LIST

OF

AMERICAN VARIETIES OF VEGETABLES FOR THE YEARS 1901 AND 1902.

BY

W. W. TRACY, Jr., Assistant,
BOTANICAL INVESTIGATIONS AND EXPERIMENTS.

Issued January 17, 1903.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture.
Bureau of Plant Industry, Office of the Chief,
Washington, D. C., May 7, 1902.

Sir: I have the honor to transmit herewith the manuscript of a List of American Varieties of Vegetables for the years 1901 and 1902, and respectfully recommend that it be published as Bulletin No. 21 of the Bureau series. The manuscript was prepared by Mr. W. W. Tracy, jr., Assistant, Botanical Investigations and Experiments, and was submitted by the Botanist.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.
PREFACE.

In the Yearbook of the Department of Agriculture for 1900 (p. 543) it is stated that American seedsmen catalogued the preceding year 685 real or nominal varieties of cabbage, 320 of table beets, 340 of sweet corn, 500 of bush beans, 255 of pole beans, 320 of cucumber, 530 of lettuce, and an equally large number of varieties of other vegetables. In such a maze of names, a large proportion of which are accompanied by the most meager descriptions, the progressive cultivator, endeavoring to ascertain what varieties are best adapted to his particular location, soil, climate, and uses, has little to guide him. Among seedsmen, also, similar difficulties exist. A small number of the larger houses maintain extensive trial grounds, but the information secured in this way is usually not made public. There remains a strong demand, both from the seed trade and from the public, for more precise information about the qualities of the various advertised varieties—information which can be furnished only after years of careful study and experimentation. There is one necessary preliminary to such work, namely, a catalogue of the names of the varieties.

There is no published work which gives all the varieties of vegetables sold by American seedsmen, and the Department of Agriculture has therefore undertaken to supply this want with a list, which is presented herewith.

The list has been prepared by Mr. W. W. Tracy, jr., who has charge of the Department's variety testing, with the aid of Mr. J. E. W. Tracy, also of the Department of Agriculture.

Frederick V. Coville,

Botanist.

Office of the Botanist.

Washington, D. C., April 26, 1902.

*In counting the number of these varieties, names were included which differed from others simply by the addition of a descriptive word, such as "improved," "large," "early," or the names of persons, while other varieties, having attached to them unimportant descriptive words, such as "select," "new," and "choice," were not included.*
## CONTENTS

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Page.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rules of nomenclature</td>
<td>7</td>
</tr>
<tr>
<td>Rules for entering</td>
<td>8</td>
</tr>
<tr>
<td>List of abbreviations of names of seedsmen</td>
<td>10</td>
</tr>
<tr>
<td>List of varieties:</td>
<td></td>
</tr>
<tr>
<td><strong>Artichoke</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Asparagus</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Bean:</strong></td>
<td></td>
</tr>
<tr>
<td>Bush lima bean</td>
<td>15</td>
</tr>
<tr>
<td>Green-podded bush bean</td>
<td>16</td>
</tr>
<tr>
<td>Pole bean</td>
<td></td>
</tr>
<tr>
<td>Pole lima bean</td>
<td></td>
</tr>
<tr>
<td>Wax-podded bush bean</td>
<td></td>
</tr>
<tr>
<td><strong>Beet:</strong></td>
<td></td>
</tr>
<tr>
<td>Garden beet</td>
<td>19</td>
</tr>
<tr>
<td>Sugar beet and mangel-wurzel</td>
<td>20</td>
</tr>
<tr>
<td><strong>Broccoli</strong></td>
<td></td>
</tr>
<tr>
<td>Brussels sprouts</td>
<td>33</td>
</tr>
<tr>
<td>Burnet</td>
<td>41</td>
</tr>
<tr>
<td>Cabbage</td>
<td>44</td>
</tr>
<tr>
<td><strong>Carloone</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Carrot</strong></td>
<td>53</td>
</tr>
<tr>
<td><strong>Cauliflower</strong></td>
<td>65</td>
</tr>
<tr>
<td><strong>Celeriac</strong></td>
<td>74</td>
</tr>
<tr>
<td>Celery</td>
<td>75</td>
</tr>
<tr>
<td>Chervil</td>
<td>76</td>
</tr>
<tr>
<td><strong>Chives</strong></td>
<td>76</td>
</tr>
<tr>
<td><strong>Chufas</strong></td>
<td>104</td>
</tr>
<tr>
<td>Collards</td>
<td>104</td>
</tr>
<tr>
<td><strong>Corn:</strong></td>
<td></td>
</tr>
<tr>
<td>Field corn</td>
<td>116</td>
</tr>
<tr>
<td>Pop corn</td>
<td>123</td>
</tr>
<tr>
<td>Sweet corn</td>
<td>124</td>
</tr>
<tr>
<td>Corn salad</td>
<td>132</td>
</tr>
<tr>
<td><strong>Cress</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cucumber</strong></td>
<td>133</td>
</tr>
<tr>
<td>Dandelion</td>
<td>133</td>
</tr>
<tr>
<td>Eggplant</td>
<td>133</td>
</tr>
<tr>
<td>Endive</td>
<td>133</td>
</tr>
<tr>
<td>Fetticus</td>
<td>133</td>
</tr>
<tr>
<td>Flag</td>
<td></td>
</tr>
<tr>
<td><strong>Corn:</strong></td>
<td></td>
</tr>
<tr>
<td>Field corn</td>
<td>134</td>
</tr>
<tr>
<td>Pop corn</td>
<td>149</td>
</tr>
<tr>
<td>Sweet corn</td>
<td>151</td>
</tr>
<tr>
<td>Corn salad</td>
<td>165</td>
</tr>
<tr>
<td><strong>Cress</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cucumber</strong></td>
<td>166</td>
</tr>
<tr>
<td>Dandelion</td>
<td>167</td>
</tr>
<tr>
<td>Eggplant</td>
<td>182</td>
</tr>
<tr>
<td>Endive</td>
<td>183</td>
</tr>
<tr>
<td>Fetticus</td>
<td>187</td>
</tr>
<tr>
<td>Flag</td>
<td>165</td>
</tr>
<tr>
<td><strong>Corn</strong></td>
<td></td>
</tr>
<tr>
<td>Field corn</td>
<td>203</td>
</tr>
<tr>
<td>Pop corn</td>
<td></td>
</tr>
<tr>
<td>Sweet corn</td>
<td></td>
</tr>
<tr>
<td>Corn salad</td>
<td></td>
</tr>
<tr>
<td><strong>Cress</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cucumber</strong></td>
<td></td>
</tr>
<tr>
<td>Dandelion</td>
<td></td>
</tr>
<tr>
<td>Eggplant</td>
<td></td>
</tr>
<tr>
<td>Endive</td>
<td></td>
</tr>
<tr>
<td>Fetticus</td>
<td></td>
</tr>
<tr>
<td>Flag</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>French spinach</td>
<td>264</td>
</tr>
<tr>
<td>Garlic</td>
<td>190</td>
</tr>
<tr>
<td>German celery</td>
<td>123</td>
</tr>
<tr>
<td>Grass nuts</td>
<td>133</td>
</tr>
<tr>
<td>Gumbo</td>
<td>244</td>
</tr>
<tr>
<td>Herbs</td>
<td>190</td>
</tr>
<tr>
<td>Horse-radish</td>
<td>195</td>
</tr>
<tr>
<td>Kale</td>
<td>195</td>
</tr>
<tr>
<td>Kohl-rabi</td>
<td>200</td>
</tr>
<tr>
<td>Leek</td>
<td>203</td>
</tr>
<tr>
<td>Lettuce</td>
<td>205</td>
</tr>
<tr>
<td>Martynia</td>
<td>226</td>
</tr>
<tr>
<td>Melon</td>
<td>226</td>
</tr>
<tr>
<td>Muskmelon</td>
<td>226</td>
</tr>
<tr>
<td>Mustard</td>
<td>241</td>
</tr>
<tr>
<td>Okra</td>
<td>244</td>
</tr>
<tr>
<td>Onion</td>
<td>246</td>
</tr>
<tr>
<td>Orach</td>
<td>264</td>
</tr>
<tr>
<td>Oyster plant</td>
<td>333</td>
</tr>
<tr>
<td>Parsley</td>
<td>268</td>
</tr>
<tr>
<td>Parsnip</td>
<td>294</td>
</tr>
<tr>
<td>Pea</td>
<td>293</td>
</tr>
<tr>
<td>Peanut</td>
<td>293</td>
</tr>
<tr>
<td>Pepper</td>
<td>294</td>
</tr>
<tr>
<td>Pieplant</td>
<td>332</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>300</td>
</tr>
<tr>
<td>Radish</td>
<td>307</td>
</tr>
<tr>
<td>Rampicun</td>
<td>332</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>332</td>
</tr>
<tr>
<td>Roquette</td>
<td>333</td>
</tr>
<tr>
<td>Salsify</td>
<td>333</td>
</tr>
<tr>
<td>Scolymus</td>
<td>335</td>
</tr>
<tr>
<td>Scorzonera</td>
<td>335</td>
</tr>
<tr>
<td>Skirret</td>
<td>335</td>
</tr>
<tr>
<td>Sorrel</td>
<td>335</td>
</tr>
<tr>
<td>Spinach</td>
<td>335</td>
</tr>
<tr>
<td>Squash</td>
<td>341</td>
</tr>
<tr>
<td>Sunflower</td>
<td>352</td>
</tr>
<tr>
<td>Swiss chard</td>
<td>352</td>
</tr>
<tr>
<td>Tomato</td>
<td>353</td>
</tr>
<tr>
<td>Turnip:</td>
<td></td>
</tr>
<tr>
<td>Garden turnip</td>
<td>371</td>
</tr>
<tr>
<td>Ruta-baga</td>
<td>383</td>
</tr>
<tr>
<td>Watermelon</td>
<td>391</td>
</tr>
</tbody>
</table>
LIST OF AMERICAN VARIETIES OF VEGETABLES
FOR THE YEARS 1901 AND 1902.

INTRODUCTION.

This list is intended as an index or catalogue to serve the purposes of seedsmen and experimenters, and aims to supply information which can not be readily found in seedsmen's catalogues. For those who wish to obtain a certain variety the names are given of all seedsmen in the United States and Canada who catalogue that variety; for those who inquire for synonymous varieties there will in many cases be found synonyms given with the names of the seedsmen who cite them as such; while for those who look for a shortening and simplifying of our already long and complex list of names there will be found here a foundation upon which such work can be carried on.

Variety names of vegetables in this country are being greatly multiplied every year by the renaming of old varieties. This practice, as well as the giving to new varieties names similar to names already used, has made the nomenclature of the whole very complex and misleading. The 320 names of lettuce entered in the list, for example, could be reduced to less than 90 distinct varieties, and the similarity of many of the names and the distinctions which must be borne in mind to separate the varieties make the whole subject very bewildering. To illustrate, the Favorite, Rudolph's Favorite, Sutton's Favorite, Florida Favorite, and Gardeners' Favorite varieties of lettuce refer to types very different from one another, while Early Dutch Butter, Dutch Speckled Butter, Hornberger's Dutch Butter, Philadelphia Dutch Butter, and Philadelphia Butter all refer, except the last, to the same variety. Besides this, there are often several different types of the same variety recognized by different seedsmen, as is well illustrated by the case of the Philadelphia Butter and Silver Ball varieties.

Besides being useful for reference, this list, it is hoped, will bring about some desirable changes, of which the first to be mentioned is the adoption of a single name for all identical varieties. There are, however, some difficulties in the way which should be well understood before such work is undertaken. Where the names are similar the varieties are generally identical, but, as already pointed out, there are,
altogether, a large number of cases where they are not so; besides this there are often recognized by different seedsmen several widely different types under the same variety name. Then also certain words which might be dropped from most names must be retained in others, as, for example, "extra" and "early," which may be dropped from the variety of bean known as Extra Early Red Valentine, but must be retained in the Extra Early Refugee variety to separate it from the distinct variety commonly known as Refugee. For these reasons very few inflexible rules for shortening and simplifying our variety names can be laid down. It will require extensive field tests to determine all of our synonymous varieties, but it is hoped that this list, perfected by successive additions and corrections, will bring about a better understanding of varieties, especially as regards synonyms, and finally establish a body of distinct varieties, eliminating many synonyms which now claim the attention of the trade and public as representing distinct varieties.

Another improvement which this list should bring about is the prevention of the duplication of old names or the giving to new varieties names which closely resemble some old name. Introducers of new varieties have sometimes given names to their introductions exactly duplicating names already applied to other varieties, or if not duplicating them very much resembling them, not knowing, of course, that such names existed. By referring to this list introducers will hereafter have a means of preventing the confusion arising from this source.

RULES OF NOMENCLATURE.

In preparing this list the following words and phrases have been omitted from the variety name as being unnecessary, and multiplying names which mark no real varietal differences: Improved, extra, perfected, pedigree, select, extra select, choice, extra choice, superior, celebrated, fine, famous, our, our own, true, new, the, and the names of persons. Exceptions have been made and some of the above words retained where they are supposed or claimed to indicate a real difference in type or where the dropping of such a word would be confusing and misleading because the variety is generally and familiarly known only by the full name, as in case of Horsford's Market Garden and Nott's Excelsior peas. The words giant, mammoth, large, early, and extra early have in every case been retained, because, though not usually indicating a difference in type, there are many cases where they do indicate such a difference. There is, perhaps, more reason for retaining the words "improved" and "perfected" and the names of persons than the other words mentioned as omitted, and for this reason they have been allowed to stand in the groups of similar names, though, as
RULES OF NOMENCLATURE.

already stated, they have been omitted from the alphabetical arrangement.

Occasionally some of the above descriptions mark real superiority of stock, especially as regards purity and vigor, due perhaps to careful "rogueing" or to climatic, soil, or cultural conditions. It would be much better, however, if such superiority were left to be known by the reputation of the seed house rather than advertised by the addition of the seedsman's name or adjectives to the simple variety name, a practice which has been so much abused that these additions have little or no significance.

Besides the above reductions in the regular catalogue names other changes have been made, as follows: When the words "earliest" and "early" are applied by different seedsmen to the same variety, not marking any difference in type, as in Early Sheffield and Earliest Sheffield, that one of the two forms has been taken up which has been most generally adopted by seedsmen. Incomplete variety names like Plum and Cherry have been changed to more exact names, as Yellow Plum, Red Plum, Yellow Cherry, and Red Cherry, wherever it has been possible from the descriptions given in the catalogue to determine which kind is referred to.

In beans the name Lazy Wives of some seedsmen has been changed to the more generally recognized Lazy Wife, and Marrowfat whenever used is changed to Marrow. In beets the words "blood" and "turnip" not being used with any regularity by seedsmen, even with reference to the same variety, have been dropped from names whenever possible, and retained only when they serve to distinguish different though similar-named varieties, as Bastian's Half Long Blood and Bastian's Blood Turnip, or where the dropping of them would make the name misunderstood or incomplete, as in Early Blood Turnip. In cabbages "headed" and "heading" have been dropped from all names and Holland changed to the more generally accepted name Hollander. In cauliflower Late Algerian has been changed to the more generally accepted name Late Algiers. In lettuce Early Stone, Golden Stone, and Spotted Dutch Butter were changed to the more generally accepted names Early Stonehead, Golden Stonehead, and Speckled Dutch Butter, and the words "white-seeded" and "black-seeded" retained only when necessary. In muskmelons the words "cantaloupe," "citron," and "nutmeg," not being used with any regularity for the varieties to which they are applied by some seedsmen, have been dropped from variety names, excepting where it has been necessary to retain them to make a name complete. In onions "long-keeping" has been dropped from all names. In peas "marrow" has been changed to "marrowfat." In peppers "thornless," which botanically speaking is an incorrect term to apply to peppers, has been changed to "spineless," which is the word used by most seedsmen.
In squashes the word "golden" as used in Golden Summer Crookneck, Mammoth Golden Summer Crookneck, Giant Golden Summer Crookneck, and Early Golden Summer Crookneck, has been changed to the more generally adopted word "yellow." In tomatoes One Hundred Day and Advancer have been changed to the more generally adopted names Hundred Day and Advance.

RULES FOR ENTERING.

The present list of varieties includes, it is believed, all the garden varieties of vegetables catalogued by seedsmen in the United States and Canada. The utmost endeavor has been made to secure every catalogue. After each variety name are given abbreviations of the names of the seedsmen who catalogue the variety. When in italics they indicate that the variety was catalogued by that seedsman in 1902 only. When all the names are in italics the variety is indicated as being a new introduction of 1902. Whenever similar names exist or synonyms are cited these also are given. By similar names are meant names resembling each other given by different seedsmen, whether to like or unlike varieties. In some cases such varieties are all dissimilar in type or essential characters. Most of them, however, are similar or identical in this regard and sometimes they are so in purity of stock also. The synonyms cited include only those given by seedsmen in their own catalogues, though some of them are undoubtedly incorrect; this is due usually to a local misunderstanding of the generally recognized type or to a misapplication of names rather than a lack of knowledge of the varieties themselves.

LIST OF ABBREVIATIONS OF NAMES OF SEEDSMEN.

The following are the abbreviations, alphabetically arranged, which have been adopted to designate the seedsmen referred to in this bulletin. The list includes, so far as is known, all the seedsmen of the United States and Canada who issued catalogues or price lists for the years 1901 and 1902.

AGT A. G. Tillinghast, Laconner, Wash.
All John H. Allan Seed Co., Three Mile Bay, N. Y.
Ahr Ameer Bros., Rockford, Ill.
Alx Alexander Seed Co., Augusta, Ga.
Amb E. Annabil, McPherson, Kans.
Ams A. H. Ansley & Sons, Milo Center, N. Y.
Ar L. E. Archias Seed Co., Carthage, Mo.
Bai Bailey & Sons, Salt Lake City, Utah.
Bak Baker Bros., Fort Worth, Tex.
Bdg Alfred Bridgeman, New York, N. Y.
Bel J. J. Bell, Deposit, N. Y.
ABBREVIATIONS OF NAMES OF SEEDSMEN.

Ber  A. A. Berry Seed Co., Clarinda, Iowa.
Bgs  Briggs Brothers & Co., Rochester, N. Y.
Bkt  W. C. Beckert, Allegheny, Pa.
Blg  F. W. Bolgiano, Washington, D. C.
Bng  William H. Brunning, Rahway, N. J.
Bou  William A. Bours & Co., Jacksonville, Fla.
Bow  E. J. Bowen, San Francisco, Cal.
Brb  E. W. Burbank Seed Co., Fryeburg, Me.
Luther Burbank, Santa Rosa, Cal.—LBk
Brd  W. W. Barnard & Co., Chicago, III.
Bri  Wm. Brinker, Cleveland, Ohio.
Brg  Joseph Breck & Sons, Boston, Mass.
Brw  Fred P. Burr & Co., Middletown, Conn.
Brt  The W. E. Barrett Co., Providence, R. I.
Brm  John A. Bruce & Co., Hamilton, Canada.
Brw  E. F. Burwell, New Haven, Conn.
Btl  F. Barteldes & Co., Lawrence, Kans.
Buc  H. W. Buckbee, Rockford, Ill.
Cam  L. Cameron, Jacksonville, Fla.
C&B  Lucas & Boddington Co., New York, N. Y.
CCo  Cole Seed Co., Buckner, Mo.
CE  Chesmore-Eastlake Mercantile Co., St. Joseph, Mo.
CF  Comstock, Ferre & Co., Wethersfield, Conn.
Chl  John Lewis Childs, Floral Park, N. Y.
Cm  M. Cushman & Co., Rochester, N. Y.
C&J  Cadwell & Jones, Hartford, Conn.
Cle  Cleveland Seed Co., Cape Vincent, N. Y.
Cok  A. T. Cook, Hyde Park, N. Y.
Col  Cole's Seed Store, Pella, Iowa.
Cox  Cox Seed Co., San Francisco, Cal.
Crg  Craig Seed Co., Memphis, Tenn.
Crs  Crosman Bros., Rochester, N. Y.
CSC  C. S. Clark, Wakeman, Ohio.
The Everett B. Clark Co., Milford, Conn.—EBC
Cur  Currie Bros., Milwaukee, Wis.
D&C  The Dingee & Conard Co., West Grove, Pa.
D&d  Dickmann-Dusard Seed Co., St. Louis, Mo.
Del  Delano Seed Co., Lee Park, Nebr.
D&H  Darch & Hunter, London, Ontario, Canada.
Dlw  W. E. Dallwig, Milwaukee, Wis.
Trm  Drumam Seed and Floral Co., Fort Worth, Tex.
Jrw  Oliver H. Drew, Hibernia, N. Y.
Dun  R. B. Dunning & Co., Bangor, Me.
Eas  Eastman Seed Co., East Summer, Me.
EBC  The Everett B. Clark Co., Milford, Conn.
Ebe  F. H. Ebeling, Syracuse, N. Y.
Ebr  W. M. Eber & Son, Quincy, III.
Eic  Eichling Seed and Nursery Co., New Orleans, La.
ABBREVIATIONS OF NAMES OF SEEDSMEN.

J&M Johnson & Musser Seed Co., Los Angeles, Cal.
JMM J. M. McCullough's Sons, Cincinnati, Ohio.
JMP J. M. Philips' Sons, Mercersburg, Pa.
Joo C. H. Josten, New York, N. Y.
Mark W. Johnson Seed Co., Atlanta, Ga. = MWJ.
R. H. Johnston, Victoria, British Columbia, Canada. = RIJ.
Kei Keith & Co., Winnipeg, Manitoba, Canada.
Kel The Kelly Co., Cleveland, Ohio.
Ken A. C. Kendel, Cleveland, Ohio.
K&F Kennedy & Farnham, Carrollton, Mo.
Kg T. J. King Co., Richmond, Va.
Koe W. H. Koerner, Milwaukee, Wis.
Kos Theo. Koss, Milwaukee, Wis.
Kra I. N. Kramer & Son, Cedar Rapids, Iowa.
K&W Kendall & Whitney, Portland, Me.
Lam Buell Lamberson's Sons, Portland, Oreg.
LB Lilly, Bogardus & Co., Seattle, Wash.
LBk Luther Burbank, Santa Rosa, Cal.
Lnr S. F. Leonard, Chicago, Ill.
Liv The Livingston Seed Co., Columbus, Ohio.
Livingston's Seed Store, Des Moines, Iowa. = JL.
Lob The Lohrman Seed Co., Detroit, Mich.
Lon W. B. Longstreth, Gratiot, Ohio.
Man Mann & Co., Cape Vincent, N. Y.
P. Mann & Co., Washington, D. C. = PM.
May L. L. May & Co., St. Paul, Minn.
McK A. E. McKenzie & Co., Brandon, Manitoba, Canada.
McM McMillan's Seed Store, Atlanta, Ga.
J. Charles McCullough, Cincinnati, Ohio. = JCM.
J. M. McCullough's Sons, Cincinnati, Ohio. = JMM.
Mie Michael's Seed Store, Sioux City, Iowa.
Mls E. B. Mills, Rose Hill, N. Y.
Mnd W. A. Manda, South Orange, N. J.
Mns J. Manns Co., Baltimore, Md.
Mrs C. C. Morse & Co., Santa Clara, Cal.
MV Missouri Valley Seed Co., St. Joseph, Mo.
MWJ Mark W. Johnson Seed Co., Atlanta, Ga.
Mzy Muzzy Bros., Paterson, N. J.
Neb The Nebraska Seed Co., Omaha, Nebr.
Nef Lincoln I. Neff, Pittsburgh, Pa.
NI Northern Indiana Seed Co., Valparaiso, Ind.
NK Northrup, King & Co., Minneapolis, Minn.
Nol J. F. Noll & Co., Newark, N. J.
<table>
<thead>
<tr>
<th>Code</th>
<th>Company Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old</td>
<td>L. L. Olds, Clinton, Wis.</td>
<td></td>
</tr>
<tr>
<td>OV</td>
<td>Ohio Valley Seed Co., Evansville, Ind.</td>
<td></td>
</tr>
<tr>
<td>Pac</td>
<td>Pacific Seed Co., Sacramento, Cal.</td>
<td></td>
</tr>
<tr>
<td>Pg</td>
<td>The Page Seed Co., Greene, N. Y.</td>
<td></td>
</tr>
<tr>
<td>PM</td>
<td>P. Mann &amp; Co., Washington, D. C.</td>
<td></td>
</tr>
<tr>
<td>Pue</td>
<td>Fine Tree State Seed Co., Bath, Me.</td>
<td></td>
</tr>
<tr>
<td>Pmt</td>
<td>Plant Seed Co., St. Louis, Mo.</td>
<td></td>
</tr>
<tr>
<td>Poo</td>
<td>Poole's Seed Store, Tacoma, Wash.</td>
<td></td>
</tr>
<tr>
<td>Por</td>
<td>Portland Seed Co., Portland, Oreg.</td>
<td></td>
</tr>
<tr>
<td>Pot</td>
<td>Walter A. Potter &amp; Co., Providence, R. I.</td>
<td></td>
</tr>
<tr>
<td>Pri</td>
<td>George H. Price, Albany, N. Y.</td>
<td></td>
</tr>
<tr>
<td>Prn</td>
<td>F. R. Pierson Co., Tarrytown-on-Hudson, N. Y.</td>
<td></td>
</tr>
<tr>
<td>Ptt</td>
<td>Frank S. Platt, New Haven, Conn.</td>
<td></td>
</tr>
<tr>
<td>Pug</td>
<td>Puget Sound Nursery and Seed Co., Seattle, Wash.</td>
<td></td>
</tr>
<tr>
<td>Qkr</td>
<td>Quaker City Seed Co., Philadelphia, Pa.</td>
<td></td>
</tr>
<tr>
<td>Rec</td>
<td>Jerome B. Rice, Cambridge, N. Y.</td>
<td></td>
</tr>
<tr>
<td>RE</td>
<td>Robert Evans Seed Co., Hamilton, Canada.</td>
<td></td>
</tr>
<tr>
<td>Rec</td>
<td>C. A. Reeser Co., Urbana, Ohio.</td>
<td></td>
</tr>
<tr>
<td>Ren</td>
<td>Wm. Rennie, Toronto, Canada.</td>
<td></td>
</tr>
<tr>
<td>RHJ</td>
<td>R. H. Johnston, Victoria, B. C., Canada.</td>
<td></td>
</tr>
<tr>
<td>Rim</td>
<td>Horace Rimby, Collegeville, Pa.</td>
<td></td>
</tr>
<tr>
<td>Rob</td>
<td>J. C. Robinson, Waterloo, Nebr.</td>
<td></td>
</tr>
<tr>
<td>Roc</td>
<td>Rockford Seed Co., Rockford, Ill.</td>
<td></td>
</tr>
<tr>
<td>Rog</td>
<td>Rogers Bros., Chaumont, N. Y.</td>
<td></td>
</tr>
<tr>
<td>Roh</td>
<td>Waldo Rohmert, Sargent, Cal.</td>
<td></td>
</tr>
<tr>
<td>RP</td>
<td>Rush Park Seed Co., Independence, Iowa.</td>
<td></td>
</tr>
<tr>
<td>Rtk</td>
<td>J. R. Ratekin &amp; Sons, Shenandoah, Iowa.</td>
<td></td>
</tr>
<tr>
<td>Sal</td>
<td>John A. Salzer, La Crosse, Wis.</td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>Steele, Briggs Seed Co., Toronto, Canada.</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>Schisler-Corneli Seed Co., St. Louis, Mo.</td>
<td></td>
</tr>
<tr>
<td>S&amp;F</td>
<td>Schlegel &amp; Fottler, Boston, Mass.</td>
<td></td>
</tr>
<tr>
<td>S&amp;H</td>
<td>The Storrs &amp; Harrison Co., Painesville, Ohio.</td>
<td></td>
</tr>
<tr>
<td>Shm</td>
<td>R. H. Shumway, Rockford, Ill.</td>
<td></td>
</tr>
<tr>
<td>Sie</td>
<td>Geo. L. Siegel, Erie, Pa.</td>
<td></td>
</tr>
<tr>
<td>Sim</td>
<td>J. A. Simmers, Toronto, Canada.</td>
<td></td>
</tr>
<tr>
<td>S&amp;O</td>
<td>Shugart &amp; Ouren Seed Co., Council Bluffs, Iowa.</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Sioux City Seed and Nursery Co., Sioux City, Iowa.</td>
<td></td>
</tr>
<tr>
<td>Spf</td>
<td>Springfield Seed Co., Springfield, Mo.</td>
<td></td>
</tr>
<tr>
<td>Sqr</td>
<td>Jas. M. Squier &amp; Son, Lindsay, Ontario, Canada.</td>
<td></td>
</tr>
<tr>
<td>S&amp;R</td>
<td>Savage &amp; Reid, Salem, Oreg.</td>
<td></td>
</tr>
<tr>
<td>Stk</td>
<td>J. Steckler Seed Co., New Orleans, La.</td>
<td></td>
</tr>
<tr>
<td>Stw</td>
<td>Stewart's Seed Store, Omaha, Nebr.</td>
<td></td>
</tr>
<tr>
<td>S&amp;W</td>
<td>Stumpp &amp; Walter Co., New York, N. Y.</td>
<td></td>
</tr>
<tr>
<td>Tat</td>
<td>George Tait &amp; Sons, Norfolk, Va.</td>
<td></td>
</tr>
<tr>
<td>TB</td>
<td>Thompson Bros., Muscatine, Iowa.</td>
<td></td>
</tr>
</tbody>
</table>
### LIST OF VARIETIES—ARTICHOKE.

**Chinese.** Drw.


**Colossal.** M&S.

*Similar names.* Sutton's White, Sutton's Colossal.

**Early Campania.** Del.

**Early Purple.** Thr. For similar names see *Purple Globe*.

*Seedsmen's synonyms.* Violet, Brk.

**Early Purple Globe.** Ewg. For similar names see *Purple Globe*.

**French.** Bdg MWJ. For similar names see *French Globe*.

*Seedsmen's synonyms.* *Green Globe*, Bdg.

**French Globe.** Ken Mnd My Mzy Sor Tat Thr.


**French Green Globe.** *1st Hop Ree Shw.*

*Similar names.* See *French Globe*, *Green Globe*.

**Giant Green Globe.** Raw Ren. For similar names see *Green Globe*.

**Giant White.** May. For similar names see *White*.

**Globe.** Chi Cur OV. For similar names see *Green Globe*.

---

<table>
<thead>
<tr>
<th>Variety</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>Drw.</td>
</tr>
<tr>
<td>Colossal</td>
<td>M&amp;S</td>
</tr>
<tr>
<td>Early Campania</td>
<td>Del.</td>
</tr>
<tr>
<td>Early Purple</td>
<td>Thr.</td>
</tr>
<tr>
<td>Early Purple Globe</td>
<td>Ewg.</td>
</tr>
<tr>
<td>French</td>
<td>Bdg MWJ.</td>
</tr>
<tr>
<td>French Globe</td>
<td>Ken Mnd My Mzy Sor Tat Thr.</td>
</tr>
<tr>
<td>French Green Globe</td>
<td><em>1st Hop Ree Shw.</em></td>
</tr>
<tr>
<td>Giant Green Globe</td>
<td>Raw Ren.</td>
</tr>
<tr>
<td>Giant White</td>
<td>May.</td>
</tr>
<tr>
<td>Globe</td>
<td>Chi Cur OV.</td>
</tr>
</tbody>
</table>
AMERICAN VARIETIES OF VEGETABLES.

Green Globe.  Aix Brd Rdg Bru Crs D&H Del Eavr RE Evg Feg Fax GH Gra Frn HRJ Man MC Mh N K Pk Pk Pri SC Sox T&B Vc Wd.
Seedsmen's synonyms.  French, Rdg.

Green Laon.  Th.  For similar names see Paris.

Green Paris.  Th.  For similar names see Paris.

Improved Large Green Globe, Improved Large White Jerusalem.  Entered as Large Green Globe and Large White Jerusalem.

Italian Purple.  Th.  For similar names see Purple Globe.

Similar names.  Large Jerusalem, Improved Large White Jerusalem, Red Jerusalem.
Seedsmen's synonyms.  Giant White French, Frd.

Large Flat Brittany.  Th.

Large French Globe.  Ptt.  For similar names see French Globe.

Large Globe.  Brn Buc C&B Etr Fer Lan Lca Lmr LB Liv JMM Pk sB W&D WS.
Similar names.  See Green Globe.

Similar names.  See Green Globe.

Large Jerusalem.  NK.  For similar names see Jerusalem.

Large Paris.  Mnd Vin.  For similar names see Paris.

Large White Jerusalem.  Ar.  For similar names see Jerusalem.

Le Normand's Mammoth.  RE.

Mammoth White.  Del.  For similar names see White.

Mammoth White French.  Eic Evr GH Lam Kos.
Similar names.  See French Globe.

Paris.  Buc Etr Fer Lyv.
Seedsmen's synonyms.  Large Globe, Fer Lyv.

Purple Globe.  Gra.
Similar names.  Early Purple Globe, Early Purple, Italian Purple.

Red Jerusalem.  S&R.  For similar names see Jerusalem.

Sutton's Colossal.  Entered as Colossal.

Sutton's White.  Ren.  For similar names see Sutton's Colossal, White.

Violet.  Brk Thr.
Seedsmen's synonyms.  Early Purple, Brk.

White.  S&R.
Similar names.  Sutton's White, Giant White, Mammoth White.

White French.  Eic H&P Lam WS Wd.  For similar names see French Globe.

ASPARAGUS.

Argenteuil.  Vin.
Similar names.  Giant Argenteuil, Early Purple Argenteuil.
Barr's Mammoth.  Alr Bai Bkt Bel Ber Bgs Bri Buc Bai Bur CE CF Crs Cur Del D&C Drr Ebc Ebr RE Efr Fst Fle Frd Gls GH G&T Grw Ham Hde Hlr Hbl Hct' Hln Hse Iml Ken K&W Lnr Liv Mnd May JMM McF Mid Mil Flc Nef Nk Pac Pg HP JMP Ptt Por Pri Pug Raw Rece Roc Rs Sal S&R Shm Sox Tat Tem Tex Thr Til Vau Wdr Yng.


Similar Names. See Barr's Mammoth.

Berliner Freude.  Sal.


California Large White.  Bel.

Charleston.  Tat Wlt.


Colossal.  Ar Btt Btt Bow Bri C&B Cur DD Dmu Ebc Ebr G&T Hrv Hn Hly JCM JMM Lam Mnd Mns JCM McM Mzy Nfr Pnd Poo Rece SB Stw Tex Thr Thb Til WAD.

Similar Names. See Conover's Colossal.

Columbian.  Dww Myx WS.  For similar names see Columbian Mammoth White.

Columbian Mammoth White.  Air Anb Ar Bai Bak Brdl Btd Btt Bel Bel Big Bow Bgs Brn Brn Buc Bfr Brr CE Col Cox Crs Cur Dlw D&H Del DD Drr Drw Ebc Eic Elt RE Evt Ewg Fmr Furn Fqr Frd Fle Ger Gls Gdn GI Gla Goy Grw Hrs Hrs Hw Hbt Hbr Hop Hse Iml Iow J&M J&S Kg Knu Kra Lam Lnr LB Liv JL Lm May JMM McK Mhl Myx M&S Nfr Nol NL Nk Pg HP Prn Pnt Ptt Por Pri Qkr Ren Rece Roc Rs RP Sal S&R SC S&F Sfr Sm Sim Sox Spf Stk S&B S&H S&W Tat Tem Tex TB Thm AGT Til Trm Vl Van Vb Wya Wll WS Yc H.


Similar Names. See Columbian Mammoth White.

Conover.  Sal.  For similar names see Conover's Colossal.

Conover's Colossal.  Alx Air Anb Ar Bai Bak Brdl Btd Btt Bel Bel Big Bow Bgs Brn Brn Buc Bfr Brr CE Col Cox Crs Cur Dlw D&H Del DD Drr Drw Ebc Eic Elt RE Evt Ewg Fmr Furn Fqr Frd Fle Ger Gls Gdn GI Gla Goy Grw Hrs Hrs Hw Hbt Hbr Hop Hse Iml Iow J&M J&S Kg Knu Kra Lam Lnr LB Liv JL Lm May JMM McK Mhl Mls Mny Myx Nfr Nol NL Nk Ov Pac Pg Bks HP JMP Prn Pnt Ptt Por Pri Qkr Raw Rece Roc Rs RP Sal S&R SC S&F Shw Sm Sim Sox Spf Stk S&B S&H S&W Tat Tem TB Thm AGT Til Trm Vl Van Vb Wya Wll WS Yc H.

Similar Names. Conover, Colossal, Conover's Palmetto, Conover's Giant, Conover's Mammoth.

Seedsmen's Synonyms. Early Purple Argenteuil, Brn.

Conover's Giant.  Rhj.  For similar names see Conover's Colossal, Giant.

Conover's Mammoth.  Mie.

Similar Names. See Conover's Colossal, Barr's Mammoth.

Cox's California Mammoth.  Cox.  For similar names see Barr's Mammoth.

Defiance.  Nef.

Similar Names. Smalley's Defiance.


1329—No. 21—02—2
AMERICAN VARIETIES OF VEGETABLES.

Dreer's Eclipse. Entered as Eclipse.
Early Purple Argenteuil. Brn. For similar names see Argenteuil.

SEEDSMEN'S SYNONYMS. Conover's Colossal, Brn.

Eclipse. Drr Mhl Thr.

SIMILAR NAMES. Dreer's Eclipse.

French. Tat Wht.

SIMILAR NAMES. Giant White French.

SEEDSMEN'S SYNONYMS. Charleston, Tat. Palmetto, Tat.

Giant. Cox Shm Tpk.

SIMILAR NAMES. Conover's Giant, Moore's Giant, Large Giant, Southern Giant.

Giant Argenteuil. Alx Cur Mnd MWJ Wer Wht Wd.

SIMILAR NAMES. See Argenteuil.

Giant Palmetto. Ham Sal. For similar names see Palmetto.

Giant Purple Top. Ewg.

SIMILAR NAMES. Moore's Giant Purple Top, Large Purple Top.

Giant Snow Cap. DaH Ewg. For similar names see Snow-head.

Giant White French. For similar names see French.

Hub. Brk Fqr.

Ivory. Tom.

Large Giant. Sim. For similar names see Giant.

Large Purple Top. Rac. For similar names see Giant Purple Top.

Hammond's Mammoth White. Iiaw.

SIMILAR NAMES. See Columbian Mammoth White.

Henderson's Palmetto. Entered as Palmetto.

Mammoth. Chl H&P MWJ. For similar names see Barr's Mammoth.

Mammoth White. Brk G&T.

SIMILAR NAMES. See Columbian Mammoth White.

Maule's Mammoth. Mau. For similar names see Barr's Mammoth.

Moore's Cross Bred. Drm Ggy.

SIMILAR NAMES. Moore's Giant Cross Bred, Moore's Giant Purple Top, Moore's Giant.

Moore's Giant. Gry Raw. For similar names see Giant, Moore's Cross Bred.

Moore's Giant Cross Bred. Fqr. For similar names see Moore's Cross Bred.

Moore's Giant Purple Top. Brk S&F.

SIMILAR NAMES. See Giant Purple Top, Moore's Cross Bred.


SIMILAR NAMES. Conover's Palmetto, Henderson's Palmetto, Giant Palmetto.

SEEDSMEN'S SYNONYMS. Charleston, Tat. French, Tat.

Paris Mammoth. Pug. For similar names see Barr's Mammoth.

Quality. LBr.

Smally's Defiance. Entered as Defiance.

Snowhead. Ger.

SIMILAR NAMES. Giant Snow Cap.

Southern Giant. Shm. For similar names see Giant.

Starkey's Early Prolific Mammoth. M&S.

SIMILAR NAMES. See Barr's Mammoth.

Vick's Mammoth. Vkn. For similar names see Barr's Mammoth.
**BEAN, BUSH LIMA.**

**BEAN (BUSH LIMA BEAN).**


**Similar names.** Burpee's Large Bush, Burpee's Willow Leaf Bush, Burpee's Quarter-Century.

**Seedsman's synonyms.** Dwarf Large White, J&S.

**Burpee's Large Bush.** Alx Bkt Gg Hde Pnt Spf Tat.

**Similar names.** See Burpee's Bush.

**Burpee's Quarter-Century.** Entered as Quarter Century.

**Burpee's Willow Leaf.** Entered as Willow Leaf.

**Calico.** *Cun.*

**Seedsman's synonyms.** Southern, Cam.

**Cox's Bush.** *Cox.*

**Cox's Southern Bush.** *Cox.*


**Similar names.** Dreer's Large Bush, Dreer's Wonder Bush.

**Seedsman's synonyms.** Kuname, Brt Bkt Bar Fqr Fer J&S, etc. Thorburn, Kra Man Vl.

**Dreer's Large Bush.** Brg Nol. For similar names see Dreer's Bush.

**Dreer's Wonder.** *Brr Drr Liv Mns.* For similar names see Dreer's Bush.

**Dwarf Carolina.** Lan.

**Seedsman's synonyms.** Dwarf Lima, Lan.

**Dwarf Large White.** Fer Inn J&S.

**Similar names.** Dwarf White, Large Bush.

**Seedsman's synonyms.** Burpee's Bush, J&S.

**Dwarf Lima.** Brb Crg Fer Haw Lea Mel 0V Vl Vg Yng.

**Seedsman's synonyms.** Dwarf Carolina, Lan.

**Dwarf Sieva.** Fer J&S Mnd MV NK.

**Seedsman's synonyms.** Henderson's Bush, Fer J&S Mnd MV NK HP Thr.

**Dwarf White.** May. For similar names see Dwarf Large White.

**Extra Early Bush.** M&S.


**Similar names.** Burpee's Large Bush, Burpee's Willow Leaf Bush, Burpee's Quarter-Century.
American Varieties of Vegetables.

S&H S&W Tat Tem Tex TB Thm Thr Thb Tpk Trn T&B VI Vau Vin Wea Web W&D Wer Wt Ws Wyg Y&H.


Seedsmen's synonyms. Dwarf Swiss, Fer J&S Mnd MV NK HP Thr.

Henderson's Improved Bush. Entered as Henderson's Bush.

Henderson's Small Dwarf. Alex. For similar names see Henderson's Bush.

Hoermann & Cleary's Wax Lima. IL&C.

Improved Bush. Vck.


Similar names. Mill's Wonder, Dreer's Wonder, New Wonder.


Seedsmen's synonyms. Dreer's Bush, Brt Bkt Bur Fqr Fer J&S, etc. Thorburn, Kra Liv NK Vck.

Large Bush. Big. For similar names see Dwarf Large White.

Mexican Lima. Pir.

Mill's Wonder. Mls. For similar names see Jackson Wonder.

Moore & Simon's Improved Large Early. Entered as Moore & Simon's Large Early.

Moore & Simon's Large Early. M&S.

Similar names. Moore & Simon's Improved Large Early.

Potato Bush. Tat.


Small Bush. Tat Vck.

Southern Cam Cox.

Seedsmen's synonyms. Southern, Cam.

Thorburn's Bush. CE CF DD Ebr Elt Hst Liv Man McM NK Ree S&W Thm Thr Wdr.


Washington Market. Lnr.

Wilkie's Perfection Prize. M&S.

Willow Leaf. Bur Sim.

Wonder. Fer Hen J&S Spf. For similar names see Jackson Wonder.

Wood's Improved. Ebr Rt.

Similar names. Wood's Prolific.

Wood's Prolific. Bng Bur Ebr Hbt Ree Shw Vck Wd WS.

Similar names. See Wood's Improved.

Bean (Green-Podded Bush Bean).

Alexander's Stringless Green Pod. Entered as Stringless Green Pod.

Bacon. Wd.

Similar names. Wood's Bacon.

Banner Leafless. Ham.

Similar names. Hammond's Banner Leafless.

Best of All. Alx All Ans Bkt Bel Ber Brk Bgs Bri Brn Buc Bur Brw Cam CE Cie Col CA Del DD Eic Evr Fmr Fst Fer Frd Gdn GH Grn Gig G&T TG Hrn Hbt Hny Hlm Jae MWJ J&S Kri Kg Lnr LB Liv Mnd Man May JCM JMM McM Mel Mhl Liv MV M&S Nef NK Pg JMP Put Qkr Ree Roc Rog Rs Slm Shm Sox Spf Sfr S&F S&W Tem Thm Thr Wbr Wd Ws Wyg Yng.

Best of All Early Market. Not M&S.

Black Morrow. Sal.

Black Turtle Soup. Drr JCM. For similar names see Turtle Soup.

Black Valentine. Hen S&W W&F. For similar names see Red Valentine.
Blue Poddled Butter.  Bur Hbt Rog S&F.

Boston.  Hme Shw Y&H.  For similar names see Boston Pea.

SEEDSMEN'S SYNONYMS.  Goddard, Y&H.  California Yellow, Hme.

Boston Favorite.  All Brg Brn Bur Brp C&S CE CF Emr Ewg Fqr Fx Frd Grn
Gry Hrs Hse Lar Mus MV NK HP Ptt Pot Qkr Raw Ree Rog Rs Sox Wea Wdr.

SIMILAR NAMES.  See Boston Pea.

SEEDSMEN'S SYNONYMS.  Goddard, Bur Fqr Gry HP Raw Ree, etc.  Improved
Goddard, Rs.  Improved Yellow Eye, Ewg.  Large Goddard, Emr Ptt.  Red
Poddled Dwarf Horticultural, Emr.

Boston Improved Round Pod Extra Early Snap Short.  Entered as Boston
Round Pod Extra Early Snap Short.

Boston Marrow.  Hrs.  For similar names see Boston Pea, White Marrow.

Boston Pea.  Brn Del Drf Emr Hme Kos Kra Liv May M&S Mns Nol HP Y&H.

SIMILAR NAMES.  Pea, White Pea, Boston Small Pea, Boston Pea, Early
Boston Navy, Boston Favorite, Boston Marrow, Boston Yellow Eye, Boston
Improved Round Pod Extra Early Snap Short.

Snowflake, M&S.  White Pea, May HP.

Boston Round Pod Extra Early Snap Short.  M&S.

SIMILAR NAMES.  See Boston Pea.

Boston Small Pea.  Brd Bgs Bur CE C&B Crs Cur DD Hrs Hen Lnr MV Ree Sox
Tem.  For similar names see Boston Pea.

Boston Yellow Eye.  Ebe.  For similar names see Boston Pea, Yellow Eye.


Breck's String and Shell.  Brk.

Broad Windsor.  Btl Bow Brk Bdg Cle Cox Crs Cur Dlw D&H DD Drf Ebe Ebr
Eic Emr RE Emr Fqr Fer Fle Ger Gra Gry G&T Hse Hs RJH Kei K&W Ken Kos
Lam Lnr Lsh Mhl Mxy NK Pac Pir Pks Ptt Poo Por Pri Png Raw Ree Ren Sal

SIMILAR NAMES.  English Broad Windsor, Green Windsor.

SEEDSMEN'S SYNONYMS.  Broad, Fer.  English, NK.  English Broad, Lam.
English Dwarf, Fer.

Brown.  NK.  For similar names see Brown Six Weeks.

SEEDSMEN'S SYNONYMS.  Swedish, NK.

Brown Six Weeks.  Brt Bkt Bri Wd WS.

SIMILAR NAMES.  Early Brown, Brown.  See also Yellow Six Weeks.

SEEDSMEN'S SYNONYMS.  Early Mohawk, Sox WS.  Mohawk, Bkt Brt.

Brown Swedish.  Brn.

Brown Speckled Valentine.  Btl Bkt.  For similar names see Red Valentine.

SEEDSMEN'S SYNONYMS.  One Thousand to One, Lan.  Refugee, Bkt Btl Dlw Lan.


SEEDSMEN'S SYNONYMS.  Early Valentine, G&T.

Buckbee's Early Wonder.  Entered as Early Wonder.

Buist's Early Lightning Valentine.  Entered as Early Lightning Valentine.

Burlingame Medium.  Ans Brk Cur Fmr Frd Hen J&S Mau.

SIMILAR NAMES.  See White Medium.

Burpee's Stringless Green Pod.  Entered as Stringless Green Pod.

Byer.  CE Chl CF Thr.

Cala.  JL.

SEEDSMEN'S SYNONYMS.  Mexican Tree, JL.

California Branch.  Ar H&P Low M.  For similar names see California Tree.

SEEDSMEN'S SYNONYMS.  Tree, H&P.  Prolific Tree, Ar Low.

California Pea.  Gra Ren.  For similar names see California Tree.
California Tree. Til J'l Web Wyg.

Similar names. California White Tree, California Branch, California Yellow, California Wonder, California Pea. See also Prolific Tree.

Seedsmen’s synonyms. Prolific Tree, Wyg.

California White Tree. CE GH May.

Similar names. See California Tree, Prolific Tree.

California Wonder. Fnr NK.

Similar names. See California Tree, Canadian Wonder.

Seedsmen’s synonyms. Improved Tree, NK.

California Yellow. Hme. For similar names see California Tree.

Seedsmen’s synonyms. Boston, Hme.

Canadian Universal. D&H.

Canadian Wonder. All Bai Bdg Bri Cox Dlw Fle Ger Gra Hme HRIJ J&M Ken NK Par HP Par Qkr Rec Rog S&R Sim Til T&B Vin Wer.

Similar names. Simmer’s Canadian Wonder, English Wonder, California Wonder, Newington Wonder, Early Wonder, Buckbee’s Early Wonder, White Wonder, Salzer’s White Wonder, Little Wonder Mary, Johnson’s Wonderful.

Carmine Dwarf Horticultural. Gil. For similar names see Dwarf Horticultural.

Chilian. Brr Ptt.

Seedsmen’s synonyms. Red Kidney, Brr Ptt.

China. Brr For Grn Pri Ren. For similar names see China Red Eye.

Seedsmen’s synonyms. Red Eye, Pri.

China Red Eye. All Bre Bar Cle Dlw Ebe Hlm Lea Lar May McK McM NK Pae Put Qkr Vin.

Similar names. Early China Red Eye, Early China, China, Red Eye.

Chocolate. Thr.

Cleveland’s Improved Extra Early Refugee, Cleveland’s Improved Red Valentine, Cleveland’s Improved Valentine. Entered as Extra Early Refugee, Red Valentine, and Valentine.

Coffee. Crs.

Colossal Stringless Green Pod. Sal. For similar names see Stringless Green Pod.

Cornhill. Btl.

Cox’s Improved Red Valentine. Entered as Red Valentine.

Craig’s Stringless Wonder. Entered as Stringless Wonder.

Cream Valentine. Bkt Hen Kei. For similar names see Red Valentine.

Crimson Beauty. Fed Rs.

Day’s Improved Leafless Medium, Day’s Leafless Medium, Entered as Leafless Medium.

Dewey Navy. Wil. For similar names see Navy.

Dun Color. Ewg.

Dwarf Black Green Podded. AGT.

Dwarf Cherry. PM Ms.

Seedsmen’s synonyms. Dwarf Horticultural, Big PM Ms.

Dwarf Cranberry. Bel Brr For Haw Hse Xi Roc Hea Wer Y&H.

Similar names. Red Dwarf Cranberry, Yellow Dwarf Cranberry, White Dwarf Cranberry, Large White Dwarf Cranberry.

Seedsmen’s synonyms. Dwarf Horticultural, Bel Brr Hse Roc Wer Y&H.

Quail Head, Brr.

Dwarf Dutch Case Knife. Jns.

Seedsmen’s synonyms. Emperor William, Jns.

Dwarf French. RIJ. For similar names see French Kidney.

Dwarf Horticultural. All Aub Ans Bai Brd Btl Bkt Bel Btg Bow Bgg Brk Bdg Bgs Bri Brn Bue Brr Bar Brr Euc C&J Cam CE C&l C&B CF Crs Cnu Dun Eas Ebe Elt Eyr Ewg Fmr Fpr Fax Fer Frd Ger Giln Gil Gn Gry G&T Tg Hns
BEAN, BUSH GREEN-PODDED.

Hrm Hrn Hrs Haw Hen H&C Hly Hlm Hse H&P J&M K&W Kra Lam Lam Lmtr LB Lw Mdn Md Mw Mal May JCM JMM Mns MV NK OV Pg HP JMP Pnt Pne Prg Ptt Poo Pof Por Pot Pri Pug Qkr Raw Ree Roe Rs RP S&R S&O Sml Sox Spf Stw S&W Thm Thr Thb Tpk Trm Y7 Van Vk Wea Web W&D Wer Wdr WS Y&H.


Dwarf Triumph. D&II.
Dwarf White Kidney. Hme MWJ RP. For similar names see White Kidney.
Dwarf White Navy. Fer Gdn Loh Lon Til. For similar names see Navy.
Seedsmen’s synonyms. Early Marrow Pen, Fer Loh.
Dwarf Wren’s Egg. Lan.
Seedsmen’s synonyms. Dwarf Horticultural, Lan.
Earliest Market. G&T. For similar names see First in the Market.
Early Aroostook. Jer.
Early Boston Navy. Mck. For similar names see Navy, Boston Pea.
Early Brown. Lan. For similar names see Brown Six Weeks.
Early Brown Mohawk. Hde K&F Pnt SC. For similar names see Mohawk.
Early Carmine Dwarf Horticultural. Giy Hrm.
Similar names. See Dwarf Horticultural.
Similar names. See China Red Eye.
Similar names. See China Red Eye.
Seedsmen’s synonyms. Early Dwarf China, Ptt.
Early Emperor William. Crs. For similar names see Emperor William.
Early Horse Pea. Hnt. For similar names see Horse.
Similar names. See Red Valentine, Lightning.

Early Long Pod. Ger Ken Pac SC W&D.
Similar names. Wait’s Improved Early Long Pod, Sword Long Pod, Negro Long Pod, Green Pod, Wait’s Early Long Pod.

Early Long Yellow Six Weeks. Ar Bow Buc Bui Brh Buc Cox Crs Dlw DcH Del Drm Else Fst Fax Gdn Tg Jec Kei K&W Lm Lm JL May JCM McM Mhd Min Mls NK JMP Prr Pks Pnt Ptt Por Pug Qkr Raw Ree Rs S&R SC Sim Spf SB S&W V1 Hrb Wer Wdr Yng.
Similar names. See Long Yellow Six Weeks.

Early Marblehead Dwarf Horticultural. Fer Giy Pue.
Similar names. See Dwarf Horticultural.

Early Marrow. Ewg. For similar names see White Marrow.

Early Marrow Pea. Fer Loh. For similar names see White Marrow.
Seedsmen’s synonyms. Dwarf White Navy, Fer Loh.

Early Mazagan. H&H May Mzy Sim S&W Thr W&D.
Similar names. Mazagan, Green Mazagan.

Similar names. See Mohawk.


Early Mohawk Six Weeks. Bui Crg Eic Gdn Kg Stk Wlt.

Similar names. See Mohawk, Yellow Six Weeks.

Early Prolific Broad. Low.

Early Red Lightning Valentine. Low.

Similar names. See Red Valentine, Lightning.

Early Red Speckled Valentine. Gdn Jac. For similar names see Red Valentine.

Early Red Valentine. Ar Brt Bd Blg Bon Brk CE & CB Col Crs Chm Del Drw Evt Ewg Ger Gra Gng Gg G&T Hns Hrn Hen Hop Hne H&P Jer Kos Lam LB PM Mns Min JCM Mel M&S Pac Poo Pot Raw Rec RP Shw Tem Thb Til Tpk Vin Web W&D Wdr WS Yng Y&H.

Similar names. See Red Valentine.


Similar names. See Refugee.

Seedsmen's synonyms. One Thousand to One, Bui Gdn Grw Iow Raw Stw.

Brown Valentine, G&T.


Similar names. See Red Valentine.

Early Round Pod Speckled Valentine. Drm.

Similar names. See Red Valentine.

Early Round Pod Valentine. Tg Iml SoX Trm.

Similar names. See Red Valentine.


Similar names. See Long Yellow Six Weeks.

Early Royal Dwarf Kidney. Roc. For similar names see Royal Dwarf.

Early Royal Dwarf White Kidney. Bac. For similar names see Royal Dwarf.


Similar names. See Red Valentine.

Early Warick. All Hen Thr.

Early White Marrow. Gra. For similar names see White Marrow.

Early White Valentine. Liv.

Early Wonder. Buc Roc. For similar names see Canadian Wonder.

Early Yellow Eye. Brr. For similar names see Yellow Eye.

Early Yellow Kidney Six Weeks. Fer Loh.

Similar names. See Long Yellow Six Weeks.

Early Yellow Six Weeks. Alg Bur Brv DD Drm Ebr Eic RE Evr Fqr Fst Gng Gry Hns Ham Hnt Kg Kos Man MeK M&S Pac Pot RP Shw Stk Tat Trm Vin Wat Wea Web Wlt Wd WS Y&H.

Similar names. See Long Yellow Six Weeks.

Electric Tree. Buc Roc. For similar names see Prolific Tree.

Emerson's Pea. Emr.
Farquhar's Dwarf Horticultural. Entered as Dwarf Horticultural.
AMERICAN VARIETIES OF VEGETABLES.

First in the Market. Alx MWJ Lan Mel Stw.

Similar Names. Landreth's First in the Market, Earliest Market, King of the
Early Market, Thorburn's Prolific Market, Prolific Market.

French Forcing.  Vim.
French Kidney.  Ger.

Similar Names. Dwarf French.

Seedsman's Synonyms. Red Turkey, Ger.


Galega Refugee. Raw Thr. For similar names see Refugee.

Seedsman's Synonyms. Large Refugee, Raw.

Georgia Prolific Bean. 1st.

German Soup.  Sal. For similar names see Turtle Soup.

Giant Green Pod Stringless Valentine.  Red Btl Bkt Brn Bur Brr C&J Frd Ggy
Hlm H&P Inl J&S Ltr Liv Man May Ncb JMP Rea SC Spf S&F Shw Sie S&H
Tel 17' WS Wd.

Similar Names. See Red Valentine.

Giant Green Pod Valentine. All J&S Wn. For similar names see Red Valentine.

Giant Stringless Green Pod.  Alx Red Bly Bng Col Dfr DD Brn Brn Gbh Ggy

Similar Names. See Stringless Green Pod.

Goddard. All Ans Brn Bur Brr CE C'e Fqr Fxs Fer Hrs Hse Ltr Mns Pg HP Pot
Raw Rea Rs S&F Shw Wdr Y&H.

Similar Names. Goddard's Favorite, Improved Goddard.

Raw Rea, etc.

Goddard's Favorite.  Pri. For similar names see Goddard.

Goddard's Horticultural.  Bgy.

Golden Refugee.  Mzy S&W Thr W&D. For similar names see Refugee.

Great Northern.  Wl.

Great Western.  Evr.

Green Flageolet.  Drr Elt Thr. For similar names see Victoria Dwarf Flageolet.

Seedsman's Synonyms. Wonder of France, Drr Elt.

Green Long Pod.  Kei. For similar names see Early Long Pod.

Green Mazagan.  Bdg. For similar names see Early Mazagan.

Seedsman's Synonyms. English Horse Beans, Bdg.

Green Nonpareil.  Bdg.

Green Pod Stringless Valentine.  S&H. For similar names see Red Valentine.

Green Windsor.  Thr. For similar names see Broad Windsor.

Gunkler.  Bgs Crs.

Seedsman's Synonyms. Prolific Pickler, Bgs.

Hammond's Banner Leafless, Hammond's Improved Extra Early Round Pod
Valentine.

Hammond's Earliest.  Ham.

Hasting's Excelsior Refugee. Entered as Excelsior Refugee.

Henderson's Cream Valentine, Henderson's Knickerbocker. Entered as Cream
Valentine, Knickerbocker.

Hopkins' Improved Extra Early Round Pod Valentine. Hopkins' Improved
Valentine. Entered as Extra Early Round Pod Valentine, Valentine.

Horse.  Gra.

Similar Names. Small Horse, Early Horse Pea.

Improved Dwarf Horticultural, Improved Early Long Yellow Six Weeks, Improved
Early Mohawk, Improved Early Red Speckled Valentine, Improved Early Red
Valentine, Improved Early Round Pod Speckled Valentine, Improved Early
Round Pod Valentine, Improved Early Valentine, Improved Early Yellow Six
Inexhaustible. Bug Bur Man Mzy Thr.

Seedsmen's synonyms. Everbearing, Bug Thr.

Johnson and Stokes' Giant Green Pod Valentine. Entered as Giant Green Pod Valentine.

Johnson's Wonderful. Kei. For similar names see Caudium Wonder.

King of the Early Market. M&S. For similar names see First in the Market.

King's Long Pod Stringless. Kg.

Knickerbocker. Hen.

Landreth's First in the Market. Entered as First in the Market.

Large Marrow. RE.

Large Negro Kidney. Hme. For similar names see Negro Long Pod.

Large Red Kidney. H&C Shm. For similar names see Red Kidney.

Large Refugee. Raw SB. For similar names see Refugee.

Seedsmen's synonyms. Galego, Raw.

Large White Dwarf Cranberry. Ken. For similar names see Dwarf Cranberry.

Seedsmen's synonyms. Large White Marrow, Ken.


Similar names. See White Kidney.

Seedsmen's synonyms. Royal Dwarf, Ptt Raw.

Large White Marrow. All Brl Blt Bel Bri Buc Bw CE Fer Frd TG Hlm Hop Hse H&P Iow Kra Lur Loh Man Min JMP Ren Ree Rtw Shw Shm Sim Sox Trm VI Vk.

Similar names. See White Marrow.

Seedsmen's synonyms. Large White Cranberry, Ken. Mountain, Fer Iml Kra Vk.

Late Refugee. All Rog Thr. For similar names see Refugee.

Seedsmen's synonyms. One Thousand to One; Brk McK Qkr Rog Thr Wer.

Lead Pencil. Nol.

Leafless Medium. Ham J&S. For similar names see White Medium.

Lightning. Fas Thr.


Little Wonder Navy. Grw. For similar names see Navy, Little Wonder Navy.

Livingston's Round Yellow Six Weeks, Livingston's Yellow Six Weeks. Entered as Round Yellow Six Weeks, Yellow Six Weeks.

Longfellow. Bkt Hen Hml Ltn Ltr May Rec Van W&D.

Long White Kidney. Shu.

AMERICAN VARIETIES OF VEGETABLES.

Roe Roc Rog S&F Shr S&O Sox Tex Thm Thr Til T&B 17 Van Vk Wea W&D Yng.


Seedsmen's synonyms. Rob Rog, Ken.

Low's Champion. All Brk Brk Brr C&J CE Cle CF Dan Elt Eml Ggy Grn Gry Hrm Hnm K&W MV JMF Pne Pot Raw Roe Rog Rs S&F Sox Wrk.

Similar names. Low's Early Champion.

Low's Early Champion. For. For similar names see Low's Champion.

Lyonnaise. Th. 


McKenzie's Matchless, McKenzie's Marrowfat. Entered as Matchless, Marrow.


Mammoth Stringless Green Pod. CF Dvr TG Hrm Lan Lnr Mhl Rs Van W&D Wkr.

Similar names. See Stringless Green Pod.

Mammoth Stringless Valentine. Tat. For similar names see Red Valentine.

Marblehead Dwarf Horticultural. GI. For similar names see Dwarf Horticultural.

Marrow. Ken McK. For similar names see White Marrow.

Marrow Pea. Hrs. For similar names see White Marrow.

Seedsmen's synonyms. White Navy, Hrs.


Matchless. McK.

May's White Valentine, May's Yellow Six Weeks. Entered as White Valentine, Yellow Six Weeks.

Mazagan. Gra. For similar names see Early Mazagan.

Medium. NK Ptt. For similar names see White Medium.

Medium Navy. At. For similar names see Navy, White Medium.

Mexican. Air CE DD Hns JMM MV Pir Rce Sow.

Similar names. Mexican Tree, Mexican Prolific Tree, White Mexican.

Mexican Prolific Tree. Ren. For similar names see Mexican, Prolific Tree.

Mexican Tree. JL. For similar names see Mexican, Prolific Tree.

Seedsmen's synonyms. Cala, JL. Prolific Tree, Alr JMM.

Mill's Improved Prolific Tree. Entered as Prolific Tree.

Mohawk. Brt Bkt Bri Bru Cam Cle Dlw Ebe RE Gru Hme Lan McK McM Nef Ptt Ren Sim.

Similar names. Early Mohawk, Improved Early Mohawk, Extra Early Mohawk, Early Brown Mohawk, Early Mohawk Six Weeks.


Mountain. Fer Kra Vk.

Seedsmen's synonyms. Large White Marrow, Fer Jml Kra Vk.


Negro Long Pod. All RHJ.

Similar names. Large Negro Kidney. See also Early Long Pod.

Ne Plus Ultra. Bar Hme Mzy Wat.

Newington Wonder. Hme M&S Nol. For similar names see Canadian Wonder.

North Star. GN.

Norwood Giant Stringless Green Pod. JMM.

Similar names. See Stringless Green Pod.

One Thousand to One. Brd Ber Bow Bdg Bgs Brn Brn Bng Bui Bar Brr Cam CE Cle C&B CF Cex Crs Cur Chn DD Drn Ebe Elt Est Fer Frd Gls Gdn Gng Gg Grw Hmn Hrs Hrv Hen H&C Hlm Hop H&P Iml low Jac J&J Sns Kg Kos Lan Lnr Liv Loh Mfd Man JMM MK Min MV Mzy Nol Pg HP Put Ptt Por Pri Qkr Raw Ren Ree Rog RP S&R Shw S&O SIE Sim Son Stw Thr Tem Til Vl Van Vin Wld Wld Wld Wd Wod Ws Ws Wyl Y&H.


Oregon Green Podded. Lam.

Oregon Tree. Bow.

Page's Extra Early. Pg.

Pea. Bri J&S Mv Tat. For similar names see Boston Pea.


Pride of Newton. Stk Thr Wtr.

Prolific Market. Brk Stk Thr W&D. For similar names see First in the Market.

Prolific Pickler. Bgs Vk. For similar names see Pick's Prolific Pickler.

Seedsman's synonyms. Gunkler, Bgs.

Prolific Tree. Air Ar Bkt Brk Bur CE Col Cok Cur Del DD Fgr Est Fld Frd Grn Gry Hst Hbt Iow JMM J&S Lnr Man Mgd Mic Mls MV Xbd XI Pg HP Ree RP Shw S&O Sim Son Tem Wer Wyl.

Similar names. Improved Prolific Tree, Mill's Improved Prolific Tree, Mexican Prolific Tree, Mexican Tree, Tree Bean, Improved Tree, Electric Tree, Wisconsin Tree, California Tree, California White Tree, Wernich's Improved Prolific Tree, Tree.


Purple Speckled. Hme.

Quail Head. Brr.


Rapp's Favorite. J&M.

Similar names. Shipper's Favorite.

Red Dwarf Cranberry. Brk Emr Gfl. For similar names see Dwarf Cranberry.

Red Eye. Brr Ptt Pri. For similar names see China Red Eye.

Seedsman's synonyms. China, Pri.

Red Kidney. All Bkt Brn Brn Bar Brn C&B Crs Dnm Eme Emr Ger Gfl Gm Hen Kg MWJ JCM NK Ptt Ree Rt Shw Shm Sox Stk.

Similar names. Improved Red Kidney, Large Red Kidney.

Seedsman's synonyms. Chihum, Brr Ptt.

Red Speckled Valentine. JMM. For similar names see Red Valentine.

Red Turkey. Ger.

Seedsman's synonyms. French Kidney, Ger.


Similiar names. Improved Refugee, Improved Round Pod Refugee, Round Podded Refugee, Improved Large Refugee, Large Refugee, Early Refugee, Extra Early Refugee, Thorburn's Extra Early Refugee, Cleveland's Improved Extra Early Refugee, Improved Extra Early Refugee, Hastings' Excelsior Refugee, Golden Refugee, Galega Refugee, Refugee Pickling, Excelsior Refugee.

Seedsman's synonyms. Extra Early Refugee, All Hlm. One Thousand to One, Ebe WS Bur For Hen Lan, etc. Brown Speckled Valentine, Bkt Btl Dw Lan.

Refugee Pickling. Ebe. For similar names see Prolific Pickler, Refugee.


Seedsman's synonyms. Long Yellow Six Weeks, Ken.

Rose. Hl.

Round Pod Red Valentine. Cam Cle Grw JCM JMM Spl.

Similiar names. See Red Valentine.

Round Pod Refugee. 1st Min McM. For similar names see Refugee.

Round Pod Six Weeks. Lon. For similar names see Long Yellow Six Weeks


Similiar names. See Red Valentine.

Round Red Speckled Valentine.  Hlm J&S. For similar names see Red Valentine.
Round Yellow Six Weeks.  Bow Brk Brn Bur Crg Eic Fer H&C Hlm Jns Lam
Liv Mnd Min Mzy Put Rce Stw Thr Vau.
Similar names. See Long Yellow Six Weeks.
Seedmen's synonyms. Yellow Cranberry, Brk.
Royal.  Bdg.  For similar names see Royal Dwarf.
Royal Dwarf.  Brd Bkt Bali Crs Dw Der Frd Hrv J&S Liv JMM Mhl MV Nef Ptt
Raw Sim Sec.  Wdr.
Similar names. Royal, Early Royal Dwarf Kidney, Improved Royal White,
Royal White Kidney, Royal Dwarf White Kidney, Early Royal Dwarf White
Kidney, Royal Dwarf Navy, Royal White.
Seedmen's synonyms. Large White Kidney, Ptt Raw.  White Kidney, Brd
Bkt Bur J&S Mhl Vk.
Royal Dwarf Kidney.  Bow Fer Hrn Lam Loh Nef Ren SB.
Royal Dwarf Navy.  Fer.  For similar names see Navy, Royal Dwarf.
Royal Dwarf White Kidney.  Ms JMM Min Put Spd Stw.
Similar names. See Royal Dwarf.
Royal White.  CE Rec.  For similar names see Royal Dwarf.
Seedmen's synonyms. White Kidney, Rec.
Royal White Kidney.  For Rec S&R.  For similar names see Royal Dwarf.
Ruby Dwarf Horticultural.  Rec Reg S&F.
Similar names. See Dwarf Horticultural.
Salzer's Colossal Stringless Green Pod, Salzer's German Soup, Salzer's White Wonder,
Salzer's Yankee Winter.  Entered as Colossal Stringless Green Pod, German Soup,
White Wonder, Yankee Winter.
Savage & Reid's Stringless.  S&R.
Scotia.  Hps.
Shipper's Favorite.  Bui Gdn.  For similar names see Rapp's Favorite.
Simmers' Canadian Wonder.  Entered as Canadian Wonder.
Sion House.  Mhl Wat.
Small Horse.  Thr.  For similar names see Horse Bean.
Small Navy.  Ar Kos.  For similar names see Navy.
Small White Navy.  Shm.  For similar names see Navy.
Smart's Hybrid.  Chl.
Snowflake.  Ggy K&W M&S.
Seedmen's synonyms. Boston Pea, M&S.
Speckled Cranberry Bush.  Bgy Gyr Rs.
Seedmen's synonyms. Dwarf Horticultural, Rs.
Speckled Valentine.  Trm.  For similar names see Red Valentine.
Stringless Green Pod.  Alix All Alr Ans Ar Bok Brd Btk Btk Big Bow Bgy
Brd Bdg Brn Bug Bui Brb Bur Brr Brw C&J Cam CE CF Crs Cur Chm DD
Drr Drn Dum Ehr Ehr Far Fgr Fer Flr Frd Gdn GI GY Gig GkT Grow
TG Ham Hde Hrs Hrv Hst H&C Hlm Ind Low Jec Jer JWC J&M J&S Jns
K&W Ken K&F Kg Koe Lam Lan Lur LB Liv JL Mgd Ms Jus May JCM
JMM McM Mcf Mhl Mic Mls MV Mzy Nfl Old Og JFM Prt Ptt Prp For Pot
Qkr Raw Ree Rim Roc Reg S&R SC S&F Shw Shm Sic Sis Spd Stw S&H S&W
Tat Tem Tex Thm Thx Tt Tth Til Trm VI Van Vek Wat Wca Web W&D Wht
Wd Wdr WS Wyg Yng Y&H.
Similar names. Stringless Green Round Pod, Improved Stringless Green Pod,
Alexander Stringless Green Pod, Burpee's Stringless Green Pod, Giant
Stringless Green Pod, Norwood Giant Stringless Green Pod, Mammoth Stringless Green Pod,
Salzer's Colossal Stringless Green Pod, Colossal Stringless Green Pod.
Stringless Green Round Pod.  ID Ehr Ptt.
Similar names. See Stringless Green Pod.
AMERICAN VARIETIES OF VEGETABLES.

Stringless Round Pod Valentine. McM. For similar names see Red Valentine.
Swedish. NK. Seedsmen's synonyms. Brown Field, NK.
Sword Long Pod. Bdg D&H DD Mzy RE Thr. For similar names see Early Long Pod.
Seedsmen's synonyms. Long Turkey, Bdg.
Taber's IXL. Sim.
Tait's Extra Early Valentine. Entered as Extra Early Valentine.
Taylor's Broad Windsor. Brun D&H.
Taylor's Green Pod. WS.
Tree. CCo Fmr H&P Kra NK Pot S&F Spf. For similar names see Prolific Tree.
Seedsmen's synonyms. California Wonder, NK. California Branch, H&P.
Vineless Marrow, Lam.
Triumph of the Frames. Drf Fqr G&T Mhl S&F Thr Van.
Uncle John. Lam.
Union White Valentine. H&P. For similar names see Red Valentine.
Valentine. All Brun Brb Cle Dam Fle Gdn Gry Hrs Jac MWJ Kei Mnd Sie Stk Thl VI.
Similar names. See Red Valentine.
Vick's Prolific Pickler. Entered as Prolific Pickler.
Vineless Marrow. Brun Ebl Fer Hbt Lam Lr Mua PG. Similar names. See White Marrow.
Seedsmen's synonyms. Tree, Lam.
Vienna Forcer. S&F Thr.
Wait's Early Long Pod. Gra. For similar names see Early Long Pod.
Wait's Improved Early Long Pod. Entered as Wait's Early Long Pod.
Warren. All Brun Bbl CF Cur Elt Fqr Ggy Grn Gry Ptt Eve Rog S&F.
Wernich's Improved Prolific Tree. Entered as Prolific Tree.
White Dwarf Cranberry. Stw. For similar names see Dwarf Cranberry.
White Field. McK Ptt Ren.
White Flageolet. All RHJ Thr.
Seedsmen's synonyms. Improved Royal Dwarf, Rce. Royal Dwarf, Brd Bkt Bui J&J Mhl Vk, etc.
Similar Names. Early White Marrow, Large White Marrow, Improved Large White Marrow, Marrow, Early Marrow, Boston Marrow, Vineless Marrow, Marrow Pea, Early Marrow Pea, Large Marrow.

Seedsman's Synonyms. Succotash, Grw.

White Medium. Btl Crs Hme Wdr.

Similar Names. Medium, Medium Navy, Burlington Medium, Day's Leafless Medium, Day's Improved Leafless Medium, Leafless Medium.

White Mexican. Hst Shm. For similar names see Mexican.


Similar Names. See Navy.

Seedsman's Synonyms. Boston Pea, May HP, Marrow Pea, Hrs. Pea, Brr Iml MV.


Similar Names. See Boston Pea.

Seedsman's Synonyms. Navy, Prt.


Similar Names. See Red Valentine.

White Wonder. Ber Eyr Hld Sal. For similar names see Canadian Wonder.

Wilson's Yellow Eye. Rog. For similar names see Yellow Eye.

Wisconsin Tree. Eyr M&S Sow VI. For similar names see Prolifer Tree.

Wonder of France. Brk Bgd Fgr Gra Raw Wea W&D.

Seedsman's Synonyms. Green Flagelot, Drr Eit. Improved Green Flagelot, Bgd.

Wood's Bacon, Wood's Early Red Speckled Valentine. Entered as Bacon, Early Red Speckled Valentine.

Wood's Earliest Hardest. Wd.

Wren's Egg. Lan Lit.

Yankee Winter. Sal. For similar names see Salzer's Yankee Winter.

Yellow Dwarf Cranberry. Brk Gry Raw S&F Wdr.

Similar Names. See Dwarf Cranberry.

Seedsman's Synonyms. Round Yellow Six Weeks, Brk.

Yellow Eye. Brk Emr Ewg Fgr Gry K&W Raw S&F.

Similar Names. Early Yellow Eye, Improved Yellow Eye, Boston Yellow Eye, Wilson's Yellow Eye.


Yellow Kidney. Lnr.


Similar Names. See Long Yellow Six Weeks.

BEAN (POLE BEAN).

Alpha. Eyr. For similar names see Everett's Alpha.

American Sickle. JMP. For similar names see Sickly.

Andalusia. Sal.

Similar Names. Golden Andalusia.

Archias' Improved Kentucky Wonder. Entered as Kentucky Wonder.

Arlington Red Cranberry. Fgr Raw S&F. For similar names see Cranberry.


Similar Names. Vair's Asparagus, French Asparagus, Cuban Asparagus.


AMERICAN VARIETIES OF VEGETABLES.

Best of All Pole. Bkt Bar Col Der McM M&S 0V Trm.

Seedsmen's synonyms. White Grease Back, Bkt Col Der McM Old. Transylvania Butter, M&S.

Big Sioux. Spl.

Seedsmen's synonyms. Hemisphere, Spl.

Black Algerian Wax. Ggy.

Seedsmen's synonyms. Indian Chief, Ggy.

Black Butter Pole. Ewg Gna McK. For similar names see Butter Pole.

Seedsmen's synonyms. Indian Chief, Ewg Gna Ren.

Black Kentucky Wonder. JCM. For similar names see Kentucky Wonder.

Black Wax Pole. Bel Brb Cle Crs Dum Eeb Gla Grw Hrn Hrn J&S May Mzy OV Reg Rs RP Tpk Trm Wea W&D.

Similar names. German Black Wax, Tall German Black Wax, Tall Black Wax, Giant Black Wax, Salzer's Giant Black Wax.

Seedsmen's synonyms. Indian Chief, Brk Cle Dum Gla J&S Rs.

Brockton. Brk CF Ebr Fqr Grn Gry Raw Ree Rs SC S&F.

Buckbee's Holstein. Entered as Holstein.


Similar names. Golden Butter, Black Butter, German Butter, Transylvania Butter, White Seeded Butter.


California Wax. Abs.

Carmine King Horticultural Pole. Brt.

Similar names. See Horticultural Pole.

Carmine Poddred. All.


Carmine Poddred Horticultural Pole. Brk K&W.

Similar names. See Horticultural Pole.

Case Knife. Ar Brb Brt Eeb Ebr Lan Sal. For similar names see Dutch Case Knife.

Seedsmen's synonyms. White Dutch, Lan Brb.

Cherry Pole. Big P&M.

Similar names. White Cherry.

Seedsmen's synonyms. Speckled Horticultural, Big P&M.

Childs' Mammoth Poddred Horticultural Pole. Entered as Mammoth Poddred Horticultural Pole.

Columbia. Fqr.

Similar names. Farquhar's Columbia.

Concord. Eph Grii Pot Rs.

Corn Field. Aix Gdn MJW Wd WS. For similar names see Corn Hill.

Seedsmen's synonyms. Cat Short, Aix Wd. Red Speckled Cat Short Corn Field, Lam. Speckled Cat Short, Gdn.

Corn Hill. Red Blr Bri Buc CE Col Crg Crs Dmr Fer Fld Gh G&T Grii Hns Hrn Ind J&S Lbr JL Lob Lou Mgd Mus Mow May JCM JMM MV Neb Nail HP Pot REc Ree RP Sal SC Shw S&R Sox Spl Thr Trm Y1 Web Wyg Yng.

Similar names. Corn Field, White Cornfield, Tennessee White Corn Hill, Oval Seed Field Corn Bean, Red Speckled Oval Seeded Cat Short Corn Field.

Seedsmen's synonyms. Cat Short, Brd Brl Bri JCM Mgd Trm. Eew White Missouri, Brt. Red Speckled, RP. Red Speckled Cat Short, Buc Crs Fer Liv Mus Ree, etc. Speckled Cat Short, G&T Hrn J&S Spl Thr.

Cranberry. Btt Btt Brl Brz Bar Brz Ewg Fld Grii Crg Tg Ham Haw H&J J&M Par Poo Ren Ree RP Tom T&B Web Wer Y&H.
**Similar Names.** Red Cranberry, Arlington Red Cranberry, Speckled Cranberry, Speckled Horticultural Cranberry, Horticultural Cranberry, Mammoth Horticultural Cranberry.

**Seedsman’s Synonyms.** Bird Egg, Fl. Horticultural, Brt Bkt Bar Ree RP Ten, etc. London Horticultural, SB. Wren’s Egg, Bar Ham.

**Creaseback.** Ax B r Cur DD Den Eic Fmr Est Ger Gdn Gra Grm G&T H&C Illy Jac J&M Lan Stk TB Thr Van Wd WS.

**Similar Names.** White Creaseback, Improved White Creaseback, Southern White Creaseback, Southern Creaseback.

**Seedsman’s Synonyms.** Fat Horse, Ax Eic Fmr G&T Lan Wd, etc. Mobile Bean, Eic.

**Crosby’s Horticultural Pole.** Fqr. For similar names see Horticultural Pole.

**Cuban Asparagus.** Bar Col Frd LrP Pks Ren.

**Seedsman’s Synonyms.** Yard Long, Bar Col LrP Pks Ren.

**Cut Short.** Ax B r B r Fr Fr Br CE Col Gr Eg Crs Dn Ebr Fhld Ger Gd Hn fow JL Lon Mgd Mns May JCM JMM XI Ren ReC Shw S&O Sox SB Trm VI Wd WS Yng.

**Similar Names.** Cut Short White, Cut Short Red Speckled, Cut Short Speckled, Cut Short Oval Seeded Red Speckled, Cut Short Speckled Corn Bean.

**Seedsman’s Synonyms.** Corn Field, Ax Wd. Corn Hill, Brd Brl Jl JCM Mgd Trm, etc. Red Speckled, SB.

**Cut Short White.** H&C ReC. For similar names see Cut Short.

**Dreer’s Early Golden Cluster, Dreer’s Golden Cluster.** Entered as Early Golden Cluster and Golden Cluster.


Flageolet Wax Pole. Ans Brk Cle Mzy Shw.

Similar names. Golden Wax Flageolet Pole.

French Asparagus. Bkt DD Man. For similar names see Asparagus.

Seedsmen's synonyms. Yard Long, Bkt DD.

Florida Butter. Gig.

French Yard Long. Bow Mzy Ptt Thr Vin. For similar names see Yard Long.

Seedsmen's synonyms. Asparagus, Bow.

Georgia Monstrous. CA.

German Black Wax Pole. CE CF Crs Emr Ger Tg Illy Kos Mas Neb Ptt Rec S&O S&W Thr Wer.

Similar names. See Black Wax Pole, German Wax Pole.

Seedsmen's synonyms. Algerian, Bdg. Indian Chief, Ptt Rec.

German Butter Pole. W&D. For similar names see Butter Pole.

Seedsmen's synonyms. Black Wax, W&D. Indian Chief, W&D.

German Wax Pole. Bui C&B Gdn Hen Hlm Jac Pri Tat Y&H.

Similar names. Tall German Wax Pole.

Seedsmen's synonyms. Butter, Pri Bui.

Giant Black Wax Pole. Sal. For similar names see Black Wax Pole.

Giant Red Wax Pole. Belg CE Cle Est Gill H&P J&S Lea Liv JL May Neb HP.

Similar names. See Giant Wax Pole.

Giant Sword. Dlw.

Giant Wax Pole. Hnt Kei JMP.

Similar names. Giant Red Wax, Tall Wax.

Giant White Runner. Sim. For similar names see White Runner.

Golden Andalusia. Air Bel BAC CE Curr Frd H&P J&S JMM McK MV HP JMP Rec Roe Ren Shw Shm Sim Sox Thr 17 Wer.

Similar names. See Andalusia.


Golden Butter Pole. Brk Bdg CE Cok Dnm Fqr Gry Hlm Kg Man Pnr Prn Rec S&F.

Similar names. See Butter Pole.

Seedsmen's synonyms. Mont d'Or Wax, Brk Bdg Dnm Fqr Gry Ken S&F. Tall Mont d'Or, Cle Pnr.


Golden Cluster. Bai Btt Bkt Bel Brk Bdg Bng Bur CE CF Crs Curr Dnm Ewa Ebe Elt Emr Emr Fqr Fdr Frd Gill Ggy Gry TG Hns Hrs Hvy Hw Hse Hut Iml Lw MWJ Ken Mud Mgd Man May JMM MV NK JMP Pat Pot Qkr Rec Rim SC S&F S&B Sox Thr Wer Y&H.


Seedsmen's synonyms. Mont d'Or, MV Wer.

Golden Lazy Wife. Mnl. For similar names see Lazy Wife.

Golden Mastiff Pod. McK Ren.


Similar names. See Flageolet Wax Pole.

Golden Wax Pole. Mnl. For similar names see Golden Cluster.

Hammond's Lazy Wife. Entered as Lazy Wife.

Hampden. All Bgg Pot Rec.

Hemisphere.  Pnt Spl.

**Seedsmen's synonyms.** Big Simur, Spl.

Hampshire.  JCM.

Holstein.  Buc.

**Similar names.** Buckbee's Holstein.

**Horticultural Cranberry Pole.**  Ar  *Cam*  CE  Cle  CF  DD  Elt  *Eae*  Gil  Ham  Hlm  K&F  Kus  JMM  Pne  Ptn  SC  Six  Tpk  Van  Wd  Wdr.

**Similar names.** See Horticultural Pole, Cranberry.

**Seedsmen's synonyms.** Wren's Egg, Hlm.

**Horticultural Lima.**  All  Brg  Bwv  CE  Cur  *Fas*  Fqr  Hrn  Hse  Lam  Lan  Lea  Lar  Mck  Mhl  MV  Mzy  Rec  Roe  Sor.


**Improved Dutch Case Knife.** Improved Dutch Runner, Improved Kentucky Wonder, Improved Old Homestead, Improved Southern Prolific, Improved White Creaseback.  Entered as Dutch Case Knife, Dutch Runner, etc.

**Indian Chief.**  Brk  Bdg  Brb  CE  Cle  Dun  Ewg  Fqr  Fae  Fx  Gil  Gra  Hrn  Hse  J&S  K&W  Lam  Min  Ptt  Poo  Por  Pug  Raw  Rec  Reg  Rs  Rs&R  S&F  SB  W&D.

**Seedsmen's synonyms.** Algerian, Bdg.  Black Algerian War, Ggy.  Black Butter, Ewg  Gra  Ren.  Black Wax, Brg  Cle  Dun  Gil  J&S  Rs, etc.  German Black War, Ptt  Ree.  German Butter, W&D.  Tall Black Wax, Lam  Por  Pug  Raw  S&R  SB.  Tall Germain War, HP.  Tall Wax, Min.  War, Fqr.

**Kentucky Wonder.**  Alx  All  Ar  Bari  Bak  Brd  Brg  Bt  Bti  Bkt  Bel  Bow  Bgg  Brk  Bri  Brr  Bng  Bue  Bui  LE  Brb  Bar  Brp  Cam  CE  Cle  Cox  Crg  Crs  Cur  DD  Drr  Drm  Elt  Ewr  Ewr  Fae  Fiv  Fdr  Fda

Similar names.  Hammond's Lazy Wife, Yellow Lazy Wife, Golden Lazy Wife.


Similar names.  See Horticultural Pole.

Long White Dutch Case Knife.  Web.  For similar names see Dutch Case Knife.

Seedsmen's synonyms.  Cranberry, SB.  Speckled Cranberry, Bow Fer JL Lam Prn Vt, etc.  Wren's Egg, Bui Ggy Vr.


Similar names.  See Carmine Poddled.

Mammoth Horticultural Cranberry Pole.  C&J.

Similar names.  See Cranberry Horticultural Pole.

Mammoth King Horticultural Pole.  Hrn Thr.

Similar names.  See Horticultural Pole.

Mammoth Poddled Horticultural Pole.  Bnc Dun Fer Frd H&C low Lvr Liv Pue Tm WS.

Similar names.  See Horticultural Pole.


Maryland White.  G&T.

Milan.  Vin.

Missouri White Cornfield.  K&F.

Monstrous Poddled Southern Prolific.  Lan.

Similar names.  See Southern Prolific.

Mont d'Or Wax.  Bdg Dun Fqr Gry Ken MV Mzy S&F Sox Thr Wer.

Seedsmen's synonyms.  Golden Butte, Brk Bdg Dun Fqr Gry Hen, etc.

Golden Cluster, MV Wer.

Noxall.  Man.

Old Homestead.  All Ar Bdr Bk Bt Br Brr CE Cle C_br C_F CX Cbr DD Derr Dnr Dnr Eb Ebr Elf Ebr Fqr Frd Ger GIH Grn Ham Hde Hrn Hst Hen H&C Hly Hm Hup Hup Hoe Low J&S Kg Lam Lan Lea Ln Lnr Lon Lnr Lon Msd Man PM May JMM M&K M&L M&N M&O MVC M&P MV Pqr Qkr Raw Rcc Rcs Sc & F Shw S&O Shm Sim S&H S&W Tem Ttn AGT Tpk Van Vnr Wdr Wd Wdr.

Similar names.  Improved Old Homestead.

Seedsmen's synonyms.  Kentucky Wonder, Bui Bar Drr Fer Thr Vr, etc.

Asparagus, Lan.

Onondaga.  Else.

Ornamental Scarlet Runner.  Brk.  For similar names see White Runn.

Oval Seed Field Corn.  TB.  For similar names see Corn Hill.

Painted Lady.  Brw Grn Prn Ren SB.

Philips' American Sickle.  Entered as American Sickle.

Powell's Prolific.  C&J Cok Liv.  For similar names see Southern Prolific.

Red Cranberry.  Brk Cle Fmn Fri Fqr Gm GIH Grn Gry Hrn Hrn K&W Pae Thm.

Similar names.  See Cranberry.

Red Speckled.  Cbrs Ms Aus Ren Rec RP Shw SB Yng.

Seedsmen's synonyms.  Corn Hill, RP.  Cat Short, SB.

Seedsmen's Synonyms.  Corn Hill, Buc Crs Fer Liv HP Rec, etc.  Horticultural, Anb.

Red Speckled Oval Seeded Cut Short Corn Field.  CA Put.

Similar Names.  See Corn Hill, Cut Short.

Royal Corn.  Liv.

Salzer's Case Knife, Salzer's Giant Black Wax Pole.  Entered as Case Knife and Giant Black Wax Pole.

Scarlet Flowering Runner.  Bdg.  For similar names see White Runner.

Scarlet Runner.  All Ans Bsl Bnl Brl Ptl Bkt Bow Bgg Bdg Bsl Brn Brn Bng Buc Bsl Bwr Brn C&J CE Cle C&B CFC Cox Crs Dw JI DD Dorm Dnm Ebr Elt RE Ewg Fgr Est Fax Frd Ger Gdn Gra Gng Grn Gwy Grw Tg Hrn Hnr Hrs Hn Hn Ht H&P Inw JI&J S&K Ken Kos Lnr Lnr Liv JL.  Loh Mas May JCM JMM Mck Mhl MV M&S Mzy Ncb Ncf Nol KN Pks HP Pir Pn Prn Ptt Poo Por Pot Pri Pug Qkr Rec Rec Rec Reg Sal S&R SC S&F S&O Shm Sim Sox SB S&H S&W Tat Thr Thl T&H Van Vk Vin Wca W&D Wcr Wd Wng Y&H.

Similar Names.  See White Runner.

Schaetzle's French.  Ebr.

Seek No Further.  Lan.

Sickle.  Mcl.

Similar Names.  White Sickle, Philips' American Sickle, American Sickle.

Snake.  Ger.

Seedsmen's Synonyms.  Asparagus, Ger.

Southern Creaseback.  GH Hst Shw Thr.  For similar names see Creaseback.

Southern Prolific.  Alx Ar Bsl Bkt Bow Bgm Bsl Bwr Brn C&J CE Cle Cox Crs Drn Ebr Eerr Est Fer Ger Gdn GH Grn Gwy Grw Tg Hrn Hnr Hrs Hn Ht H&P Iml Ken Lam Lea Liv JL.  Loh Mnd Mgl Msk Mck Pug Mhl MV Mzy Ncb Ncf Nol NV Pac Pg HP Ptt Pri Raw Rs Shw S&O Sox S&W Tat Thr Thb Tpk Vl Vk Vin Wca Wng Wyg.


Southern White Creaseback.  Bsl.  For similar names see Creaseback.

Seedsmen's Synonyms.  Fat Horse, Bsl.

Speckled Cranberry.  Anb Bsl Bwr Brk Brk C&B Col Cox Crs Crs Crr Drr Drn Ebr Err Fmr Fnt Fer Ger Hrn Hrs Hvy Hen Hse H&P Iml Ken Lam Lea Liv JL.  Loh Mnd Mgl Msk Mck Pug Mhl MV Mzy Ncb Nol NV Pac Pg HP Ptt Pri Raw Rs Shw S&O Sox S&W Tat Thr Thb Tpk Vl Vk Vin Wca Wng Wyg.

Similar Names.  See Cranberry, Horticultural Pole.


Similar Names.  See Cranberry, Horticultural Pole.


Speckled Horticultural Pole.  Bdg G&T PM.

Similar Names.  See Horticultural Pole.

Seedsmen's Synonyms.  Cherry Pole, Bdg PM.  Wren's Egg, G&T.

Sunshine Wax.  Bkt Bwr Fgr Mcl Rim.

Similar Names.  Burpee's Sunshine Wax.

Tall Black Wax Pole.  Bow Lam Png Png Raw S&R SB.

Similar Names.  See Black Wax Pole.

Seedsmen's Synonyms.  Indian Chief, Lam Png Raw S&R SB.

Tall German Black Wax Pole.  Alx Crr CA Fmr Hly J&M Thm Wlt.

Similar Names.  See Black Wax Pole, German Wax Pole.
Tall German Wax Pole.  Lan McM Min HP.

Similar names.  See German Wax Pole, Black Wax Pole.

Seedsmen's synonyms.  Indian Chief, HP.

Tall July Runner.  Thr.  For similar names see White Runner.

Tall Mont d'Or.  Cle Prn.


Tall Wax.  Min.  For similar names see Giant Wax Pole.

Seedsmen's synonyms.  Indian Chief, Min.

Tall Sioux.  Fld MV Sox.

Tennessee White Corn Hill.  M&S.  For similar names see Corn Hill.

Tennessee Wonder.  Lan.

Similar names.  Eastern Wonder.

Texas.  Gdn Jac.

Similar names.  Texas Prolific.

Seedsmen's synonyms.  Kentucky Wonder, Jac.

Texas Prolific.  1st MWJ.  For similar names see Texas, Southern Prolific.

Titan Runners.  Gra.  For similar names see White Runner.

Transylvania Butter.  M&S.  For similar names see Butter Pole.

Seedsmen's synonyms.  Best of All, M&S.

Vair's Asparagus.  Ren.  For similar names see Asparagus.

Wax Pole.  For Kei.  For similar names see Golden Cluster.

Seedsmen's synonyms.  Indian Chief, Fqr.

White Case Knife.  K&W Pae S&F.  For similar names see Dutch Case Knife.

White Cherry.  G&T.  For similar names see Cherry.

White Cornfield.  DD SC Yng.  For similar names see Corn Hill.

Seedsmen's synonyms.  White Corn Hill, SC.

White Corn Hill.  SC.

Seedsmen's synonyms.  White Corn Field, SC.


Similar names.  See Creaseback.

Seedsmen's synonyms.  Best of All, Bkt Col Drr McM Ojd.  Fat Horse, Bri Hde J&S M&S Spf K&F Pnt.

White Dutch.  Ar Brb Lan.

Seedsmen's synonyms.  Case Knife, Brb Lan.


Similar names.  See Dutch Case Knife.

White Dutch Runner.  Ans Brk Bdg Bur Brr C&J CE Cle CF Crs Drr Dun Ebe Etm Enr RE Hrn Hrn Hse K&W Mas May MV Ptt Pri Ree Ree Rog Sox SB &W Thr Wer Wdr.

Similar names.  See White Runner.

White Horticultural.  Fqr.


White Seeded Butter Pole.  Dlw.  For similar names see Butter Pole.

White Sickle.  Fer Lan Lar Ree Spf.  For similar names see Sickle.


Similar names.  Burpee's White Zulu.
Willing's Pride. Sal.
Worcester. All Raw Wea.


Worcester Carmine Padded. Grn.

Similar names. See Worcester, Horticultural Pole.

Worcester Mammoth Horticultural. Rs. For similar names see Worcester.


Similar names. French Yard Long, Yard Long Stringless Green Pod.


Yard Long Stringless Green Pod. Mel. For similar names see Yard Long.

Yellow Lazy Wife. Ans. For similar names see Lazy Wife.

**BEAN (POLE LIMA BEAN).**

Black Lima. Hse Rec.

Similar names. Early Black Lima.

Bliss's Extra Early. Raw. For similar names see Extra Early.

Seedsmen's synonyms. Early Jersey, Raw.


Butter. Ar Btl CA Eic Grw TG Hde MWJ K&F Pnt Stk Wd WS Yng.

Similar names. King's Improved Butter, King's Butter.


California Lima. Lan.

Carolina. Btl Bur Cle CA Eic Fer Gdn GH Hns HilM Jac MWJ Lam Min Shw Stk Tat Thm Tex Wlt.

Similar names. Small Carolina, Carolina Seewe.


Carolina Seewe. Bui Shw Wlt. For similar names see Carolina, Sieva.


Challenger. Bai Bkt Bow Brk Bdg Bui Bur CE Cle CF Enr Err Eqr Fst Fer G&T TG Htt'Hlm J&S Lan Liv Mnd May Ml Mzy Nol Rec Rce S&F S&W Thr Wdr W&D.


Champion. May.

Similar names. May's Champion.

Dreer's Improved Lima. Entered as Dreer's Lima.
**American Varieties of Vegetables.**

**Dreer's Lima.** Air Ar Bai Bt Bkt Blg Bow Brk Bdg Bgs Bng Bui Brb Bur Bw CE Cle CB&C CF C'r D&H Drr D'rm E'tt Fmr RE Exr Fqr Fst Fux Gry G&T TG Hen H'cc Hlm JWJ RIH J&S Kei Mund Lam Lar Liv JL Mnd Mns Man May JMM Mhl MV Mzy Nef Nol NK OV Prn Ptt Pri Raw Ren Ree Rs RP Sai S&W Shm Sox S&W Thr Tpk Vl Van Wat Wea W&D Wdr Y&H.

**Similar Names.** Dreer's Improved Lima.

**Seedsmen's Synonyms.** Potato, J&S. Potato Leaf, Bur. Challenger, Bui Bur Bkt J&S Liv S&W, etc.

**Early Black Lima.** Bc Bwr D&C Mhl Rd. For similar names see Black Lima.

**Early Dawn.** Liv.

**Early Golden Lima.** Ham. For similar names see Golden Lima.

**Early Jersey Lima.** Bel Bgs Brn Bro C&J CE C'r Drr D'rm E'be E'tt Emm Gls H'rv H'w Jns Lar Liv Loh MM Mzy Ree Rs Sox S&W Thr Tvl Van Wea Wdr.

**Similar Names.** See Jersey Lima.

**Seedsmen's Synonyms.** Bliss's Extra Early, Raw.

**Early Large White Lima.** Bkt Brg Bwr CA DD G&T TG H&C PM JCM Pir Rcg Wgy.

**Similar Names.** See Large White Lima.

**Early Leviathan.** Hen.

**Similar Names.** Henderson's Early Leviathan.

**Early Lima.** Cok. For similar names see Extra Early.

**Seedsmen's Synonyms.** Frost, Ggy. Scira, Ggy.

**Extra Early.** Brl Brr Brg Bdl Fd Pir Pnc Rt Thb Wrr.

**Similar Names.** Bliss's Extra Early, Improved Early, Salzer's Improved Early, Salzer's Early, Early Lima.

**Extra Early Jersey Lima.** Bc Brg Bui Bur Brr Cle CB&C CF C'r DD D'rm E'r Fst Frd G'H G&T TG Hen Hlm Jl MlWJ J&S Lan Lar JL Mnd Man JCM Mhl M&S Nol Og Png H'f Pri Png SC S'I sox S'tw Thb Tpk Vh W&D Y&H.

**Similar Names.** See Jersey Lima.

**Extra Early Large White Lima.** Gin Jac.

**Similar Names.** See Large White Lima.

**Extra Large White Lima.** Cle CA G&T Liv JMM Min HP SC Wdr.

**Similar Names.** See Large White Lima.

**Seedsmen's Synonyms.** Butter, CA. Mammoth White Lima, HP.

**Florida Butter.** Hst.

**Ford's Extra Large.** MWJ. For similar names see Ford's Mammoth.

**Seedsmen's Synonyms.** King of the Garden, MWJ.

**Ford's Extra Large Mammoth.** Bld. For similar names see Ford's Mammoth.

**Ford's Mammoth.** Air Brl Bkt Brr CE Cle CF D'r Drr Frd Gdn Gry G&T Imn J&S Lhr Myl Mhl Mns Nol M&S Nol Thn Shw Shg Vn W&D Wdd Wdr Ws.

**Similar Names.** Ford's Extra Large Mammoth, Ford's Extra Large, Godden's Mammoth, Jersey Mammoth, Salem Mammoth, Improved Salem Mammoth, Mammoth.

**Godden's Mammoth.** Gdn. For similar names see Ford's Mammoth.

**Golden Lima.** Bc Roc.

**Similar Names.** Buckbee's Golden Lima, Hammond's Early Golden Lima, Early Golden Lima.

**Hammond's Early Golden Lima.** Entered as Early Golden Lima.

**Henderson's Early Leviathan.** Entered as Early Leviathan.

**Improved Early Lima.** Improved Extra Large White Lima, Improved Large White Lima, Improved Salem, Improved Salem Mammoth. Entered as Early Lima, Extra Large White Lima, Salem, and Salem Mammoth.

**Improved Lima.** Hst Vw.

**Similar Names.** Wood's Improved Lima, Moore & Simon's Improved Lima, Moore & Simon's Lima, Wood's Lima.
Jersey Lima.  May TB.

Similar names.  Early Jersey Lima, Extra Early Jersey Lima, Large Jersey Lima, Michell's Large Jersey Lima, Jersey Mammoth.

Jersey Mammoth.  Fst.  For similar names see Ford's Mammoth, Jersey Lima.


Similar names.  Buckbee's King of the Garden.

Seedsmen's synonyms.  Ford's Extra Large, MWJ.  Large White Lima, Alx.

King's Butter.  Kg.

Similar names.  King's Improved Butter.

King's Improved Butter.  Entered as King's Butter.

Large Evergreen Lima.  M&S.

Large Jersey Lima.  Lam McEl Mhl Stw.  For similar names see Jersey Lima.


Similar names.  Extra Large White Lima, Early Large White Lima, Extra Early Large White Lima, Improved Large White Lima, McCullough's Extra Large White Lima, Improved Extra Large White Lima, Rimby's Improved Large White Lima.

Seedsmen's synonyms.  Butter, Ar Bui Hde Pnt Grw MWJ.  King of the Garden, Alx.

McCullough's Extra Large White Lima.  Entered as Extra Large White Lima.

Mammoth.  Chl.  For similar names see Ford's Mammoth.

May's Champion.  Entered as Champion.

Michell's Large Jersey Lima.  Entered as Large Jersey Lima.

Moore & Simon's Improved Lima.  Entered as Moore & Simon's Lima.

Moore & Simon's Lima.  M&S.  For similar names see Improved Lima.


Potato Lima.  Brg Brd C&K J&S Wr Wtr Y&H.


Prolific Thick Green Lima.  M&S.

Similar names.  Walter's Prolific Thick Green Lima.

Rimby's Improved Large White Lima.  Entered as Large White Lima.

Saleem.  J&S Man.  For similar names see Salem Mammoth.

Saleem Mammoth.  Bui Gdn MWJ M&S.

Similar names.  Improved Salem Mammoth, Improved Saleem, Salem.

Salzer's Early.  Sal.  For similar names see Extra Early.

Salzer's Improved Early.  Entered as Salzer's Early.

Scroll.  Jac.

Szibert.  Brw S&F.  For similar names see Seiber's Early.

Similar names.  Seibert’s Large Early, Seibert’s Extra Early, Seibert’s Extra Early, Seibert’s Large Early.

Seibert’s Extra Early.  JMM Mhl M& S Pitt Shw Tem.  For similar names see Seibert’s Early.

Seibert’s Large Early.  Bur Gdn TG.  For similar names see Seibert’s Early.

Sewee.  Ax Bn Cam Eic Gdn MWJ Lan Sft Tat.  For similar names see Sieva.


Shallcross Market Queen.  J&G.

Shotwell’s Improved Thick Lima.  Entered as Shotwell’s Thick Lima.

Shotwell’s Thick Lima.  J&G.

Similar names.  Shotwell’s Improved Thick Lima.


Similar names.  Sewee, Carolina Sewee, Willow Leaf Sewee, Southern Willow Leaf Sewee.


Small Carolina.  Bur.  For similar names see Carolina.


Small Lima.  Ax Brk Brv Cam CE CF Crs Cur Drr Ebr Emr Fqr Fax Fer Gll Gry Hms Hst Hen K&W Lmr Liv May Mcm Mhl Pitt Pat Pot Raw Shw Ree SC Spf Tat Tmt Wea Wht Wd WS.

Similar names.  Small White Lima.


Small White Carolina.  H&C.

Small White Lima.  CA DD Drr Mm Emr Fer Hlm K&F Mnl Mcm Min Mzy Tex Wkr.

Similar names.  See Small Lima.

Seedsmen’s synonyms.  Carolina, CA Fer Hlm Tex Thm.  Sven, CA Fer Hrm Pitt SC Tex, etc.

Southern Willow Leaved Sewee.  Sft.  For similar names see Willow Leaf, Sven.

Stokes’ Evergreen.  J&G.

Trucker’s Delight.  Hlm.

Seedsmen’s synonyms.  Butter, Sft.

Walter’s Prolific Thick Green Lima.  Entered as Prolific Thick Green Lima.

Washington Market.  Lmr.


Similar names.  Willow Leaf Sewee, Southern Willow Leaved Sewee.

Willow Leaf Sewee.  Eic.  For similar names see Willow Leaf, Sven.

Wood’s Lima.  Wd WS.

BEAN (WAX-PODDED BUSH BEAN).

Alexander’s Flageolet Wax, Alexander’s Valentine Wax.  Entered as Flageolet Wax, and Valentine Wax.

Algerian Wax.  Mzy.

Similar names.  Black Algerian Wax.
Bein, Bush Wax-Podded.

Allan's Imperial Wax.  All Frd Ken Ptt Til.
Alneer's Rust Proof Golden Wax.  Entered as Rust Proof Golden Wax.
Archias' Black Wax.  Entered as Black Wax.
Beckert's Speckled Wax.  All.  For similar names see Speckled Wax.
Bell's Improved Kidney Wax.  Entered as Kidney Wax.
Bell's Prolific Rustless Wax.  Bel.
Bismarck Black Wax.  'CE Ebr MV Roe S&O Sox Thr Wer.

SIMILAR NAMES.  See Black Wax.

Bismarck Wax.  Bui Fmr Hlm.  For similar names see Black Wax.
Black Algerian Wax.  Grn.  For similar names see Algerian Wax.
Black Eyed Wax.  Bui Bow Bss Buc 'CE Ebr Fer Gg Grn Hlm Hop Kei Lam Lnr Mnd May MeK MV Pq Por Qkr Ren Roe Roe S&R S&O Sox Tat Vl Web Yng.

SIMILAR NAMES.  Early Black Eyed Wax.


Bolgiano's Wax.  Blg.
Brittle Wax.  Bar.

Burpee's Perfection Wax, Burpee's Saddleback Wax, Burpee's Twentieth Wax, Burpee's Brittle Wax.  Entered as Perfection Wax, Saddleback Wax, Twentieth Century Wax, and Brittle Wax.


Cabbage Wax.  Wd.

SEEDSMEN'S SYNONYMS.  Crystal White Wax, Wd.

California Black Wax.  Tat.

California Rust Proof Wax.  M&X NoL.  For similar names see Rust Proof Wax.

Challenge Black Wax.  All Amb Bsk Brd Btl Bly Brg Bra Brk Brn Brw 'CE Chm Dlw D'H Emr Ery Fnr Fer Fld Gs GY TG Hde Hbt Jnd Jns Krr Lnr LB Lvn Lmt May Mv NM NK OV Old Pnt Ptt Qkr Roc Reg S&R Shm Sox Tex Thr AGT Vl Wdr Vnr Wgy.

SIMILAR NAMES.  Early Challenge Black Wax, Extra Early Challenge Black Wax.  See also Black Wax, Prolific Black Wax, German Black Wax.

Challenge German Black Wax.  Bar.

SIMILAR NAMES.  See Challenge Black Wax.

Champion Wax.  Tat.

SIMILAR NAMES.  Golden Champion Wax.
**Similar names.**  See Flageolet Wax.  
**Seedsman's synonyms.**  Scarlet Flageolet, Pmt.  

**Crystal Wax.**  Br Brn Gra Hrs Kei Lan Xl Pir Pirn Rog RP.  
**Similar names.**  Crystal White Wax, Early Crystal Wax.  

**Crystal White Wax.**  B&g Brn Buc Bui Bur CLE CE Cle Emr Fst Fer Ggy Hrn Hst H&C H&P LB Liv May Mck Min Pwr Rec Roc Sal Shm Sox SB Trn T&B 17 Wd.  
**Similar names.**  See Crystal Wax.  
**Seedsman's synonyms.**  Ancient American, Br. Cabbage Wax, Wd.  

**Currie's Improved Rust Proof Wax.**  Entered as Currie's Rust Proof Wax.  

**Currie's Rust Proof Black Wax.**  Brk CE CF Emr Fst Frd GH G&T Hme J&S Ken K&F May M&S NK Pnt JMP Qkr Rog Rs Thr W&D.  
**Similar names.**  See Currie's Rust Proof Wax.  

**Currie's Rust Proof Golden Wax.**  Bug Buc Bur Koe Kra Lnr Mns HP Prn Wkr.  
**Similar names.**  See Currie's Rust Proof Wax, Golden Wax.  

**Currie's Rust Proof Wax.**  Alx All Ar Brt Btl Bg Big Bgw Brg Brr Bri Brn Brb Brr Cam Cle &G &B Crg Cur CA. Drr Dom Dun Ewg Fer Gra Gry Gry TG Hrn Hst Jac Jns K&W Kg Lan Liv Mund Man JCM JMM Min MV Wd Pg Put Ptt Pri Rec Roc S&F Shw S&O Shm S&I Tat Thm Til Vk Wkr Wd Wkr.  
**Similar names.**  Currie's Rust Proof Black Wax, Currie's Improved Rust Proof Wax, Currie's Wax, Currie's Rust Proof Golden Wax.  

**Currie's Wax.**  Bkt Fqr.  For similar names see Currie's Rust Proof Wax.  

**Cylinder Black Wax.**  M&S Nol HP Poo.  
**Similar names.**  See Cylinder Ivory Wax.  
**Seedsman's synonyms.**  Prolific German Black Wax, HP.  

**Cylinder Ivory Wax.**  Ggy.  
**Similar names.**  Cylinder Wax, Ivory Pod Wax, Cylinder Black Wax.  

**Cylinder Pod Wax.**  Bkt Bnr J&S.  For similar names see Cylinder Ivory Wax.  
**Seedsman's synonyms.**  Improved Black Wax, Bur. Improved Prolific Black Wax, Dr. Prolific German Black Wax, Bur. Prolific German, Bkt J&S.  

**Darch & Hunter's Monarch Wax.**  Entered as Monarch Wax.  

**Date Wax.**  Rgs Lnr.  

**Davis Early White Kidney Wax.**  Crs.  For similar names see Davis Wax.  

**Davis Kidney Wax.**  Brl Brt Btl Bkt Big Brg Brr Brr Brb Brr CE Cle C'o Col DD Dom Dun Ent Emr Fqr Gls Glm GH Ggy Gry Gry Hns Hrn Hry Hy Hlm H&P J&S Jns Ken Kz Koe Lnr Lon Mgd P'M Mas Man May JCM JMM M&S Nol NK Old HP JMP Pri Raw HP Sic Spf S&W Thm Thr Til Trn Vl Vn Wdt Wd Ws.  
**Similar names.**  See Davis Wax.  

**Davis Wax.**  All Alr Bui Bak Bow Buc Cur Chm Dlw Der Ebe Eic Fer Frd Grw Inl Tov Krl Lam Lan Liv JL Lsk Neb Pg Put Ptt Prr Rec Rog Rg Rl S&R Shw S&I Tat Tem Wd.  
**Similar names.**  Davis White Wax, Davis Kidney Wax, Davis White Kidney Wax, Davis Early White Kidney Wax.  

**Davis White Kidney Wax.**  Alx Aus Ar C'dl Del Ebr Eit Eld G&T TG Haw Hlm Pit Ptn Rec Rs SC S&F S&O Shm Web Y&H.  
**Similar names.**  See Davis Wax.  

**Davis White Wax.**  Del Ber Bsr CF Emr Gng hrs Kit W Mic MV P'tqkr P'tk Sox Thb Th Wk Wb.  
**Similar names.**  See Davis Wax.  

**Detroit Golden Wax.**  RE.  For similar names see Detroit Wax, Golden Wax.
Detroit Wax. All Brd Bel Bow Bgg Bra Bgs Bru Buc CE Cle Ehe Emr Ewg Fer Fle GH Gra Ggy Grn G&T Hlm Hme Iml Lam Lan Luc Man May MeK MV Mzy NK Pmt Pri Pug Qkr Ren Ree Roe Rs S&R S&O Sim Sox Stk Thr Til Van Wdr.
Similar names. Ferry's Detroit Wax, Detroit Golden Wax.
Seedsman's synonyms. Rust Proof Wax, Bow For Pug S&R Stk.

Dixie Land. CA.

Double Barreled Wax. Lan.
Similar names. Landreth's Double Barreled Wax.

Early Black Eyed Wax. Crs. For similar names see Black Eyed Wax.

Early Black Wax. Crs Fle Hly Sim. For similar names see Black Wax.
Seedsman's synonyms. Butter, Crs.

Early Challenge Black Wax. Crs. For similar names see Challenge Black Wax.

Early Crystal White Wax. Sim. For similar names see Crystal Wax.

Early Dolly Varden. Co.

Early Flageolet Wax. Col. For similar names see Flageolet Wax.

Early German Wax. Bui CA. For similar names see German Black Wax.

Early Golden Eyed Wax. Brr Chl C&B Crs Ggy Wll.
Similar names. See Golden Eyed Wax.

Early Golden Wax. Bel Brr C&G Col Crs Mas Sim.
Similar names. See Golden Wax.

Early Prolific Black Wax. Bar Col Crs. For similar names see Prolific Black Wax.

Early Red Flageolet Wax. Crs. For similar names see Flageolet Wax.

Early Refugee Wax. Crs DD Lnr. For similar names see Refugee Wax.

Early Valentine Wax. Crs Hve W&D. For similar names see Valentine Wax.

Early White Wax. Brr CE Col Ree Sim Thm. For similar names see White Wax.

Eclipse Wax. D&H.

Eichling's White Kidney Wax. Eic. For similar names see Kidney Wax.

El Dorado Wax. Tat.

Similar names. Tait's El Dorado Wax.

Emperor William Wax. Hlm.

Epicure Wax. M&S.

Everbearing Giant Wax. Hop. For similar names see Giant Wax.

Extra Early Black Wax. Slm. For similar names see Black Wax.

Extra Early Challenge Black Wax. Bow Buc Bru For Pug Roe S&R.

Similar names. See Challenge Black Wax.

Extra Early Refugee Wax. Big Frd Gdn Ggy Hrn Hse Jac Rog W&D.
Similar names. See Refugee Wax.

Extra Early Valentine Wax. Tat. For similar names see Valentine Wax.


Fillbasket Wax. Thr.

Flageolet Wax. Alx Ans Bkt Bdg Buc C&B Crg Cnr CA Eic Ewg Grn TG Hry Hen Hme Lnr Man Mas Man May Mic MV Poo Pri Roe Sox Stk Stl Stl Thr Til Van W&D.


Fuller's Black Wax. Ggy Rog. For similar names see Black Wax.

Fuller's Ringleader Wax. J&S. For similar names see Black Wax.
48

AMERICAN VARIETIES OF VEGETABLES.

Germain's Improved Golden Eyed Flageolet Wax. Entered as Golden Eyed Flageolet Wax.


Similar names. German Wax, Early German Wax, Improved German Wax, Prolific German Wax, Improved Prolific German Wax, Improved Prolific German Black Wax, Improved German Black Wax, See also Black Wax, Challenge Black Wax, Prolific Black Wax.

Seedsmen's synonyms. Butter, Cox Fmr J&S, Prolific German Black Wax, Alb.

German Wax. Ar Brt Ber Dlw Eiw Fqr For Gdn Jac MWJ RJH McM Mhl Min Pri Ri Rs RP SHW Stw Tat Vin Wd WS Y&H.

Similar names. See German Black Wax.


German White Wax. Bow Brn Grw Hde Kei Pks Por Pug S&R Sox Tpk Web.

Similar names. See White Wax.

Giant Poded Stringless Wax. Grn. For similar names see Giant Wax.

Giant Red Wax. RE SB. For similar names see Giant Wax.

Giant Wax. Gng Grn Kei Min.

Similar names. Salzer's Giant Stringless Wax, Giant Poded Stringless Wax, Simmers' Early Giant Wax, Holmes' Everbearing Giant Wax, Giant Red Wax, Mammoth Wax, Everbearing Giant Wax.

Seedsmen's synonyms. Mammoth Red German Wax, Ren.

Golden Beauty. D&H.

Golden Champion Wax. Roc. For similar names see Champion Wax.

Golden Crown. For Grn.

Similar names. Golden Crown Stringless Wax.

Golden Crown Stringless Wax. Thr. For similar names see Golden Crown.

Golden Eyed Flageolet Wax. Ger.

Similar names. See Flageolet Wax, Golden Eyed Wax.


Golden Flageolet Wax. Brn Grn. For similar names see Flageolet Wax.

Golden Prize. Cok.

Golden Queen Wax. Vin.


Similar names. See Golden Wax.

Griswold's Everbearing Wax. 1st.

Hammond's Butter Wax. Ham. For similar names see Butter Wax.

Similar names. Hammond's Butter Wax, Manlie's Butter Wax.

Hammond's Luscious Stringless. Ham.

Hammond's Improved Golden Wax. Entered as Golden Wax.

Hodson Wax. Her Y&H.

Henderson's Improved Black Wax. Entered as Black Wax.

Holmes' Everbearing Giant Wax, Holmes' Improved Silver Wax. Entered as Everbearing Giant Wax Silver Wax.

Horticultural Wax. Raw.

Imperial Golden Wax. Ggy Iow.

Similar names. See Allan's Imperial Wax, Golden Wax.

Imperial White Wax. Man.

Improved Black Wax, Improved Early Golden Wax, Improved German Black Wax, Improved German Wax, Improved Golden Wax, Improved Prolific Black Wax, Improved Prolific German Black Wax, Improved Prolific German Wax, Improved Rust Proof Golden Wax, Improved Rust Proof Wax, Improved Refugee Wax, Improved White Wax, Improved Yellow Eyed Wax. Entered as Black Wax, Early Golden Wax, German Black Wax, etc.

Ivory Pod Wax. CE Ferl Hunt Lar May Min Roe RP Sal W&D.

Similar names. See Cylinder Ivory Wax.

Jones' Stringless Wax. All Air Ben Buc Col Fer For Fer Gis Hbc Hbc Imp Jns Lar Liv Man Mgd Man Neb Pg Pri Roe Van.

Similar names. Jones' Stringless White Wax, Stringless White Wax, Rene- nie's Stringless Wax.

Jones' Stringless White Wax. Frd Neh Thr Vr Wh.

Similar names. See Jones' Stringless Wax.

Keeney's Early Rustless Golden Wax. Cos.

Similar names. See Keeney's Rustless Golden Wax.

Keeney's Improved Stringless Refugee Wax, Keeney's Pencil Pod Black Wax, Keeney's Pencil Pod Wax. Entered as Stringless Refugee Wax, Pencil Pod Black Wax, and Pencil Pod Wax.

Keeney's Rustless Golden Wax. All Ans Bow Bigg Brn Buc Buc C&B Col CF D&H Del Evr Fer Gra Ggy Gyn G&T Gyr Har Hru Hru Jer J&S Lar May OV Old PnCh Pnt Pitt Roe Roe Rog Stk SB S&H S&W Tat Thom Thr.


Similar names.  See Keeney's Rustless Golden Wax.

Seedsmen's synonyms.  "Golden Wax", D&H.

Kidney Wax.  All Bel Brg Brw CE Drm Koe JL Man Mel NI Ptt Rkh Ree Sie.


King of the Wax.  M&S.

Landreth's Double Barreled Wax, Landreth's Scarlet Wax.  Entered as Double Barreled Wax and Scarlet Wax.

Large White Marrow Wax.  Hlm.


Lima Wax.  All Brk Brb Gry May Sal Sk.

Similar names.  Roger's Lima Wax.

Longfellow.  Grn.

Lyonnaise.  Nol.

McKenzie's Perfection Wax.  Entered as Perfection Wax.

Mammoth Red German Wax.  McK Ren.

Seedsmen's synonyms.  "Giant Wax", Ren.

Mammoth Wax.  SB.  For similar names see Giant Wax.

Market Wax.  Hln.

Maule's Butter Wax.  Buc Mau Roc.  For similar names see Butter Wax.

Midsummer Wax.  Sal.

Milliken's Wax.  K&W.

Mills' Rust Proof Wax.  Ms.  For similar names see Rust Proof Wax.

Monarch Wax.  J&S.

Mountain of Gold.  D&H.

New York State Golden Wax.  Pg.  For similar names see Golden Wax.

Pencil Pod Black Wax.  All Bur Dr J&S Thr AGT.

Similar names.  See Keeney's Pencil Pod Wax.


Similar names.  Keeney's Pencil Pod Black Wax, Keeney's Pencil Pod Wax, Pencil Pod Black Wax.

Perfection Kidney Wax.  Alx.  For similar names see Perfection Wax, Kidney Wax.

Perfection Wax.  Ans Bgs Bng Buc But Brw C'E Col Dw Drf Flf Gll Gra Hlm J&M Mund Man McK Mcm Mil MK Pn Poo Qkr Ree Roc Roe Sie Y&H.

Similar names.  Burpee's Perfection Wax, Young & Halstead's Perfection Wax, Perfection Kidney Wax.


Pink Eye Wax.  Buc Brv CE Man MV NK Ree Roe Sox.

Prolific Black Wax.  All Brd Bel Brg Brh Bkg Caws CE Car DD Drf Gll Gmn G&I Tc Hlm Lnr Mund Mgd Man May Mh MV NK Pri Raw Ree Roe S&O Se Sor S&I Thr Wd.

Similar names.  Improved Prolific Black Wax, Early Prolific Black Wax.

See also Black Wax, Challenge Black Wax, German Black Wax.


Prolific Everbearing Wax.  M&S.

Prolific German Black Wax.  Alr Bel Bow Brg Bur Drm Gls Hde Hlm Ind Liv Mus Pls Pnt Qkr Spf Trm Tex Vau Vk Yng.

Similar names.  See German Black Wax.

Prolific German Wax.  Bkt Bgs Brc Bui Dnm Eos Eic Fer Frd Ham J&S LB Loh PM McM Xeb Nol HP Roc Stk VI.

SIMILAR NAMES.  See German Black Wax.

SEEDSMEN'S SYNONYMS.  Cylindre Wax, Bkt J&S.  Improved Black Wax, Buc Ham Roc.

Purple Flageolet Wax.  Web.  For similar names see Flageolet Wax.

Red Flageolet Wax.  Bkt Bgs Elt Gill McK Mzy HIp Put Qkr Thm Thr Wer.

SIMILAR NAMES.  See Flageolet Wax.

SEEDSMEN'S SYNONYMS.  Scarlet Flageolet, Put.

Refugee Wax.  All Bkd Bk Bow Bag Bgs Brn Bsd Buc Bur C&J CE Cie C&B CF Chm Dw Dnn Eor Elt Eor Fer Gll Gru Gry TG Hns Hst Hen H&C Hmn H&P Mnd Man May Mic MV Xdk NK Pg JIP Prn Prt Qkr Raw Rec Roc Rs & Sal &F Son S&W Ths VI Vks Wnt Wdc Wdr Y&H.

SIMILAR NAMES.  Golden Refugee Wax, Improved Refugee Wax, Stringless Refugee Wax, Early Refugee Wax, Extra Early Refugee Wax, Keeney's Improved Stringless Refugee Wax, Thorburn Refugee Wax.

Rennie's Stringless Wax.  Ren.  For similar names see Jones' Stringless Wax.


SIMILAR NAMES.  See Lima Wax.

Round Pod Kidney Wax.  Ans Bkt Dfr For Grn Hlm J&S Liv JMM Mhl Mus Prd.

SIMILAR NAMES.  See Kidney Wax.

Round Poddled White Wax.  All.  For similar names see White Wax.


SIMILAR NAMES.  See Golden Wax, Keeney's Rustless Golden Wax.

Rust Proof Black Wax.  Bar Dfr.  For similar names see Black Wax.


SIMILAR NAMES.  See Golden Eyed Wax.


SIMILAR NAMES.  See Golden Wax.

Rust Proof Wax.  Ans Bow Buc 1D GN Grw McM Por Pug RP S&R Stk Wmn.

SIMILAR NAMES.  Improved Rust Proof Wax, Mill's Rust Proof Wax, Shumway's Rust Proof Wax, California Rust Proof Wax.

SEEDSMEN'S SYNONYMS.  Detroit Wax, Bow Por Pug S&R Stk.


SIMILAR NAMES.  See Saddleback Wax, Black Wax.


SIMILAR NAMES.  Burpee's Saddleback Wax, Saddleback Black Wax.

Salzer's Earliest Wax.  Sal.

Salzer's Giant Stringless Wax.  Sal.  For similar names see Giant Wax.

Salzer's Golden Wax.  Entered as Golden Wax.

Salzer's Round Poddled Wax.  Sal.


SIMILAR NAMES.  See Flageolet Wax.


Scarlet Wax.  Bui Dlw Ewq Lan Rm Stw Tat.

SIMILAR NAMES.  Landree's Scarlet Wax.

SEEDSMEN'S SYNONYMS.  Flageolet Wax, Ewq.

Shumway's Rust Proof Wax.  Shm.  For similar names see Rust Proof Wax.

Silver Wax.  Hlm Man Shm.

SIMILAR NAMES.  Holmes' Improved Silver Wax.
Simmers' Early Giant Wax.  Sim.  For similar names see Giant Wax.
Speckled Kidney Wax.  Bui Jac.
  Similar names.  See Speckled Wax, Kidney Wax.
  Similar names.  Beckert's Speckled Wax, Speckled Kidney Wax.
Seedsmen's synonyms.  Wardwell's Kidney Wax, Gdn.
Stringless Refugee Wax.  J&S Van Wdr.  For similar names see Refugee Wax.
Stringless Round Pod Wax.  Thr.
Stringless White Wax.  Grn.  For similar names see Jones' Stringless Wax.
Tait's El Dorado Wax.  Entered as El Dorado Wax.
Thorburn Refugee Wax, Thorburn Valentine Wax.  Entered as Refugee Wax and Valentine Wax.

Twentieth Century Wax.  Bmr.
  Similar names.  Burpee's Twentieth Century Wax.
Ventura Wonder Wax.  Grr J&M.

Violet Flaggeole Wax.  Brn Buc C'E Fer Glr Lnr LB Rec Roe Shw.
  Similar names.  See Flaggeole Wax.
Seedsmen's synonyms.  Perfection Wax, Fer.

Violet Wax.  J&S.
  Seedsmen's synonyms.  Perfection Wax, J&S.
  Similar names.  See Wardwell's Kidney Wax.

Wardwell's Improved Kidney Wax.  Entered as Wardwell's Kidney Wax.
Wardwell's Kidney Wax.  AxL All Anb Ans Ar Bk Lck Brd Btt Bttl Ber BgB BcW Brk Bbg Bgs Brr Buc C&J Cam CE CLc CJ& Bow CF Cur CgU CA Clm D&D Dl Dd Drr DmDm Ebr Ebr Emr Emr ER Evr Fnr Flr Fcr Fcr Fcr Fer Frd Gdn Ggl GgY Grn Gry Gry Gry Gry GAT Grw Tg Hms Hde Hmr Hrs Hst Hst Hst Hen HAC HLY Hll Hlm Hop Hunc H&P Hml hov J&M J&S Jns Keg Kg Kka Lam Lam Lnr LB Liv Loh Mnd Mgd Mns Msd Man May JCM JMM Mck McM McM Mcl Mhl Min Mv M&S MxY Nol NK NN Pac PdPP) JMM Pir Ptt Poo Ptt Pri Prq Prq Raw Ren Rim Roe Rog Rs RP S&R SC S&F Shw S&O Shm Sim Sox Spf Spr Sph SPB Sth Sth Sth S&H S&W S&m Tex TB Thm Thr TIl Tph Trn Vl Vau Wt Wca Web Wd Wd Wd Wd Wg Wg Yg Yg YII.
Seedsmen's synonyms.  Speckled Wax, Gdn.

Wardwell's Wax.  Bkt Pd Rec.  For similar names see Wardwell's Kidney Wax.
White Kidney Wax.  1D Eic Pac Wcr.  For similar names see Kidney Wax.
White Wax.  Ans Bk Lck Bkg Brk Bbg Brn Buc C&J CE CLc CJ& Bow CF Cur CgU Cur Eby ER Evr Fnr Flr Fcr Fcr Fcr Fcr Fer Frd Gdn Ggl GgY Grn Gry Gry Gry Gry Gry GAT Grw Tg Hms Hde Hmr Hrs Hst Hst Hen HAC HLY Hll Hlm Hop Hunc H&P Hml hov J&M J&S Jns Keg Kg Kka Lam Lam Lnr LB Liv Loh Mnd Mgd Mns Msd Man May JCM JMM Mck McM McM Mcl Mhl Min Mv M&S MxY Nol NK NN Pac PdPP) JMM Pir Ptt Poo Ptt Pri Prq Prq Raw Ren Rim Roe Rog Rs RP S&R SC S&F Shw S&O Shm Sim Sox Spf Spr Sph SPB Sth Sth Sth S&H S&W S&m Tex TB Thm Thr TIl Tph Trn Vl Vau Wt Wca Web Wd Wd Wd Wg Wg Yg Yg YII.
  Similar names.  Improved White Wax, Early White Wax, Round Podded White Wax, German White Wax.
Seedsmen's synonyms.  Batur, Brn Rec Vin.  German Wax, Fnr.

Wonder of France.  Grn.
Yellow Eyed Wax.  Entered as Golden Eyed Wax.
Yosemite Black Wax.  Brk Bng.
  Similar names.  See Yosemite Wax, Black Wax.
Yosemite Giant Wax. Sim Van. For similar names see Yosemite Wax.

Yosemite Mammoth Wax. Alr Bai Bel Brg Brw Brw Brw Brw Brw Brw Brr C&J CE Cle CCo Ccr Crr Crr Emr Ewr Erg Fpr FrF Grg Ggg Tg Tg 1st Hen Iim Hop Ise Iow JSS Liv JL Mgl JCM McK MV Mzy Nk Pte Pts JMP Pna Ptt Prr Raw Rec Ren Rec Rec Sat Sim See S&H Tat Tet Thr Vg W&D Wgr Wdr.

Similar names. See Yosemite Wax.

Yosemite Monster Wax. Chl GN. For similar names see Yosemite Wax.

Yosemite Wax. CF DD Grr Hnr Lnr Man Jmm S&F S&W.

Similar names. Yosemite Mammoth Wax, Yosemite Monster Wax, Yosemite Giant Wax, Yosemite Black Wax.

York Wax. Ggy.

Seedsmen's synonyms. Golden Wax, Ggy.

Young & Halstead's Perfection Wax. Entered as Perfection Wax.

Young's Improved Golden Wax. Entered as Golden Wax.

BEET (GARDEN BEET).

Acme. Sic.

Acme Early Blood. CE.

Acme Second Early. J&S M&S.

Albani. Pri.

Alexander's Early Red Turnip. Alx. For similar names see Early Blood Turnip.

Almeer's Early Columbia. Entered as Early Columbia.

American Egyptian. M&S. For similar names see Extra Early Egyptian.

Archias's Blood Turnip. Ar. For similar names see Early Blood Turnip.

Archias' Improved Blood Turnip. Entered as Archias's Blood Turnip.


Seedsmen's synonyms. Favorite, Wdr. Rawson's Boston Market, HP.

Arlington Blood Red. McK MAN. For similar names see Arlington.


Similar names. See Arlington.

Arlington First Early. Lan. For similar names see Arlington.

Atlanta's Earliest. Jac.


Baltimore Early Market. G&T. For similar names see Early Market.

Bassano. Bel Bn Bn Brr Brf Efr Efr Gry G&T Hde Inda MWJ Kg Lan Ldn Md Man Pm Jmm McK Mcm OV Pm Pnt Shw Sth Stw S&W Thr Tph Wdr Wdr.

Similar names. Early Bassano, Extra Early Bassano, Early Flat Bassano, Early Flat Bassano, Flat Bassano, Early Egyptian Bassano.

Seedsmen's synonyms. Extra Early, Bow Shw Sth Wtr. Extra Early Turnip, Bn Ldn G&T.

Bastian. Aub Brg Brg Buc C&B Cur Bb Hll HP DFr Efr Gry Hrs Hen Hat Lnr Mas Jmm MV Nol Por Pri Ren Rec Rs S&R S&O See Thm Thr Y&H.

Similar names. See Bastian's Early Blood Turnip.


Similar names. See Bastian's Early Blood Turnip.

Bastian's Early Blood Turnip. Alr Bk Bk Bk CE Cle Cts Drr Drn Dm Frn Ger Gry Tg Haw Hly Hlm Liv JL Jmm Mcm Ptt Rec RP Shw Sox Spf S&H Til Tpk Vg W&D Wdr Wdr Wgr.
American Varieties of Vegetables.


Similar Names. See Early Blood Turnip.

Similar Names. See Bastian's Early Blood Turnip.

Similar Names. See Bastian's Early Blood Turnip.

Bastian's Half Long. Brn Bui Bur Cle Col Drr GII 1Hbt Illm J&S PM Mhl Pug Wat.
Similar Names. See Bastian's Early Blood Turnip.

Similar Names. See Bastian's Early Blood Turnip.

Seedsman's Synonyms. Philadelphia Perfection, Bur PM.

Beats All. Brk. For similar names see Best of All.

Beckert's Perfection Blood Turnip. Bkt.
Similar Names. See Early Blood Turnip, Philadelphia Perfection.

Beckert's Winter. Bri.

Best of All. GN Sal.
Similar Names. Salzer's Best of All, Breck's Beats All, Beats All.

Birmingham's Earliest. Gdn. For similar names see Atlanta's Earliest.

Bismarck. Buc Roc.

Black Prince. SB.

Black Queen. Bui Cle Col Thr W&D.
Similar Names. Black Queen Half Long Blood, Queen of the Blacks.

Black Queen Half Long Blood. W&D. For similar names see Black Queen.

Blood Red Turnip. Mel. For similar names see Early Blood Turnip.

Blood Turnip. Bet Ber Cam D&C Evr Efd Lnr PM McK Prn Ren Kim Roc SB.
Similar Names. See Early Blood Turnip.

Similar Names. See Early Blood Turnip.

Bolgiano's Extra Early Eclipse. Entered as Extra Early Eclipse.

Bonsecours Market. Ewg Gra.

Boston Market. HP Raw.
Similar Names. Rawson's Boston Market.

Seedsman's Synonyms. Improved Arlington, HP.

Breck's Beats All. Entered as Beets All.

Briggs' Extra Early. SB. For similar names see Extra Early.

Bruce's Long Dark Blood. Entered as Long Dark Blood.

Similar Names. See Early Blood Turnip.


Buist's Extra Early. Bui. For similar names see Extra Early.


Buist's Scarlet Perfection. Bui. For similar names see Philadelphia Perfection.

Burpee's Blood Turnip. Bur. For similar names see Early Blood Turnip.

Burpee's Extra Early. Bur. For similar names see Extra Early.

Burpee's Improved Blood Turnip. Entered as Burpee's Blood Turnip.

Cardinal. Man Ren.
Carter's Excelsior. Mhl MV Rec. For similar names see Excelsior.

SEEDSMEN'S SYNONYMS. Columbia, J&S Cle.


Chicago Early Blood Turnip. Sk. For similar names see Chicago Blood Turnip.

Chicago Market. Thc Kra Vi Vau.

SIMILAR NAMES. Vaughan's Chicago Market, Chicago Early Blood Turnip.

Columbia. Bai Brl Bkt Bel Brk Bld Bri Buc Bar Brv C&J Cle Col Del Elbr Elt RE Fmr Fgr Fst Frd G11 Gra GN Gry JMM Hln Hop Hac Jer J&S Lan For Loc Man Ms M&S Neb Pac Pg HP Qkr Rco Shw Tcm Thr Til Vin Wd W&H Y&H.

SIMILAR NAMES. Early Columbia, Alner's Early Columbia, Extra Early Dark Red Columbia, Columbian Red.

SEEDSMEN'S SYNONYMS. Carter's Excelsior, Cle J&S. Dark Red Turnip, Pri. Excelsior, Wd.

Columbian Red. Loh. For similar names see Columbia.

Cooper's Market King. Entered as Market King.

Covent Garden. Engw.

Cox's Blood Turnip. For similar names see Early Blood Turnip.

Cox's Improved Blood Turnip. Entered as Cox's Blood Turnip.

Crimson Globe. Alx Ar Brt Brk BarBrv EBC Col Cur Gry Gry Ham Hln Lan Ltr Rce Rs SC Shr Sm S&W Tcm Thr Twb Tiw Wbd Y&H.


Crimson King. Sal.

SIMILAR NAMES. Hasting's Crimson King, Lower's Early King, Market King.

Crimson Purple Globe. Shm. For similar names see Crimson Globe.

Crosby. Brt Bkt Bri Tex.

Crosby's Dark Red Egyptian. Bgs Crs SC Thm.

SIMILAR NAMES. See Early Egyptian.

Crosby's Early. Mgl Y&H. For similar names see Early Egyptian.

Crosby's Early Blood Turnip. R11J.

SIMILAR NAMES. See Early Blood Turnip, Extra Early Egyptian.

Crosby's Early Dark Red Egyptian. Ptn.

SIMILAR NAMES. See Early Egyptian.

Crosby's Early Egyptian. Btl Cle Gny Hns Ken Roe R.

SIMILAR NAMES. See Early Egyptian.


SIMILAR NAMES. See Early Egyptian.

Crosby's Extra Early. Bgl DP. For similar names see Extra Early Egyptian.

Crosby's Extra Early Egyptian. Brr Eic Gdn Gll H&P Jc K&g P&I S&I.

SIMILAR NAMES. See Early Egyptian.

Crosby's Extra Large Egyptian. Gng.

SIMILAR NAMES. See Extra Egyptian.

Crosby Improved. Entered as Crosby.

Crosby's Improved Egyptian. Entered as Crosby's Egyptian.

Danish Long Keeping. J&S.

Dark Blood Egyptian. RE. For similar names see Early Egyptian.
Dark Red Egyptian. Bru Col CF Cox Crs Ger GH Man Mzy Xi Pir Pt Raw Sal
Sth Thu Vin.

Similar names. See Early Egyptian.

Dark Red Blood. Kei.

Dark Red Turnip. Pri. For similar names see Early Blood Turnip.

Seedmen's synonyms. Columbia, Pri.

Dark Stinson. Buc Bur Joe J&S Mls Rec. For similar names see Stinson.

Dell's Black Leaved. Bru Fqr RIJ Sim Thr W&D.

Similar names. Dell's Crimson Leaved, Dell's Improved Black Leaved, Dell's
Superb Black, Dell's Flower Garden, Dell's Dark Crimson Long Smooth.

Seedmen's synonyms. Dell's Crimson Leaved. Sim.

Dell's Crimson Leaved. Sim. For similar names see Dell's Black Leaved.

Seedmen's synonyms. Dell's Black Leaved. Sim.

Dell's Dark Crimson Long Smooth. M&S.

Similar names. See Dell's Black Leaf.

Dell's Flower Garden. Kei. For similar names see Dell's Black Leaved.

Dell's Improved Black Leaved. Entered as Dell's Black Leaved.

Dell's Superb Black. Eig Gra. For similar names see Dell's Black Leaved.

Detroit. Lan. For similar names see Detroit Dark Red.

Detroit Blood Red. Bri Emr Era. For similar names see Detroit Dark Red.

Dewar's Half Long. Pat SR. For similar names see Half Long Blood.

Dewing's Blood. Anb Btjk Bkt Kel Ryg Dkg Bri Bru Bng Bnc Bbr Bar CE C&B
CF Curs Cus Dmn Dmn Ext Fnr Fsr Fxdk Gh Ghy Hbr Hbr Hen Hlm Hm LmP LmS
LmW Kg Lea Lnr Liv Ll Man PM Mns Mm JCM Mm Mzy Nol Xi OY Pac
Jmp Pnc Poo Pot Pri Raw Roc Rs RP Sim SpB Tm Tsb Tpl Trm Yl Wd Wd Wd Yb Yb.

Similar names. Dewing's Early Blood, Dewing's Extra Early Blood, Dewing's
Improved Blood, Dewing's Improved Early Blood, Dewing's Early Blood Red,
Dewing's Early Red, Dewing's Red, Dewing's Early, Dewing's Extra Early. See
also Blood Turnip, Bastian's Early Blood Turnip, Early Blood Turnip, Ednaud's
Blood.

Dewing's Blood Red. Pat. For similar names see Dewing's Blood.

Dewing's Early. Ger Cbs Loh Mnd May MV S&F Shm Syc Thr.

Similar names. See Dewing's Blood.

Dewing's Early Blood. Anb Broi Bow Brg Brk Brgs Brs C&J CE CE Cbr Curs Dmn
Fqr Gyg Grw TG Hrn Hrn Haw Kra Lnr LB Mic Neb Nec Pir Ptt Roc S&O
Sod Stk Tpl Vn Wd.

Similar names. See Dewing's Blood.

Dewing's Early Blood Red. Ksc. For similar names see Dewing's Blood.


Similar names. See Dewing's Blood.

Dewing's Extra Early. Emr RE. For similar names see Dewing's Blood.

Dewing's Extra Early Blood. Ebr Evr. For similar names see Dewing's Blood.

Dewing's Improved Blood, Dewing's Improved Early Blood. Entered as Dewing's
Blood, Dewing's Early Blood.
Dewing's Red. Sal. For similar names see *Dewing's Blood*.
Similar names. Dirigo Extra Early.
Dirigo Extra Early. Gdn Hrn Hve' K&W Lan Rec Y&H.
Similar names. See Dirigo.
Dirigo Extra Early Dark Red. *To.*
Dobbie's Globe. Gra. For similar names see *Dobbie's Purple*.
Similar names. Dobbie's Globe.
Dreer's Excelsior. *Drr.* For similar names see *Excelsior*.

Earliest Dark Red Egyptian. Bgs. For similar names see *Early Egyptian*.
Similar names. See Arlington.

Similar names. See Bassano.


Early Blood Red Turnip. *Air Bld Bar MWJ Lan PM Neb Pac HP Sww.*
Similar names. See *Early Blood Turnip*.


Early Columbia. Air Hrs. For similar names see *Columbia*.
Early Crimson. *Ewg.* For similar names see *Crimson Globe*.

Early Crimson Globe. *TG Low.*

Early Dark Blood Turnip. *Gdn TB WIt.*
Similar names. See *Early Blood Turnip.*
Early Dark Egyptian. Chl. For similar names see Extra Early Egyptian.
Early Dark Red. Dw. For similar names see Early Blood Turnip.
Early Dark Red Egyptian. JMP SC.
   Similar names. See Extra Early Egyptian.
Early Dark Red Flat Egyptian. CA Sim.
   Similar names. See Extra Early Egyptian.
Early Eclipse. Alx Alr Bui Bgg Bgs Bui C&J Cam Crg CA Drr E1t RE For Fax
   For Fle Gng Tc Hde Hly Hlm Ken K&F Ky Lnr LB JL Loh May JCM Pg Pks
   JMP Put Por Pot Pri Qkr Rec Rim Rs S&R S&F Sim SB Til V1 Vau Vk Wlt Wyg.
   Similar names. See Eclipse.
Early Egyptian. Alr Bak Bow Cam Fnr Fqr TG Hly Kg Lnr LB Liv JL Man
   McM Ncb Nol Old Puc HP For Pri Pug Rec Rec Rs S&R S&B AGT Trm T&B
   V1 Vau.
   Similar names. See Extra Early Egyptian.
Early Egyptian Bassano. Hnt. For similar names see Bassano.
Early Electric. Alr Hen. For similar names see Electric.
Early Flat Bassano. Bak Brd Bgs Brb C&J CE C&B CF Cur Hrm Haw Hen
   K&W K&F Mzy Put Pug Rec SC S&o Sim Sox SB W&D Y&H.
   Similar names. See Bassano.
Early Flat Red Bassano. Drn Liv. For similar names see Bassano.
Early Half Long Blood. Crg Sox. For similar names see Half Long Blood.
Early Large Egyptian. Brg. For similar names see Extra Early Egyptian.
Early Long Blood. Bgg. For similar names see Long Blood.
   Similar names. Wesley’s Earliest Market, Baltimore Early Market.
Early Othello. Gdn.
   Similar names. Early Othello Dark Blood.
Early Othello Dark Blood. Bui Evr. For similar names see Early Othello.
Early Turin. Thr.
   Similar names. Extra Early Turin.
Early York. Sal.
Early Yellow Turnip. Bgs Buc Bar C&J E1t Evr Gls Hen Hop Nef Ptt Qkr Raw
   Roc Trm.
   Similar names. See Yellow Turnip.
Eclipse. Anb Ar Bai Bak Brd Brt Brl Bel Bow Brk Bri Brn Brb Bur Brv Cam
   CE Chl Cle C&B Col CF Cox Crs Cur Dw D&H Del DD D&C Drw Drm Dun
   Eas Ebe Ele Evr Evg Fnr Fst Fld Frl Ger Gls GH Grr Ggy Gry G&T Grw
   TG Hns Ham Hrm Hrs Hrv Hst Haw Hen Hbt Hop Hse Hnt H&P Ind low
   Jer J&S MWJ RJH J&M Kei K&W Kos Kra Lm Lea LB Liv Loin Lvdl PM
   Man Mas JMM McK Mel Mic Mhl Min Nol NI NK NV Old Pac HP Pfr Prr
   Pne Put Ptt Poo Pug Rtk Raw Ren Rec Rim Rt Rs RP Sal SC S&B S&o Sim Sox
   Spn Stk SB S&H S&W Ten Tex Thm Thr Thb AGT Tpk Trm T&B T7 Vau Vin
   Wat Wca Web W&D Wer Wlt Wdr Wng Y&H.
   Similar names. Early Eclipse, Improved Early Eclipse, Extra Early Eclipse,
   Bolgiano’s Extra Early Eclipse, Improved Extra Eclipse, Eclipse Crimson
   Turnip, Improved Eclipse.
   Eclipse Crimson Turnip. Bdg. For similar names see Eclipse.
Edmand. Anb Bur Brw CE EFC Del Drw Drm Evr Frd Ggy Gry Hen Kos Man
   JCM Mzy Nol Pmn Pnc Put Raw Rec Sal Trm.
   Similar names. See Edmand’s Blood.
Edmand Improved. Entered as Edmand.
Edmand’s Blood. Bai Brd Brt Brl Bkt Bkg Bgg Bri Brn Bng C&J Chl Cle C&B
   Crg D&H DD Dfr Eas Fnr Fux Ger GH Ggy Grw Haw Hbt Low Jns Law Lnr
   Mnd Mgd Man Mns Mas May Mic Mhl MV NX NK NV Pac Pfr Pnr Pri Qkr Rec
   Rs S&R S&F S&l S&W Thr AGT Tlh Til Tpk Tsc Wdr Wyg Y&H.

Edmand's Blood Red. Lan. For similar names see Edmand's Blood.
Edmand's Dark Blood. Ax. For similar names see Edmand's Blood.
Edmand's Dark Red. McK. For similar names see Edmand's Blood.

Similar names. See Edmand's Blood.

Edmand's Early Blood. Ar Bak Bel Bw Bdg Bgs Buc Bbr Brr Dun Emr RE Fgr Fer Hde Hrn Hrn H&C Hlm Kg Koe Kra Lam Lcr LB Liv Neb Old Pg HP Pnt Ptt Roc Re RP SC shw S&O Sox Spf Stk SB Tat Vl Van Vk Wea Web W&D Wd Wng Y&H.

Similar names. See Early Egyptian.

Eichling's Extra Early Red Turnip. Eic.

Similar names. See Early Blood Turnip.

Electric. Bsc C&B Ebr GN Ham Hde Hrn J&S Lnr Man Png Pnt Poo Rec Roc SC Thr Thb Yng.

Similar names. Extra Early Electric, Early Electric, Henderson's Early Electric.

Erfurt Prize. May OV Tpk.

Similar names. Gardener's Prize.

Evans' Improved Early Blood Turnip. Entered as Early Blood Turnip.

Excelsior. Cie Pri Wd.

Similar names. Carter's Excelsior, Dreer's Excelsior, Young & Halstead's Excelsior.

Seedsman's synonyms. Columbin, Wd.

Extra Early. Bon Bdg Btl Bck Cdk Cht G&t Jac Lam McK Rec Shw Stk Stw Whl.


Extra Early Arlington Favorite. M&S. For similar names see Arlington.

Extra Early Bassano. Anb Ar Bgy Cam Cox Crs Gdn Hr's Hst H&P Jac Kei Ken Mhl Min Pri Sim Tat T7 Vl Vin Wd Ws.

Similar names. See Bassano.

Seedsman's synonyms. Sugar, Wd Ws.

Extra Early Blood Turnip. Liv Pug Wt.

Similar names. See Early Blood Turnip.
Extra Early Crimson Globe.  Brd.  For similar names see Crimson Globe.
Extra Early Dark Beauty.  Shm.  For similar names see Red Beauty.
Extra Early Dark Blood Turnip.  Shm.  For similar names see Early Blood Turnip.
Extra Early Dark Egyptian.  Emr Mas.
SIMILAR NAMES.  See Extra Early Egyptian.
Extra Early Dark Red Columbia.  Shm.  For similar names see Columbia.
Extra Early Dark Red Egyptian.  Shw Shm Wdr.
SIMILAR NAMES.  See Extra Early Egyptian.
Extra Early Eclipse.  Ber Big Bow Bug Buc Brr Emr Gdn Gg Hrm H&C Kg Koe Lan Mnd Mns MV May Neb Net Pri Roe Shm Stw Tat TB Wd WS.
SIMILAR NAMES.  See Eclipse.
SIMILAR NAMES.  Extra Early Flat Egyptian, Extra Early Dark Egyptian, Extra Early Dark Red Egyptian, Leonard’s Extra Early Egyptian, Improved Extra Early Egyptian, Earliest Dark Red Egyptian, Early Dark Egyptian, Maule’s Dark Red Egyptian, Dark Red Egyptian, Early Dark Red Egyptian, Early Dark Red Flat Egyptian, Egyptian, Flat Egyptian, Improved Egyptian, American Egyptian, Early Egyptian Bassano, Early Egyptian, Improved Early Egyptian, Early Large Egyptian, Dark Blood Egyptian, Crosby’s Egyptian, Crosby’s Improved Egyptian, Crosby’s Extra Large Egyptian, Crosby’s Dark Red Egyptian, Crosby’s Early Dark Red Egyptian, Crosby’s Extra Early Egyptian, Crosby’s Early Egyptian, Crosby’s Early, Crosby’s Extra Early, Crosby’s Early Blood Turnip, Crosby’s Improved.
Extra Early Electric.  Bdg.  For similar names see Electric.
Extra Early Flat Bassano.  TG.  For similar names see Bassano.
Extra Early Flat Egyptian.  Big DI Kei Mns JMM Mkr Ren.
SIMILAR NAMES.  See Extra Early Egyptian.
Extra Early Forcing.  Mic.  For similar names see Extra Early.
Extra Early Intermediate.  Ren.  For similar names see Extra Early.
Extra Early Red Turnip.  Alv.
Extra Early Turin.  Tat.  For similar names see Early Turin.
Extra Long Dark Blood.  Shm Stw.  For similar names see Long Blood.
Extra Long Smooth Deep Blood Red.  Sim.  For similar names see Long Blood.
Faust’s Crimson.  Ggy May.  For similar names see Crimson Globe.
SEEDSMEN’S SYNONYMS.  Mitchell’s Perfected, Ggy.
Faust’s Early.  Eas.  For similar names see Atlanta’s Earliest.
Faust’s Early Crimson.  Est Ggy Rs.  For similar names see Crimson Globe.
Favorite.  Wdr.
SIMILAR NAMES.  Gardener’s Favorite, Arlington Favorite, Extra Early Arlington Favorite, Rawson’s Arlington Favorite.
SEEDSMEN’S SYNONYMS.  Arlington, Wdr.
First and Last.  Evr.
Flat Bassano.  Ewg.  For similar names see Bassano.
Flat Egyptian.  Kei.  For similar names see Extra Early Egyptian.
Gardener’s Favorite.  Ewg.  For similar names see Favorite.
Gardener’s Prize.  VI.  For similar names see Evert Prize.
German’s Long Blood.  Entered as Long Blood.
Golden Turnip.  Eas.  For similar names see Yellow Turnip.
Grey’s Blood Turnip.  Gry.  For similar names see Early Blood Turnip.

Griffith & Turner Co.’s Early Blood Turnip.  G&T.

Similar names.  See Early Blood Turnip.

Half Long.  Eas Hlm J&J.


Half Long Blood Red.  CA RE H&P Lan Liv Mic Stw VI Vk Wlt WS.

Similar names.  See Half Long Blood.


Seedsman’s Synonyms.  Pear Shaped, Bdg.

Half Long Dark Blood.  Bgs Kei.  For similar names see Half Long Blood.


Similar names.  See Half Long Blood.

Half Long Red.  MWJ.  For similar names see Half Long Blood.

Hammond’s Crimson Globe.  Hum.

Hammond’s Early.  Ham.  For similar names see Atlanta’s Earliest.

Harrisburg Market Extra Early.  Hlm.  For similar names see Extra Early.

Hastings’ Blood Turnip.  Hst.  For similar names see Early Blood Turnip.

Hastings’ Crimson King.  Hst.  For similar names see Crimson King.

Hastings’ Improved Blood Turnip.  Entered as Hastings’ Blood Turnip.


Holmes’ Deep Blood Turnip.  Hlm.  For similar names see Early Blood Turnip.

Holmes’ Surprise.  Hlm.  For similar names see Surprise.

Hopkins’ Darkest Blood.  Hop.  For similar names see Early Blood Turnip.

Huntington & Page’s Early Dark Red Turnip.  H&P.

Similar names.  See Early Blood Turnip.

Ideal.  Pg.

Imperial Blood Red Turnip.  Glg.  For similar names see Early Blood Turnip.


Incomparable.  M&S.

Similar names.  Simon’s Incomparable.

Invincible.  Sal.

Similar names.  Salzer’s Invincible.

Johnson & Stokes’ Surprise.  J&J.  For similar names see Surprise.

King’s Model.  Kg.  For similar names see Skull’s Model.

Landreth’s Very Early.  Lan.  For similar names see Extra Early.

Large Long Blood.  G&T TB.  For similar names see Long Blood.
Late Blood Turnip. Buc Roe. For similar names see Early Blood Turnip.

Late Stinson. Lan. For similar names see Stinson.


Similar names. Lentz Early, Lentz Extra Early, Lentz Extra Early Red, Lentz Early Red, Lentz Hybrid, Lentz Extra Early Hybrid.


Lentz Early. Alr Bgs Bri Cam Crs Hst JMM Mhl Sic.

Similar names. See Lentz.

Lentz Early Red. Eic. For similar names see Lentz.


Similar names. See Lentz.

Lentz Extra Early Hybrid. Clk. For similar names see Lentz.

Lentz Extra Early Red. M&S Qkr. For similar names see Lentz.

Lentz Hybrid. Drr Ggy Mnd. For similar names see Lentz.


Lohrmann's Egyptian. Entered as Egyptian.

Long Black Red. Hde. For similar names see Long Blood.


Long Blood Red. Ar Btl Ber Bon Brg Bri Bnr Cam Cox Evr Gig Hns RHJ Lan Mc Tae JHP Shw T&B Vl Wl.

Similar names. See Long Blood.

Long Crimson. Sal. For similar names see Crimson Globe.


Similar names. See Long Blood.


Similar names. See Long Blood.

Long Dark Red. Bdg D&H Drn. For similar names see Long Blood.

Long Dark Smooth. Buc.

Long Red. Man M&N.

Long Smooth Blood. Bai Bkr Brn Cam CE Cle CF Del Elt Emr Efg Fgr Fax GH Gry Hde Hrm Hst Kei Ken Kg Lnr JL Man May MV Neb OV Pfl Pot Pot Ree
BEET, GARDEN. 63
RP Sal S&F S&O No. SB Tat Thr AGT Til Til Tpk Wat Wea Web W&D Wlt Wd Wdr WS Wyg Y&H.

Similar names. See Long Blood.

Seedsman's synonyms. Long Smooth Red, Cle.


Similar names. See Long Blood.


Similar names. See Long Blood.

Long Smooth Dark Red. Brn LB SB Yng. For similar names see Long Blood.

Long Smooth Deep Blood Red. RE Grg McK Ren SB.

Similar names. See Long Blood.


Similar names. See Long Blood.

Seedsman's synonyms. Long Smooth Blood, Cle.

Lower's Early King. M&S. For similar names see Crimson King.

McCullough's Norwood. Entered as Norwood.

McMillan's Early Dark Blood Turnip. McM.

Similar names. See Early Blood Turnip.

McMillan's Extra Early. McM. For similar names see Extra Early.


Mammoth Long Red. CA Lea. For similar names see Long Blood.

Mann's Ruby. Entered as Ruby.


Similar names. Northrup, King & Co.'s Market Gardeners.

Market King. Tov Man. For similar names see Crimson King.

Maule's Blood Turnip. Man. For similar names see Early Blood Turnip.


Mitchell's Dark Red. Air. For similar names see Long Blood.

Mitchell's Earliest Dark Red. Prn. For similar names see Long Blood.

Seedsman's synonyms. Lentz. Ptn.

Mitchell's Perfected. Brw G7 Frd Hsc Hrb Rec S&O.

Similar names. See Rust's Scarlet Perfection, Philadelphia Perfection.

Seedsman's synonyms. Rust's Crimson, Ggy.

Mitchell's Red Turnip. Brt Cle. For similar names see Early Blood Turnip.

Mitchell's Turnip. Yng. For similar names see Early Blood Turnip.

Nineteenth Century. Pkg.

Non Plus Ultra. Brw RE SB.

Northrup, King & Co.'s Market Gardeners. NK.

Similar names. See Market Gardeners.

Northrup, King & Co.'s Sterling. Entered as Sterling.

Norwood. JMM.

Similar names. McCullough's Norwood, Norwood Blood Turnip.

Norwood Blood Turnip. JCM.

Similar names. See Early Blood Turnip, Norwood.

Nutting's Crimson. May. For similar names see Crimson Globe.

Nutting's Dwarf. Hill.
Nutting's Early Gem. M&S.
Nutting's Improved Dwarf. Entered as Nutting's Dwarf.
Olive Shaped. SB.
Pear Shaped. Bdg.

SEEDSMEN'S SYNONYMS: Half Long Dark, Bdg.

Pearce's Long Dark Red. Entered as Long Dark Red.
Peerless. Mhd.


Philadelphia Perfection. Bur Lan PM.


Philadelphia Red. Bui. For similar names see Philadelphia Perfection.

Plant's Early Blood Turnip. Pmt. For similar names see Early Blood Turnip.

Plant’s Improved Early Blood Turnip. Entered as Plant’s Early Blood Turnip.
Queen of the Blacks. Ggg J&N Thun. For similar names see Black Queen.


Red Beauty. Sal.

SIMILAR NAMES: Shumway’s Extra Early Dark Beauty, Extra Early Dark Red Beauty.

Red Turnip. Lan. For similar names see Early Blood Turnip.

Rennie’s Intermediate. Ren.

Rochester. Vk.

Royal Half Long. Sal. For similar names see Half Long Blood.

Ruby. Man.

SIMILAR NAMES: Mann’s Ruby.


Scarlet Tennisball. Lan.

Shull’s Model. Bui.

SIMILAR NAMES: King’s Model.

Shumway’s Extra Early Dark Beauty. Entered as Extra Early Dark Beauty.

Siegel’s Acme. Entered as Acme.

Simmers’ Extra Early. Sic. For similar names see Extra Early.

Simon’s Early Red Turnip. Eic. For similar names see Early Blood Turnip.


Sterling. NK ShH.

SIMILAR NAMES: Northrup, King & Co.'s Sterling.

Stinson. Roc.

SIMILAR NAMES: Late Stinson, Dark Stinson.

Strasburg Half Long Dark Blood. M&S. For similar names see Half Long Blood.

Sugar. Wd WS.

SIMILAR NAMES: White Flesh Sugar.

SEEDSMEN’S SYNONYMS: Early Bassano, Bdg CA. Extra Early Bassano, Wd WS. Extra Early Turnip, Bdg.

Sunset. Roc.
Surprise. RE McM.

**Similar Names.** Holmes’ Surprise, Johnson & Stokes’ Surprise.

**Sutton’s Table Delicacy.** Entered as Table Delicacy.

**Table Delicacy.** M&S.

**Similar Names.** Sutton’s Table Delicacy.

**Vail’s Extra Dark Red Turnip.** U7.

**Vaughan’s Chicago Market.** Entered as Chicago Market.

**Vicks’ Rochester.** Entered as Rochester.

**Victoria.** D&I Thr.

**Wait’s Dwarf Black.** Entered as Dwarf Black.

**Wesley’s Earliest Market.** M&S. For similar names see Early Market.

**White Flesh Sugar.** Ax. For similar names see Sugar.

**Whyte’s Deep Blood.** Ewg. For similar names see Early Blood Turnip.

**Whyte’s Extra Dark Red.** Ren. For similar names see Long Blood.

**Whyte’s Very Deep Long Blood Red.** Sim. For similar names see Long Blood.

**Will’s Blood Turnip.** Wll. For similar names see Early Blood Turnip.

**Will’s Improved Blood Turnip.** Entered as Will’s Blood Turnip.

**Wood’s Crimson Globe.** Wd. For similar names see Crimson Globe.

**Yellow Turnip.** CE Frd Ggy Hst Pri Ree.

**Similar Names.** Early Yellow Turnip, Golden Turnip.

**Young & Halstead’s Excelsior.** Y&H. For similar names see Excelsior.

---

**BEETS (SUGAR BEET AND MANGEL-WURZEL).**

**Allen’s Mammoth Long Red.** Entered as Mammoth Long Red.

**Alnear’s Mammoth Long Red.** Entered as Mammoth Long Red.

**American Sugar.** GN Ggy. For similar names see Improved Sugar.

**Seedsmen’s Synonyms.** Lane’s, Ggy.

**Bell’s Giant Long Red.** Entered as Giant Long Red.

**Berkshire Prize Yellow Globe.** Ewg. For similar names see Yellow Globe.

**Breck’s Imperial.** Breck’s Mammoth Long Red. Entered as Imperial and Mammoth Long Red.

**Briggs’ Mammoth Prize Long Red.** Entered as Mammoth Prize Long Red.

**Bruce’s Giant Yellow Intermediate.** Bruce’s Giant Half Long, Bruce’s Gatepost. Entered as Giant Yellow Intermediate, Giant Half Long and Gatepost.

**Buckbee’s Imperial.** Buckbee’s Mammoth Long Red, Buckbee’s Mastodon. Entered as Imperial, Mammoth Long Red, and Mastodon.


**Canadian Giant.** D&I. For similar names see Giant.

**Carter’s Improved Orange Globe.** Entered as Carter’s Orange Globe.

**Carter’s Orange Globe.** Gls Ggy K&W Pne.

**Similar Names.** See Orange Globe.

**Carter’s Mammoth Long Red.** Tg Kei Mas. For similar names see Long Red.

**Carter’s Prize Intermediate.** RE. For similar names see Intermediate.

**Carter’s Prize Long Red.** M&S. For similar names see Long Red.

**Carter’s Warden Orange Globe.** Dun Kei McK.

**Similar Names.** See Orange Globe.

**Carter’s Warden Prize Yellow Globe.** Pks.

**Similar Names.** See Yellow Globe.

**Champion.** CE Gll.

**Champion Colossal Long Red.** M&S. For similar names see Long Red.

**Champion Long Red.** No. For similar names see Long Red.
American Varieties of Vegetables.

Champion Orange Globe. Pac T&B. For similar names see Orange Globe.

Champion Prize Long Red. Bui. For similar names see Long Red.

Champion Red Globe. Bue D&H Roi. For similar names see Red Globe.

Champion Yellow Globe. Anb Bui Bdg Bue Bui Bar CE Cle C&B Cox Cur D&H RE Evr Fmr Ftd GdH Gra Hrn Hcn Hop Iow J&S Kos LB Liv Mnd PM Man May OV Pac HP Rec Roc Se Sim Thb Tpk VI Vau Vk W&D.

Similar names. See Yellow Globe.

Seedsmen’s Synonyms. Orange Globe. Bui Cox Drn J&S Liv Vk, etc.

Champion Yellow Intermediate. G&T Kei.

Similar names. See Yellow Intermediate.

Seedsmen’s Synonyms. Gatepost, G&T.


Similar names. Chirk Castle Long Red, Chirk Castle Mammoth.

Chirk Castle Long Red. M&S.

Similar names. See Chirk Castle, Long Red.

Seedsmen’s Synonyms. Gatepost, M&S.

Chirk Castle Mammoth. Nol. For similar names see Chirk Castle.

Colossal Long Red. C&B Hen. For similar names see Long Red.


Danish Improved Red Top, Danish Improved Sugar. Entered as Danish Red Top and Danish Sugar.

Danish Red Top. R.E. For similar names see Danish Sugar.

Danish Sugar. Bar D&H Gra Iow Mck Rcn Rec Sim SB Wat.

Similar names. Danish Improved Sugar, Steele, Briggs & Co.’s Danish, Remie’s Danish, Danish Improved Red Top, Queen of the Danes, Danish Red Top.

Seedsmen’s Synonyms. Red Top, McK.

Danube. Mck.

Dewar’s Half Long. Fle.

Dignity Long Red. Iow.

Similar names. Mammoth Dignity. See also Long Red.

Eckendorfer Red. Wer.

Similar names. Eckendorfer Yellow.

Eckendorfer Yellow. Wer. For similar names see Eckendorfer Red.

Eiffel Tower. Roc Sal.

Elite. Nk.

Elvethan Long Yellow. Our Gra Kei. For similar names see Long Yellow.

England Milk and Butter.

English Prize. May.

English Prize Long Red. GII. For similar names see Long Red.

Erfurt Model. DB Vau.


Ferry’s Improved Mammoth Long Red. Entered as Mammoth Long Red.

French Giant Half Sugar. Thl.

French Half Sugar Rose. J&S. For similar names see French White Sugar.

French Imperial. Hde Mic. For similar names see Imperial.

French Improved. Ber. For similar names see French White Sugar.

French Silesian. Cox Wat. For similar names see Silesian.

French Sugar. CE Hly Lur Por S&R Trm. For similar names see French White Sugar.


Similar names. See French White Sugar.
French White Sugar. Bait Brt Bdg Bui Cam Cle Crs Eic G11 Grw T6 Hm Hst Hw K&W Lam Man May OV 1g Pks JMP Fir Ptt Por Pot Ro2 RP S&R S&O Sox Sk Thm Thr Tpk Wdr.


French White Sugar Red Top. Bak Bow Fer Fle Gls Loh Pks Rt.

Similar names. See French White Sugar.

French Yellow Sugar. Bow Brn Bry For GH Lam Loh Ree.

Similar names. See Yellow Sugar.


Similar names. Gatepost Yellow, Bruce’sGatepost, Manuf’sGatepost, Taber’s Gatepost.

Seedsman’s synonyms. Champion Yellow Intermediate, G&T. Chick Castle

Gatepost Yellow. Gra. For similar names see Gatepost.

German Imperial. Sox. For similar names see Imperial.

German Imperial White. Bow For S&R. For similar names see Imperial.

German Sugar. Sal.

Similar names. Salzer’s German Sugar.

Giant. Bui Roe SC.

Similar names. Steele, Briggs Royal Giant, Pearce’s Canadian Giant, Giant Feeding Sugar, Riverhall Giant Yellow, Giant Yellow Half Long, Canadian Giant, Royal Giant.

Giant Feeding. Fer Jus. For similar names see Giant.

Seedsman’s synonyms. Half Sugar Mangel, Fer.


Similar names. See Intermediate.

Seedsman’s synonyms. Leviathan, Por S&R. Mammoth Yellow, Liv. Yellow Leviathan, Bui Liv J&S.


Giant Half Long Sugar Rose. RE.

Giant Holstein. Bui Roe Sal.


Similar names. See Yellow Intermediate.

Giant Long Red. Bkt Bel Crs Hls Indl McK Min.

Similar names. See Long Red.

Seedsman’s synonyms. Mammoth Long Red, SC. Steel Briggs’ Prez Mammoth, SC.

Giant Long Yellow. D&H. For similar names see Long Yellow.

Giant Mammoth Long Red. Shn. For similar names see Long Red.

Giant Red Ovoid. Ggy. For similar names see Yellow Ovoid.

Giant Yellow Globe. McK. For similar names see Yellow Globe.

Giant Yellow Half Long. McK. For similar names see Giant.

Giant Yellow Intermediate. Bow Brn C&J CE Col Ebc D&H RE Ewg G11 Gng Gy Bui Hls Hlm LR Man Rce Sim Thm Thr Vam Wdr.

Similar names. See Intermediate.

Seedsman’s synonyms. Mammoth Half Long, Sim.

Giant Yellow Ovoid. Ebe. For similar names see Yellow Ovoid.

Golden Giant. Hm May OV Vk. For similar names see Mammoth Golden Giant.

Golden Globe. Ax Bui Eic G11 Jrg Jc McM YCH.

Similar names. See Yellow Globe.
AMERICAN VARIETIES OF VEGETABLES.

Golden King.  D&H.
Golden Monarch.  Buc.  For similar names see Monarch.
Golden Tankard.  Alx Alr Anb Ar Bai Bak Brd Brt Brj Bkt Bel Ber Big Bgg Brk Edg Bgs Bri Bn2 Bri Bng Bui Brr Brr Brw C&K Cam CE Chl C&B Col CF Cok Cox Crs Curr Dlw DD Drr Dwn Ebe Fbr Ett Emr RE Evr Ewg Fgr Fst Fax For Frl Ger Gls Gdn GH Gfn Grv GY G&T Tg Hrs Hms Ham Hde Hrm Hrn Hrs Hrv Hn H(CC Hlm Hop Hsc H&P Imp Iow Jac Jer MWJ J&M J&K Jns Kei K&W Ken Kg Koe Kos Kra Lnn Lan Lnr Lea LB Liv JL Loh Mhl Mgl Man PM Mns Mas May JCM JMM M&K McM Mlc Mhl Mbs MV M&Y Mey Neb Nol Nk NV Old Pac Pg Pks HP JMP PatPt Poo Por Pot Pru Pug Qkr Raw Ree Rec RecRt Rs RP Sal S&R SC S&F S&O Shm Sic Sim Sox Spf Stw &H Tem Tex TB Thn Thr Til Tpk Trm T&B Vl Van Vk Vin Wat Wea W&D Wer Wll Wld Whr WS Wyg Y&H.


Golden Yellow Giant.  M&S.  For similar names see Mammoth Golden Giant.
Golden Yellow Mammoth.  Bt Drr TgI Ms SC S&F.

Similar names.  See Mammoth.

Golden Yellow Tankard.  AGT.  For similar names see Golden Tankard.
Goliath.  G&X.
Great Dane Half Sugar.  Mgd.
Green Top White Sugar.  Drr Ewg SB.  For similar names see Improved Sugar.
Grey's Prize Long Red.  Entered as Prize Long Red.
Half Long Mammoth.  Sim.  For similar names see Mammoth.
Seedsmen's synonyms.  Giant Yellow Intermediate, Sim.

Half Sugar.  For Hrs Lam Por S&R.
Seedsmen's synonyms.  Giant Feeding, Fer.


Harris' Yellow Globe.  Entered as Yellow Globe.
Holmes' Mammoth Prize Long Red.  Entered as Mammoth Prize Long Red.

Imperial.  Brk Brn Buc Dlw Eas Eld Gg Gig Hrs Lan Man Mav Mcl NI Roe Sim Sww Tem 17.

Similar names.  Breck's Imperial, Buckbee's Imperial, German Imperial, French Imperial, Lane's Imperial, Vilmorin's Improved, Improved Imperial, Lane's Improved Imperial, Vilmorin's Improved Imperial, Imperial Grey Top, Imperial White, Improved Imperial White, Vilmorin's Improved Imperial White, German Imperial White, Lane's Imperial White, Vilmorin's Imperial White.

Imperial Giant Half Long Sugar.  Sim.

Imperial Gray Top.  SB.  For similar names see Imperial.

Imperial White.  Alx Al Bdg Bgs Drr Ebr Gra J&K Mhl Shm Thr Vr Wea.

Similar names.  See Imperial.

Improved American Sugar.  Improved Golden Tankard, Improved Imperial, Improved Imperial White, Improved Klein Wanzelchen, Improved Long Red, Improved Mammoth Long Red, Improved Mammoth Prize Long Red, Improved
Orange Globe, Improved Red Globe, Improved Wanzleben, Improved White Sugar, Improved Yellow Ovoid. Entered as American Sugar, Golden Tankard, Imperial, Imperial White, etc.

Intermediate. For Lnr Loh.


Seedsmen's synonyms. Yellow Mammoth, Ebe. Yellow Ovoid, Fer.

Intermediate Red. Mck.
Jaensch's Victrix. Fer.

Jumbo. Man.


Jumbo Long Red. Hst. For similar names see Jumbo, Long Red.

Jersey Queen. May.

Jumbo Red. HP. For similar names see Jumbo.


Similar names. See Yellow Globe.

Klein Wanzleben. Ab Rbl Brk Brn Bue CE Cle Col Cox Cse Dlw Del Drn Ebe Ebr Etr Fnr Fgp Fer Fle Frd Ger Gbl Gwn Ham Hrn Hlv Hse Hse Jn J&M J&S Jns Kos Lmr Lmr LB Liv Jl Loh Mld Man Men May Mic MV Neb Nk Ov Old HP For Pri Rec Rec Sel S&I R&S O Shm Scl Soj Sb Sw S&H S&W TB Thr Til Tpk Vi Van Vk Wvr.


Lane's Green Top. SB. For similar names see Lane's Sugar.


Similar names. See Imperial.

Lane's Imperial White. CF Cse Prn Pri Wdr. For similar names see Imperial.

Lane's Improved Sugar. Lane's Improved Imperial. Lane's Improved White Sugar. Entered as Lane's Sugar, Lane's Imperial, Lane's White Sugar.

Lane's Sugar. Brd Brk Cox D&H Dun Emr Evt For Fld Gdn Gvy Gvy Hrs Krr LB Mns JCM JMM McK MV Old Prc Pir Por Rs S&O Sox S&H Thm T&B Van Wat.

Similar names. Lane's White Sugar, Lane's Improved White Sugar, Lane's Improved, Lane's Green Top. See also Vilmorin's Sugar, Improved Sugar, Seedsmen's synonyms. Improved American Sugar, Ggy.

Lane's White Sugar. Brt Chl Drn Tg Jns Mhl S&F.

Similar names. See Lane's Sugar.

Large Obendorf Red. Dlw. For similar names see Obendorf Golden.

Large Obendorf Yellow. Dlw. For similar names see Obendorf Golden.

Large Red Globe. CE Jns Mls Ren Rec. For similar names see Red Globe.


Leviathan. Gls Por S&R.

Similar names. Leviathan, Long Red, Yellow Leviathan.

Seedsman's synonyms. Golden Giant Intermediate, Por S&R.

Leviathan Long Red. W&D. For similar names see Leviathan, Long Red.

Leutwizer Red. Wer.

Long Mammoth. Mic. For similar names see Mammoth.
**AMERICAN VARIETIES OF VEGETABLES.**


**Seedsmen's Synonyms.** *Cattle, Bd. Secructy, Bdg.*

**Long White.** Ewg.

**Similar Names.** Sweet White.

**Long Yellow.** Bkt Brk Bru Cle RE Ewg GI Gra Hen Mnd MV Mzy Roe Sal Sim Sim Sox.

**Similar Names.** Elvethan Long Yellow, Mammoth Long Yellow, Giant Long Yellow.

**Mammoth.** *McK* Roc.

**Similar Names.** Long Mammoth, Half Long Mammoth, Red Mammoth, Yellow Mammoth, Golden Yellow Mammoth.

**Seedsmen's Synonyms.** *Norbition Red, Ehr.*

**McKenzie's Manitoba Giant Yellow.** Entered as *Manitoba Giant Yellow.*

**Mammoth Dignity.** Emr. For similar names see *Dignity Long Red.*

**Mammoth Golden Giant.** *Gam Evr Gil Gra low Koe Nk Spf Stw Wl.*

**Similar Names.** Hammond's Golden Giant, Vick's Golden Giant, Golden Giant, Golden Yellow Giant, Yellow Giant, Mammoth Yellow Giant.

**Mammoth Jumbo.** Bui.

**Mammoth Long Red.** Alx Alr Bai Brd Btl Ber Bow Brg Bth Bkd Bg Bdk Bru Bui Bru Bru Buc Bjd Brr Cam CE Chl Cle Col Cox Crs Crv DD Drk Drr Dun Eas Ect Etm E4v Ewr Erw Fdr Fyr Fyr Fyr Fyr Ger Gls Gdm Gmr Gog Gog Ham Hld Hlm Hmn Hrs Hcc HnP Jcl RJH J&M J&S Jns K&W Kg Koe Kre Lum Lea Lod LB Liv Loh Mnd Mgd Man May JCM Mick MCM Mlh MV Neb Nol NK OV Old Pg Pks HPV Prr Prm Pnr Pnt Ptt Pto Por Pot Pug Raw Roe Roe Re RP S&R SC Shw Sox Spf Stw S&H S&W Tat Ten Tex TB Thm Thr Til Vl Van Vk Wea Wot Web Wdd Wdr.

**Similar Names.** *See Long Red.*

**Seedsmen's Synonyms.** *Côlôssoâl, Fer Drm J&S Liv.* *Monarch, Fer.* *Norbition Giant, Drm Hrs Fer J&S Liv.* *Jumbo, J&S Liv Drm.* *Giant Long Red, SC.* *Sow Log, SB.*

**Mammoth Long Yellow.** *CE Neb Roe.* For similar names see *Long Yellow.*

**Mammoth Prize Long Red.** Bgs Bmg Bui Bwr CE Est Haw Him Hop Hse JL PM Man JMM Ms Pac JMP Qkr Roe Sec Sim Wd WS.

**Similar Names.** *See Long Red.*

**Seedsmen's Synonyms.** *Giant Jumbo, PM.* *Jumbo, JL.* *Norbition, PM.* *Norman Giant, JL.*
Mammoth Red Intermediate. Bru McK Sim. For similar names see Intermediate.

Seedsmen’s synonyms. Red Oval Shaped Giant, Sim.

Mammoth Saw Log. RE.

Similar names. Evans’ Improved Mammoth Saw Log.

Mammoth Yellow Giant. Gls HJF. For similar names see Mammoth Golden Giant.

Mammoth Yellow Intermediate. McK.

Similar names. See Yellow Intermediate.

Manitoba Giant Yellow. McK.

Mastodon. Bruc Roe.

Similar names. Buckbee’s Mastodon.

Maule’s Champion Yellow Globe, Maule’s Gatepost. Entered as Champion Yellow Globe and Gatepost.


Minnesota Tankard. Fmr. For similar names see Golden Tankard.

Monarch. Brd.

Similar names. Monarch of All, Golden Monarch.


Monarch of All. Han.


Norbilton Giant. Ar Rbk Bdl Brt Bgg Brk Bri Brt CF Dun For Fax Gdn GH Ggy Gw Hrs Hrv Hly K&W Ken May Mhl Pg HP Put S&F Sox AGT Thb Til Vin Wht Wdr.


Norbilton Giant Long Red. Brw C&J CE Crs Elt RE Hrn Lrm LB Pot Pri Rce Rs Thb Y&H.

Similar names. See Norbiton Giant, Long Red.

Norbilton Giant Red. Edg Neb Vin. For similar names see Norbiton Giant.

Norbilton Red. Ebr.

Seedsmen’s synonyms. Mammoth, Ebr.

Obendorf Golden. Lnr Wtr.

Similar names. Obendorf Yellow, Large Obendorf Yellow, Large Obendorf Red.

Obendorf Yellow. RE. For similar names see Obendorf Golden.

Oblong Red Giant. RE. For similar names see Red Giant.

Olive Shape. Ger.

Similar names. Ward’s Large Oval Shape.

Seedsmen’s synonyms. Yellow Oval, Ger.


Orange Yellow Globe. Pt. For similar names see Yellow Globe.

Oval Shape Red Giant. Sim. For similar names see Red Giant.

Seedsmen’s synonyms. Mammoth Red Intermediate, Sim.

Pearce’s Canadian Giant. Entered as Canadian Giant.
Perfection Mammoth Long Red. McK. For similar names see Long Red.

Prize Champion Globe. Brd. For similar names see Yellow Globe.

Prize Golden Globe. Bui. For similar names see Yellow Globe.

Prize Long Red. Gry Kos. For similar names see Long Red.

Prize Mammoth. SB.

**SEEDSMEN'S SYNONYMS.** Giant Long Red, SB.

Prize Orange Globe. Crs. For similar names see Orange Globe.

Queen of the Danes. Ewg. For similar names see Danish Sugar.

Queen of Denmark. The.

Red Giant. Mrs.

**SIMILAR NAMES.** Oval Shape Red Giant, Oblong Red Giant.


**SIMILAR NAMES.** Champion Red Globe, Improved Red Globe, Large Red Globe.

Red Mammoth. Ar Bck May Pat Trm. For similar names see Mammoth.

**SEEDSMEN'S SYNONYMS.** Norwegian Giant, Ar Pnt.

Red Ovoid. Crs. For similar names see Yellow Ovoid.

Red Tankard. C&J Sim. For similar names see Golden Tankard.

Red Top. Btk Btt Bnr Ewg Gls Hns Lan Qkr Ren Sim SB Thm Tl Vk.

**SEEDSMEN'S SYNONYMS.** Danish, McK.

Red Top Silesian. RE. For similar names see Silesian.


**SIMILAR NAMES.** See Improved Sugar.

Rennie's Danish. Entered as Danish Sugar.

Rennie's Danish Sugar, Rennie's Tankard Cream. Entered as Danish Sugar, Tankard Cream.

Rivenhall Giant Yellow. Ptt. For similar names see Giant.

Royal Giant. D&H SB. For similar names see Giant.

Salzer's German Sugar. Entered as German Sugar.

Saw Log. SB.

**SEEDSMEN'S SYNONYMS.** Mammoth Long Red, SB.

Silesian. Btk Dlw Hss Koe Lan JCM Mel Stw Wd WS.

**SIMILAR NAMES.** White Silesian, White Silesian Green Top, Red Top Silesian, French Silesian.

Simmers' Mammoth Prize Long Red. Entered as Mammoth Prize Long Red.

Steele, Briggs & Co.'s Danish Sugar. Steele, Briggs & Co.'s Royal Giant, Steele, Briggs & Co.'s Prize Mammoth. Entered as Danish Sugar, Royal Giant, Prize Mammoth.


Sweet White. Sal. For similar names see Long White.

Taber's Gatepost. Entered as Gatepost.

Tankard Cream. Ren. For similar names see Golden Tankard.


Vilmorin's French White Sugar. Ggy Vl.

**SIMILAR NAMES.** See French White Sugar.


**SIMILAR NAMES.** See Imperial.

Vilmorin's Imperial White. Kra M&S S&H. For similar names see Imperial.
Vilmorin's Improved French White Sugar, Vilmorin's Improved Imperial, Vilmorin's Improved Imperial White, Vilmorin's Improved Sugar, Vilmorin's Improved White Sugar. Entered as Vilmorin's French White Sugar, Vilmorin's Imperial, Vilmorin's Imperial White, Vilmorin's Sugar, and Vilmorin's White Sugar.


Similar names. Vilmorin's Improved Sugar, Vilmorin's White Sugar, Vilmorin's Improved White Sugar. See also Lam's Sugar, Improved Sugar.


Similar names. See Vilmorin's Sugar.

Wait's Red Tankard. Gra Kei. For similar names see Golden Tankard.

Wanzleben. But E1t MWJ Ms Pac Ren Sim T&B Wat.

Similar names. See Klein Wanzleben.

Warden's Orange Globe. Hrn Pri. For similar names see Orange Globe.

Warden's Prize. Brg.

Ward's Large Oval Shape. Ewg. For similar names see Olie Shape.

White French. Bdg Gon CE CA Tl.

Seedsmen's synonyms. Field, Bdg. White Sisian, Bdg.

White Klein Wanzleben. Btl. For similar names see Klein Wanzleben.

White Silesian. RE For Fax Ger Ggy Gry Ken Mzy S&F Sim.

Similar names. See Sisian.


White Silesian Green Top. McK Ren. For similar names see Sisian.


Seedsmen's synonyms. Orange Globe, Spf Wd WS.

Yellow Intermediate. Bgs Brn Ebe RE Mrk Ren.

Similar names. Champion Yellow Intermediate, Mammoth Yellow Intermediate, Giant Intermediate.

Seedsmen's synonyms. Yellow Ovoid, Loh SB.

Yellow Leviathan. Bnl Bar Fer Lam LB Roc Tem.

Similar names. See Leviathan.


Yellow Mammoth. Ebe. For similar names see Mammoth.

AMERICAN VARIETIES OF VEGETABLES.

Yellow Ovoid. Bow Bgs Cle Emr Fer Ger GH TG Lan Lnr Lah Ms Min Pg Ree Roe Tat Thr.

**Similar names.** Improved Yellow Ovoid, Giant Yellow Ovoid, Giant Red Ovoid, Red Ovoid.

**Seeiwn's synonyms.** Yellow Intermediate, Fer Loh SB, Yellow Olive Shape, Ger.

Yellow Sugar. *CE Gra V&H.*

**Similar names.** French Yellow Sugar.

Yellow Tankard. Man Sie. For similar names see Golden Tankard.

**BROCCOLI.**

Alexander’s Early Market. Entered as Early Market.

**Autumn White Cape.** AGT. For similar names see White Cape.

Carter’s Summer. Cle.

Early Angiers. Man.

**Early Large French.** Ebe. For similar names see Large White French.

**Early Large White.** CA G&T Low MWJ Lan Liv JMM Mic SC.

**Similar names.** See Large White.

**Early Large White French.** Fer Ggy RIJ Vin.

**Similar names.** See Large White French.

**Early Market.** Alx.

**Similar names.** Alexander’s Early Market.

**Early Purple Cape.** Bnd Brk Bgs Brn Buc Bui Brn C&J Cam CE CF Crs DD Emr Ext Ger Gls Gry G&T Hrn Hrv Hrn Low J&M J&S Kei Kan Kg LB JCM JMM MV Nol Pg Ptt Pwr Pri Roe S&R SC S&F S&O Sim Sox Tat TB Thr AGT Vin.

**Similar names.** See Purple Cape.

**Early Walcheren.** GH MV Sox. For similar names see Walcheren.

**Early White.** CF McM Mzy Ptt Thr. For similar names see Large White.

**Early White Cape.** Alx Bow Brr C&J CF Cox Crs DD Hrn Hrv Mnd JCM MV Ptt Roe S&S Sox.

**Similar names.** See White Cape.

**Early White French.** Bgg.

**Easter Day.** RIJ.

**Extra Large French White Cape.** Lam. For similar names see White Cape.

Grange’s Autumn White Cape. Mil. For similar names see White Cape.

Grange’s White. Bui. For similar names see Large White.

**Improved White Cape.** Entered as White Cape.

**Landreth’s Purple.** Mic.

**Large White.** Hrs Hrn H&P Lea LB Sal T7.

**Similar names.** Early White, Early Large White, Grange’s White, White.

**Large White Cape.** Fmr TG OV Tpk. For similar names see White Cape.

**Large White French.** Bow.

**Similar names.** Early Large French, Early Large White French.

**Large White Mammoth.** Bdl Drn Van. For similar names see Mammoth White.

**Late White Cape.** Pri. For similar names see White Cape.

**Mammoth White.** RIJ Jns Mzy Thr.

**Similar names.** Large White Mammoth.

**Purple Cape.** Btr Btl Brn CE Cle C&B Cnr Eic Elt RE Fmr Fst Fax GH Ggy Grw TG Hns Hst Hen H&P K&W Lam Lan Lnr Man Man May Mzy X1 OV Pot Ree RP Sal Sbw Sbk S&H Tpk T7 Van Vr Wer WII Y&H.

**Similar names.** Early Purple Cape.

**Purple Sprouting.** RIJ Thr.
**BRUSSELS SPROUTS.**

**Snow White.** M&S Not NK.

**Similar names.** Sutton's Snow White, Snow White Winter.

**Snow White Winter.** Cam. For similar names see Snow White.

**South Hampton.** Ebe.

**Sutton's Snow White.** Entered as Snow White.

**Veitch.** Brk.

**Similar names.** Veitch Self Protecting.

**Veitch Self Protecting.** Thr. For similar names see Veitch.

**Walcheren.** Bui C&B Del Elt Gdn Hen Kei Lnr Mzy Ren Sox W&D.

**Similar names.** Early Walcheren, White Walcheren.

**White.** Ren. For similar names see Large White.

**White Cape.** Brd Brt Bkt Brk Bri Buc Cam Cel Cle C&B D&H Del Drr Eic Elt Emr For Ger GH Gry Grw Hst Hcn Hop K&W Law Lnr Man May M&S XI Poo Por Pot Raw Rec RP S&R S&F T&B Wk Wea W&D Wd WS Y&H.

**Similar names.** Early White Cape, Late White Cape, Improved White Cape, Autumn White Cape, Grange's Autumn White Cape, Large White Cape, Extra Large French White Cape.

**White Walcheren.** RE Ggy Sim SB. For similar names see Walcheren.

---

**BRUSSELS SPROUTS.**

**Brussels Sprouts.** Air Anh B Ak Brd Btl Bel Brr Bui CE Cox Crg Dhw Eic RE Fer Gls G&T Hms Huc Hly MWJ Roc Lan MB Mans Min NK Pks Pne SC Shw Shn Sim Spf Stk Stw Ten Vin.

**Aigburth.** For.

**American Mammoth.** Iow.

**Similar names.** Bruning's Mammoth.

**Brunning's Mammoth.** Bng. For similar names see American Mammoth.

**Carter's Perfection.** Entered as Perfection.

**Dalkeith.** Cam Cle C&B Del RE Ggy Hen Kei Ptt SB.

**Similar names.** Giant Dalkeith, Improved Dwarf Dalkeith, Dwarf Dalkeith.

**Defiance.** Chl.

**Dobie.** Gra.

**Deer's Matchless.** Drr. For similar names see Matchless.

**Dwarf.** Alx Brt Btk Bow Bdg Bgs Buc Cam CE Cle C&B Col Crs Cur D&H Del Dmn Eas Ebe Elt Eyr Fnr Fax Ger GH Gng Ggy Grw Hrm Hrr Hrv Hst Hen H&P J&M K&W Ks Kra Lam Lea Lnr Liv Mnd Man Mas May JCM JMM Mic MV Mzy XI OV Pae Prn Por Pot Pri Pug Qkr Raw Rec Roc Sal S&R Shw S&O Sim Sox S&II S&W Txb TB Thm Thr Tpk T&B VI Vk W&D Wdr Wdr Y&H.

**Similar names.** Improved Dwarf.

**Seedsmen's synonyms.** Miniature Cabbage, Bdg. Perfection, Frd Tm Bdg.

**Dwarf Dalkeith.** Poo. For similar names see Dalkeith.

**Dwarf French.** Brk Emr Gry Ken S&F. For similar names see French.

**Dwarf Paris Market.** Ewg Gra. For similar names see Paris Market.

**Edinburgh Prize.** Ewg.

**English.** For Iow Loh.

**Seedsmen's synonyms.** Spring Sprouts, S&W Thr.

**Exhibition.** Mil.

**Similar names.** Sutton's Exhibition.

**French.** Bdg Brr DD Mund Men Tat Thr Vin.

**Similar names.** Tall French, Large Tall French, Improved Dwarf French, Dwarf French.

**Seedsmen's synonyms.** Roseberry, DD Mund Thr Vin.
Giant. Ren.

Similar names. Scrymger's Giant.

Giant Dalkeith. Gra. For similar names see Dalkeith.


Similar names. Improved Half Dwarf.


Half Long. DD.

Similar names. Improved Half Long.

Hercules. Van.


Largo Tall French. Sim. For similar names see French.


Long Island. C&B Gey J&S Thr W&D.


Long Island Half Dwarf. Brrr. For similar names see Long Island.

Market Favorite. M&S.

Similar names. Veitch's Market Favorite.

Matchless. Chl Mhl.


Perfection. Egg Bug Bur Brr CE Fst Gdn Hop McM Ms Nef Rec Rce S&O Sie Til Wd WS.

Similar names. Carter's Perfection.

Seedsmen's synonyms. Improved Dwarf, Frd.

Roseberry. Bdg DD Mud Pnt Tat Thr Vin.

Similar names. Improved Roseberry.

Seedsmen's synonyms. French, DD Mud Vin Thr.

Scrymger's Giant. Fqr Hrrn. For similar names see Giant.

Sutton's Exhibition. Entered as Exhibition.

Sutton's Matchless. RE M&S. For similar names see Matchless.

Tall. CF Pot W&D.

Tall French. Del Elt GH Gry Hen Lnr Raw AGT. For similar names see French.


BURNET.

Burnet. Brt Bkt Bdg Cle Fqr Gry Ken Mnd Sal S&F Thr.

CABBAGE.

Acme Flat Dutch. Bur Fer Hlrn Shw Will.

Similar names. See Large Late Flat Dutch.

Acme Large Late Flat Dutch. Roc.

Similar names. See Large Late Flat Dutch.

Admiral Dewey. Wls.

SIMILAR NAMES. Burpee's All Head, McMillan's All Head, Early All Head, Burpee's Early Hard Head, Eichling's Early All Head, Mill's Early All Head, Phillip's Medium Early All Head.

All Seasons. Alx Abr Anb Ab Bk Bld Br Bt Bt Bl Bk Bk Bel Ber Bm Bow Bm Br Bm C&J Cam CE Chl Cle Col CF Cox Crag Gb Cus Cr CA Chm Dlw D&H Drn Dun Eas Elb Eie Elt Emr RE Eqt Fqr Fst Fer Fl I Ger Gis Gdn GI Gra Ggy Gry Gg G&F Grw Ti Hrn Hrn Hrn Hrb Hbt H& C Hly Htm Hop Iml Iml Jow Jac MWJ McM J&S Jns K&F K& F Kg Kra Lam Lan Lnr LB Liv JL Loh Low Mud Mgd Man PM Mns Mas May JCM JMM McM McM Mie Mlh Mls MV Mzy Nub Nol XI XK OV Ohl Pace Pk HP Pir Pm Ptn Ptt Pr Pot Ptu Pug Qkr Raw Rec Ren Rec Roc Rs RP Sal S&R SC & F SHW S&O Shm Sic Sita Sop Spk Sbk Sb Sw S&H S&W Tat Tedium Tex Thm Thr AGT Til Tlm T&B Tl VI Van Vt Vin Wat Web W&D Wdr Wd Ws Wyg Yng.

SIMILAR NAMES. Improved All Seasons, Gregory's All Seasons, All Seasons' Vanderwag, Willett's All Season's surehead.

SEEDSMEN'S SYNONYMS. Succession, Ebr Lam For S&K AGT Vin. Sure Head, Eie K&F SC. Vanderwag, Brt Bk Col Iow J&S Rs, etc.

All Seasons Surehead. Wl. For similar names see All Seasons.

All Seasons Vanderwag. VI. For similar names see All Seasons, Vanderwag.

All the Year Round. Bri J&S Lan Liv M&S Stw.

SIMILAR NAMES. Landreth's All Year Round, Landreth's All Year Round, Market Gardener's All Year Round.


Aineer's. Excessior Large Late Flat Dutch, Aineer's Premium Flat Dutch, Aineer's Safe Crop, Aineer's Winter King. Entered as Excessior Large Late Flat Dutch, Premium Flat Dutch, Safe Crop, and Winter King.

Alpha. Bed CF Crus Gry H&K Iow J&S Sa Wd.

SIMILAR NAMES. Extra Early Alpha.

Amager. TG.

SEEDSMEN'S SYNONYMS. Danish Ball Head, Bk Bui Fqr TG. Holland. Bui Fqr. Solid Emperor, Fqr.

American Drumhead. Fmr Mud.

American Savoy. Bk Bkld.


SIMILAR NAMES. Improved American Savoy, Late American Savoy.

Archies' Extra Early. At.

SIMILAR NAMES. Aroostook Extra Early, Manle's First Early, First Early, Tait's Extra Early, Wood's Extra Early.

Aroostook Extra Early. Jer. For similar names see Archies' Extra Early.

Arrington's Earliest. CA. For similar names see Earliest.

Augusta Early Trucker. Alx.

Autumn Giant. RJH Mkn.

SIMILAR NAMES. Everitt's Early Giant, Early Giant, Russian Round Giant, Earliest White Giant.

Autumn King. Alx Alr Anb Brd Bk Bk Bel Ber Bm Bm Bn Bm Brr CE Cie C&B CF Cok D&H Del Dun Ibr Ebr Eie Evt Emr Fqr Frel Gdn GI Gra Gg Gry G&T TG Hen Hlm Hse H&P Iml J&S K&F Kg Kra Lan Lnr LB Liv Mgd Man
AMERICAN VARIETIES OF VEGETABLES.

PM Mns Man May JMM McK McM Xol Pks HP JMP Pm Far Pri Qkr Raw Ree Ren Ree Roe Rs Sal S&R S&O Shm Sie Sim Spf SB S&W Tem Tex Thr Thb Van Vk Wea W&D.

**Similar Names:** Improved Autumn King, Henderson's Autumn King, Steele, Briggs Chester King, Christmas King, Buckbee's Christmas King, Almeir's Winter King, Winter King, Hastings' Emerald King, Emerald King, Chester King.

**Seedsmen's Synonyms:** *World Beater, Alx Bkt Bui Brr Msn Raw, etc.*

*Auvergns Quintal.* RJJ. For similar names see *Schwebert Quintal.*

*Ball Head.* Crs Roe. For similar names see *Danish Ball Head.*

*Bamburg Earliest.* Evy.

**Baseball.** Brr.

**Seedsmen's Synonyms:** *Emperor, OV. Export, OV. Holland, Roe. Holland, OV.*

**Battersea.** Tat.

**Seedsmen's Synonyms:** *Early Drumhead, Tat. Early Dutch Drumhead, Bdg. Early Dutch, Bdg.*

Bell's Mammoth Wakefield, Bell's Sure Head. Entered as Mammoth Wakefield and Sure Head.

**Bellville.** Brr Brr. For similar names see *Belleville.*

**Similar Names:** Small Belleville.

**Big 4.** 1st.

**Blood Red Berlin.** Brr.

**Blood Red Drumhead.** Ren. For similar names see *Red Drumhead.*

**Blood Red Dutch.** JL. For similar names see *Red Dutch.*

**Blood Red Erfurt.** 1st.

**Bloomsdale Brunswick.** Lan. For similar names see *Boller's Brunswick.*

**Bloomsdale Early Drumhead.** Lan Stw 17. For similar names see *Early Drumhead.*

**Bloomsdale Early Dwarf Flat Dutch.** Lan. For similar names see *Early Flat Dutch.*

**Bloomsdale Large Late Drumhead.** Lan Stw. For similar names see *Large Late Drumhead.*

**Bloomsdale Large Late Flat Dutch.** Lan Stw. For similar names see *Large Late Flat Dutch.*

**Blue Boom.** JL.

**Similar Names:** Livingston's Blue Boom.

**Bolgiano's Early.** Bdg. For similar names see *Earliest.*

**Bolgiano's Early Drumhead, Bolgiano's Early Flat Dutch, Bolgiano's Early Large York, Bolgiano's Improved Savoy, Bolgiano's Large Late Drumhead.** Entered as *Early Drumhead, Early Flat Dutch, Early Large York, Bolgiano's Savoy, and Large Late Drumhead.*

**Bolgiano's Savoy.** Bdg. For similar names see *Savoy.*

**Boss Flat Dutch.** C&T. For similar names see *Flat Dutch.*

**Boston.** For.

**Boston Hard Head.** M&S. For similar names see *Hard Heading.*

**Brandon Market.** Mck.

**Bridgeport Drumhead.** Rdd C'E Fmr J&S Liv Lar Old Ree Shm Spf Tem Van. For similar names see *Old's Bridgeport Drumhead, Vaughan's Bridgeport Drumhead, Leonard's Improved Bridgeport Drumhead, Buckbee's Mammoth Late Bridgeport Drumhead, Mammoth Late Bridgeport Drumhead, Large Late Bridgeport Drumhead, Mammoth Bridgeport Drumhead.*

**Brill's Eureka, Brill's Extra Early Eureka, Brill's Nonesuch, Brill's Second Early Long Island.** Entered as *Eureka, Extra Early Eureka, Nonesuch, and Second Early Long Island.*
Bristol.  Kell.
Bristol Flat Dutch.  Pri.  For similar names see Flat Dutch.
Bristol Improved Late Flat Dutch.  Entered as Bristol Late Flat Dutch.
Bristol Late Flat Dutch.  CE Rec.  For similar names see Large Late Flat Dutch.
Brunning's Early Flat Head.  Bug.
Similar names.  See Early Summer Flat Head.
Brunning's Early Jersey Wakefield, Brunning's Excelsior Late Flat Dutch.  Entered as Early Jersey Wakefield and Excelsior Late Flat Dutch.
Brunswick.  Ger Hr Man JMM Pat.  For similar names see Fottler's Brunswick.
Seedsmen's synonyms.  Fottler's Drumhead, Hrs.
Brunswick Short Stem.  Bow For Man Loh Pks HP.
Similar names.  See Fottler's Brunswick.
Buckbee's Christmas King, Buckbee's Extra Early Large Queen, Buckbee's Faultless, Buckbee's Great Dane, Buckbee's Mammoth Late Bridgeport Drumhead, Buckbee's Race Horse, Buckbee's Rockford Market.  Entered as Christmas King, Extra Early Large Queen, Faultless, Great Dane, Mammoth Late Bridgeport Drumhead, Race Horse, and Rockford Market.
Buffalo Market.  Hrv.
Buist's Earliest.  Bui.  For similar names see Earliest.
Buist's Early Drumhead, Buist's Early Flat Dutch, Buist's Early Large York, Buist's Early York.  Buist's Florida Header, Buist's Improved Late Drumhead, Buist's Improved Late Flat Dutch, Buist's Prize Medal Drumhead, Buist's Prize Medal Flat Dutch, Buist's Short Stem Brunswick.  Entered as Early Drumhead, Early Flat Dutch, Early Large York, Early York, Florida Header, Buist's Large Late Drumhead, Buist's Large Late Flat Dutch, Prize Medal Drumhead, Prize Medal Flat Dutch, and Short Stem Brunswick.
Buist's Large Late Drumhead.  Bui.
Similar names.  See Large Late Drumhead.
Buist's Large Late Flat Dutch.  Bui.  For similar names see Large Late Flat Dutch.
Buncombe.  Alx Hst MWJ McM Wlt Wd.
Seedsmen's synonyms.  North Carolina, Hst Wlt Wd.
Burpee's All Head, Burpee's Early All Head, Burpee's Large Flat Dutch, Burpee's Large Late Flat Dutch, Burpee's Late Stonehead, Burpee's Round Head, Burpee's Safe Crop, Burpee's Short Stem Drumhead, Burpee's Sure Head, Burpee's World Beater.  Entered as All Head, Early All Head, Large Flat Dutch, Large Late Flat Dutch, Late Stonehead, Round Head, Safe Crop, Short Stem Drumhead, Sure Head, and World Beater.
Burr's Large Flat Dutch.  Entered as Large Flat Dutch.
Burwell's Extra Flat Dutch, Burwell's Flat Dutch.  Entered as Extra Flat Dutch and Flat Dutch.
Buxton Red Drumhead.  S&F.  For similar names see Red Drumhead.
Cannon Ball.  Anb Wdr.
Similar names.  Poole's Cannon Ball, Early Cannon Ball, Danish Cannon Ball.
Seedsmen's synonyms.  Danish Ball Head, Wdr.  German Export, Wdr.  Solid Emperor, Wdr.
Carolina Hard Header.  J&S.  For similar names see Hard Heading.
Cassel.  Dlw.
Centennial Late Flat Dutch.  Hst.  For similar names see Large Late Flat Dutch.
Champion Late Drumhead.  M&S.  For similar names see Large Late Drumhead.
Champion Late Flat Dutch. M&S. For similar names see Early Champion.


Similar names. See Early Jersey Wakefield.

Seedmen's synonyms. Early Large Jersey Wakefield, C&J MWJ. Improved Jersey Wakefield, D&H. Large Early Wakefield, CA Pir. Large Headed Wakefield, Spf. Large Jersey Wakefield, Bt Bkt Bri Bui Eic Shw, etc. Large Wakefield, Buc Bur Drr Fer Hen Liv, etc.

Chase's Excelsior. Entered as Excelsior.

Chester Savoy. SB. For similar names see Summer Savoy.

Chicago Market. Lnr.

Similar names. Chicago Market Garden, Market Gardener's No. 2, Johnson & Stokes' Market Gardener's No. 2.

Seedmen's synonyms. Tundraqu, Lnr.

Chinese Cabbage. Alx Eqr Thr Van.

Seedmen's synonyms. Pe Tsai, Alx Eqr Thr Tat Van Vin.

Chow Bonneuil. Stk.

Seedmen's synonyms. St. Denis, Stk.

Christmas King. Buc Roe. For similar names see Autumn King.

Cluster Savoy. Eqr. For similar names see Savoy.

Colossal. Ebr Thr.

Similar names. Thorburn's Colossal.

Columbia. Man.

Similar names. Mann's Columbia.

Cox's Early Spring. Cox's Flat Dutch. Entered as Early Spring and Flat Dutch.

Crescent City Flat Dutch. Eqr Stk. For similar names see Flat Dutch.

Crescent City Late Flat Dutch. Eqr Stk. For similar names see Large Late Flat Dutch.

Crown Jewel. M&S.

Crystal Summer Savoy. Drr. For similar names see Savoy.

Curled Drumhead Savoy. Eqr S&F. For similar names see Drumhead Savoy.

Curled Globe Savoy. Eqr Gry Raw S&F SB Wm.

Similar names. See Green Globe Savoy.

Curled Perfection Drumhead Savoy. Bdg Mld.

Similar names. See Perfection Drumhead Savoy.

Curled Savoy. Brg Bui. For similar names see Green Curled Savoy.


Dallwig's Early Dark Red. Entered as Early Dark Red.

Danish. C&J Hrs JCM. For similar names see Danish Ball Head.

Seedmen's synonyms. Holthamer, C&J JCM.

CABBAGE.

81

Lam Lan Lnr LB Liv JL PM Mau Mns JMM MeK Mic Mhl Ms Xeb Xol Old Pac Pg Pks HP JMP Pir Pue Put Ptt For Pri Qkr Ree Roe Rs S&R S&F Shw Shm Sim Sox SB SW S&H S&W Ten Tex Thm Thr AGT Th Tri Thm Vaun Vkm Vat Wea Web Wde Wdr Yng YlH.

Similar names. Ball Head, Hammond’s Danish Ball Head, Improved Danish Ball Head, Wick’s Improved Danish Ball Head, Summer Danish Ball Head, Winter Danish Ball Head, Danish Winter, Danish Round Winter, Summer Ball Head.


Drumhead Savoy. Bai Bak Bld Bel CE Crg CA Eic Ear Ger Ggy Gwy Grw Hvs Hde Hrv Jac Koe Kos Lan JL Mnd Man May JCM McK McM MV Mzy NK Por Raw Ren S&K Shw Sce Sos Sth Thm Trm Vl Wat.

Similar names. Thorburn Drumhead Savoy, Late Drumhead Savoy, Large Drumhead Savoy, Imperial Drumhead Savoy, Improved Drumhead Savoy, Curled Drumhead Savoy, Market Gardener’s Private Stock Drumhead Savoy.

Drumhead Vertus Savoy. RE SB. For similar names see Vertus.

Dutch Early Drumhead. Belg MeK. For similar names see Early Drumhead. See Seedsman’s synonyms. Early Dutch, Belg. Battersea, Belg.

Dutch Hollander. Bel. For similar names see Hollander.

Dutch Large Late Deep Red Drumhead. Sim.

Similar names. See Red Drumhead.

1329—No. 21—02—6.
Dutch Red Drumhead. JMM Mhl Pg. For similar names see Red Drumhead.

**Seedsmen's synonyms.** Improved Red Dutch, Pg.


Dwarf Green Curled Savoy. Ger Vk. For similar names see Green Curled Savoy.

Dwarf Savoy. Bow.

**Similar names.** Early Dwarf Savoy.

**Seedsmen's synonyms.** Green Globe, Bow.

Dwarf Ulm Savoy. Cur Hrv Mas May Xi Sim Tpk.

**Similar names.** See Early Dwarf Ulm Savoy.


**Similar names.** Arrington's Earliest, Buist's Earliest, Everitt's Earliest, Johnson & Stokes' Earliest, Landreth's Earliest, Minnesota's Earliest, Salzer's Earliest, Sutton's Earliest of All, Belgiano's Early, Earliest Round Head, Lohrman Seed Co.'s Earliest Round Head, Fust's Earliest of All.

Earliest of All. Eas Hde Pnt. For similar names see Earliest.

**Seedsmen's synonyms.** Very Early Hompes, Fer. Wonderful, Fer.

Earliest Pointed. Kg.

**Similar names.** King's Earliest Pointed.

Earliest Round Head. Gyg Loh. For similar names see Earliest.

Earliest White Giant. May Van. For similar names see Autumn Giant.

Early All Head. Alb Bak Blt Ber Buc Bar CE Cle Col CF Crs CA Del Dr Erf RE Evr Fvr Fld Frd Gls GH Gw Hns Ham Hrn Hrs Hst Hbt H&C Hlm Hop H&P Iow J&K Kg Kra Lnr Lwr LB Liv JL Loh Mgd M's Man JCM JMM M&K Mhl Ms Nol NK OV Old Pg JMP Pnt Rec Ren Rec Rim Roc Sal S&B Shw Shm S&Jn Sn Ox SB Sw S&H Tim Tex TB Thm Til Tpk Tsm VI Van Vk W&D Wer Wd Wdr WS Wyl Yng Y&H.

**Similar names.** See All Head.

**Seedsmen's synonyms.** Solid Smith, Crs Ham.

Early Bacalan. Bdg.

**Seedsmen's synonyms.** Early Nonpareil, Bdg. Early Jersey Wakefield, Bdg.

Early Blood Red. Bm H&P Kei Vk. For similar names see Early Dark Red.

Early Blood Red Dwarf Erfurt. Bm. For similar names see Red Erfurt.


**Similar names.** See Red Erfurt.

**Seedsmen's synonyms.** Dark Red Erfurt, Ncb Pnt.

Early Brunswick. Lnh Yng. For similar names see Fottler's Brunswick.

**Seedsmen's synonyms.** Fottler's Improved Drumhead, Yng.

Early Cannon Ball. Bur Fst McM Pur Rec. For similar names see Cannon Ball.

Early Champion. Pg.

**Similar names.** Tait's Champion, Champion Late Flat Dutch.

Early Charleston Wakefield. Alx Del Rs Yng.

**Similar names.** See Early Jersey Wakefield.


Early Dark Red. Dw Ebc.

**Similar names.** Dallwig's Early Dark Red, Dobbie's Red, Early Blood Red, Large Blood Red.

Early Dark Red Dutch. RE Fqr Mgd SB. For similar names see Red Dutch.

Early Dark Red Erfurt. Grn Hde RHJ Kos. For similar names see Red Erfurt.

Early Deep Head. Cam Cle Dw Ggy Kg Liv McM.

**Similar names.** See Deep Head.

Early Drumhead. Alb Ar Bak Blg Bon Bow Bgs Bui Cam Cox Crg Drr Drm Fer Gdn GH Gw TG Hde Hly Jac MWJ Kg Lam Lan JL May Mel Mhl M&S Pac Pks JMP Pnt Shw Spf Stk Tat Tex Tpk Wht Wd WS.
CABBAGE.

Similar names. Extra Early Drumhead, Belgiano’s Early Drumhead, Buist’s Early Drumhead, Dyer’s Early Drumhead, Dutch Early Drumhead, Swiss Early Drumhead, Bloomsdale Early Drumhead, Improved Early Drumhead, Reedland’s Early Drumhead, McMillan’s Perfection Early Drumhead, Perfection Early Drumhead, St. John’s Day Early Drumhead. See also Drumhead, Large Late Drumhead, Premium Drumhead.


Early Dwarf Dark Red Erfurt. SC. For similar names see Red Erfurt.


Similar names. See Early Flat Dutch.

Early Dwarf Savoy. Eic Mdv MV Sox Sk Tbr VI.

Similar names. See Dwarf Savoy.


Similar names. Dwarf Ulm Savoy, Ulm Savoy, Early Ulm Savoy.


Similar names. See Early York.


Similar names. Extra Early Etampes, Etampes.

Early Eureka. Shw. For similar names see Eureka.

Early Express. Ar Olh Cle D&H Jms Lnr Man Sox Vin Wat Whl.

Similar names. See Express.

Early Favorite Savoy. SB. For similar names see Savoy.

Early Flat Brunswick. M&S. For similar names see Father’s Brunswick.

Early Flat Dutch. Alx Bak Bgl Big Bow Bln Brn Bui Brn Cam CE CF Crg Crs Cur CA Ehe Ehr Eic Emr Evr GH Grw TG Hde Hrn Hnh Hut H&P Jac Mwj J&S Jns Ks Koe Kra Lmn LB JL Mgd Mns Man McM Mie Jth Mv Mzy Nol Xi Pac Pte Ptr Pot Prt Ror Raw Rcc RP Sal S&R Shw S&O Sox Spf Sth Sb S&W Tex Thir Tpk Tmn VI Vam Wat Web Wer Whl Whl WS.

Similar names. Early Dwarf Flat Dutch, Bloomsdale Early Dwarf Flat Dutch, Improved Early Dwarf Flat Dutch, Belgiano’s Early Flat Dutch, Buist’s Early Flat Dutch, Maule’s Early Flat Dutch, Stein’s Early Flat Dutch, Newark Early Flat Dutch, Newark Flat Dutch, Improved Early Flat Dutch, McMillan’s Improved Early Flat Dutch. See also Flat Dutch, Premium Flat Dutch, Large Late Flat Dutch.

Seedsman’s synonyms. Earlyummer, Bdg.

Early Flat Head. Thm.

Early French. Tat. For similar names see Early French Ox Heart.

Early French Ox Heart. Der Bgl CE C&B Drr Ehe Ken Rce Shm Sim SB.

Similar names. Early French, French Ox Heart, Ox Heart, Early Ox Heart, Large Early Ox Heart, Large Ox Heart.

Early Gem. M&S.

Similar names. Moore & Simon’s Early Gem.

Early German Brunswick. Sim. For similar names see Father’s Brunswick.

Early Giant. Evr. For similar names see Autumn Giant.

Early Green Curled Savoy. Mlh Wlt.

Similar names. See Green Curled Savoy.

Early Harvest. Hop. For similar names see Harvest Home.
Early Jersey *Wakefield*. Alx Air Anb Ar Bai Bak Bel Bel Ber Bow Bow Bgg Brk Bdg Bgs Brn Brn Bng Bng Dnc Bai Brb Bur Brr C&J Cam CE C&B Col CF Cok Cox Crg Cvs Cur CA Chu Del D&C Drr Drrm Dun Emr Ese Ete Ete Emr Emr Eyr Frr Frs Fax Fer Fld Fli Efl Frd Gls Gln Gna Gnr GN Ggy Gry Gif Gk&Tr Gwv TG Hns Ham Hde Hrm Hrs Hry Hst Haw Hen H&C Hly Hop Hse Hnt HkP Inl Iow Jac Jer JaM J&s Kei K&W K&K Kos Kra Lam Lan Lnr Lb Lix Jl Loh Lon Mnd Mgd PM Mns Mas May JCM JMM McK Mel Mic Mhl Ms Min MV My Neb Nol XL NK OV Old Pks HP JMP Pir Prm Pue Ptt Poo Pot Pri Pug Qkr Raw Rec Ren Rec Roe RP SC S&B Shw S&O Shm Sox SB Stw S&H Tad Tem Thm Thr Thb AGT Thl Tlp Tpk Trn T&B VI Van Vk Vin Wat Wea Wbe W&D WLI Whl Wld Wdr Ws Wyr Yng.


**Early Large York.** Alx Anb Bai Bak Bak Big Bow Bui CE Cle CF Cvs CA Ehmr Emr Fie Fie Ghn Ghn Ghv Hns Hde Hk&Ch Hkm R1J Lca LB PM Mns May JCM Mhl Ms Min Neb Put Rec Roe Roe RP SC Shw S&O Shm Tem Tex Thm Thr Thb AGT Thl Tlp Tpk Trn T&B VI Van Vk Vin Wat Wea Wbe W&D WLI Whl Wld Wdr Ws Wyr Yng.

**Similar names.** See *Early York*.

**Seedsmen's synonyms.** *Early Napoleon*, Bdg. *Early Balaton*, Bdg.

**Early Long Island *Wakefield*.** CHL. For similar names see *Early Jersey *Wakefield*.

**Early Louisville.** JMM. For similar names see *Louisville Drumhead*.

**Early Maine.** HML.

**Similar names.** Harmon's Early Maine.

**Early Market.** Cur. For similar names see *Extra Early Market*.

**Early May.** Bdg.

**Seedsmen's synonyms.** *Early York*, Bdg. *Early Royal Dwarf*, Bdg.

**Early Ox Heart.** Bdg Crg Ggy RHJ Mas May Vin.

**Similar names.** See *Early French Ox Heart*.

**Seedsmen's synonyms.** *French Heart Shaped*, Bdg.

**Early Paris Market.** Gra. For similar names see *Paris Market*.

**Early Paris Savoy.** Fst Liv. For similar names see *Paris Market*.

**Early Peerless.** Hly Rsc Rov Shm. For similar names see *Peerless*.

**Early Premium Flat Dutch.** Shm. For similar names see *Premium Flat Dutch*.

**Early Quedlinburg *Winningstadt*.** Thm.

**Similar names.** See *Early Winningstadt*.

**Early Red Dutch.** Anb Gyr Nef. For similar names see *Red Dutch*.

**Early Red Dutch Erfurt.** DrrJMM M&G Wst. For similar names see *Red Erfurt*.

**Early Red Erfurt.** Gyr Hrs Sox. For similar names see *Red Erfurt*.

**Early Schweinfurt.** Vin. For similar names see *Schweinfurt Quintal*.

**Early Schweinfurt *Quintal*.** Kei Shm. For similar names see *Schweinfurt Quintal*.

**Early Small York.** RHJ. For similar names see *Early York*. 

---

**AMERICAN VARIETIES OF VEGETABLES.**
**Cabbage.**


**Similar Names.** Cox's Early Spring, Henderson's Early Spring, King's Early Spring, Extra Early Spring.

**Seedmen's Synonyms.** *Flot Parisium*, Cur.

**Early Standard.** Buc Ewg.

**Early Succession.** Big JMP. For similar names see *Succession*.

**Early Sugar Loaf.** Eic Min SB Thr. For similar names see *Sugar Loaf*.

**Early Summer.** Alx Alr Anb Ar BAI Bak Bpi Brl Blt Brk Bel Bel Bel For Big Bsg Bggs Brk Bgs Bri Brn Brc Brc Buc Buc Brb Brn Brr C&J Cun Cle C&J Col CF Crg Crg Crs Cur CA Dwv Drr Drr Drr Drr Dun Ebr Eic Ely Emr RE Efr Esg Esg Esg Esg Est Fst Fst Fux For Flw Frd Gdy Glh Glh Glh Gra Gng Ggy Ggy Ggy Gdy Grw Tg Hng Hnd Hm Lnr Lnr Lnr Lnr Mgs Mns Mns Mns Man PM Mns Mns Man May JCM JMM McK Mcd Mcl Mcl Mcl Mbl Mbl MV M&8 Myg Ncb Ncb NK NV OV Ebd Pk Ps Bp J&PJ MDP Pr Pm Pm Pnt Ptt Poo Poo Psw Pref Prey Prey Prey Pri Pug Raw Reo Ren Reo Rl Rs RP S&R SC S&F S&B S&O Sso Sis Sir Spf Spf Stk SB S&W S&I Tm Ten Tex TB Thr Thb AGT Thh Til Tpl Trm T& B VI Van Vg Vn Wat Wea Web W&D Wer Wll Wll Wld Wdr Ws Wve Yng Y&H.

**Similar Names.** Henderson's Early Summer, Rawson's Early Summer, New York Early Summer, Henderson's Summer, Dickmann-Dusard Seed Co.'s Giant Summer, Giant Summer, Large Early Summer, Improved Early Summer.

**Seedmen's Synonyms.** *Early Flat Dutch*, Big. *Excelsior*, Ebr.

**Early Summer Flat Head.** Dwv Lnr SW Thm VI.

**Similar Names.** Lumbreth's Early Summer Flat Head, Brunning's Early Flat Head.

**Early Sure Crop.** *Wt*. For similar names see *Sure Crop*.

**Early Surprise.** May OV Tpl.

**Similar Names.** May's Early Surprise.

**Early Ulm Savoy.** Ggy RHJ Thr Van.

**Similar Names.** See *Early Dwarf Ulm Savoy*.

**Early Victoria Savoy.** SB. For similar names see *Victoria Savoy*.

**Early Vienna Savoy.** Thor. For similar names see *Savoy*.

**Early Wakefield.** Buc Cur Ken. For similar names see *Early Jersey Wakefield*.

**Early Washington Wakefield.** LB.

**Similar Names.** See *Early Jersey Wakefield*.

**Early Winningstadt.** Alx Anb Anb Ar Bai Bak Brd Brt Blt Bkt Bel Ber Big Bong Bong Bggs Bggs Bgr Bgr Bgr Bgr Bgr Bgr Bgr Bgr C&J Cun Cle C&J Col CF Cok Cok Crg Crg Crg Crg Cruiser CA T&H Ddr Drr Drr Drr Dun Dns Dss Dss Eic Ely Emr RE Efr Esg Esg Esg Esg Est Fst Fst Fst Fux For Flw Frd Gdy Glh Glh Glh Gra Gng Ggy Ggy Ggy Gdy Grw Tg Hng Hnd Hm Lnr Lnr Lnr Lnr Mns Mns Mns Mns Man Mns May JCM JMM McK Mcd Mcl Mcl Mcl Mcl Mcl Mcl Mcl Mbl Mbl MV M&8 Myg Ncb Ncb NK NV OV Pnt Pk Ps Bp J&PJ MDP Pr Pm Pm Pnt Ptt Poo Poo Psw Pref Prey Prey Prey Pri Pug Raw Reo Reo Rl Rs RP S&R SC S&F S&B S&O Sso Sis Sir Spf Spf Stk SB S&W S&I Tm Ten Tex TB Thr Thb AGT Thh Til Tpl Trm T& B VI Van Vg Vn Wat Wea Web W&D Wer Wll Wll Wld Wdr Ws Wve Yng Y&H.

**Similar Names.** Rice's Early Winningstadt, Improved Early Winningstadt, Early Quehlingburg Winningstadt, Extra Early Winningstadt, Winningstadt, Hawkins' Winningstadt, Mante's Winningstadt.

**Seedmen's Synonyms.** *Early Coa.*, Bdg.
AMERICAN VARIETIES OF VEGETABLES.

Early Wyman. Bgs.
Early Yellow Curled Blumenthaler. Dlw.

S I M I L A R N A M E S. Buist’s Early York, Large Early York, Extra Early York, Early Small York, Early Dwarf York, Large York, Early Large York, Bolgian’s Early Large York, Buist’s Early Large York, Late York.

SEEDSMEN’S SYNONYMS. Early May, Bdg. Early Royal Dwarf, Bdg.


S I M I L A R N A M E S. Currie’s Eclipse.

Eichling’s Early All Head, Eichling’s Flat Dutch, Eichling’s Solid South, Large Late Flat Dutch. Entered as Early All Head, Flat Dutch, Solid South, and Large Late Flat Dutch.

Emerald King. 11st. For similar names see Autumn King.

Emperor. Raw. For similar names see Solid Emperor.

SEEDSMEN’S SYNONYMS. Bull Head, OV. Export, OV. Hollander, OV.

English Curled Savoy. Brk Emr Raw S&F.

S I M I L A R N A M E S. See Green Curled Savoy.

SEEDSMEN’S SYNONYMS. Globe Savoy, Brk.

Erfurt Large Red Drumhead. Pri. For similar names see Red Drumhead.

Etampes. Drr Emr Hrs Mnd JMM MV Mzy Sx Thm.

S I M I L A R N A M E S. See Early Etampes.

Eureka. Brd D&H Hrs Mnd Nol.

S I M I L A R N A M E S. Brill’s Eureka, Early Eureka, Extra Early Eureka, Brill’s Extra Early Eureka.

Evans’ Improved Savoy. Entered as Evans’ Savoy.

Evans’ Savoy. RE. For similar names see Savoy.

Everitt’s Earliest. Ext. For similar names see Earliest.

Everitt’s Early Giant. Everitt’s Large Late Flat Dutch, Everitt’s Late White Dutch, Everitt’s Short Stem Drumhead. Entered as Early Giant, Large Late Flat Dutch, Late White Dutch, and Short Stem Drumhead.

Excelsior. Air Anh Btl Gry Hrs Iow Ltv Jl S&l Sve.

S I M I L A R N A M E S. Chase’s Excelsior, Van Namen’s Excelsior, Excelsior Flat Dutch, Excelsior Large Flat Dutch, Excelsior Late Flat Dutch, Almeier’s Excelsior Large Late Flat Dutch, Excelsior White Dutch, Van Namen’s Excelsior Early White Dutch, Excelsior Early White Dutch.

SEEDSMEN’S SYNONYMS. Improved Early Summer, Ebr. Large Late Flat Dutch, Bdg. Premium Flat Dutch, Bdg.

Excelsior Early White Dutch. Joo. For similar names see Excelsior.

Excelsior Flat Dutch. Eh TG Neb Pir Rt Tpk W&D.

S I M I L A R N A M E S. See Excelsior.

Excelsior Large Flat Dutch. C&J Chl Del Frd Hrs.

S I M I L A R N A M E S. See Excelsior.

Excelsior Large Late Flat Dutch. Shm.

S I M I L A R N A M E S. See Large Late Flat Dutch.

Excelsior Late Flat Dutch. Brg CE Gra Rec Tll.

S I M I L A R N A M E S. See Excelsior.

Excelsior White Dutch. Ebe. For similar names see Excelsior.

Express. Anh Bkt Brn Cur D&H Drr Ggy Kei MV Mzy Neb NK Poo Sax Thr Thn.
CABBAGE. 87

Similar Names.  Henderson's Express, Early Express, Mauhe's Early Express, Extra Early Express, Hammond's Extra Early Express, Lightning Express, Lightning, Salzer's Lightning.

Seedsmen's Synonyms.  Extra Early Etampes, Ebr.
Extra Early Alpha.  Shw.  For similar names see Alpha.
Extra Early Blood Red Drumhead.  McK.
Similar Names.  See Red Drumhead.
Extra Early Blood Red Erfurt.  Qkr Raw.  For similar names see Red Erfurt.
Extra Early Cocosnut.  M&S.
Extra Early Dark Red Erfurt.  Drm Fmr 11P Vnr.
Similar Names.  See Red Erfurt.
Extra Early Drumhead.  Cam.  For similar names see Early Drumhead.
Extra Early Etampes.  Btl Cle Crs RE Fnr 11hs May OV Shm Sim SB Tp i Vr.
Similar Names.  See Early Etampes.
Seedsmen's Synonyms.  Express, Ebr.
Extra Early Eureka.  Col Ebe Frd Pot Wtr.  For similar names see Eureka.
Extra Early Express.  Bsk Bdl Big Bow Bgs Brn Blu Bar C&J CE Col Crs Del Drm RE Ewg Fqr For Frd Grn Gng Grw Tg Hns Ham Hst Hbt H&C Hlm Hop Hse Iow MJJ RHJ 98S Kri Kg Lam I.B Liv Mgd Man PM May JCM McK Noi Pac Pg JMP For Pug Qkr Rec Rec Rec Rec S&R S&F S&B S&O Shm Sim SB Tmr Van WS Yng.
Similar Names.  See Express.
Extra Early Ideal.  Nol.  For similar names seeIdeal Winter.
Extra Early Jersey Wakefield.  Brl Bkt Bri Gms Hrn, Pg For Pug S&R Sic Spf Tat TB Thc Y&H.
Similar Names.  See Early Jersey Wakefield.
Extra Early Large Queen.  Buc.  For similar names see Market Queen.
Extra Early Market.  Alx.
Extra Early Pilot.  Tat.
Similar Names.  Tait's Extra Early Pilot.
Extra Early Queen.  Rec.  For similar names see Market Queen.
Extra Early Red Dutch Erfurt.  Sim.  For similar names see Red Erfurt.
Extra Early Spring.  C&J Ebr.  For similar names see Early Spring.
Extra Early Winningstadt.  Buc Rec Shm.
Similar Names.  See Early Winningstadt.
Extra Early York.  Web.  For similar names see Early York.
Extra Flat Dutch.  Big Brw.  For similar names see Flat Dutch.
Extra Large Flat Dutch.  Bdg.  For similar names seeLarge Late Flat Dutch.
Farmer Seed Co.'s Earliest.  Fnc.
Faultless.  Buc Lmr Rec Shm Van Wyg.
Faust's Earliest of All.  Fst.  For similar names see Earliest.
Faust's Prize Head Late Flat Dutch.  Entered as Priz. Head Late Flat Dutch.
Ferry's Late Premium Drumhead, Ferry's Late Premium Flat Dutch.  Entered as Late Premium Drumhead and Late Premium Flat Dutch.
Filderkraut.  Bdg Bgs Brn Brn Bar CE Col Crs Dlw Drm Ebe Fmr Fsr Fst Fer Fle GIH Ggy Jns Lam Liv Msr Man McK MV Mzy Rec Rec Rec Rec RP S&R Shm Sim Sax SB Thr Til Van Wyg W&D.
Similar Names.  German Filderkraut.
Seedsmen's Synonyms.  Fildr, Rev. Pomatanian, Bdg Rec. Pomatanian Painted Head, Mzy Thr.
First and Best. McK.
First Early. Man. For similar names see Archib's Extra Early.
First in the Market. Ms.

**Similar Names.** Mill's First in the Market.

**Flat Brunswick.** Drr. For similar names see Fottler's Brunswick.

**Flat Dutch.** Brw Cox Ebe Eic Gng H&C Mck Poo Wd.

**Similar Names.** Burwell's Flat Dutch, Burwell's Extra Flat Dutch, Extra Flat Dutch, Cox's Flat Dutch, Eichling's Flat Dutch, Boss Flat Dutch, Bristol Flat Dutch, Imperial Flat Dutch, McMillan's Improved Flat Dutch, Crescent City Flat Dutch, Long Island Medium Flat Dutch, Northern Giant Flat Dutch, Ohio Medium Flat Dutch, Salzer's Giant Flat Dutch, Giant Flat Dutch, Tait's Victor Flat Dutch, Victor Flat Dutch, Thorburn's Market Gardener's Flat Dutch, Market Gardener's Private Stock Flat Dutch. See also Early Flat Dutch, Premium Flat Dutch, Large Late Flat Dutch.

**Flat Intermediate.** Lan.

**Flat Parisian.** Cur McK Mxy. For similar names see Paris Market.

**Seedsmen's Synonyms.** Early Spring, Cur.

**Flat Standard.** Lan.

**Florida Drumhead.** Hst. For similar names see Drumhead.

**Florida Header.** Bon Bai Cam Gdn Jae. For similar names see Hard Heading.

**Foremost German.** J&S Wea. For similar names see German Export.

**Fottler's Blue Brunswick.** Emr Lnr. For similar names see Fottler's Brunswick.

**Fottler's Brunswick.** Alx Aln Alb Bai Bak Bk Bt Jd Bon Brg Brk Bri Brn Brw Brw C&J Cam CB Cle CB Col Cur Dat D&H D&C D&N Ebe Emr Eyr Eyg Fqr Fst Frd Gia Ghn Gng Gwv Gry Gwv Tg Hns Brn Hrs Hln H&P Iow Jae Hn JHJ Kei K&W Ken Kg Krr Lnn Jl Mnd Miel Man May JoM Mic Mis MV Mey Ox JMJ Pkn Pkn Ptn For Prt Pri Prig Prg Raw Ree Roc Rk Re RP Sal S&K S&F Sho S&O Sd Sim Sox SB S&E Tbk Thb TdG Tlh Tpk Vi Van Vkn Wat Wca Web W&D Wer Wdr Wgy Y&H.

**Similar Names.** Fottler's Blue Brunswick, Fottler's Early Brunswick, Fottler's Improved Early Brunswick, Fottler's Improved Brunswick, Fottler's Improved Flat Brunswick, Fottler's Flat Brunswick, Fottler's Improved Short Stem Brunswick, Fottler's Short Stem Brunswick, Fottler's Drumhead, Fottler's Early Drumhead, Fottler's Improved Drumhead, Fottler's Large Drumhead, Fottler's Large Improved Drumhead, Short Stem Brunswick, Large Short Stem Brunswick, Brunswick, Early Brunswick, Early Flat Brunswick, Improved Brunswick, Flat Brunswick, Improved Flat Brunswick, Large Flat Brunswick, Large Late Brunswick, Perry's Premium Brunswick, Premium Brunswick, Buist's Short Stem Brunswick, Giant Brunswick, Simon's Netted Savoy Brunswick, Deep Head Brunswick, Simmers' Early German Brunswick, Improved White Brunswick, Bloomsdale Brunswick, White Brunswick, Early German Brunswick.

**Seedsmen's Synonyms.** Early Drumhead, Bgs. Fottler's Early Drumhead, Ger. Large Late Brunswick, Ire. Short Stem Brunswick, Fdr.

**Fottler's Improved Brunswick.** Fottler's Improved Drumhead, Fottler's Improved Early Brunswick, Fottler's Improved Flat Brunswick, Fottler's Improved Large Drumhead, Fottler's Improved Short Stem Drumhead. Entered as Fottler's Brunswick, Fottler's Drumhead, Fottler's Early Brunswick, Fottler's Flat Brunswick, Fottler's Large Drumhead, and Fottler's Short Stem Brunswick.

**Fottler's Drumhead.** Bow J&M Kei McK Ren Tem Thm Y&G.

**Similar Names.** See Fottler's Brunswick.

**Seedsmen's Synonyms.** Brunswick Short Stem, Bow. Improved Brunswick, Hrs. Early Brunswick, Yng.

**Fottler's Early Brunswick.** Brw CT Ear Ggy Haw Jns Lnr Thl Til Yng.

**Similar Names.** See Fottler's Brunswick.
CABBAGE.

Fottler's Early Drumhead.  Fer Ger Hry H&C Lam Loh Mus Min Pks HP.
  Similar names.  See Fottler's Brunswick.
  Seedsmen's synonyms.  Brunswick Short Stem, Fer Loh HP Pks.  Fottler's
  Brunswick, Ger.

Fottler's Flat Brunswick.  J&S.  For similar names see Fottler's Brunswick.

Fottler's Large Drumhead.  RE.  For similar names see Fottler's Brunswick.

Fottler's Short Stem Brunswick.  Brd Brn Gdn RIJ LiV Shn Sc.
  Similar names.  See Fottler's Brunswick.

French Market.  Stk.  For similar names see Late French Market.

French Ox Heart.  Ren.  For similar names see Early French Ox Heart.

Frotscher's Large Late Flat Dutch.  Frotscher's Late Flat Dutch.  Entered as
  Large Late Flat Dutch and Late Flat Dutch.

George Blue's Treasure.  Evr.

Georgia Trucker 117.

German Drumhead.  For similar names see German Export.

  Similar names.  German Drumhead, Large German Drumhead, Foremost
  German.
  Seedsmen's synonyms.  Cannon Ball, Wdr.  Danish Ball Head, Col Fer Eic
  Liv Ten Wdr.  Dutch Cabbage, Fer.  Dutch Winter, Col Eic Liv.  Hollander,
  Cle Fer Eic J&S Liv Rs, etc.  Improved Late Drumhead, Fmr.  Solid Emperor,
  Fer Liv Ten Wdr.

German Filderkraut.  Bow Por Pug S&R Vin.  For similar names see Filderkraut.

German Magdeburger.  Su.


Giant Blood Red Erfurt.  D&H.  For similar names see Red Erfurt.

Giant Brunswick.  Mck Ren.  For similar names see Fottler's Brunswick.

Giant Flat Dutch.  Sal.  For similar names see Flat Dutch.

Giant Late Flat Dutch.  Ms.  For similar names see Large Late Flat Dutch.

Giant Red Dutch.  Sal.  For similar names see Red Dutch.

Giant Red Erfurt.  Van.  For similar names see Red Erfurt.

Giant Summer.  DD.  For similar names see Early Summer.

Globe Savoy.  Brk Bui Elie.  For similar names see Green Globe Savoy.
  Seedsmen's synonyms.  English Curled Savoy, Brk.

Golden Winter.  Drr.

Grand Duke.  Tat.

Great Dane.  Buc Roc.
  Similar names.  Buckbee's Great Dane.

Gregory's All Seasons, Gregory's Deep Head, Gregory's Hard Heading.  Entered
  as All Seasons, Deep Head, and Hard Heading.

Green Curled Savoy.  Bui Cam Ewg Gdn GH To.  MWJ Kei Ken Lan JMM Stw
  Tat Til.
  Similar names.  Early Green Curled Savoy, Late Green Curled Savoy, Dwarf
  Green Curled Savoy, English Curled Savoy, Curled Savoy.

Green Glazed.  Alx Bum Bnr CF Crs Est Fer Ggy GH 1st MWJ Lan May McM
  Shw Tat Thd Wht Wd.
  Similar names.  Southern Green Glazed.

Green Glazed American.  RIJ.

  Similar names.  Globe Savoy, Curled Globe Savoy, Mammoth Globe Savoy.
  Seedsmen's synonyms.  Dwarf Savoy, Bow.

Gregory's Twiss.  Entered as Twiss.  For similar names see Twiss.

Griffing's Succession.  Entered as Succession.
Haines’ Perfection Late Beauty. Entered as Perfection Late Beauty.


Harnden’s Large Late Premium Drumhead. Harnden’s Large Late Premium Flat Dutch. Harnden’s Large Wakefield. Entered as Large Late Premium Drumhead, Large Late Premium Flat Dutch, and Large Wakefield.

Hard Head Hollander. Net VI. For similar names see Hollander.

Hard Heading: Cle Col Fnr Frl Ggy Jns Kra Neb Rs Van.


Seedmen’s Synonyms. Luxembourg, Ggy Fnr Frl Kra Rs, etc.

Hard Heading Savoy. J&S. For similar names see Hard Heading.

Hard Head Luxemburg. Jow. For similar names see Luxembourg.

Hard Head Savoy. M&S. For similar names see Hard Heading.

Harmon’s Early Maine. Entered as Early Maine.

Harris’ Short Stem. Hrs.

Harvest Home. CE Fnr LB NK.

Similar names. Lilly, Bogardus & Co.’s Harvest Home, Early Harvest.

Hastings’ Centennial Late Flat Dutch. Hastings’ All Head Early, Hastings’ Emerald King, Hastings’ Florida Drumhead, Hastings’ Premier Brand, Hastings’ Sure Crop. Entered as All Head Early, Centennial Late Flat Dutch, Emerald King, Florida Drumhead, Premier Brand, and Sure Crop.

Hawkins’ Early Jersey Wakefield, Hawkins’ Large Late Premium Flat Dutch, Hawkins’ Sure Head, Hawkins’ Winningstadt. Entered as Early Jersey Wakefield, Large Late Premium Flat Dutch, Sure Head, and Winningstadt.

Henderson’s Autumn King. Henderson’s Early Spring. Henderson’s Early Succession. Henderson’s Early Summer. Henderson’s Express. Henderson’s Late Flat Dutch. Henderson’s Succession. Entered as Autumn King, Early Spring, Early Succession, Early Summer, Express, Late Flat Dutch, and Succession.

Henderson’s Summer. Cur Fld RIJ K&F. For similar names see Early Summer.


Holmes-Houser. Egg Illm Mhl.

Holmes’ Jersey Wakefield, Holmes’ Perfection Late Late Flat Dutch. Entered as Jersey Wakefield, Perfection Late Late Flat Dutch.

Houseman Drumhead. Bow. For similar names see Drumhead.

Houseman Late Flat Dutch. For Fie Rec.

Similar names. See Large Late Flat Dutch.

Houser. Net CE Fnr Frl Ggy Man S&W Thr Wra.
CABBAGE.

Hundred Weight.  Ext Fem May OV.

Similar names.  May's Hundred Weight.

Ideal.  Sal.  For similar names see Ideal Winter.


Similar names.  Livingston's Ideal Winter, Salter's Ideal, Noll's Extra Early Ideal, Extra Early Ideal, Ideal.

Imperial Drumhead Savoy.  Mrs Min Pac Vin.

Similar names.  See Drumhead Savoy.

Imperial Flat Dutch.  Gig.  For similar names see Flat Dutch.

Improved All Seasons, Improved American Drumhead, Improved American Savoy, Improved Autumn King, Improved Brunswick, Improved Danish Ball Head, Improved Drumhead Savoy, Improved Early Drumhead, Improved Early Dwarf Flat Dutch, Improved Early Flat Dutch, Improved Early Jersey Wakefield, Improved Early Summer, Improved Early Winningstadt, Improved Flat Brunswick, Improved Jersey Wakefield, Improved Large American Drumhead, Improved Large Late Drumhead, Improved Large Late Flat Dutch, Improved Large Wakefield, Improved Late Drumhead, Improved Late Premium Drumhead, Improved Late Premium Flat Dutch, Improved Long Keeping, Improved Red Drumhead, Improved Red Dutch, Improved Red Dutch Erfurt, Improved Red Stone Head, Improved Savoy, Improved Stone Mason, Improved Succession, Improved Sure Head, Improved Vandergaw, Improved Large Late Drumhead, Improved White Brunswick, Improved Bristol.  Entered as All Seasons, American Drumhead, American Savoy, Autumn King, Brunswick, Dutch Ball Head, etc.

Iowa Seed Co.'s Short Stem Drumhead.  Entered as Short Stem Drumhead.

Iron Head.  Gvu.


Similar names.  See Early Jersey Wakefield.

Seedsmen's synonyms.  Charleston Wakefield, D&H.

Johns Day Drumhead.  Bak.

Johnson's Early Large Prize Head.  MWJ.

Similar names.  See Large Late Flat Dutch.

Johnson's Wonderful.  Bgs.  For similar names see Wonderful.


Johnson & Stokes' Hard Heading Savoy.  Johnson & Stokes' Market Gardener's No. 2, Johnson & Stokes' Matchless Late Flat Dutch.  Entered as Hard Heading Savoy, Market Gardener's No. 2, and Matchless Late Flat Dutch.

Jones' Early Jersey Wakefield, Jones' Late Flat Dutch.  Entered as Early Jersey Wakefield, and Late Flat Dutch.

King's Earliest Pointed.  King's Early Spring, King's Market Gardener's Late Flat Dutch.  Entered as Earliest Pointed, Early Spring, Market Gardener's Late Flat Dutch.

Koss' Short Stem Drumhead.  Entered as Short Stem Drumhead.

Kramer's Premium Flat Dutch.  Entered as Premium Flat Dutch.

Kraut King.  Sal.

Landreth's All the Year Round, Landreth's Early Summer Flat Dutch, Landreth's Flat Standard, Landreth's Flat Intermediate, Large Late Mountain.  Entered as All the Year Round, Flat Standard, Early Summer Flat Dutch, Large Late Mountain, and Flat Intermediate.

Landreth's Earliest.  Lan Stw.  For similar names see Earliest.

Large American Drumhead.  Liv Pitt Sim Wtr.

Similar names.  See American Drumhead.

Large American Premium Flat Dutch.  RE.

Similar names.  See Premium Flat Dutch.
Large Aubervillers Savoy. Ebe.

Similar names. Large Aubervilleers.

Large Aubervillers. Ewe. Gra. For similar names see Large Aubervillers.

Large Blood Red. Dw. For similar names see Early Dark Red.

Large Bridgeport. Sbr.

Large Bristol. Pri.

Similar names. Price & Knickerbocker's Large Bristol.

Large Charleston Wakefield. Irr Cox Cur Fst Per H&C Hse Lan Avg Mhl Rea S&O Wat.

Similar names. See Early Jersey Wakefield.

Large Dark Red Drumhead. Ebe. For similar names see Red Drumhead.

Large Drumhead. Crg J.L. Fuc Ren Tpk.

Similar names. See Large Late Drumhead.

Large Drumhead Savoy. Bui Kg JMP. For similar names see Drumhead Savoy.

Seedsmen's synonyms. Large Globe Savoy, Bdg.

Large Early Charleston Wakefield. M&S.

Similar names. See Early Jersey Wakefield.

Large Early Jersey Wakefield. Y&H.

Similar names. See Early Jersey Wakefield.

Seedsmen's synonyms. Charleston, C&J MWJ.

Large Early Ox Heart. M&S Not Stk.

Similar names. See Early French Ox Heart.

Large Early Schweinfurt. Bdg. For similar names see Schweinfurt Quintal.

Large Early Summer. G&T. For similar names see Early Summer.

Large Early Wakefield. Crg CA Pri Tat.

Similar names. See Early Jersey Wakefield.

Seedsmen's synonyms. Charleston Wakefield, CA. Charleston, Pri.

Large Early York. Bar Irnm Hst Kei Thr Ten. For similar names see Early York.

Large Flat Brunswick. Eie Stk. For similar names see Fottler's Brunswick.

Large Flat Dutch. Brg Crg PM Pac. For similar names see Large Late Flat Dutch.

Large French Drumhead. Sim. For similar names see Drumhead.

Large German Drumhead. D&H sim. For similar names see German Export.

Large Jersey Wakefield. Brr Bkt Brr Brr Bdk C&J C F Elld Gig Hde Hrs MWJ Kra LB Pri Kjr Shw Vn.

Similar names. See Early Jersey Wakefield.

Seedsmen's synonyms. Charleston, Brr Bkt Brr Eie Shw, etc.

Large Late Bridgeport Drumhead. H&P.

Similar names. See Bridgeport Drumhead.

Large Late Brunswick. Eic. For similar names see Fottler's Brunswick.

Seedsmen's synonyms. Large Late Brunswick, Bdg. Fottler's Brunswick, Bdg.

Large Late Drumhead. Arr Amb Ar Brr Bk Bk Blk Bn Bn Bk Bur Brr CE Cle Co. CF Cox Crs Cur CA Drr Eic Elt Emr RE Fst Ger Gdn GI Gg &T Gw Il Hse Hde Hrv Hst Jac RHJ &S Jns Kei Ken Kg Kos Lam Lea Lar Mgd M Muns May JCM JMM McM Mel Mic Mlg Ml Mz Mz Mz Nf XI NK Pale JMP Pri Pat Pot Pri Re Rcc Roe RPS C Shw Simm Sim Sp Stk SB Stw Stw Stw Tat Tem TB Thrn Thrn Thnn Tn Tn T&B Van Vc Vc Vc Wd Wr Wt WS Wyg.

Similar names. Belgiano's Large Late Drumhead, Bloomdale Large Late Drumhead, Market Gardener's Large Late Drumhead, Market Gardener's Late Drumhead, Philipp's Toledo Large Late Drumhead, Toledo Large Late Drumhead, Improved Large Late Drumhead, Buist's Large Late Drumhead, Buist's Improved Large Late Drumhead, McMillan's Improved Large Late Drumhead, Shimmy's Improved Large Late Drumhead, Large Drumhead, Late Drumhead, Champion Late Drumhead, Improved Late Drumhead, Mammoth Late Drumhead. See also Drumhead, Premium Drumhead, Early Drumhead.

Seedsmen's synonyms. Large Late Brunswick, Bdg. Fottler's Brunswick, Bdg.
Large Late Flat Dutch.  Aub Brr Bkt Bon Bur Cam Cle CA D&C Eie Evr Fur
Gdn GIH Gg Haw Iml Jac Kei Kg Liv Mns May Mic May Qkr Rec Rim. Roc S&B
Shw S&H S&W TB Thr Til Wd.

Similar Names. Acme Large Late Flat Dutch, Acme Flat Dutch, Burpee's
Large Late Flat Dutch, Everitt's Large Late Flat Dutch, Frotscher's Large Late
Flat Dutch, Bloomsdale Large Late Flat Dutch, Holmes's Perfection Large Late
Flat Dutch, Shawway's Excelsior Large Late Flat Dutch, Long Island Large
Late Flat Dutch, Market Gardener's Large Late Flat Dutch, Toledo Market
Gardener's Large Late Flat Dutch, Improved Large Late Flat Dutch, Buist's
Large Late Flat Dutch, Buist's Improved Large Late Flat Dutch, Large Flat
Dutch, Burpee's Large Flat Dutch, Buur's Large Flat Dutch, Extra Large Flat
Dutch, Late Flat Dutch, Breer's Late Flat Dutch, Frotscher's Late Flat Dutch,
Henderson's Late Flat Dutch, Houseman's Late Flat Dutch, Jones's Late Flat
Dutch, Northrup, King & Co.'s Late Flat Dutch, Schisler-Cornell Late Flat
Dutch, Bristol Improved Late Flat Dutch, Bristol Late Flat Dutch, Brunning's
Excelsior Late Flat Dutch, Crescent City Late Flat Dutch, Centennial Late
Flat Dutch, Hastings' Centennial Late Flat Dutch, McMillan's Improved Late
Flat Dutch, Mammoth Late Flat Dutch, Vincent's Improved Late Flat Dutch,
Mill's Giant Late Flat Dutch, Giant Late Flat Dutch, Superior Late Flat Dutch,
Matchless Late Flat Dutch, Null's Matchless Late Flat Dutch, Johnson & Stokes'
Matchless Late Flat Dutch, Eichling's Large Late Flat Dutch, Simmers' Match-
less Flat Dutch, Matchless Flat Dutch, Prize Head Late Flat Dutch, Faust's
Prize Head Late Flat Dutch, Wood's Prize Head Late Flat Dutch, Prize Head
Late Flat Dutch, Buist's Prize Medal Flat Dutch, Prize Medal Flat Dutch,
Manle's Prize Flat Dutch, Prize Flat Dutch, Johnson's Early Large Prize Head.
See also Flat Dutch, Early Flat Dutch, Premium Flat Dutch, Lilly, Bagardus & Co.'s
Late Flat Dutch.

Seedsman's Synonyms. Premium Flat Dutch, Bdg. Excelsior, Bdg.
Large Late French Quintal.  Sim. For similar names see Schweinfurt Quintal.

Large Late Mountain.  Laus.

Similar Names. Landreth's Large Late Mountain.

Large Late Premium Drumhead.  Brd Bui Hrn.

Similar Names. See Premium Drumhead.

Large Late Premium Flat Dutch.  Ar Bui G&T Tg Hrn H&P J&M Lea Min HP
Spf Thm.

Similar Names. Premium Flat Dutch.

Large Lupton.  Gra. For similar names see Lupton.

Large Luxembourg.  MV Soc. For similar names see Luxembourg.

Large Ox Heart.  Eie Ewg Gra. For similar names see Early French Ox Heart.

Large Perfection Drumhead Savoy.  Shm.

Similar Names. See Perfection Drumhead Savoy.

Large Premium Drumhead.  Min. For similar names see Premium Drumhead.

Large Red Drumhead.  Bdg Bru Bru Brg Col Fax Fle GIH Gra RJH Pks Raw Rt
W&D.

Similar Names. See Red Drumhead.

Seedsman's Synonyms. Improved Red Dutch, Bui.

Large Red Pickling.  Cur. For similar names see Pickling.

Large St. Denis.  RE SB. For similar names see St. Denis.

Large Short Stem Bruuswick.  Ewg Gra Pac.

Similar Names. See Foltler's Bruuswick.

Large Vertus Savoy.  RJH. For similar names see Vertus.

Large Wakefield.  Bak Bow Bnr Brr C&E Col Dlw Drr Elt Gry G&T Hrn Hrs
Hrn H&P Iml J&S Ken Lam Ltrd Liv Mgd Men PM Mns Nol HP Pnt Ptt
Poo Por Roc S&R Spf S&H S&W Van Vcr Wd Wdr WS.
Similar names. See Early Jersey Wakefield.

Seedsmen’s synonyms. Charleston, Spl Bng Buc Bar Drr Fer, etc. Charleston
Wakefield, Crg Gil Liv Nol Wd Ws Wea.

Large York. Crg Drr Eic Gqr Hlm Mel Mzy Stk Vin Wd WS.

Similar names. See Early York.

Late American Drumhead. Frd AGT.

Similar names. See American Drumhead.

Late American Savoy. Neb. For similar names see American Savoy.

Late Drumhead. Bri Ewg Furr H&C May Poo.

Similar names. See Large Late Drumhead.

Seedsmen’s synonyms. German Export, Fnt.

Late Drumhead Savoy. Bdg. For similar names see Drumhead Savoy.

Late Flat Dutch. Bnd Bri Bng Buc LR C&B Cur Dlw Drr Drw RE Ewg Fer Ham
Hen Bsc RHJ Ink Ky Lon Mc Mcl Mel Mic Mhl NK OV Pug Rik Roc SC Sim Spf
SB AGT Tpk Vin.

Similar names. See Large Late Flat Dutch.

Seedsmen’s synonyms. Premium Flat Dutch, SB OV.

Late French Market. DD.

Similar names. Steckler’s French Market.

Late French St. Denis. Snt. For similar names see St. Denis.

Late Green Curled Savoy. Dlw. For similar names see Green Curled Savoy.

Late Mammoth Rock Red. Ar. For similar names see Mammoth Rock Red.

Late Marblehead Mammoth. Snt. For similar names see Marblehead Mammoth.

Late Perfection Drumhead Savoy. LB.

Similar names. See Perfection Drumhead Savoy.

Late Premium Drumhead. Aix Bow Fer Loh Neb Tex Wlt.

Similar names. See Premium Drumhead.

Late Premium Flat Dutch. Aix Bak Btl Bow CE EBC’ Fer Fle Gil Gra Hns
Hde Hst Hop RHJ Ken K&F Lam LB Loh Pdl May MV Neb NI Pdl Put Rec
Roc RP SC S&O Shm Sox Tlh Tpk VI Vlk Web Wlt.

Similar names. See Premium Flat Dutch.

Late Red Dutch. Auh CF NI Wer. For similar names see Red Dutch.

Late Stoneball. Mhl.

Late Stonehead. Bar.

Late White Dutch. Evt.

Similar names. Everett’s Late White Dutch.

Late York. Eic. For similar names see Early York.

Lauderback’s All Year Round. Entered as All the Year Round.

Lightning. Sal. For similar names see Express.

Lightning Express. GN. For similar names see Express.

Lilly, Bogardus & Co.’s Harvest Home. Entered as Harvest Home.

Lilly, Bogardus & Co.’s Late Flat Dutch. Entered as Late Flat Dutch.

Limited Mail. Hlm.

Livingston’s Blue Boom, Livingston’s Ideal Winter, Livingston’s Premium Flat
Dutch. Entered as Blue Boom, Ideal Winter, and Premium Flat Dutch.

Lohrman Seed Co.’s Earliest Round Head. Entered as Earliest Round Head.

Long Island. Chl TB.

Similar names. Long Island Large Late Flat Dutch, Long Island Medium
Flat Dutch, Brill’s Second Early Long Island, Long Island Market Savoy, Long
Island Colossal Savoy, Second Early Long Island.

Long Island Colossal Savoy. J&S Van. For similar names see Long Island.

Long Island Large Late Flat Dutch. Lan.

Similar names. See Large Late Flat Dutch, Long Island.

Long Island Market Savoy. Shw.
CABBAGE.

Long Island Medium Flat Dutch.  Lhn.
  Similar names.  See Flat Dutch, Long Island.
Long Island Second Early.  Bug.  For similar names see Long Island.
Long-Keeping.  Cur Dlw Ksw May.
  Similar names.  Improved Long-Keeping, Currie's Long-Keeping, May's Long-Keeping.
Louisville Drumhead.  Bnl Brg CE BRC Clc CF Crg Crs Dtr Frd Glh G&T Hrn H&G Ind Kg Lar Mag Mcm Qkr Rec SC Tat Ti Vl Vk Wol WS Wyg.
  Similar names.  Louisville Early Drumhead, Louisville Short Stem Drumhead, McCullough's Early Louisville, Early Louisville.
Louisville Early Drumhead.  Amb Cam CA Frd H&J &S Lkn Lea Liv JCM Nol Shr.
  Similar names.  See Louisville Drumhead.
Louisville Short Stem Drumhead.  Trm.
  Similar names.  See Louisville Drumhead.
Low Dutch.  Lhn.
Lupton.  Air Brg Bkt Big Bgs Bri Brn Brg Brg C&J Col Crs CA D&H Dtr Frd Fnr Frd Glh Grg G&T TG Hrs 1Hm Hse H&P MWJ JS Kra Liv JL Mns Man McK Ms Nbr Pg HP Ptt Pri Raw Ren Rec Roe Sal Shm Sic Sim Spf SB Tbn Til Van Vl Wer.
  Similar names.  Large Lupton.
Seedsmen's synonyms.  Improved Vandergaw, D&H DD.
Luxemburg.  Bnl Clc CF Efr Frd Ggy Hse Jns Kg Ksw Kra Lnr Liv Nbr Rec Roe Rs Van Wer.
  Similar names.  Leonard's Luxemburg, Large Luxemburg, Hard Head Luxemburg.
  Seedsmen's synonyms.  Hard Heading, Col Clc Fnr Frd Kra Rs, etc.  Gregory's Hard Heading, Ggy.
McCullough's Early Louisville.  McCullough's Premium Flat Dutch.  Entered as Early Louisville and Premium Flat Dutch.
McKenzie's Northern Favorite.  Entered as Northern Favorite.
McMillan's All Head.  McMillan's Improved Early Flat Dutch.  McMillan's Improved Flat Dutch.  McMillan's Improved Large Late Drumhead, McMillan's Improved Late Flat Dutch, McMillan's Improved Jersey Wakefield, McMillan's Perfection Drumhead Savoy, McMillan's Perfection Early Drumhead.  Entered as All Head, Early Flat Dutch, Flat Dutch, Large Late Drumhead, Late Flat Dutch, Jersey Wakefield, Perfection Drumhead Savoy, and Perfection Early Drumhead.
Magdeburg.  Dlw.
Mammoth Bridgeport Drumhead.  Sal.
  Similar names.  See Bridgeport Drumhead.
Mammoth Dark Red.  Bde.
Mammoth Globe Savoy.  Sal.  For similar names see Green Globe Savoy.
Mammoth Late Bridgeport Drumhead.  Buc Roe.
  Similar names.  See Bridgeport Drumhead.
Mammoth Late Drumhead.  Bie.  For similar names see Large Late Drumhead.
Mammoth Late Flat Dutch.  Roe.  For similar names see Large Late Flat Dutch.
Mammoth Red.  Gls.  For similar names see Mammoth Rock Red.
Mammoth Red Drumhead.  Spt.  For similar names see Red Drumhead.
Mammoth Red Dutch.  Blg.  For similar names see Red Dutch.
Mammoth Rock Red.  Ahr Bak Brg Btd Bkt Bgg Bgs Bri Brn Brn Bag Buc Bui Bui Brn Brr Brw Cam CE Clc C&B Col CF Crs Cnr C'I Dlw Del Dry Dnr Dtt RE Fnr Frr Frd Gdn GH Gra Grg GN Ggy Gry Gwv TG Hns Hrs Hawn Hl&H
AMERICAN VARIETIES OF VEGETABLES.


Similar names. Rock Red, Late Mammoth Rock Red, Mammoth Red.

Mammoth Vertus. RHJ. For similar names see Vertus.

Mammoth Wakefield. Bel. For similar names see Early Jersey Wakefield.

Mann's Columbia. Entered as Columbia.

Marblehead Drumhead. Yng. For similar names see Marblehead Mammoth.


Similar names. Late Marblehead, Marblehead, Marblehead Mammoth, Drumhead, Marblehead Drumhead.

Marblehead Mammoth Drumhead. Btl Bow Brn Bui CE Cur CA Fer Ger Hrn Hlm K&W Kg Lam MV Jmp Ptt Rec S&O Sor S&H Thm Til Tpk Van Vr Web Yng.

Similar names. See Marblehead Mammoth.

Market Gardener's All Year Round. Bri.

Similar names. See All the Year Round.

Market Gardener's Flat Dutch. Thr. For similar names see Flat Dutch.

Market Gardener's Late Drumhead. Vl.

Similar names. See Large Late Drumhead.

Market Gardener's Large Late Drumhead. Lan Sw.

Similar names. See Large Late Drumhead.

Market Gardener's Large Late Flat Dutch. H&P Lan Lea Sw.

Similar names. See Large Late Flat Dutch.

Market Gardener's Late Flat Dutch. Kg.

Similar names. See Market Gardener's.


Similar names. See Market Gardener's.


Similar names. See Drumhead Savoy.

Market Gardener's Private Stock Flat Dutch. Ebe Thr.

Similar names. See Flat Dutch.

Market Queen. May OV Tpk.

Similar names. Extra Early Queen, Buckbee's Extra Early Large Queen, Tait's May Queen, Extra Early Large Queen, May Queen.

Marvin's Improved Savoy. Entered as Marvin's Savoy.

Marvin's Large Savoy. Liv. For similar names see Marvin's Savoy.

Marvin's Savoy. Brw Chl Frd Shw Vnn.

Similar names. Marvin's Large Savoy, Marvin's Improved Savoy.

Matchless. Chl.

Matchless Flat Dutch. Sim. For similar names see Large Late Flat Dutch.

Matchless Late Flat Dutch. J&S M&S Nol Shw.

Similar names. See Large Late Flat Dutch.

Maule's Early Express, Maule's Early Flat Dutch, Maule's First Early, Maule's Prize Flat Dutch, Maule's Prize Short Stem Drumhead, Maule's Prize Wakefield, Maule's Sure Head, Maule's Winningstadt. Entered as Early Express, Early Flat Dutch, First Early, Prize Flat Dutch, Prize Short Stem Drumhead, etc.
Maule's Midsummer.  Mauf.


Maule's Prize Midsummer.  For Mauf Raw.

May Queen.  Tat.  For similar names see Market Queen.

May's Early Surprise, May's Hundredweight, May's Long-Keeping.  Entered as Early Surprise, Hundredweight, and Long-Keeping.

Midsummer.  Bui Bur Shm.


Seedsmen's synonyms. Vandergau; Bui Bur Buc Roc.

Mills' Early All Head, Mills' First in the Market, Mills' Giant Late Flat Dutch, Mills' Short Stem Drumhead, Mills' Sure Head.  Entered as Early All Head, First in the Market, Giant Late Flat Dutch, Short Stem Drumhead, and Sure Head.

Minnesota Earliest.  Fur May OV Tpk.  For similar names see Earliest.

Model Summer.  M&S.


Nebraska Seed Co.'s Late Premium Flat Dutch.  Entered as Late Premium Flat Dutch.

Netted Savoy.  Hen McK Neb HP Pir Poo Por Ren S&R AGT.

Similar Names. See Savoy.

Netted Savoy Brunswick.  M&S.  For similar names see Father's Brunswick.

Newark Early Flat Dutch.  Cam CE Chl TG Nol Pri Rec Shm Ten TB Vl W&D Y&H.

Similar Names. See Early Flat Dutch.

Newark Flat Dutch.  Cam Tat Y&H.  For similar names see Early Flat Dutch.

New York Early Summer.  Lan Stw.  For similar names see Early Summer.

Niggerhead.  Fli Neb Thr.

Noll's Extra Early Ideal, Noll's Matchless Late Flat Dutch, Noll's Perfection Hard-Heading Savoy.  Entered as Extra Early Ideal, Matchless Late Flat Dutch, and Perfection Hard-Heading Savoy.

Nonesuch.  Bru Del RE Ext MWJ TB.

Similar Names. Brill's Nonesuch.

Nonpareil.  DaH.

North Carolina.  Ist Wd.

Seedsmen's synonyms. Buncombe, Ist Wt Wd.

Northern Favorite.  McK.

Northern Giant Flat Dutch.  GN.  For similar names see Flat Dutch.

Northrup, King & Co.'s Late Flat Dutch.  Entered as Late Flat Dutch.

Number Ninety-One.  GN.

Number Seventy-Six.  Bur.

Ohio Medium Flat Dutch.  EBT.  For similar names see Flat Dutch.

Olds' Bridgeport Drumhead, Olds' Early Jersey Wakefield.  Entered as Bridgeport Drumhead and Early Jersey Wakefield.

Oregon.  GN.

Oxheart.  Keli May.  For similar names see Early French Oxheart.

Paris Market.  RHJ McK.

Similar Names. Early Paris Market, Early Paris Savoy, Flat Parisian.

Pearce's Fifty Pound.  D&H.

Pearce's Second Crop.  D&H.

Peerless.  Cle.

Similar Names. Early Peerless, Shumway's Early Peerless.

1829—No. 21—02—7

**Similar Names.** Large Perfection Drumhead Savoy, Late Perfection Drumhead Savoy, Curled Perfection Drumhead Savoy, McMillan's Perfection Drumhead Savoy, Simmers' Perfection Drumhead Savoy.

**Perfection Early Drumhead.** McM. For similar names see Early Drumhead.

**Perfection Hard-Heading Savoy.** Nal. For similar names see Hard-Heading.

**Perfection Large Late Flat Dutch.** Hlm.

**Similar Names.** See Large Late Flat Dutch.

**Perfection Late Beauty.** M&N.

**Perry's Premium Brunswick.** Perry's Premium Flat Dutch. Entered as Premium Brunswick and Premium Flat Dutch.

**Pe Tsai.** Ax Fqr Tat Thr Van Vin.

**Seedsmen's synonyms.** Chinese Cabbage, Ax Fqr Tat Thr Van Vin.

**Philips' Improved Succession.** Philips' Large Late Premium Flat Dutch, Philips' Toledo Large Late Drumhead. Entered as Succession, Large Late Premium Flat Dutch, and Toledo Large Late Drumhead.

**Plant Seed Co.'s Late Premium Flat Dutch.** Plant Seed Co.'s St. Louis Late Market. Entered as Late Premium Flat Dutch and St. Louis Late Market.

**Pickling.** Brk Bdg Roc.

**Similar Names.** Red Pickling, Large Red Pickling.

**Seedsmen's synonyms.** Red Dutch, Bdg Buc Brk Neb Roc.

**Pomeranian.** Bdg Ren.

**Similar Names.** Pomeranian Pointed-Head.

**Seedsmen's synonyms.** Fieberkrant, Bdg Ren.

**Pomeranian Pointed-Head.** Mzy Thr. For similar names see Pomeranian.

**Seedsmen's synonyms.** Fieberkrant, Mzy Thr.

**Poole's Cannon Ball.** Too. For similar names see Cannon Ball.

**Premier.** Sim.

**Similar Names.** Simmers' Premier.

**Premier Brand.** Hst.

**Premium Brunswick.** Ebe. For similar names see Foster's Brunswick.

**Premium Drumhead.** Bak Brk Fer Pks Por Pri S&R.

**Similar Names.** Price & Reel's Premium Drumhead, Large Premium Drumhead, Late Premium Drumhead, Large Late Premium Drumhead, Ferry's Late Premium Drumhead, Improved Late Premium Drumhead, Harrend's Large Late Premium Drumhead. See also Drumhead, Early Drumhead, and Large Late Drumhead.

**Premium Drumhead Savoy.** Man.


**Similar Names.** Almeier's Premium Flat Dutch, Currie's Premium Flat Dutch, Kramer's Premium Flat Dutch, Livingston's Premium Flat Dutch, McCullough's Premium Flat Dutch, Perry's Premium Flat Dutch, Vaughan's Premium Flat Dutch, Will's Premium Flat Dutch, Early Premium Flat Dutch, Late Premium Flat Dutch, Improved Late Premium Flat Dutch, Ferry's Premium Flat Dutch, Nebraska Seed Co.'s Premium Flat Dutch, Plant Seed Co.'s Late Premium
Flat Dutch, Rice’s Late Premium Flat Dutch, Large Late Premium Flat Dutch, Hardees’ Large Late Premium Flat Dutch, Hawkins’ Large Late Premium Flat Dutch, Phillips’ Large Late Premium Flat Dutch, Large American Premium Flat Dutch. See also Flat Dutch, Early Flat Dutch, Large Late Flat Dutch.

SEEDSMEN’S SYNONYMS. Large Late Flat Dutch, Bdg. Late Flat Dutch, Sb.

Excelior, Bdg. Superior Late Flat Dutch, Ov.

Price & Knickerbocker’s Large Bristol. Entered as Large Bristol.

Price & Reed’s Premium Drumhead. Entered as Premium Drumhead.

Pride of Erfurt. Nol.

Pride of the South. Pot Sthk.

Prize Flat Dutch. Man. For similar names see Large Late Flat Dutch.

Prize Hard Head. Ren. For similar names see Hard-Headed.

Prize Head Late Flat Dutch. Fst Wd WS.

SIMILAR NAMES. See Large Late Flat Dutch.

Prize Medal Drumhead. Bui. For similar names see Drumhead.

Prize Medal Flat Dutch. Bui. For similar names see Large Late Flat Dutch.

Prize Short Stem Drumhead. Man. For similar names see Short Stem Drumhead.

Prize Wakefield. Man. For similar names see Early Jersey Wakefield.

Queen Victoria. Bdg. For similar names see Victoria Savoy.

Quincy Market. Fix.

Quintal Drumhead. RE. For similar names see Schweinfurt Quintal.

Race Horse. Buc Roe. For similar names see Buckbee’s Race Horse.

Rawson’s Early Summer, Rawson’s Stone Mason, Rawson’s Volunteer. Entered as Early Summer, Stone Mason, and Volunteer.


Red Dutch. Alx Bai Bd Bdl Bt Bov Bfr Bk B To Bru Bub Brr Bra CE Ch G&B Cj St Bt Ps Eic Elw Ew G Hl Gra Hms Hn Hmn J&W Kei Koa Lan Mnd Mns Man May Mc Mc M M Min MV N Nvb Pg Pks J M P Pri Rec Ree Rs RP S&R Shw S&O Sox Spd Stk Stw Tat Thm Tpl Tpk Vis Vin Wb Wl Yng.

SEEDSMEN’S SYNONYMS. Large Red Drumhead, Bar. Red Dutch Drumhead, Pg.

Pickling, Big Bk Ke Nvb Koe.

Red Dutch Erfurt. Ebe GI J&S. For similar names see Red Erfurt.

Red Dutch Pickling. Cie Grv Gw Tg Pir Shm Vl.

SIMILAR NAMES. See Red Dutch.

Red Erfurt. CE Rec Svc.


Red Hollander. Cur. For similar names see Hollander.


Red Pickling. Cur Nvb. For similar names see Pickling.

Red Polish Short-STEMMED. Man.

Red Stone Head. CE Dlv Mzy Thr.

SIMILAR NAMES. Improved Red Stone Head, Thorburn Improved Red Stone Head, Rock Head.
Reedland Early Drumhead.  Lam Mic Stw
  Similar names.  See Early Drumhead.

Rennie's Prize Hard Head.  Entered as Priz Hard Head.

Rice's Early Jersey Wakefield.  Rice's Early Winningstadt, Rice's Late Premium Flat Dutch, Rice's Premium Flat Dutch, Rice's Sure Head.  Entered as Early Jersey Wakefield, Early Winningstadt, Late Premium Flat Dutch, Premium Flat Dutch, and Sure Head.

Rockford Market.  BuC Roc.
  Similar names.  Buckbee's Rockford Market.

Rock Head.  Frd J&S M&S.  For similar names see Red Stone Head.

Rock Red.  CE Hrns NK Rec.  For similar names see Mammoth Rock Red.

Rosedale Savoy.  J&H.

Round Sugar Erfurt.  Fur Ggy.  For similar names see Red Erfurt.

Russian Round Giant.  M&S.  For similar names see Autumn Giant.

Russian Round Head.  NoL.

  Similar names.  Alnere's Safe Crop, Burpee's Safe Crop.

St. Denis.  BnH Ewg Gra KtLan Rtn Stk.
  Similar names.  Large St. Denis, Late French St. Denis.

  Seedsmen's synonyms.  Chow Bonnail, Stk.

St. John's Day Early Drumhead.  Hen Kg.
  Similar names.  See Early Drumhead.

St. Louis Late Market.  K&F Lm Neb Pt St Spf Stw.
  Similar names.  See St. Louis Market.

St. Louis Market.  BuE Ebr Trm.
  Similar names.  St. Louis Late Market, Plant Seed Co.'s St. Louis Late Market.

St. Malo.  Vin.

Salzer's Earliest.  Sal.  For similar names see Earliest.

Salzer's Giant Flat Dutch, Salzer's Ideal, Salzer's Improved Market, Salzer's Jersey Wakefield, Salzer's Kraut King, Salzer's Lightning.  Entered as Giant Flat Dutch, Ideal, Salzer's Market, Jersey Wakefield, Kraut King, and Lightning.

Salzer's Market.  Sal.  For similar names see Extra Early Market.

Savoy.  Hnt Pg.
  Similar names.  Improved Savoy, Bolgiano's Savoy, Bolgiano's Improved Savoy, Evans' Improved Savoy, Evans' Savoy, Steele-Briggs' Chester Savoy, Chester Savoy, Dreer's Crystal Summer Savoy, Crystal Summer Savoy, Early Favorite Savoy, Netted Savoy, Early Vienna Savoy.

Schisler-Cornell Late Flat Dutch.  Entered as Late Flat Dutch.

Schweinfurt Quintal.  RHJ.
  Similar names.  Early Schweinfurt Quintal, Early Schweinfurt, Large Early Schweinfurt, Quintal Drumhead, Large Late French Quintal, Auvergne Quintal.

Schwill's Matchless Late Flat Dutch.  Entered as Matchless Late Flat Dutch.

Sensation.  DD.

Short Stem Brunswick.  Bow Bui Fer Kt Mgs Pks HP.
  Similar names.  See Fottler's Brunswick.

  Similar names.  Burpee's Short Stem Drumhead, Everitt's Short Stem Drumhead, Iowa Seed Co.'s Short Stem Drumhead, Koss' Short Stem Drumhead, Mills' Short Stem Drumhead, Manlee's Prize Short Stem Drumhead, Prize Short Stem Drumhead.

  Seedsmen's synonyms.  Fottler's Improved Brunswick, Frd.
CABBAGE.

Shumway's Early Peerless, Shumway's Excelsior Large Late Flat Dutch, Shumway's Faultless, Shumway's Improved Large Late Drumhead, Shumway's Improved Sure Head, Shumway's Jersey Wakefield. Entered as Early Peerless, Excelsior Large Late Flat Dutch, Faultless, Large Late Drumhead, Sure Head, and Jersey Wakefield.

Shumway's Midsummer Market. Shm. For similar names see Midsummer.

Silverleaf Drumhead. Kei. For similar names see Drumhead.

Simmers' Early German Brunswick, Simmers' Matchless Flat Dutch, Simmers' Perfection Drumhead Savoy, Simmers' Premier. Entered as Early German Brunswick, Matchless Flat Dutch, Perfection Drumhead Savoy, and Premier.

Simon's Netted Savoy Brunswick. Entered as Netted Savoy Brunswick.

Small Bellville. Brr. For similar names see Bellville.


Solid Emperor. Frd Ggy Hrs Ree Ten Wdr.

Similar names. Emperor.


Solid South. Cle Crg Crs Ele Hst Kg May OV Roc Shw Shm Stk Wd Ws.

Similar names. Eichling's Solid South.

Seedsmen's synonyms. All Head Early, Crs. Burpee's All Head Early, Ham.

Southern Green Glazed. Bui Gdn. 'Fer similar names see Green Glazed.

Springfield Seed Co.'s Late Flat Dutch. Entered as Late Flat Dutch.

Similar names. See Large Late Flat Dutch.


Steele-Briggs' Chester King, Steele-Briggs' Chester Savoy. Entered as Chester King and Chester Savoy.

Stein's Drumhead. May. For similar names see Drumhead.

Stein's Early Flat Dutch. Entered as Early Flat Dutch.

Stone Mason. Aub Bow Brk Bgs Bnl Brb Brr CE CF Cox Cur Dan Ebe Emar Fnr Fqr Fax Fer Ger Gry TG Hrn Hrv H&C HHJ Jas K&W Ken Kg Lur Man May Ms MV HP JMP Pir Pue Ptt Pot Pug Raw Ree Rs S&O Shm Sie Sox Thb Til Tpk Vun Wea Wdr.


Stone Mason Marblehead. Bow Brr Brn Cur Es Fas Lam PM Pks Por Roc S&R.

Similar names. See Stone Mason.

Stone Mason Marblehead Mammoth. Vin. For similar names see Stone Mason, Succession.

Succession. A1x Aub Bai Bak Bt Bt Bt Bel Bow Bgg Brk Bdg Bgs Bri Brn Bru Bug Bnl Brz Brw C&J Cam CE Cle C&G Col CF Cox Crg Crr Cur Dlw D&H Del Db Dtr Dtw Dmn Dnn Dne Ebe Eic Emr Etr Ewg Fnr Fqr Fst Fqr Ger Glg Gdn GH Gra Gng Gyy Gg G&T TG Hrn Hrn Hrv Hst Htn H&C Hlm Hop Hse Ind Jng MWJ JnS Jns Kei K&W Ken Kg Kos Kra Lam Lam Lca Lnq Lix Loh Mnd Man PM Ms S Man May MeK McM Mie Mbl Ms S MV Myx Nbl Nbl NX NY Ov Pae P2 Pks HP Pir Pnm Png Pnt Ptt Ptt Por Pot Pot Pir Raw Rev Roc Rcs Sal S&K S&F Shw Shw S&O Shm Sie Sim Sox Spf Stk SW Tat Teq Thc Thl Thm Thr Thg AGT Thl Til Tpk T&B Vn Van Vn Wn Wm W&I Wk Wd Wdr WS Y&II.

Similar names. Griffing's Succession, Henderson's Succession, Early Succession, Henderson's Early Succession, Improved Succession, Philips' Improved Succession.

Seedsmen's synonyms. All Seasons, Ebr Lam Por S&R AGT Vin.
Sugar Loaf. Fle Kei.

Similar names. Early Sugar Loaf.

Summer Ball Head. Man. For similar names see Danish Ball Head.

Summer Danish Ball Head. Ggy Man. For similar names see Danish Ball Head.

Sunproof. Ar.

Sure Crop. Hst. For similar names see Hastings’ Sure Crop, Early Sure Crop.


Similar names. Bell’s Sure Head, Barpee’s Sure Head, Hawkins’ Sure Head, Manic’s Sure Head, Mills’ Sure Head, Rive’s Sure Head, Shunway’s Improved Sure Head, Improved Sure Head, Willett’s All Seasons Sure Head.

See also synonyms. All Seasons, Eic K&F SC.

Sutton’s Earliest. SB. For similar names see Earliest.

Taber’s Nonpareil. Entered as Nonpareil.

Tait’s Champion. Tat. For similar names see Early Champion.

Tait’s Early Jersey Wakefield. Tait’s Extra Early Pilot, Tait’s Grand Duke, Tait’s May Queen, Tait’s Victor Flat Dutch. Entered as Early Jersey Wakefield, Extra Early Pilot, Grand Duke, May Queen, and Victor Flat Dutch.

Tait’s Extra Early. Tat. For similar names see Archibald’s Extra Early.

Thompson’s Flat Head Early. Entered as Early Flat Head.

Thorburn’s Colossal, Thorburn’s Improved Red Stone Head, Thorburn’s Market Gardener’s Flat Dutch. Entered as Colossal, Red Stone Head, and Market Gardener’s Flat Dutch.

Thorburn’s Drumhead Savoy. Thr. For similar names see Drumhead Savoy.

Toledo Large Late Drumhead. HP.

Similar names. See Large Late Drumhead.

Toledo Market Gardener’s Large Late Flat Dutch. HP.

Similar names. See Large Late Flat Dutch.

Twentieth Century. Brd Van Vk.

Similar names. Twentieth Century No. 1, Twentieth Century No. 2, Twentieth Century No. 3.

Twentieth Century No. 1. Thl. For similar names see Twentieth Century.

Twentieth Century No. 2. Thl. For similar names see Twentieth Century.

Twentieth Century No. 3. Thl. For similar names see Twentieth Century.

Twiss. By.

Similar names. Twiss Early Drumhead, Twiss Stone Mason, Gregory’s Twiss.

Twiss Early Drumhead. Ggy. For similar names see Early Drumhead.

Twiss Stone Mason. S&F. For similar names see Stone Mason.

Uim Savoy. Lan 17. For similar names see Early Dwarf Uim Savoy.

Vail’s Early Flat Summer. Entered as Early Summer Flat Head.


Similar names. Vaughan’s Vandergaw, Improved Vandergaw, Vandergaw Middsummer, Vandergaw Early Drumhead, Vandergaw All Seasons, Vandergaw Flat Dutch, Vandergaw Quick-Growing Flat Dutch.
Cabbage.

Seedsmen's Synonyms. Lapton, D&H DD. Chicago Market, Linn. All Seasons, Brit Bkt Ggy Iow J&S Pkt, etc. Midsummer, Blu Bar Buc Roc.

Vandergaw Early Drumhead. Lan. For similar names see Vandergaw.

Vandergaw Flat Dutch. Mzy. For similar names see Vandergaw.

Vandergaw Midsummer. RE GH. For similar names see Vandergaw.

Vandergaw Quick-Growing Flat Dutch. Pri. For similar names see Vandergaw.


Variegated. Chl.


Vertus. Dlw.

Similar Names. De Vertus Savoy, Drumhead Vertus Savoy, Large Vertu Savoy, Mammoth Vertus.

Very Early Etampes. Fqr Fer Liv JCM Vin.

Seedsmen's Synonyms. Earliest of All, Fer. Wonderful, Fer.

Very Early French. Tat.

Vick's Improved Danish Ball Head. Entered as Danish Ball Head.

Victor Flat Dutch. Tat. For similar names see Flat Dutch.

Victoria Savoy. D&H Ekt.

Similar Names. Early Victoria Savoy, Queen Victoria.

Vincent's Improved Late Flat Dutch. Entered as Late Flat Dutch.

Volunteer. Raw. For similar names see Rawson's Volunteer.

Warren. Fer Ggy Ms HP. For similar names see Stone Mason.

Seedsmen's Synonyms. Improved Stone Mason, Fer HP. Stone Mason, Ms.


Similar Names. See Stone Mason.


Washington Wakefield. CE Fmr Iow NK Rkt TB.

Similar Names. See Early Jersey Wakefield.

White Brunswick. Pat SC. For similar names see Jalller's Brunswick.

Willett's All Seasons Sure Head. Entered as All Seasons Sure Head.

Will's Premium Flat Dutch. Entered as Premium Flat Dutch.


Similar Names. See Early Winningstadt.

Winter Danish Ball Head. Brit Ebr Est M&S Sie Thr.

Similar Names. See Danish Ball Head.

Seedsmen's Synonyms. Hollander, Thr.

Winter King. Alt. For similar names see Autumn King.

Wonderful. J&S Sal.

Similar Names. Johnson's Wonderful.


Wood's Early Jersey Wakefield. Wood's Prize Head Late Flat Dutch. Entered as Early Jersey Wakefield and Prize Head Late Flat Dutch.

Wood's Extra Early. WD. For similar names see Archias' Extra Early.

Wood, Stubbs & Co.'s Early Jersey Wakefield. Entered as Early Jersey Wakefield.


Similar Names. Burpee's World Beater.

Seedsmen's Synonyms. Autumn King, Alx Bui Bar Liv Man Raw, etc.
CARDOON.

Cardoon. MWJ Lan Mhl Roe Sal Van.

Large Smooth. Raw.
Large Smooth Solid. Drr Ewg Gra.
Large Smooth Spanish. Brk.
Large Solid. Bdg Dd Emr Lan Mnd Tat Thr Vin W&D.
Large Spanish. Buc C&B Fsr Hen Kei M&S Put Ptt Pot SC Sim.

CARROT.

Agricultural Wonder. MLS.

Similar names. Mills' Agricultural Wonder.

Alneer's Beauty. ALR. For similar names see American Beauty.

Alneer's Intermediate. ALR. For similar names see Intermediate.

Altringham. Bdg Bru CLE Drr Ebe Emr RE Ger RHJ Mnd HP Sim Wat.


Seedsmen's synonyms. Long Orange, Bdg. Long Scarlet, Bdg. Surry, Bdg.

Altringham Forcing. Del Gill. For similar names see Altringham.

American Beauty. Roe Sm.

Similar names. Shumway's American Beauty, Alneer's Beauty.

American Luc Half Long. M&S. For similar names see Luc.

American Red Altringham. M&S. For similar names see Altringham.

Barnard's Improved Danvers. Entered as Danvers.

Beith's Mammoth White. Cle Man. For similar names see Mammoth White.

Belgian. Cox.


Seedsmen's synonyms. Long White, Cox.

Bellot. Thr.

Blunt-Rooted Horn. Lan. For similar names see Early Scarlet Horn.


Similar names. See Improved Intermediate White.


Buckbee's Earliest Forcing. Buc. For similar names see French Forcing.

Buist's Improved. Bui.

Seedsmen's synonyms. Prize Long Orange, Bui.


Burpee's Improved Long Orange. Entered as Long Orange.

California Mammoth. Sal.

Carentan. Bri Cle Elt Lan Mtz Prn Roe Thr.


Champion Feeder. Mfd.

SIMILAR NAMES: Ontario Champion.


SEEDSMEN'S SYNONYMS. Half Long Scarlet Stump-Rooted, Ken. Model, Brw Brv DD Dfr Pmc Roc, etc. Peavy's Scarlet Model, D&H.

Chantenay Stump-Rooted. Brm Iml Loh Mic Vk.

SIMILAR NAMES. See Chantenay.

Cooper's Yellow Intermediate. Cen. For similar names see Intermediate.

Cowboy Field. Sul. For similar names see White Field.

Cox's Improved Long Orange. Entered as Long Orange.

Crecy. Vin.


Danvers Intermediate. Eic Hst Stk. For similar names see Intermediate.

Danvers Orange Intermediate. Bdg. For similar names see Danvers.

Danvers Pointed. M&S Y&H. For similar names see Danvers.

Danvers Stump-Rooted. EBC Y&H. For similar names see Danvers.

Deere's Perfect Forcing. Entered as Perfect Forcing.

Dutch Horn. RIIJ. For similar names see Early Scarlet Horn.

Earliest Forcing. Roc. For similar names see French Forcing.

Earliest French Forcing. Bai Bcr Bcr Eit Gyr J&M Ptt Shm VI Vk.

SIMILAR NAMES. See French Forcing.

Earliest French Short Horn. Lam. For similar names see Early Scarlet Horn.

Earliest Red Horn. Hde. For similar names see Early Scarlet Horn.

SEEDSMEN'S SYNONYMS. French Forcing, Hde.

Earliest Scarlet Forcing. C&J. For similar names see French Forcing.

Earliest Scarlet French Forcing. Yrt. For similar names see French Forcing.

Earliest Short Horn. Drr Fer Min Pg SB.

SIMILAR NAMES. See Early Scarlet Horn.


Early Chantenay. Bac Old Vau Yng. For similar names see Chantenay.
Early English Horn.  Brn Gng.  For similar names see Early Scarlet Horn.

Early Favorite.  Rum.

Early Forcing.  Brn Mud Rec Thr.  For similar names see French Forcing.


Similar names.  See French Forcing.

Early French Forcing Horn.  Bel Bow Brt Ger.

Similar names.  See Early Scarlet Horn.

Early French Horn.  Bel Kei.  For similar names see Early Scarlet Horn.

Early French Short Horn.  Hrs H&P Jns VI.

Similar names.  See Early Scarlet Horn.

Early Gem.  McK Ren.


Early Guerande Half Long.  Brn.  For similar names see Guerande.

Early Half Long.  DD.  For similar names see Half Long.

Early Half Long Carentan.  Drr Hrn Lam Spf.  For similar names see Carentan.

Early Half Long Danvers.  Prf VI.  For similar names see Danvers.

Early Half Long Nantes.  Big Ynn.  For similar names see Nantes.


Similar names.  See Half Long Scarlet.


Similar names.  See Carentan.

Early Half Long Scarlet Chantenay.  Big Brn.

Similar names.  See Chantenay.


Similar names.  See Nantes.

Early Half Long Scarlet Pointed.  Gll M&S.

Similar names.  See Half Long Scarlet.


Similar names.  See Half Long Scarlet.


Similar names.  See Half Long Scarlet.

Early Horn.  Brn Eke Ewg H&C K&W Mns MV Mrs Pri Png S&F Sox AGT Wll.

Similar names.  See Early Scarlet Horn.

Early Long Forcing.  Roc Shm.  For similar names see French Forcing.

Early Long Scarlet.  DD.  For similar names see Half Long Scarlet.


Similar names.  See Livingston's Early Market.

Early Orange Horn.  Brn.  For similar names see Early Scarlet Horn.

Early Oxheart.  Bui.  For similar names see Oxheart.

Seedsmen's synonyms.  Guerande, Bow Bui Bak Jac Png.

Early Round Forcing.  Pnt.

Early Round Parisian.  Gll Mzy Thr.

Early Rubicon.  Brn.  For similar names see Rubicon.

Early Scarlet.  Brn Firr LB Nk.  For similar names see Half Long Scarlet.

Early Scarlet Dutch Horn.  Bui.  For similar names see Early Scarlet Horn.

Early Scarlet English Horn.  D&H Sim.

Similar names.  See Early Scarlet Horn.

Seedsmen's synonyms.  Half Long Scarlet Horn, Sim.

Early Scarlet Forcing.  Brk S&F Ynn.  For similar names see French Forcing.

Early Scarlet French Forcing Horn.  Gng.

Similar names.  See Early Scarlet Horn.
Early Scarlet French Horn. Brn. For similar names see Early Scarlet Horn.

Early Scarlet Horn. Alr Anb Ar Btl Bet Btl Bkt Brr Bon Bow Bgg Brr Bgs Bri Bng Buc Bur Cam CE C&B Col CF Cox Cur Dw Drr Ebr Eic Elt Emr Evr Fgr Fst Fax Fer Fle Ger Gdn GH Gra Gry G&T HG Hms Ham Harm Hen Hly Hln Tlw HJJ J&S K&W Ken Kos Lam Lan Liv Loh Lnr Mgl Man PM Mas Man May JCM JMM Mck Mcl Mhl Mzy Nol NY Old Pac Pg HP JMP Pir Ptt Poo Pot Qkr Raw Rec Ken Rec Roe Rs RP Sa S&F Shw Sim S&Y S&Y S&Y Tat Tem Tex TB Thr Tlb Tlk Trm UY Vn Wat Web W&D Wm Wd Ws Y&H.

Similar names. Earliest Red Horn, Early Orange Horn, Scarlet Horn, Early Horn, Short Horn, Extra Early Horn, Earliest Short Horn, Early Short Horn, Early Short Horn Stump-Rooted, Early Scarlet Horn, Early Scarlet Horn Pointed, Early Scarlet Horn Blunt-Rooted, Scarlet Short Horn, Blunt-Rooted Horn, Point-Rooted Horn, Dutch Horn, Early Scarlet: Dutch Horn, Early Scarlet English Horn, Early English Horn, Early French Horn, French Short Horn, French Horn, French Forcing Horn, Early French Forcing Horn, Early French Short Horn, Earliest French Short Horn, Extra Early French Short Horn, Early Scarlet French Horn, Early Scarlet French Forcing Horn.

Seedsmen's synonyms. Short Horn, Bur Fst Fnr LB NK Pac Wdr.


Similar names. See Early Scarlet Horn.

Early Scarlet Horn Pointed. Lam Stw. For similar names see Early Scarlet Horn.

Seedsmen's synonyms. Half Long Scarlet Horn, Lam.

Early Scarlet Horn Stump-Rooted. Ncb.

Similar names. See Early Scarlet Horn.


Similar names. See Early Scarlet Horn.

Early Scarlet Stump-Rooted. Pks. For similar names see Half Long Scarlet.

Early Short Horn. Brn C&J Crz CA Eie Haw Hnt Kei Lnr Prn Sal S&O Wdr.

Similar names. See Early Scarlet Horn.

Early Short Horn Stump-Rooted. Ptc Pnt SC T&B.

Similar names. See Early Scarlet Horn.

Early Short Scarlet. Bur Fas RE Ggy Kra Ren Sim Vnn.

Similar names. See Half Long Scarlet.

Seedsmen's synonyms. French Forcing, RE.


English.

Seedsmen's synonyms. French Horn, Pks.

Extra Early Forcing. Bdg DD Hms Koe Lan Mic Pnt.

Similar names. See French Forcing.

Seedsmen's synonyms. Orange Turnip Rooted, Bdg.

Extra Early French Forcing. Emr Pac Spf.

Similar names. See French Forcing.

Extra Early French Short Horn. Pri. For similar names see Early Scarlet Horn.

Extra Early Horn. Ewg MWJ. For similar names see Early Scarlet Horn.

Extra Early Parisian Forcing. W&D.

Extra Early Short Forcing. Bld. For similar names see French Forcing.

Farmer Seed Co.'s Market. Fmr.

Similar names. See Livingston's Early Market.

Ferry's Improved Short White. Entered as Short White.
First of All. Sal.

Similar names. Salzer's First of All.

French. Mae.


French Forcing Horn. CE Gra S&O YxII.

Similar names. See Early Scarlet Horn.

French Horn. Mrs Pks. For similar names see Early Scarlet Horn.

Seedsmen's synonyms. English Horn, Pks.

French Intermediate. Bru. For similar names see Intermediate.


French Red Forcing. M&S. For similar names see French Forcing.

French Short Horn. Eas Hrv. For similar names see Early Scarlet Horn.

Gatepost Orange. Kei. For similar names see Long Orange.

Giant Short White. Mls JMM Sim. For similar names see Short White.

Giant Short White Vosges. Gra. For similar names see Vosges.

Giant Victoria. Etr. For similar names see Victoria.

Giant White Australian. M&S.

Giant White Belgian. Bru Gls Ul. For similar names see Belgian.

Giant White Vosges. Ren. For similar names see Vosges.

Golden Ball. Dnm Frd Man Sim.

Similar names. Scarlet Golden Ball.


Golden Rod. Man.

Green Top Orthe. Eng.

Similar names. Improved White Green Top Orthe, White Green Top Orthe.


Seedsmen's synonyms. Early Gem, Ren. Early Orheart, Bak Bow Bui Jac Png. Half Short Orheart, Thr. Orheart, Bur Drr Fqr Fer Hen Lam, etc. Orheart Orange, Bgs S&O.


SEEDSMEN'S SYNONYMS. Early Scarlet English Horn, Sim.

Half Long Carentan. CE Gra Gng rHd Mnd Tat Til.

SIMILAR NAMES. See Carentan.


SIMILAR NAMES. See Chantenay.

Half Long Coreless. H&P Lan Rim Tat. For similar names see Hid Coreless.


SIMILAR NAMES. See Danvers.


SIMILAR NAMES. See Guerande.

SEEDSMEN'S SYNONYMS. Sphreut, Ewg Gra Hde J&S Porr S&R, etc.

Half Long Intermediate. Mrs. For similar names see Intermediate.

Half Long Luc. Bkt Ebe Eic Kfi Ree SfK SB. For similar names see Luc.


SIMILAR NAMES. See Nantes.

Half Long Orange. Agn Blg Cox Fld Hut Mns.

SIMILAR NAMES. See Long Orange.

SEEDSMEN'S SYNONYMS. Dangers, Agn Cox.


SIMILAR NAMES. See Danvers.

Half Long Orange Rubicon. J&S. For similar names see Rubicon.

Half Long Point-Rooted. Bkt Bri Ebr Ewg Myr Thr.

SIMILAR NAMES. See Half Long.

Half Long Pointed Danvers. Gw PM Rec. For similar names see Danvers.

Half Long Red. Blg C&B Cox Crr Hnn. For similar names see Half Long.

Half Long Red Danvers. Gng. For similar names see Danvers.

Half Long Red Nantes. Alr. For similar names see Nantes.

Half Long Red Orange. Blg. For similar names see Long Orange.


SIMILAR NAMES. See Half Long.

Half Long Red Stump-Rooted Nantes. Crs. For similar names see Nantes.


SIMILAR NAMES. See Rubicon.


Half Long Scarlet Carentan. Cur. For similar names see Carentan.
American Varieties of Vegetables.


Similar names. See Chantenay.

Half Long Scarlet Danvers. Ar Bai Jae Tex. For similar names see Danvers.

Half Long Scarlet French. Eic Sk.

Similar names. See Half Long Scarlet, French.

Half Long Scarlet Luc. McK Ren. For similar names see Luc.

Seedsmen's synonyms. Danvers, McK Ren.


Similar names. See Nantes.


Similar names. See Half Long Scarlet.


Similar names. See Half Long Scarlet.

Seedsmen's synonyms. Chantenay, Ken.


Similar names. See Chantenay.

Half Long Scarlet Stump-Rooted Nantes. May V&.

Similar names. See Nantes.


Similar names. See Half Long.


Similar names. See Carentan.

Half Long Stump-Rooted Chantenay. Gng MV Sox S&W Thr T&B.

Similar names. See Chantenay.


Similar names. See Danvers.


Similar names. See Guerande.

Seedsmen's synonyms. Oxheart, Ggy.

Half Long Stump-Rooted Luc. Thr W&K. For similar names see Luc.


Similar names. See Nantes.

Half Short Oxheart. Thr. For similar names see Oxheart.

Seedsmen's synonyms. Guerande, Thr.


Handsome. Jns.

Harris' Half Long. Hrs. For similar names see Half Long.

Harris' Perfected Half Long. Entered as Harris' Half Long.

Henderson's Intermediate. Bly Hen Ren Rs. For similar names see Intermediate.

Henderson's Intermediate Red. Rs. For similar names see Intermediate.


Holstein Mammoth White. May. For similar names see Mammoth White.


**Intermediate.** Bgg Buc Bar Cok D&H D&H H&C J&S Ken Mns JCM JMM M&S Ov Pac HP Pri Roc SC Ten Vk W&D Y&H.


**Seedsman's Synonyms.** Long Red St. Valery, D&H. St. Valery, Bar Cur H&C J&S Mns Vk, etc.

**James' Intermediate.** Ebr TG Kra Mnd May HP S&W Vau.

**Similar Names.** See Intermediate.

**James' Intermediate Scarlet.** CE Ewg Gra Hde Kei Ree.

**Similar Names.** See Intermediate.

**Large Belgian.** Del. For similar names see Belgian.

**Large Orange.** Crs. For similar names see Orange.

**Large Orange Belgian.** Ken Liv Vau. For similar names see Belgian.

**Large Red Altringham.** Brn Hlm Sim. For similar names see Altringham.

**Large Red Belgian.** M&S. For similar names see Belgian.

**Large Scarlet Stump-Rooted.** Ken. For similar names see Half Long Scarlet.

**Seedsman's Synonyms.** Orheart, Ken.

**Large White.** Brk.

**Large White Belgian.** Alx Alr BAI Bdl Bdg Bgs Bri Bar Mr T&G C&B Col Crs Cur Hw Brr Eas Ebe Ebt Emr Emr Efr Efr Emr Frd Ger GH Ggy Hns Hr Hrn Hrs Hst RHJ K&M J&S JnS Kra Lan Lam Lan LRJ Loh Mau May JMM McM Mr Mls Ms Mv Mzy Ov Old Pac Pg Pks HP Ptt Poo Ppg Raw Ren Roc Rs RP S&R SC SF Shw S&O SiS Sim Sox Stw S&H Tat AGT Til Tpk T&B VI Wca Wcl Wcl WS.

**Similar Names.** See Belgian.

**Seedsman's Synonyms.** Long White, Bdg.

**Large White Green Top Belgian.** Gds. For similar names see Belgian.

**Large White Vosges.** Brn Buc Bar Col Ebe Est GH Lw Mau Mck Mrs Pks Roc.

**Similar Names.** See Vosges.

**Large Yellow.** Brk.

**Large Yellow Belgian.** Ar Brl Brg Bgs Bri Bar CE Dtw Err Err Est Ger GH Hns Hlm MWJ J&M J&S JnS Kra Lan Mau JCM MV Ov Roc Sox Tpk.

**Similar Names.** See Belgian.

**Light Yellow.** Hrs. For similar names see Long Yellow Stump-Rooted.

Lilly, Bobardus & Co.'s Mastodon, Lilly, Bobardus & Co.'s Victoria.' Entered as Mastodon and Victoria.

**Livingston's Early Market.** Liv.


**Long Lemon Stump-Rooted.** Man Vau.

**Long Meaux.** Ebe. For similar names see Red Meaux.

**Long Nantes Stump-Rooted.** M&S. For similar names see Nantes.

**Long Orange.** Alx Alr Anb Ar BAI Bak Bcl Bdt Btl Btk Bcl Bgn Bov Bgg Brk Bdg Bgs Bri Brn Brn Bng Buc Bui Brg Brh Bar Brr Brw C&J Cun CE Chl
AMERICAN VARIETIES OF VEGETABLES.


Long Orange Belgian. Brh Old. For similar names see Belgian.

Long Red. Phl.

SIMILAR NAMES. Long Red Stump-Rooted.


SEEDSMEN'S SYNONYMS. Intermediate, D&H.

Long Red Stump-Rooted. Ewg Gya Spf. For similar names see Long Red.

Long Red Surry. Bue M&S Ndf Roc. For similar names see Surry.

Long Scarlet. Bdg. For similar names see Half Long Scarlet.

SEEDSMEN'S SYNONYMS. Altringham, Bdg. Long Orange, Bdg. Surry, Bdg.

Long Scarlet Altringham. Brn Flr Hde Ken SC SB. SIMILAR NAMES. See Altringham.

Long Scarlet Exhibition. Mnd.

Long Scarlet Intermediate. Thr. For similar names see Intermediate.

Long Nantes. M&S. For similar names see Nantes.

Long White. Cox Mnd Thr.

SIMILAR NAMES. Long White Green Top.

SEEDSMEN'S SYNONYMS. Belgium, Cox. Large White Belgian, Bdg.

Long White Belgian. Bsd Bw Dm Fnr R&J Pac Pks Pri Sal Shm Tem Thm Trm Vtn Wcr. SIMILAR NAMES. See Belgian.

Long White Green Top. Liv. For similar names see Long White.

Long White Green Top Belgian. Vau. For similar names see Belgian.

Long Yellow Belgian. Pks SB. For similar names see Belgian.

SEEDSMEN'S SYNONYMS. Orange Belgian, SB.

Long Yellow Stump-Rooted. Brh Old Ren.

SIMILAR NAMES. Yellow Giant, Light Yellow, Yellow.

Luc. Ldf.

CARROT. 113

McCullough's Intermediate. JMM. For similar names see Intermediate.

Majestic. Brk Roc.

Mammoth Orange. Mrs Shm. For similar names see Long Orange.

Mammoth White. Frl Mau Mck.

Mammoth White Belgian. Brk Roc. For similar names see Belgian.


Mammoth Yellow Belgian. Brk Roc. For similar names see Belgian.

Market Gardener. DD. For similar names see Livingston's Early Market.

Mastodon. Alr Ber Cox Ham Hrs LB May Mrs NK Sal Vau.

Maud. Ham.


Michael's Oxheart. Entered as Oxheart.

Midseasons. Ham.

Midsummer. Sal.


Milwaukee White. Eng.

Milwaukee Market. Cur. For similar names see Livingston's Early Market.


Nantes. Dlw Kos Lam Lan Pnt Thom.


New York Market. Bkt Hen W&D.


Norman Belgian. Sal. For similar names see Belgian.

Northrup, King & Co.'s Mastodon, Northrup, King & Co.'s Victoria. Entered as Mostab a and Victoria.

Ontario Champion. Gra. For similar names see Champion Feeder.

Orange. Bel Brk. For similar names see Long Orange.

Orange Belgian. Brn Ren Sim SB Tat Vk. For similar names see Belgian.


Orange Giant. D&H. For similar names see Long Orange.

1329—No. 21—02——8

**Similar Names.** Early Oxheart, Michael's Oxheart, Oxheart Orange, Half Short Oxheart, White Oxheart.


Oxheart Guerande.  Hlm.  For similar names see Guerande, Oxheart.

**Seedsmen's Synonyms.** *Guerande*, Bgs S&O.  For similar names see Oxheart.

Paris Exposition.  Thr.

Pearce's Half Long White.  D&H.  For similar names see Intermediate.

Pearce's Improved Half Long White.  Entered as Pearce's *Half Long White*.

Pearce's Scarlet Model.  D&H.  For similar names see Model.

**Seedsmen's Synonyms.** *Chatonay*, D&H.

Peer of All.  D&H.

Perfect Forcing.  Dtt.  For similar names see French Forcing.

Perfection Rubicon.  M&S.  For similar names see Rubicon.

**Seedsmen's Synonyms.** *Modl*, M&S.

Pointed Intermediate.  Btm Ken.  For similar names see Intermediate.

Point-Rooted Horn.  Lam.  For similar names see Early Scarlet Horn.

Pride of the Market.  Big.  For similar names see Livingston's Early Market.

Prize Long Orange.  Bui.  For similar names see Long Orange.

**Seedsmen's Synonyms.** *Bext's Improved*, Bui.

Red Coreless.  Min.

**Similar Names.** Long Red Coreless, Half Long Coreless.

Red Intermediate.  Cle C&G Est Liv Spl Wdr.  For similar names see Intermediate.

Red Meaux.  Bar Mrs.  For similar names see Long Meaux.

Red Parisian Forcing.  J&S.  For similar names see French Forcing.

Red St. Valery.  Eyr GH Mau Mse.  For similar names see St. Valery.

Red Surry.  Kei MeK Ren.  For similar names see Surry.

**Seedsmen's Synonyms.** *Long Orange*, SB.

Rennie's Market Garden.  Ren.  For similar names see Livingston's Early Market.


St. James Half Long.  Ebe.  For similar names see Half Long.


St. Valery Half Long.  Ewg.  For similar names see St. Valery.
St. Valery Half Long Scarlet. Bui. For similar names see St. Valery.
St. Valery Intermediate. Bkt. For similar names see St. Valery.
Salzer's Forcer. Sal. For similar names see French Forcing.
Scarlet Carentan. Bdg. For similar names see Carentan.
Scarlet Chantenay Stump-Rooted. Hde. For similar names see Chantenay.
Scarlet Golden Ball. Bar Hbt. For similar names see Golden Ball.
Scarlet Horn. Brr Cox Cur Grw Mrs Sal Wea Wdr.
Similar names. See Early Scarlet Horn.
Scarlet Intermediate. Bgy Bgr Bru RE Man McK Pks Ren Sim SB Wd WS.
Similar names. See Intermediate.
Scarlet Model. D&H.
Scarlet Nantes. Cox Mgr Mrs Sal. For similar names see Nantes.
Scarlet Perfection. Roc Shm.
Similar names. Shumway's Scarlet Perfection.
Scarlet Short Horn. AIX Cle NL. For similar names see Early Scarlet Horn.
Scarlet Stump-Rooted. S&R. For similar names see Half Long Scarlet.
Short Horn. Bui Bar Fnr Est Ggy Hbt LB NK Pac.
Similar names. See Early Scarlet Horn.
French Forcing, Bui.
Short Thick White. RHIJ. For similar names see Short White.
Short White. Bow Bae Brb Bar CE Frr For Fll Ggy Gry Hvy Hop Hse Lam LR Loh Man Mrs Og Pg Pks For Ren Rce Roc S&R AGT Th.
Similar names. Improved Short White, Buckbee's Improved Short White, Ferry's Improved Short White, Simmers' Improved Giant Short White, Mills' Giant Short White, Improved Short Thick White, Short Thick White.
Short White Vosges. Ewg. For similar names see Vosges.
Shumway's Red Intermediate. Shm. For similar names see Intermediate.
Simmers' Improved Giant Short White. Entered as Giant Short White.
Small French Forcing. Pir. For similar names see French Forcing.
Surry. Bdg Sim.
Seedsman's synonyms. Altringham, Bdg. Long Orange, Bdg. Long Scarlet, Bdg.
Table Queen. May OV Tpk.
Vaughan's Danvers. Entered as Danvers.
Very Early Scarlet. Drm.
Seedsman's synonyms. Earliest Short Horn, Drm. Golden Ball, Drm.
Very Early Short Horn Scarlet. Mhl Nol.
Seedsman's synonyms. French Forcing, Mhl Nol.
Victoria. Ah Brr Bae Cox DB Fnr Gll Httm low LB May Mrs NK Roc.
Similar names. Lily, Bogardus & Co.'s Victoria, Northrup, King & Co.'s Victoria, Buckbee's Victoria, Yellow Victoria, Giant Victoria.
Vincent's Intermediate. Vin. For similar names see Intermediate.
Vosges. May OV Tpk.
Similar names. White Vosges, Short White Vosges, Giant Short White Vosges, Mammoth White Vosges, Giant White Vosges, Large White Vosges.
White Belgian. Anh Ber Bru Bug C&J Cle DD Ewg Fqr Fld Gra Ham Hrv Hen HKC Hly Kei K&W Kg Lan Lnr LB Man Mic Mrs Nef Pir Pot Spf Vk W&D.

Similar names. See Belgian.

White Field. Grw TG.

Similar names. Cowboy Field.

White Giant. SB.

Seedsmen’s synonyms. White Vosges, SB.

White Giant Green Top. Ewg Ptt.

White Green Top Orthe. D&H. For similar names see Green Top Orthe.

White Intermediate. RHJ.

White Mastodon. Grw TB. For similar names see Mastodon.

White Oxheart. RIJ. For similar names see Oxheart.

White Vosges. Cle Cox RHJ Kei Mgd MAS '/" Shm Thr Wat.

Similar names. See Vosges.

Seedsmen’s synonyms. Giant, SB.

Wood’s Scarlet Intermediate. Entered as Scarlet Intermediate.

Yellow. Sim. For similar names see Long Yellow Stump-Rooted.


Similar names. See Belgian.

Yellow Danvers. Sal. For similar names see Danvers.

Yellow Giant. May. For similar names see Long Yellow Stump-Rooted.

Yellow Intermediate. Ewg RHJ. For similar names see Intermediate.

Yellow Victoria. TB Wt. For similar names see Victoria.

CAULIFLOWER.

Abyssinian. Ewg.


American Beauty. Chl. For similar names see Beauty.

American Late Beauty. M&S. For similar names see Beauty.

Autumnal Early Giant. LB. For similar names see Autumn Giant.

Autumnal Late Giant. Ggy Ptt. For similar names see Autumn Giant.

Autumn Giant. Bai Brd Bdg Bri Bru CE Chl RE Fmr Ger GH Gra Hns Ham Hru Hst J&M Ken Kg Lnr Man May NK Pac Sal Sim Spf Tat Thm Thr Til Van Wer.

Similar names. Veitch’s Autumn Giant, Autumnal Early Giant, Autumnal Late Giant.

Seedsmen’s synonyms. Italian, Bdg. Late Italian, Sim.

Autumn King. Bru.

Barnard’s Early Snowball. Entered as Early Snowball.

Beauty. Tat.

Similar names. American Beauty, American Late Beauty, Long Island Beauty, Price’s Danish Beauty, Bell’s White Beauty, Danish Beauty.

Beckert’s Early Snowball. Entered as Early Snowball.

Bell’s Early Surehead. Bel. For similar names see Salzer’s Surehead.

Bell’s White Beauty. Entered as White Beauty.

Berlin Dwarf. Ggy. For similar names see Extra Early Dwarf.

Best Early. D&C 1st MWJ.

Similar names. Burpee’s Best Early, Sandahl’s Best Early.

Best of All. D&H.

Blue Ribbon. Sal.

Similar names. Salzer’s Blue Ribbon.
CAULIFLOWER.

Breck's White Bouquet. Entered as White Bouquet.

Bruce's Early Dwarf Erfurt, Bruce's Autumn King. Entered as Early Dwarf Erfurt and Autumn King.

Buckbee's Early Favorite, Buckbee's Extra Early Chief. Entered as Early Favorite and Extra Early Chief.

Buist's Early Snowball. Entered as Early Snowball.

Burpee's Best Early. Bur Jeb. For similar names see Best Early.

Burpee's Dry Weather. Entered as Dry Weather.

California Mammoth Market. J&M Thn. For similar names see California Wonder.

California Wonder. Cox Pac.

Similar names. Cox's California Wonder, California Mammoth Market.

Carrara Rock. Bdg Eit Kei W&D.

Carter's Defiance, Carter's Dwarf Mammoth. Entered as Defiance and Dwarf Mammoth.

Champion Erfurt. S&F.

Copenhagen. H&P J&S.

Similar names. Extra Early Copenhagen.

Seedsmen's synonyms. Denmark, J&S. Dry Weather, J&S.

Cox's California Wonder. Entered as California Wonder.

Danish Beauty. Pri.

Danish Drought-Resisting. Ren. For similar names see Early Dwarf Danish.

Danish Early Snowball. Bit Gls.

Danish Giant. Gra. For similar names see Early Dwarf Danish.

Danish Snowball. Bit Dlw Hns Kra LB Vau. For similar names see Snowball.

Seedsmen's synonyms. Sandahl's Best Early, Pug.

Darch & Hunter's Eureka. Entered as Eureka.

Defiance. Ggy.

Similar names. Carter's Defiance.

Demi-Dur. RE Kei Ren.

Similar names. Early Demi-Dur.


Denmark. Brl C&G Bdr J&S Shw Thr.

Seedsmen's synonyms. Copenhagen, J&S. Dry Weather, J&S.

Dreer's Dwarf Erfurt, Dreer's Earliest Snowstorm. Entered as Dwarf Erfurt and Earliest Snowstorm.

Dry Weather. Bur Hbt Man McK Sim Wat.

Similar names. Burpee's Dry Weather.

Seedsmen's synonyms. Copenhagen, J&S. Denmark, J&S.

Dutch. Bdg Crs Pac.

Similar names. Early Dutch, Large Late Dutch.

Dwarf Erfurt. CE DaH Drr Ggy Hrv JMM Mhl S&O Tat Tex.

Similar names. See Early Dwarf Erfurt.

Dwarf Erfurt Small-Leaved. Bgs. For similar names see Early Dwarf Erfurt.

Dwarf Mammoth. K&W.

Similar names. Carter's Dwarf Mammoth.


Similar names. See Early Dwarf Erfurt.

Earliest Erfurt. Lrt. For similar names see Early Dwarf Erfurt.

Earliest Snowball. Alr Fst SB Wfr Wd WS. For similar names see Snowball.

Earliest Snowstorm. Drr Mhl M&S. For similar names see Snowstorm.

Early Alabaster. J&S M&S.

Similar names. Improved Early Alabaster.
Early Boston. Fix.

Similar names. Faxon's Early Boston.

Early Demi-Dur. Sim. For similar names see Demi-Dur.

Seedsmen's synonyms. Half Early Paris, Sim.

Early Dutch. Ggy. Ren. For similar names see Dutch.


Early Dwarf Danish. Brk Efg Ggy S&F.

Similar names. Extra Early Danish, Danish Drought-Resisting, Large Danish, Danish Giant.

Seedsmen's synonyms. Sax Focus, S&F.

Early Dwarf Erfurt. Ab Bel Bow Brn Bui Bar CE Cle CoCA Del Drr Eic RE Ewg Gnr GHz GgT Hrs Lan Man Meng Mcln Ms M&S Ncb Nef XI Pac Pks JMP Pue Pri Qkr Rce Sal SC S&F Sic Sim Tel T&B W&D.


Seedsmen's synonyms. Snowball, Eic.

Early Dwarf Erfurt Small-Leaved. Pnt.

Similar names. See Early Dwarf Erfurt.

Early Dwarf Snowball. Bdg. For similar names see Snowball.

Early Erfurt. Bon Bag Bng Eic Evg Fer Gru Ggy Hnt RHJ K&F'Loth NK Por Png S&R SB Tel Tpk Wat.

Similar names. See Early Dwarf Erfurt.

Early Favorite. Bow Buc Brb CE Fer Frd Hlm Lam Ms Pnc Rce Shn Shn Tel.

Similar names. Buckbee's Early Favorite, La Crosse's Early Favorite, Mills' Early Favorite, Shumway's Early Favorite, Improved Early Favorite, Gardener's Favorite, Favorite.

Early Gilt-Edge Snowball. Bri J&S. For similar names see Snowball.

Early Italian Giant. Eic Ggy. For similar names see Italian.

Early London. Bai Bow Brk Bdg Cle CB Cts Elt Ewg Fer GHI Hly Hen RHJ LB Man Man Meng May May Pac Pks Pnt Ptt Png Icc S&R Sim Sox Tat Tkr T&B Vin.


Seedsmen's synonyms. Early Dutch, Cts Bdg.

Early London Market. Ggy. For similar names see Early London.

Early Padilla. Fnr Ggy AGT.


Seedsmen's synonyms. Nonpareil, Fer SB Vk Wga.

Early Paris Forcing. S&O. For similar names see Early Paris.
Early Paris White. Cam Tat. For similar names see Early Paris.

Early Snowball. Air Anb Ar Bai Bak Brd Brt Bkt Bel Ber Big Bow Bgg Brk Bru Bag Buc Bui LB Bdb Bar Bar Brw CE Cle C&B Col CF Cok Cox Cts Cur CA Dw D&H Del Dre Dry Dun Ebr Efr Elt Exr Env FmR For Frl Frld Frl Ger Gls Ggn Ggy Gry GgG Grg Gtw HG Ham Hde Hrn Hvr Hst Haw Heu HK C Hly Hly Hop Hut HkP Hmd Low Juc Jer MWD RJH J&M Jus Kei K&W Ke Kor Kos Lam Laa Lea LB Lx I Luh Mld Mgd PM Mns Mst Man My EJC JMM J &K Mcl Mie Mhl MlS MV Mzy Neb Ncl Ov Old Pac Pg Pks Jmp Pn Prn Pnc Pnt Ptt Poo Por Pot Pug Qkr Rbk Raw Ren Rec Rim Roe Rt Rs RP S&R ST S&B Shw S&O Se SIm Sox Stw S&H S&W Tex TB Thm Thb AgT Thk Til Tpk Trm T&B VI Vk Vin Wnt Wnt Web W&D Wer Wdr Wyg Yng Y&H.

Similar names. See Snowball.

Early Snowball Forcing. May. For similar names see Snowball.

Early Snow Cap. M&K.

Early Whitehead. SB.

Ebeling's Dwarf. Ehe. For similar names see Extra Early Dwarf.

Ebeling's Snowball. Entered as Snowball.

Eichling's Improved Large Algiers, Eichling's Snowball. Entered as Large Algiers and Snowball.

Eureka. D&H.

Ewing's Early Dwarf Erfurt. Entered as Early Dwarf Erfurt.

Extra Early. Var.

Extra Early Chief. Buc Roc.

Similar names. Backbee's Extra Early Chief.

Extra Early Copenhagen. Cam Lam. For similar names see Copenhagen.

Extra Early Danish. May. For similar names see Early Dwarf Danish.

Extra Early Danish Snowball. Sal. For similar names see Snowball.

Extra Early Dwarf. Bai.


Similar names. See Early Dwarf Erfurt.

Extra Early Dwarf Paris. SB. For similar names see Early Paris.

Extra Early Erfurt. ALx Brd Brt Btt Btt Bri Brr Cam KEHms J&M K&W Lam LB May Roc Shn Th B Thm Thn.

Similar names. See Early Dwarf Erfurt.

Extra Early Erfurt Forcing. May. For similar names see Early Dwarf Erfurt.

Extra Early London. Wer. For similar names see Early London.


Similar names. See Early Paris.

Extra Early Paris Forcing. CE Mls Roc. For similar names see Early Paris.

Extra Early Paris White. Hst. For similar names see Early Paris.

Extra Early Snowball. ALx For DD RE Man Por S&R Shn Thr.

Similar names. See Snowball.

Farquhar's Earliest Dwarf Erfurt. Entered as Earliest Dwarf Erfurt.
AMERICAN VARIETIES OF VEGETABLES.

Faust's Earliest Snowball. Entered as Earliest Snowball.
Favorite. Evr.
Seedsmen's synonyms. Early Dutch, Ren.
Faxon's Early Boston. Entered as Early Boston.
First and Best. W&D.
First Crop. Mbl.
Similar names. Sutton's First Crop.
Ford's Extra Early Dwarf Erfurt. Entered as Extra Early Dwarf Erfurt.
Fottler's Champion Erfurt. Entered as Champion Erfurt.
Gardener's Favorite. Entered as Favorite.
German Erfurt. D&II. For similar names see Early Dwarf Erfurt.
Giant White Pearl. D&II.
Gilt-Edge. Poo Wea.
Similar names. Thorburn's Gilt-Edge, Simmers' Gilt-Edge.
Gilt-Edge Extra Early Dwarf Erfurt. M&S.
Similar names. See Extra Dwarf Erfurt.
Gilt-Edge Snowball. G&T H1st H&P Lea HP Shw Vin.
Similar names. See Snowball.
Haage's Dwarf Early. Dw. For similar names see Extra Early Dwarf.
Half Early. McK Ren. For similar names see Half Early Paris.
Half Early French. Lan. For similar names see Half Early Paris.
Half Early Large French. Gil. For similar names see Half Early Paris.
Half Early Paris. Bar Bru Bui C&J CE Cle C&B Col Cox Crs Drr Dmm Ebe Eic Elt Ewg Gil Gra Tg Hen RHJ Kei Lan Liv MV Pac Prn Ree Rs Sim Sox T&B Vau Wat Hen W&D.
Half Early Paris Nonpareil. Bdg Bri. For similar names see Half Early Paris.
Henderson's Early Snowball, Henderson's Extra Early Snowball, Henderson's Snowball. Entered as Early Snowball, Extra Early Snowball, and Snowball.
Holmes' Improved Early Snowball. Entered as Early Snowball.
Hot Weather. Scn.
Ideal. Yk.
Similar names. Vick's Ideal.
Italian. Bdg.
Similar names. Late Italian, Large Late Italian Giant, Early Italian Giant.
Seedsmen's synonyms. Autumn Giant, Bdg.
Italian Giant Early Surehead. M&S.
Similar names. See Salzer's Surehead.
Imperial. Gig Lan Puc.
Improved Earliest Snowstorm, Improved Early Alabaster, Improved Early Dwarf Erfurt, Improved Early Favorite, Improved Early Paris, Improved Early Snowball, Improved Snowball, Improved Algiers. Entered as Earliest Snowstorm, Early Alabaster, etc.
Kronk's Perfection Dwarf Erfurt. Entered as Perfection Dwarf Erfurt.
La Crosse Early Favorite. Sal. For similar names see Early Favorite.
Landreth's Early Snowball. Entered as Early Snowball.
Landreth's Reliable. Lan.
Large Algiers. Bow Bdg Bng C&J Crs Eic Elt For Ger Gil Hrs Lar Mnd Nbc Nol NI Pac Pks Pug Thr.
CAULIFLOWER.

Similar names. Large Algiers, Late Algiers, Large Late Algiers, Improved Algiers. Eichling's Improved Large Algiers. See also Algiers.

Large Danish. Dd. For similar names see Early Dwarf Danish.

Large Early Dwarf Erfurt. MV Mx Soc Thr. Similar names. See Early Dwarf Erfurt.

Large Early Erfurt. GH JMM Van Will. Similar names. See Early Dwarf Erfurt.

Large Erfurt. Bai BAI Mic Othl. For similar names see Early Dwarf Erfurt.

Large French. Bai.

Large Late Algiers. Bai CE C&B DD Frd Gis GH Brg Hrm 11st Hen Hop Lam Liv Loh Man Mic HP Poo For Rec S&R Sim Vl Vl Y&H. Similar names. See Algiers.

Large Late Asiatic. Cox SC.

Large Late Dutch. Lan. For similar names see Dutch.

Large Late Italian Giant. Eic. For similar names see Italian.

Large Late Le Normand. Sim Sim. For similar names see Le Normand.

Large Late Stadtholder. Bdg.

Large Late Walcheren. Sim. For similar names see Walcheren.

Large Le Normand Short Stem. Hrs SB. For similar names see Le Normand.

Large Walcheren. Bm. For similar names see Walcheren.

Large Algiers. Drw Ggy Sox. For similar names see Algiers.

Large Erfurt Market. Sim. For similar names see Early Dwarf Erfurt.

Late Italian. Sim. For similar names see Italian. Seedsmen's synonyms. Autumn Giant, Sim.

Late Utrecht. Tat.

Le Normand. Eng low Lan JCM MC KTrn. Similar names. Le Normand's Short Stem, Le Normand's Mammoth, Le Normand's Short Stem Mammoth, Large Le Normand's Short Stem, Large Late Le Normand.

Le Normand's Mammoth. D&H. For similar names see Le Normand.


Seedsmen's synonyms. Carter's Extra Dwarf Mammoth, Bdg.

Le Normand's Short Stem Mammoth. Ger Ggy Pac Ptt Wdr. Similar names. See Le Normand.


Leonard's Short Stem. Mid Min.

Lilly, Bogardus & Co.'s Earliest Dwarf Erfurt. Entered as Earliest Dwarf Erfurt.

Livingston's Earliest. Liv Jt. For similar names see Extra Early.

Long Island Beauty. Ggy. For similar names see Beauty.

McCullough's Earliest Dwarf Erfurt. Entered as Earliest Dwarf Erfurt.

McKenzie's Early Snow Cap. Entered as Early Snow Cap.


Matador. Srr.

Maule's Prize Earliest. Entered as Prize Earliest.

Michell's Erfurt. Entered as Erfurt.

Midsummer. Sal.

Similar names. Salzer's Midsummer.
Mills' Early Favorite. Entered as Early Favorite.

Model. GII NK.

Moore & Simon's Italian Giant Early Surehead. Entered as Italian Giant Early Surehead.


Midsummer. Sal.

Noll's Extra Early. Nol. For similar names see Extra Early.


Nonpareil. Bui C E C&B Cox Fer Gis Gil Hen Liv McK MV Puc Prn Pri Ren Rec Shm Son SB Tat Thr T&B Vk Wea W&D.


Northern Early Snowball. GN. For similar names see Snowball.

Padilla. Tlb.

Perfection Dwarf Erfurt. Fqr.

Plant Seed Co.'s Earliest Dwarf Erfurt. Entered as Earliest Dwarf Erfurt.

Price's Danish Beauty. Entered as Danish Beauty.

Prize Earliest. Mau.

Similar names. Maule's Prize Earliest.

Queen of the Danes. Kng.


Rennie's Earliest Dwarf Erfurt. Entered as Earliest Dwarf Erfurt.

Salzer's Blue Ribbon, Salzer's Midsummer. Entered as Blue Ribbon and Midsummer.

Salzer's Surehead. Sal.

Similar names. Bell's Early Surehead, Moore & Simon's Italian Giant Early Surehead, Italian Giant Early Surehead.

Sandahl's Best Early. Pug. For similar names see Best Early.

Seedsmen's synonyms. Danish Snowball, Pug.

San Francisco Market. Bai.

Sea Foam. Raw.

Similar names. Rawson's Sea Foam.

Seedsmen's synonyms. Early Dwarf Danish, S&F.

Second Erfurt. Vau. For similar names see Early Dwarf Erfurt.

Shumway's Early Favorite. Entered as Early Favorite.

Simmers' Early Dwarf Erfurt. Entered as Early Dwarf Erfurt.

Simmers' Gilt-Edge. Sim. For similar names see Gilt-Edge.

Small-Leaved Erfurt. Spf. For similar names see Early Dwarf Erfurt.

Snowball. Bon Bgs Brn Cam Chl East Ebe Ebe Emr Fqr Gra Hrs Hbt Hlm Jns Ken Lam Lan Lnr McM NI NK HP Pri Rec Sal S&F Spf Tat Tem Tpk Van.


Seedsmen's synonyms. Early Dwarf Erfurt, Eic.
CAULIFLOWER.

123

Snowstorm. May.

Similar Names. Earliest Snowstorm, Dreer's Earliest Snowstorm, Improved Earliest Snowstorm.

Steele-Brigg's Extra Early Whitehead. Entered as *Extra Early Whitehead*.

Steele's Whitehead. Entered as *Whitehead*.

Sutton's First Crop. Entered as *First Crop*.

Thorburn's Extra Early Snowball. Entered as *Extra Early Snowball*.

Thorburn's Gilt-Edge. Brt Ebr Ggy Thr. For similar names see *Gilt-Edge*.

Thorburn's Large Early. Thr.

Van Namen's Mammoth Autumn Snow White. Entered as *Mammoth Autumn Snow White*.

Vaughan's Earliest Dwarf Erfurt. Entered as *Earliest Dwarf Erfurt*.


Similar Names. See *Autumn Giant*.

Vick's Ideal. Entered as *Ideal*.

Walcheren. Bai Bel Bui Emar GH Hrs NK Pac Ren Thr Wd.

Similar Names. Walcheren White, Large Walcheren, Large Late Walcheren.

Walcheren White. SB. For similar names see *Walcheren*.

Weaver's Earliest Dwarf Erfurt, Weaver's Early Snowball. Entered as *Earliest Dwarf Erfurt and Early Snowball*.

Wernich's Earliest Dwarf. Wer. For similar names see *Extra Early Dwarf*.

White Beauty. Bel.

Similar Names. Bell's White Beauty.


Similar Names. Breck's White Bouquet.

White Excelsior. Pg.

Whitehead. Gng.

Similar Names. Steele's Whitehead, Steele-Briggs' Extra Early Whitehead.

Early Whitehead, Extra Early Whitehead.

Wood's Earliest Snowball. Entered as *Earliest Snowball*.

World Beater. Bel Gra.

World's Best Snowball. McK Ren. For similar names see *Snowball*.

CELERIAC.

(Also called Turnip Rooted Celery and German Celery.)


Similar Names. Thorburn's Giant.

Early Erfurt. Bdg. For similar names see *Large Erfurt*.

Erfurt. Kos Pnt Thr. For similar names see *Large Erfurt*.

Extra Large Erfurt. Brd. For similar names see *Large Erfurt*.

Giant. Bgs Chl.

Seedsmen's Synonyms. *Large Smooth Prague*, Bgs.
Giant Erfurt. DLw Fqr Hen Sim. For similar names see Large Erfurt.

Giant Prague. Bkt Bri CE DD LB JL Mas HP Put Pri Sie Vau.

Similar names. See Large Smooth Prague.

Giant Smooth Prague. Drv Liv Mrs Por S&F.

Similar names. See Large Smooth Prague.

Large Early Erfurt. CE Hrs Ree Sie. For similar names see Large Erfurt.

Improved. Gry.


Large Erfurt. Cle Cur DD Fur Frl Ken JMM May NK Spf W&D Wer.

Similar names. Extra Large Erfurt, Early Erfurt, Large White Erfurt, Giant Erfurt, Improved Erfurt.

Large Paris. DD. For similar names see Large Smooth Paris.

Large Prague. Iul Pir Ptt. For similar names see Large Smooth Prague.

Large Smooth. Mas.


Similar names. Large Prague, Smooth Prague, Prague, Giant Prague, Giant Smooth Prague.

Seedsmen’s synonyms. Giant Turnip Rooted, Bgs.

Large White Erfurt. SC. For similar names see Large Erfurt.

No Plus Ultra. M&S.


Prague. M&S Mzy. For similar names see Large Smooth Prague.

Smooth Prague. Jus Lnr. For similar names see Large Smooth Prague.

Thorburn’s Giant. Thr. For similar names see Barnard’s Giant.

CELERY.

Alexander’s White Plume. Entered as White Plume.

American Triumph. Tll.

American White Solid. Grw May. For similar names see Giant White Solid.

Beckett’s Hardy Winter, Beckett’s Perfection Winter, Beckett’s Silver Spray. Entered as Hardy Winter, Perfection Winter, and Silver Spray.

Boston Market. Ax Anb Ar Bai Brd Bri Brl Btt Ber Big Bin Bow Brk Big Bgs Bri Bro Bri Bbr Bar Brr C&J Cam CE C’d Cl Cle C&B CF Cok Cox Crg Crs Cur CA DLW DD Drr Drn Dun Eas Ebe Ebr Elt Emr Fnr Fpr Fax Fer Ger GH GRY G&T Grw TG Hrn Hrs Hrv Haw Hen HUm Hop Hnt H&F Hm Iow RIH J&S K&W Ken Kos Kra Lam Lan Lea Lnr LB Liv JL Man Mls Mas Man May JCM JMM McM Mhl Min MV Mrs Myx Nef Pae Pg HP JMP Pnm Put Ptt Por Pot Pri Raw Rov Roe Roe Rs RP Hl S&K S&O S&F Slw Sm Spf Sw S&H S&W Tat Tem Tl Tpk VI Vl Vin Wat Wea Web W&D Wer Wdr Yng Y&H.

Similar names. Improved Boston Market, Dwarf Boston Market.

Breck’s Christmas. Entered as Christmas.

Broad-Ribbed. M&S.


Similar names. See Kalamazoo.

Bruce’s Hamilton Red. Entered as Hamilton Red.

Buckbee’s Golden Heart, Buckbee’s Perfected Kalamazoo. Entered as Golden Heart and Kalamazoo.

Burpee’s Giant White Solid. Entered as Giant White Solid.

California Golden Self-Blanching. Vk.

Similar Names. See Golden Self-Blanching.

Carter's Crimson. Ren S&F.


Carter's Dwarf Crimson. Brk For Cier McK Ren.

Similar Names. See Carter's Crimson.

Carter's Incomparable Dwarf Crimson. Kei Sim.

Similar Names. See Carter's Crimson.

Cooper's Branching. Mhl. For similar names see Cooper's Cutting.

Seedsmen's Synonyms. Cooper's Improved Cutting, Mhl.

Cooper's Cutting. Mhl Mrs Thr.

Similar Names. Cooper's Improved Cutting, Cooper's Improved Branching, Cutting, Cooper's Branching.

Seedsmen's Synonyms. Cooper's Improved Branching, Mhl.

Cooper's Improved Branching. Cooper's Improved Cutting. Entered as Cooper's Branching and Cooper's Cutting.

Covent Garden Red. S&W.

Similar Names. Covent Garden Rose.

Covent Garden Rose. Mzy. For similar names see Covent Garden Red.


Similar Names. See Half Dwarf.

Seedsmen's Synonyms. Golden Heart, Elt Thr. Henderson's Half Dwarf, J&S.

Christmas. Brk.

Similar Names. Breck's Christmas.

Cremona. J&S.

Crimson. Sal. For similar names see Carter's Crimson.

Cutting. Bue For Wdr. For similar names see Cooper's Cutting.


Dobbie's Invincible White. Ewg Thr.

Dobbie's Red. Ewg. For similar names see Red.

Dreer's Monarch. Entered as Monarch.

Dwarf Boston Market. Ewg Gra Mud Shm. For similar names see Boston Market.

Dwarf Crimson. Gry Hrv Man. For similar names see Carter's Crimson.


Dwarf Golden Heart. Ar Brd Bow Bgs Brn Brn Bui Bur Brn Byr CE Col CE Cox Del DD Evr Fmr Fst Frd Ger Gis GH Tg Hm Hm Iml J&M Jna Kda LB Liv PM Man JCM JMM McK Mhl Mhl Min MV NV Old Pw HP JPM Pnt Pug Qkr Ren Rec Rin Rn RP Sal S&B Shm Sje Spl S&H Tex Thm AGT Trm T&R Vg Wat Wea Web Wdr Wgg Yng.

Similar Names. See Golden Heart.

Dwarf Golden Self-Blanching. CE Hsc J&M Nef Rec S&O.

Similar Names. See Golden Self-Blanching.

Dwarf Large-Ribbed. Bnr Eic Ewg Gra Man JPM Stk.

Similar Names. See Dwarf White.

Dwarf Rose. Drr Mud JMM SB. For similar names see Rose.

Dwarf White. Anb Bd Bon Drr Hes Hut Mud Stw Trm W&D.
Similar Names. Henderson's Dwarf White, Henderson's Dwarf, Simmons' Dwarf White Winter, Improved Dwarf White, Dwarf Large Ribbed, Simmons' Large-Ribbed Dwarf White Winter, Incomparable Dwarf White, Early Dwarf White, Prince of Wales Dwarf White.

Dwarf White Golden Heart. Pri. For similar names see Golden Heart.
Dwarf White Kalamazoo. Til. For similar names see Kalamazoo.
Dwarf White Solid. Bow Brn Fer Gls Ind Liv Sal SB Thm.

Similar Names. See Giant White Solid.

Seedsman's Synonyms. Kalamazoo, Fer Ind Lam. Large-Ribbed Kalamazoo, Fer.


Similar Names. See Kalamazoo, Giant White Solid.

Early Arlington. Dm Fgr Fax Gry Lnr.

Early Dwarf Red. Bdg. For similar names see Red.

Seedsman's Synonyms. Dwarf Crimson, Bdg. Rose Colored, Bdg.

Early Dwarf White. Bdg. For similar names see Dwarf White.

Seedsman's Synonyms. Incomparable Dwarf, Bdg.

Early White Plume. Bdg RE. For similar names see White Plume.

English White Solid. Pks. For similar names see Giant White Solid.

Eureka. Evr May.

Evans' Triumph. Entered as Triumph.

Far Superior. Mrs.


Fin de Siecle. Bdg Dlw Ebr Him J&S Lan Mhl Mzy Mrs Norl Rim Sic Thr W&D.

Similar Names. Thorburn's Fin de Siecle.

French Dwarf. RE.


Similar Names. See Golden Self-Blanching.

French's Success. Hrs.

French White Solid. RHJ. For similar names see Giant White Solid.

Giant Dwarf Golden Heart. Sim. For similar names see Golden Heart.


Similar Names. See Golden Heart.

Giant Pascal. Agn Mx Alr Anb Ar Bai Brd Brt Btl Eki Bel Ber Big Bow Brk Bdg Bgs Bri Brn Bng Bnc Bnr Brr Cam CE Chl Cle C&B Col CE CK Cox Crs Cur Dhw D&H Dl D&C Drr Drw Fas Ebr Ebr Eic Elt RE Evr Fmr Fgr Fst Fer Fie Frd Gr Gls Gdn Gll Gra Gng Ggy Gry G&TG Grw TG Hns Ham Hde Hrn Hrs Hrv Hst Hen HoT Hlu Hlln Hop Hse Hnt H&P Hm Jow Jac J&J&M J&S Jns Kei K&W Ken K&F Kg Kos Kra Lam Lan Lnr LB Liv JL Lm Mnd Mgl Man PM Mns Mas Man May JCM JMM JMK JMc McM McE Mio Mhl Mls MV Mrs Mzy Nbr Nor Nk NO Old Par Pg Pks HP JMP Pir Pirn Put Ptt Pou For Pot Pri Qkr Raw Ree Ren Rene Rim Roc Rt Rs Sal S&R S&F Shw S&O Shm Sim Sim Sip Sp Nk SB Stw S&H S&W Tat Tem Thm Thr Thl Til Tp&T Trn T&B VI Van Vk Vin Wat Wea Web W&D Wer Wd Wdr WS Yng Y&H.

Similar Names. Giant White Pascal, Vilmorin's Giant Pascal, Improved Giant Pascal.

Seedsman's Synonyms. Winter King, May.

Giant Red. Raw Shm. For similar names see Red.

Giant White. Bgd Ebe McE. For similar names see Giant White Solid.

Giant White Pascal. Brn Bai Ewg SC. For similar names see Giant Pascal.

Giant White Plume. Gdn Jac. For similar names see White Plume.

Giant White Solid. Air Ar Brd Bar CE Cle CA Del Emr Gll TG Haw Hm Him
Golden Dwarf.  Big Bui C&E CF Cs Cur CA Fer Gdn bow J&S Kei Lam Lan
Mad Mrs Neb Pac Prn Raw Roe SR Sw 17 W&D Wd WS.


Golden Half Dwarf.  Drr.  For similar names see Half Dwarf.

Golden Heart.  Air Amb Bui Bui C&E CE Cle Cox Cks CA Eas Ebr Ekt Ec
Ft Fer Fle Gla GN Hps Hrs Hrv H/w Hop Hnt H&K J&S Ken Kos Lam Lan
Lea JL.  Loh Man Mns Man May Mel Mzy Neb Nef Nl Ov Pir Pot Por Pag Raw
Rim Roe S&K S&P S&M S&O SB Sw S&F Tat Til Thr Tpk VL Vin Wd WS Y&H.

Golden Rose.  Bli Brr Brr Col Cks Gys Gyy Liv JL.  Mns Mrs Pg W&D Wd WS.

Golden Rose Self-Blanching.  Brr Drr Ger J&M.

Golden Self-Blanching.  Alx Air Amb Ar Bai Brd Br'l Btl Bkt Bld Ber Bow Brk
Bdg Bri Brr Bug Bui Brr Drr Cam CE Chl Cle C&E Col Cx Cx Cx Cur Dlw D&H
Del DD D&C Drr Drr Dm Ebr Eic Ekt Emr Ecg Fst Fst Fst Fst Fst Fst Fst Fst
Gdn GH Gra GN Gry Gy'T Gw Tg Tm Hm Hde Hr Hrv Hf Hst Hen Htt Httt
H/K H/l Hop Hnt H/P Hop Jow Jc&M J&K Kg Koe Kos Kra Lam Lan Lar
LB Liv JL.  Loh Lon Mnd Mgd Man PN Mns Mns MP Mas Mns Ming J&M J&J J&M
McK Mie Mif Mrz Mau Mau Mrz Mrs Neb Nef Nk Pae Pg Pks HP JIP Pir Pir Poe Pit
Poo Por Prr Prn Qkr Reo Rm Reo Rt Re RP Sal S&R S&W Sw Sm Sls S&S Sp Sk
SrH S&W Tat Ten Tex Thr Thb ThH Til Trn T&B Wl Van Wt Wt W&M Wd Wd Wd WD
Wse Ws Ws Ws Ws Yg Yg Yg Yg.

CEmery.
American Varieties of Vegetables.

Seedsman's Synonyms. Golden Yellow Large Solid, Buc Fer Lam Inml HP Loh, etc. Paris Golden, Mrs.

Golden Yellow Self-Blanching. Gls. For similar names see Golden Self-Blanching.

Goodwin's White Solid. Bgs. For similar names see Giant White Solid.

Half Dwarf. Bbk Bbl Bec C&b Emr Lan Mnd Mrs Prn RP Stw W&D.


Half Dwarf Golden Heart. Bdg Ehe Ptt. For similar names see Golden Heart.

Half Dwarf Large-Ribbed. Fic. For similar names see Half Dwarf.

Half Dwarf Solid. Min. For similar names see Half Dwarf.

Half Dwarf White. Crs Eas. For similar names see Half Dwarf.

Hamilton Red. Bru. For similar names see Red.

Hamilton Rose. Fe. For similar names see Rose.

Hammond's Improved White Plume. Entered as White Plume.

Hardy Winter. Bri.

Similar names. Beckert's Hardy Winter.


Similar names. See Dwarf White.

Henderson's Golden Dwarf. Hen. For similar names see Golden Dwarf.

Henderson's Golden Rose. Hen. For similar names see Rose.

Henderson's Half Dwarf. Air Anb Bgs Cle CF Ctr Tg Hn Lm Hrv Hen Lw RIIJ J&S K&W Mnn May Pir Sc Sim Thb Trm.

Similar names. See Half Dwarf.

Seedsman's Synonyms. Crawford's Half Dwarf, J&S.

Henderson's Half Dwarf White. CE For Rec. For similar names see Half Dwarf.

Henderson's Rose. Air Hen Kep Jmp Pir Sim. For similar names see Rose.

Holmes' White Plume. Entered as White Plume.

Incomparable Dwarf Crimson. CE Kos Re.

Similar names. See Carter's Crimson.

Incomparable Dwarf Red. Tat. For similar names see Red.

Incomparable Dwarf White. Crs. For similar names see Dwarf White.

Imperial. Sim.

Similar names. Simmers' Imperial, Imperial Dwarf Large-Ribbed.

Imperial Dwarf Large-Ribbed. Fur.

Improved Boston Market, Improved Dwarf Golden Heart, Improved Dwarf White, Improved Giant Pascal, Improved Golden Heart, Improved Golden Self-Blanching, Improved Half Dwarf, Improved Large White Solid, Improved Pink Plume, Improved White Plume. Entered as Boston Market, Dwarf Golden Heart, Dwarf White, Giant Pascal, Golden Heart, Golden Self-Blanching, etc.

Johnson and Stokes' Cremona. Entered as Cremona.


Similar names. Dwarf White Kalamazoo, Dwarf White Solid Kalamazoo, Buckbee's Perfected Kalamazoo, Large-Ribbed Kalamazoo, Broad-Ribbed Kalamazoo.

Seedsman's Synonyms. Dwarf White Solid, For Inml Lam. Giant White Solid, Red. Large-Ribbed Kalamazoo, For. Solid Ivory, D&H LB.

Keppeler's Long Island. Brk S&W.
Laing's Mammoth Red.  VK.  For similar names see Red.
Large-Ribbed Kalamazoo.  Agra Del J&S MZY Mzy Sor Tat Thr
  Similar names.  See Kalamazoo.
Large-Ribbed Red.  Bur Ms.  For similar names see Red.
Large Solid Golden Self-Blanching.  Bgs.
  Similar names.  See Golden Self-Blanching.
Large Solid Golden Yellow.  Buc LB For Fie Haw Imi Lam Loh Roe.
  Similar names.  See Golden Self-Blanching.
  Seedsmen's synonyms.  Golden Self-Blanching, Buc Fer Fie Imi Loh HP, etc.
  Similar names.  See Golden Self-Blanching.
Large White.  Bnh Hut Stw 17.
Large White Plume.  Stk.  For similar names see White Plume.
Large White Solid.  A1x Amb Bbl Bkt Bsw Bui Drf Ein Egw Gtj Gra Ken Mau
  Mhl Pac Jmp Roe Stw Stk Tpk Wd WS.
  Similar names.  See Giant White Solid.
London Large Red.  Bdg.  For similar names see London Red.
London Market Red.  Gng.  For similar names see London Red.
London Prize Red.  McK SB Thr.  For similar names see London Red.
London Red.  Bkt Brr Cur Hen S&W W&D.
Long-Keeping.  Pri.
  Similar names.  Price & Reed's Long-Keeping.
Major Clark's Pink.  Crg Mnd W&D.  For similar names see Pink Plume.
Mammoth Red.  Hns.  For similar names see Red.
Mammoth White Solid.  Bui Gdn.  For similar names see Giant White Solid.
Manchester Prize Red.  D&H.  For similar names see Red.
Many Heart.  JMM Mhl.
  Similar names.  Michell's Many Heart.
Matchless Giant Perfection Long-Keeping Golden Heart.  M&S.
Matchless Red Solid.  Min.  For similar names see Red Solid.
Mexican Solid.  Car Hst.
Monarch.  Brk.
  Similar names.  Dreer's Monarch.
Michell's Many Heart.  Entered as Many Heart.
Moore & Simon's Matchless Giant Perfection Long-Keeping Golden Heart.
  Moore & Simon's White Walnut.  Entered as Matchless Giant Perfection Long-
  Keeping Golden Heart and White Walnut.
Noll's White Plume.  Entered as White Plume.
Pacific Pink.  Bui.  For similar names see Pink Plume.
  Similar names.  See Golden Self-Blanching.
Paris Golden.  Brc G&T Tg Mrs Wdr.  For similar names see Golden Self-Blanching.
  Seedsmen's synonyms.  Golden Self-Blanching, Mrs.
  Wea.
  Similar names.  See Golden Self-Blanching.
Paris Golden Yellow.  Bgs Cie D&H Elb Egw Gtj Gra Lnm JCM JMM McK Raw Ren
  S&F Sim Stw.
  Similar names.  See Golden Self-Blanching.
1329—No. 21—02—9
AMERICAN VARIETIES OF VEGETABLES.

SEEDSMEN'S SYNONYMS.  

Golden Self-Blanching.  

Self-Blanching, Sim.

Paris Large Solid Golden Yellow.  

Bru RE Ggy SB.  

Similar names.  See Golden Self-Blanching.

Paris Market White Solid.  

Fqr.  For similar names see Giant White Solid.

Paris Rose Ribbed.  

Bru Bru D&H Drw RE Fer Gls Ging Hbt RJH Ken Lam McK Ren Rr SB S&H Wd Wd.  

Similar names.  See Rose.

SEEDSMEN'S SYNONYMS.  

Golden Rose, Wd WS.  Pink Plume, Drw.

Paris Self-Blanching.  

Brr.  For similar names see Golden Self-Blanching.

Pennsylvania Long-Keeping.  

Non.

Perfected White Plume, Perfected Kalamazoo.  Entered as White Plume and Kalamazoo.

Perfection Heartwell.  

Alr Bai Brd Bkt Big Bow Bdg Brn Bng Buc Bai Bur Brw Cam CF CF Chs Cur Del DD Drr Elb Elc Elf Elf Est Fer Gls TG Ham Hrs Htt Hlm J&S Jsn Kos Kra Lan Lar LB Loh Mnd Man May JMM Mhl Mrs Mzy Nol XI NK Pac Pg Prn Ptt Por Pri Rec Rrr Rec Rrr S&R Shn Sic Skh Stw S&W Tat Tem Thr Til Vs Wat Wea Wd & Wd.  

Similar names.  Thorburn's Perfection Heartwell.

Perfection Winter.  

Bkt.

Similar names.  Beckert's Perfection Winter.

Perle Le Grand.  

Bkt Big Bri Brn Frd Ggy G&T Ham Hlm J&S Kei LB Liv Mns Man Mhl Mrs Roc Thr Wdr WS.  

Pink.  

Hnt Lan Pac HP Stw.  For similar names see Pink Plume.

SEEDSMEN'S SYNONYMS.  


Pink Aromatic.  

Iow.  For similar names see Pink Plume.

Pink Beauty.  

Prt.

Pink Plume.  


Similar names.  Henderson's Pink Plume, Improved Pink Plume, Pink Plume Self-Blanching, Pink, Pink Aromatic, Pacific Pink, Major Clark's Pink.

SEEDSMEN'S SYNONYMS.  


Pink Plume Self-Blanching.  

Roc.  For similar names see Pink Plume.

Price & Reid's Long-Keeping.  

Entered as Long-Keeping.

Prince of Wales Dwarf White.  

Kei Sim.  For similar names see Dwarf White.

SEEDSMEN'S SYNONYMS.  

Sandringham, Kei Sim.

Red.  

Hnt Lan HP Stw.  


SEEDSMEN'S SYNONYMS.  

Pink, Lan.

Red Solid.  

RJH Mhl.

Similar names.  Matchless Red Solid.

SEEDSMEN'S SYNONYMS.  

Rose, Mhl.

Rennie's Giant White.  

Ren.  For similar names see Giant White Solid.

Rose.  

Brd Bkt Brk Bgs Bri Buc Brr C&J CE Chl Cle Col Crs Cur D&H Dcl Eas Elt Ewr Ewg Fqr Frd Gra Ging Ggy Gry G&T Hrs Hlm Hop Hse H&P J&S Kei Kra Lan Lar LB Liv Mas Mrk May Mhl Ms Mrs Pac Pnt Ptt Petr Rec Roe Rt Sal Sim Tem Thr Til TxB Vin W&D Wd & Wd Wd Wd & Wd Wd Wd.


Rose Red. Tg. For similar names see Rose, Red.

Rose Ribbed Golden Self-Blanching. J&S Lnr S&W Thr. For similar names see Rose.

Seedsmen's synonyms. Golden Rose, Liv Mrs.


Similar names. see Rose.


Similar names. See Rose.

Seedsmen's synonyms. Golden Rose, Bur Lnr.

Rose Ribbed Self-Blanching. Bur Brk Tg. Low Mrs Mzy Py Yug.

Similar names. See Rose.


Salzer's Giant. Sal.

Salzer's Self-Blanching. Sal. For similar names see Golden Self-Blanching.


Similar names. Sandringham Dwarf White.

Seedsmen's synonyms. Prince of Wales Dwarf White, Kei Sim.

Sandringham Dwarf White. Bgs Bui Crs Cur Ebe Ger Gry Kei MV Mzy Nol Pac Ren Nsr Thr W&D.

Similar names. See Sandringham.

Savannah Market. Hst.

Schumacher. Bdg Cle CF Drr Elt Tg Hlm J&S Lan Lnr Mnn JMM Mrs Nol Ptt Pri Ree Rim Roc Se Scfl Thr Van W&D Wdr.

Similar names. Thorburn's Schumacher.

Self-Blanching. May Min Xl OV Sim Tpk.

Similar names. See Golden Self-Blanching.


Seymour's Giant White. Sim. For similar names see Giant White Solid.

Seymour's White. Sal Vin.

Seymour's White Solid. Bgs Fer Lnr. For similar names see Giant White Solid.

Silver Spray. Bkt Hrm.

Similar names. Beckert's Silver Spray.

Simmers' Dwarf White Winter. Sim. For similar names see Dwarf White.

Simmers' Imperial. Entered as Imperial.

Simmers' Large-Ribbed Dwarf White Winter. Sim.

Similar names. See Dwarf White.

Smallage. Wdr.

Seedsmen's synonmys. Cutting, Wdr.


Seedsmen's synonyms. Kalamazoo, D&H LB.

Soup. Bae Fer Man.

Sutton's A1. D&H Thr.


Sweet Nut. M&S.

Thorburn's Fin de Siecle, Thorburn's Perfection Heartwell, Thorburn's Schumacher. Entered as Fin de Siecle, Perfection Heartwell, and Schumacher.

Triumph. Brd Bow Brk Bri Bar Bhw Col Cur Dw Ebe RE Ewg Fer Glb Ggy TG.
AMERICAN VARIETIES OF VEGETABLES.

Hbt Hlm J&S Jns Kos Lnr LB Liv Loh Mns May JMM Mrs Mzy Pg Pnt Rue Sie SB Thm Thr Van.

**Similar names.** Evans' Triumph, White Triumph.

**Vaughan's Giant Golden Heart.** Entered as Giant Golden Heart.

**Vautier's Giant Golden Heart, Vautier's Golden Heart.** Entered as Giant Golden Heart and Golden Heart.

**Victory.** Blg.

**Vilmorin's Giant Pascale, Vilmorin's Golden Self-Blanching.** Entered as Giant Pascale and Golden Self-Blanching.

**White Gem.** Mbl.

**Similar names.** Sutton's White Gem.


**Seedsmen's synonyms.** Self-Blanching, Etc.

**White Solid.** Col CF G&T Kei May Pnc Sim S&W Nat T&B.

**Similar names.** See Giant White Solid.

**White Triumph.** Gra. For similar names see Triumph.

**White Walnut.** Buc CF M&S Pir Ren Sal S&F Shm S&G W&D.

**Similar names.** Moore & Simon's White Walnut.

**Winter King.** May. For similar names see Winter Queen.

**Seedsmen's synonyms.** Giant Pascale, May.

**Winter Queen.** Bri Brn Bai Bur Brw Drr Frd Gry G&T TG Hlm J&S Lar Man JMM Mbl Mrs Rim Roc 17 WJ.

**Similar names.** Winter King.

**CHERVIL.**

**Chervil.** Btl Cle Cox Dw Ebe Fmg For Grn G&T Grw Hns Hde Hst MWJ J&S Ken Lan Man MV May Neb HP Pnt Pnr Sal SC Sic Spf Stk Vin Wea.

**Curled.** Bai Bkt Bow Brk Bdg Bgs Bru Bng Buc C&B Ccrs Cur DD Drr Elt Eml Fr Ewg Fst Fgr Fer Ger Gks Gry Hrn Hw Hen J&M Kei K&W Lan Lnr LB Mnl May Mbl Mzy Nol NK Poo Pnt Pri Png Raw Ren Rec Roc S&K Sim SB S&W Tat Thr T&B W&D.

**Double.** Bdg GII Mbl.

**Double Curled.** Gra Vau.

**Fine Curled.** S&F.

**Italian Curled.** M&S.

**Plain.** Bgs Ebe Gra Thr.

**Tuborous Rooted.** Brk Bdg Bng Elt GII Lar Mnl Mzy Nol Thr W&D.
**CHICORY.**

Chicory.  Ber Bur Cle Ewg Frd Gra G&T Grw Ham RHJ Kei Mau Mzy Pri Sal Spf AGT.

Asparagus.  Buc.


Curled.  Ken.

Improved Large-Leaved.  Ebe.

Large Magdeburg.  SB.

Large Red Magdeburg.  Brd.


Large-Rooted Brussels.  Pot Van.

Large-Rooted Coffee.  GII Ggy.

Large-Rooted Magdeburg.  Bai Brt Bkt C&B GII Mud MV OV HP Pot Ren Sim S&W Thr T&B Van Vin.

Long Large-Rooted Magdeburg.  Vg.

Magdeburg.  Cle.

Mammoth-Rooted.  M&S.


Witloof.  Brk Ger Mnd Pct Pot S&W Thr Van W&D.

**CHIVES.**


**CHUFAS.**

(Also known as Earth Almonds and Grass Nuts.)


SEEDSMEN'S SYNONYMS.  *Earth Almonds and Grass Nuts.*

Spanish.  MWJ Wl.

**COLLARDS.**

Blue Stem.  Cam Jac.

SIMILAR NAMES.  Georgia Blue Stem, Long Blue Stem, North Carolina Blue Stem.

Buist's Cabbage.  Bui.  For similar names see *Cabbage.*

Buncombe.  Lan.

Cabbage.  CE CA Pct.

SIMILAR NAMES.  Buist's Cabbage, White Cabbage, Georgia White Cabbage.

SEEDSMEN'S SYNONYMS.  *Georgia, CE: Improved White Georgia,* Gig.


SIMILAR NAMES.  Southern Creole.

SEEDSMEN'S SYNONYMS.  *Georgia, Btl Buc Cox Fer Frd Fmr,* etc.  *Southern,* Buc Btl Drr Fer May Sim, etc.
AMERICAN VARIETIES OF VEGETABLES.


Similar names. Improved White Georgia, Long Georgia, Georgia White Stem, Georgia Blue Stem, Georgia Southern, Georgia White Head.

Seedsmen's synonyms. Cabbage Greens, CE, Creole, Buc Btl Cox Frd H&P Ten, etc. Silver, Thm. Southern, Bow Btl Buc Hlm H&P Pug, etc. Southern Curled, M&S.

Georgia Blue Stem. Cam Wt. For similar names see Georgia, Blue Stem.

Georgia Southern. Eve Fer. For similar names see Georgia, Southern.

Georgia White Cabbage. Shw Wt. For similar names see Georgia, Cabbage.

Georgia White Head. Cam Jac. For similar names see Georgia, White Head.

Georgia White Stem. Bui. For similar names see Georgia.

Improved White Georgia. Entered as White Georgia.

Landreth's Marrow. Lan.

Long Blue Stem. CA. For similar names see Blue Stem.

Long Georgia. Alx. For similar names see Georgia.

Mammoth Southern. Grw. For similar names see Southern.

Marrowfat. Sal.


North Carolina Buncombe. Shw.

Similar names. See North Carolina Short Stem.

North Carolina Short Stem. 1st Wd WS.


Pink Heart. MWJ Lan.

Rosette. Ren.

Silver. J&M Thm.

Seedsmen's synonyms. Georgia, Thm.


Similar names. Georgia Southern, Mammoth Southern.

Seedsmen's synonyms. Creole, Btl Buc Drr Fer LB May, etc. Georgia, Btl Bow Fer Lan Pug Sim, etc.

Southern Creole. GH. For similar names see Southern, Creole.

White Cabbage. Tat. For similar names see Cabbage.

White Georgia. Alx CA Gig Kg. For similar names see Georgia.

Seedsmen's synonyms. Cabbagey, Gig.

White Head. 1st.

Similar names. Georgia White Head.

White-Leaved. MWJ.

CORN (FIELD CORN).

Alexander's Southern White Snowflake. Entered as Southern White Snowflake.

All Gold. Sal.

Similar names. Salzer's All Gold.

American Pride Early Yellow Dent. Hm.

Similar names. Hammond's American Pride Early Yellow Dent.

Angel of Midnight. Brk Brm CSC Crs Cur D&H Ebe Emr RE Ewg Fqr Kei Kos May Pot Pri Raw Rob Sal Sim Thr Wtr.
Armstrong's Early Rose. Mic MV Sor. For similar names see Early Rose.
Atwell. Gls.

SEEDSMEN'S SYNONYMS. 

Austins Colossal Yellow Dent. J&S.
Bailey's Favorite. D&H. For similar names see Farmer's Favorite.
Barnard's Early Yellow Dent. Brt. For similar names see Yellow Dent.
Battles' Cuban Giant Dent. Hop. For similar names see Cuban Mammoth.
Bennett's Yellow. Jll.
Black Hawk. DD.
Bloody Butcher. CE CSC Frd Gra Hrs Kg NK Pir.

SEEDSMEN'S SYNONYMS. Northwestern Dent, NK.
Blue Blazed. D&H. For similar names see Red Blazed.
Blunt's Mammoth. Eqr. For similar names see Blunt's Prolific.

SIMILAR NAMES. Blunt's White Prolific, Blunt's Mammoth.

SEEDSMEN'S SYNONYMS. Mammoth Ensilage, J&S.

SIMILAR NAMES. See Blunt's Prolific, White Prolific.
Bonanza White Dent. May. For similar names see White Dent.
Boone County Prolific. Roc.

SIMILAR NAMES. Boone County White.
Boone County White. Eer Wyg. For similar names see Boone County Prolific.

SIMILAR NAMES. Breck's Boston Market.
Breck's Boston Market. Entered as Boston Market.

Buckbee's Early Gold Mine, Buckbee's Early Klondike. Entered as Early Gold Mine and Early Klondike.
Buist's Early Golden Dent. Bui. For similar names see Golden Dent.
Buist's Improved Early Golden Dent, Buist's Prize Medal Southern White Snowflake. Entered as Buist's Early Golden Dent and Prize Medal Southern White Snowflake.


Butler Dent. Ggy. For similar names see Early Butler Dent.
Calico Dent. Hrn Jt. Pir.

SIMILAR NAMES. Up-to-date Calico Dent, Robb's Improved Calico Dent.
Canadian Cap. Rs.
Canadian Dent. D&H. For similar names see Early Eight-Rowed Yellow Canada.
Cary's Klondike. Kg Ws. For similar names see Klondike.

Champion Early White Pearl. Bak HP Put Shw Tex Yng.

SIMILAR NAMES. See Champion White Pearl.
Champion White Dent. Alx. For similar names see Champion Yellow Dent.
Champion White Flint. May. For similar names see Champion Yellow Dent.

Champion White Pearl. Alx Air Anb Ar Bar Bbl Bow Bui CSC Cle CCo Col Cox DD Ebr Eie Ewg Fnr Ger GI Graf Ham Hde Hre Hre Hot Iow MWJ J&M Kg Lam Lar L.B.JL Mgd May JCM JMM Ms MV Mzy Old For Rob Sal SOR S&O Sox Spl Stk Thm Thru Trim Vin Vh Wkr.

SIMILAR NAMES. Champion Early White Pearl, Early White Pearl, Extra Early Pearl, Illinois White Pearl, Mammoth White Pearl, Powell's Improved White Pearl, Sioux White Pearl, Wernich's Sweet Pearl, Sweet Pearl.

Champion Yellow Dent. Alx Iml MWJ S&O Tex Til.

SIMILAR NAMES. Early Champion, Yellow Dent, Champion White Dent, McCullough's Champion White Dent, Champion White Flint.
Chester County Mammoth Dent. Bui Bur CSC Drm Fst GH J&S Mns Man Mhl Min M&S Mzy Nel Nol Ren Roc Sal Slow Sim Tpk W&D.

Chestnut Grove Yellow. G&T.

Chickasaw. Anb.

Clark’s Cuban White Dent, Clark’s Cuban Yellow Dent, Clark’s Early Butler Dent, Clark’s Early Mastodon, Clark’s Early Yellow Mastodon, Clark’s Extra Early Huron Dent, Clark’s Mastodon. Entered as Cuban White Dent, Cuban Yellow Dent, Early Butler Dent, Early Mastodon, Early Yellow Mastodon, etc.

Cloud’s Early Mammoth Dent. Bui. For similar names see Cloud’s Yellow Dent.

Cloud’s Early Yellow Dent. Bra D&H Ewg Mhl Ren SB. Similar names. See Cloud’s Yellow Dent.

Cloud’s Yellow Dent. Drr Wat.

Similar names. Cloud’s Early Yellow Dent, Cloud’s Early Mammoth Dent.

Cocke’s Prolific. Ax CA Hst Kg Mc M & S&W Wlt Wd.

Similar names. See White Prolific.

Cocke’s White Prolific. MWJ. For similar names see White Prolific.

Compton’s Early Yellow. CSC EBC C&B D&H RE Ewg Gra Hen Kei McK May Pit Pri Ren Rob Sic Sim SB Thr.

Similar names. Compton’s Early Yellow Twelve-Rowed.

Compton’s Early Yellow Twelve-Rowed. Bru. Similar names. See Compton’s Early Yellow.

Connecticut White. Wer.

Conscience. MWJ Shw.

Copley’s Pride. TB.

Cornucopia White Dent. Del JCM.

Crane’s Prolific. Bgg. For similar names see White Prolific.

Cuban Giant Dent. Gra May. For similar names see Cuban Mammoth.

Cuban Giant White Dent. Bru RE Sim. For similar names see Cuban Mammoth.

Cuban Giant Yellow Dent. Ewg. For similar names see Cuban Mammoth.

Cuban Mammoth. Gng Kei Neb.

Similar names. Cuban Mammoth White Dent, Cuban Mammoth Yellow Dent, Cuban Giant White Dent, Cuban Giant Yellow Dent, Cuban Giant Dent, Battles’ Cuban Giant Dent, Clark’s Cuban Yellow Dent, Clark’s Cuban White Dent, Cuban Yellow Dent, Cuban White Dent.

Cuban Mammoth White Dent. CSC. For similar names see Cuban Mammoth.

Cuban Mammoth Yellow Dent. CSC D&H RE Kg Ren Sim SB.

Similar names. See Cuban Mammoth.

Cuban White Dent. CSC. For similar names see Cuban Mammoth.

Cuban Yellow Dent. CSC. For similar names see Cuban Mammoth.

Currie’s Earliest of All. Cur.

Dakota Dent. GIH Hbt NK RP Wil.

Similar names. Northrup, King & Co’s Dakota Dent, Early Dakota Dent, Extra Early Dakota Dent, Will’s Dakota Flint, North Dakota Flint, North Dakota White Flint, Salzer’s North Dakota White Flint, North Dakota Yellow Flint, Salzer’s South Dakota Yellow Flint, South Dakota Yellow Flint, Salzer’s South Dakota Yellow Flint, Dakota Queen Yellow Dent, Extra Early Dakota Queen Yellow Dent.

Dakota Queen Yellow Dent. May. For similar names see Dakota Dent.

Dakota Flint. NK Wil. For similar names see Dakota Dent.

Delaware County Yellow Dent. J&S Koe.

Delaware Sheep Tooth. Y&D.

Duly’s Hybrid. Kra MV Sox.


Similar names. See White Prolific.
Dutton.  GLs Pri.

Early Butler Dent.  Bru EBC C&F Ebr Ewg Fnd Gra Hn Kei Pri Ren S&H Sim.  

Similar names.  Clark's Early Butler Dent, Early Butler Yellow Dent, Butler Dent.

Early Butler Yellow Dent.  CSC D&H DD RE Hrv Shm SB.  

Similar names.  See Early Butler Dent.

Early Canada.  Bur LB.  

Similar names.  Yellow Flint, LB.

Early Champion Yellow Dent.  Shw.  

Similar names.  See Champion Yellow Dent.

Early Dakota Dent.  Pug.  For similar names see Dakota Dent.

Early Eclipse.  Bak.


Similar names.  Improved Early Yellow Canada, Eight-Rowed Early Yellow Canada, Twelve-Rowed Early Yellow Canada, Eight-Rowed Yellow Canada, Yellow Canada, Improved Yellow Canada, Canadian Dent, White Canada, Large White Canada, Pride of Canada.

Early Eight-Rowed Yellow Flint.  Bru Pac.  

Similar names.  See Eight-Rowed Yellow Flint.

Early Giant White Dent.  D&H Shw.  

Similar names.  Rennie's Early Giant White Dent, Salzer's Early Giant White Dent.

Early Golden Beauty.  Bui Eie Hly.  For similar names see Golden Beauty.


Similar names.  See Golden Dent.

Early Golden Surprise.  Ind.  For similar names see Golden Surprise.

Early Golden King.  IND.  M&S.  For similar names see Kansas King.

Early Golden Kansas.  IND.  M&S.  For similar names see Kansas King.

Early Green King.  IND.  M&S.  For similar names see Green King.

Early Horse Tooth.  Hen.  For similar names see Southern Horse Tooth.

Early Huron Dent.  Frm May XK Ren Rob Sal.  For similar names see Huron Dent.

Early Imperial.  Ber.

Early Iowa Yellow Dent.  Til.  For similar names see Iowa Gold Min.

Early Iowa Gold.  Bgs C&J Nef Mrv.  For similar names see Iowa Gold Min.

Early Kansas King.  Hly.  For similar names see Kansas King.

Early Kansas King.  Hly.  For similar names see Kansas King.

Early King Philip.  EBC May.  For similar names see King Philip.

Early Klondike.  Buc Roc.  For similar names see Klondike.

Early Klondike.  Buc Roc.  For similar names see Klondike.

Early Large White Flint.  Alx Cox.  For similar names see Large White Flint.

Early Learning.  Bgs C&J Nef Mrv.  For similar names see Learning.

Early Longfellow.  EBC Ewg Fmr Gra Iow Pg.  For similar names see Longfellow.

Early Mammoth White Dent.  Ms.  For similar names see Mammoth White Dent.

Early Market.  Shw.

Early Mastodon.  Alx Air Bak Btl Ber Big Bru Buc Bui Buc CSC Cie Col Ccr  

D&H Drr Drr Ebr Ebr Fnd Gra Hn Kei Pri Ren S&H Sim.  

Similar names.  See Mastodon.

Early Minnesota King.  CSC.  For similar names see Minnesota King.

Early Northern White Dent.  CSC.  For similar names see Northern White Dent.

Early One Hundred Day Bristol.  Drr.  For similar names see One Hundred Day.
Early Ontario.  

Early Orange.  

Early Pride of the North.  

Early Red Blazed.  Bow fer Gla LB Loh.  For similar names see Red Blazed.  

SEEDSMEN’S SYNONYMS.  Smit Nose, Fct.  

Early Rose.  

SIMILAR NAMES.  Armstrong’s Early Rose, Yellow Early Rose.  

Early Sanford.  Brit Brk Dun Emr Flo Gry Hrm K&W Neb S&F.  

SIMILAR NAMES.  See Sanford.  

Early Sheep Tooth.  Eit Vkl.  For similar names see Sheep Tooth.  

Early Vermont.  Hop.  

Early White Dawn.  Liv Shw.  

Early White Dent.  CSc MWJ.  For similar names see White Dent.  

Early White Flint.  Bow Brn low Min Pg Pnt Por Pri S&R Sim Tat.  

SIMILAR NAMES.  See White Flint.  

Early White Pearl.  Hly.  For similar names see Champion White Pearl.  

Early White Surprise.  Shw.  For similar names see Golden Surprise.  

Early Wisconsin White Dent.  Cur Sal.  

SIMILAR NAMES.  See Wisconsin White Dent.  

Early Yellow Canada.  Bui Drr Emr Flo Ggy J&S Raw Thr W&D.  

SIMILAR NAMES.  See Early Eight-Rowed Yellow Canada.  

SEEDSMEN’S SYNONYMS.  Early Yellow Flint, Mhl.  

Early Yellow Clarage.  HP.  For similar names see Yellow Clarage.  

Early Yellow Dent.  Tgl.  

Early Yellow Flint.  low Mhl Pnt.  For similar names see Yellow Flint.  

SEEDSMEN’S SYNONYMS.  Early Yellow Canada, Mhl.  

Early Yellow Huron Dent.  RE GIn NK.  For similar names see Huron Dent.  

Early Yellow Leaming.  Shw.  For similar names see Leaming.  

Early Yellow Longfellow.  Shm.  For similar names see Longfellow.  

Early Yellow Mastodon.  Yng.  For similar names see Mastodon.  

Early Yellow Rose.  S&O.  

Eclipse.  Btl Pnt Tht.  


SIMILAR NAMES.  See Early Eight-Rowed Yellow Canada.  

Eight-Rowed Yankee.  Brn.  For similar names see Yankee.  

Eight-Rowed Yellow Canada.  Luc Min.  

SIMILAR NAMES.  See Early Eight-Rowed Yellow Canada.  

Eight-Rowed Yellow Flint.  Bgs Lam.  

SIMILAR NAMES.  Large Eight-Rowed Yellow Flint, Improved Eight-Rowed Yellow Flint, Early Eight-Rowed Yellow Flint, Mammoth Early Eight-Rowed Yellow Flint, Mammoth Early Eight-Rowed Flint, Mbls’ Mammoth Early Eight-Rowed Yellow Flint, Eight-Rowed Yellow, Mammoth Eight-Rowed Yellow.  

EVERITT’S MORTGAGE LIFTER.  EVr.  For similar names see Mortgage Lifter.  

Expansion.  Bet.  

Extra Early Dakota Dent.  Neb.  For similar names see Dakota Dent.  

Extra Early Dakota Queen Yellow Dent.  OY Tpk.  

SIMILAR NAMES.  See Dakota Dent.  

Extra Early Huron Dent.  CECS Crs D&H DD Ewg Frd Hen Hlm H&P Kei  

Luc Man May JCM Mbls Pg HP Roe Shw Sie.  

SIMILAR NAMES.  See Huron Dent.  

Extra Early Iowa Yellow Dent.  JL.  For similar names see Iowa Gold Mine.  

Extra Early King Philip.  D&H HP Roe Shw.  

SIMILAR NAMES.  See King Philip.  

138 AMERICAN VARIETIES OF VEGETABLES.
CORN, FIELD.  139

Extra Early Large Yellow Yankee.  Buc Roc.  For similar names see Yankee.
Extra Early Leaming.  Tpk.  For similar names see Leaming.
Extra Early Pearl.  Gdn.  For similar names see Champion White Pearl.

SEEDSMEN'S SYNONYMS.  White's Surprise, Gdn.
Extra Early Squaw.  Shm.  For similar names see Squaw.
Extra Early Yellow Huron Dent.  H&C.  For similar names see Huron Dent.
Extra Early Yellow Summer Flint.  Dlw.
Extra Early Yellow Yankee.  Shm.  For similar names see Yankee.
Farmer's Favorite.  CSC Cle GH J&S May Shw Thr W&D.

SIMILAR NAMES.  Bailey's Favorite, Forsythe's Favorite, Murdock's Favorite, Riley's Favorite.
Farmer's Friend.  Hrs.
Farmer's Interest.  WS.
Farmer's Pride.  Alx.
Farmer's Reliance.  Iow.

SEEDSMEN'S SYNONYMS.  O'Connell's Early, Sox.
Farmer's Surprise.  Shw.
Farmer's Yellow Surprise.  D&H.  For similar names see Golden S ris.

First Crop.  Sie.

SIMILAR NAMES.  Siegel's First Crop.
Fitche's Antique Red Cob.  Gdn.  For similar names see Red Cob.
Florida Flint.  Gfg.

SIMILAR NAMES.  Griffing's Florida Flint.
Ford's Sure Crop Yellow Dent.  Frid.  For similar names see Yellow Dent.
Forsythe's Favorite.  Btl Evr.  For similar names see Farmer's Favorite.
Fuller's Early Yellow.  Ggy Pr.

Gehn Seventy Day.  Van Wll.

SIMILAR NAMES.  Will's Gehn Seventy Day.  
Genesee Valley.  Bgs Hrv Vk.
Gentry's Early Market.  Kg Wd.
Giant Beauty Dent.  J&S M&S.  For similar names see Golden Beauty.
Giant Long Flint.  Van.
Giant Mexican June.  Iow.  For similar names see Mexican June.
Giant Red.  Jl.
Giant Southern White.  Ewg Gra.  For similar names see Southern White.
Giant White Normandy.  Dd.
Gilbert's White Flint.  Gfg.  For similar names see White Flint.  

Goddard's King of the Earliest.  Entered as King of the Earliest.

Gold Coin.  Bgs Hlrn.

SIMILAR NAMES.  Livingston's Gold Coin, Michell's Gold Coin.

Golden Beauty.  Alx Anb Ar Bak Bil Ben Bow Brk Bdg Bar Cam CE CSC Cle C&B Cox Chm DD Drr Drm Ehr Eic Emr Est Ger Gln Gry Hde Hrn Hen Hly Hll Hm Iow J&S Kg Lsn Lan Lnr Mgd PM Mns Man May JMM McM Mhl Min Nfl Nol Pac Ptt Rob Shw Spt Stk Tex Thr Trm Vk W&D WS Yng.


Golden Combination.  Sal.

SIMILAR NAMES.  Salzer's Golden Combination.

Golden Dent.  Bhe Buc Cam Cle CA Hst Kg Lan McM Roc Tat Wd WS.

SIMILAR NAMES.  Improved Golden Dent, Early Golden Dent, Improved Early Golden Dent, Buist's Improved Early Golden Dent, Large Grain Golden
American Varieties of Vegetables.

Dent. Late Golden Dent, Yellow IXL Golden Dent, Yellow Golden Dent, Hunting- 
ington & Page’s Golden Dent, Murdock Golden Dent. See also Yellow Dent.

Seedmen’s Synonyms. Improved Pride of the North, Bae Roc.

Golden Dewdrop. CSC P’t Pri Van W&D.

Similar Names. Early Golden Dewdrop.

Golden Longfellow. M&S. For similar names see Longfellow.

Golden Row Yellow Dent. Lou Neb Van. For similar names see Yellow Dent.

Golden Superb. Chi.

Golden Superior. M&S.

Similar Names. Mills’ Golden Superior.


Similar Names. Early Golden Surprise, Livingston’s Early Golden Surprise, Farmer’s Yellow Surprise, White Surprise, Early White Surprise, Mammoth White Surprise.

Golden Triumph. Ber Sal. For similar names see Triumph.

Gold King. Alr.

Similar Names. Silver King.

Gold Mine. Hlm. For similar names see Inva Gold Mine.

Gold Standard Yellow. Rtk.

Similar Names. Ratekin’s Gold Standard Yellow.

Gourd Seed Golden Dent. Eic Stk.

Similar Names. Gourd Seed Leaming, Yellow Giant Gourd, Higdon’s Mam- moth Gourd Seed, Southern White Gourd.

Gourd Seed Leaming. Drr.

Similar Names. See Gourd Seed Golden Dent, Leaming.

Griffing’s Florida Flint. Entered as Florida Flint.

Griswold’s Wonder. Bak Gw.

Similar Names. New Century Wonder, Vail’s New Wonder Golden Dent.

Guinea. Lan.

Hammond’s American Pride Early Yellow Dent, Hammond’s Sixty Day Flint, Hammond’s White Cap Yellow Dent. Entered as American Pride Early Yellow Dent, Sixty Day Flint, and White Cap Yellow Dent.

Hammond’s White Dent. Ham. For similar names see White Dent.

Hanna White. Shaw.

Harden Seed Co.'s White Perfection. Entered as White Perfection.

Harris’ Mammoth Yellow Flint. Hrs.

Hastings’ Six-Ear. Hst.


Similar Names. Pierson’s Eureka.

Hickory King. AIX Bak Btl Blg Bon Bar Cam CSC C&B CA BD Drr Drrn Eic Fst Ger Gdn GH G&T Hde Hlm Hst Hen Iow MWJ J&M J&S Kg PM Mns Mau May JCM JMM McH Mhl Pat Ptt Pri Qkr Roe Sal Sim Spf Stk S&H Tal Tex Thr Trm T&B Vin Wd.

Similar Names. Improved Hickory King, White Hickory King, Steelman’s Early Hickory King.

Higdon’s Mammoth Gourd Seed. Gdn.

Similar Names. See Gourd Seed Golden Dent.

Hogue’s Yellow Dent. Bak. For similar names see Yellow Dent.

Seedmen’s Synonyms. Nebraska Yellow Prize, Bak.

Holmes’ Yellow Dent. Hlm. For similar names see Yellow Dent.

Holt’s Early Mammoth. Brn.

Holt’s Strawberry. Kg Wd.

Houghton’s Silver White Flint. Sal. For similar names see White Flint.

Huntington & Page’s Golden Dent. H&P. For similar names see Golden Dent.
CORN, FIELD.

Huron Dent. May.


Illinois White Pearl. Shw. For similar names see Champion White Pearl.

Imperial. Rtk.

Improved Early Golden Dent, Improved Early Horse Tooth, Improved Early Learning, Improved Early Mastodon, Improved Early Sheep Tooth, Improved Early Yellow Canada, Improved Eight-Rowed Yellow Flint, Improved Golden Beauty, Improved Golden Dent, Improved Hickory King, Improved King Philip, Improved Large White Flint, Improved Large Yellow Dent, Improved Leaning, Improved Longfellow, Improved Maryland Yellow Dent, Improved Mortgage Lifter, Improved Ninety Days Leaning, Improved Pride of the North, Improved Sanford, Improved Southern White Snowflake, Improved White Prolific, Improved Yellow Canada, Improved Yellow Flint, Improved Yellow Leaning. Entered as Early Golden Dent, Early Horse Tooth, Early Learning, Early Mastodon, Early Sheep Tooth, Early Yellow Canada, etc.

Iowa Beauty. Shw. For similar names see Golden Beauty.

Iowa Gold Mine. Air Ar Bak Brd Blt Blg CE CSC Col Cur D&H Ebr Evr Fnr Frd Grw Ham Hle Iow Kg Kra Lar JL Mgd Mos Man May JCM JMM Mic MV NK OV Pac Pg Pnt Pri Rob Roc Sal Shw S&O Sox Spf Stw S&H Tex TB Thr Tpk Trm Vl Van Wer.


Iowa Silver Mine. Air Ar Bak Brd Blt Bue CE CSC Col D&H IDO Ebr Evr Fnr Frd Gll Ham Hle Iow Kra Lar JL Mgd Mos Man May Mic MV Neb Ovl Pac Rtk Rob Roc Sal Shw S&O Shm Sox Spf Tex TB Thm Trm Vn Vl Wer.

Similar Names. See Iowa Gold Mine.

Iowa Yellow Dent. Iow. For similar names see Iowa Gold Mine.

John's Large Southern Bread. MWI.

Johnson & Stokes' Giant Beauty Dent. Entered as Giant Beauty Dent.

Jumbo King. Jnm.

Kansas King. Bai Hly.

Similar Names. Early Kansas King, Early Golden Kansas King, White Kansas King, Kansas Sunflower Corn.

Kansas Sunflower Corn. Btl Hly. For similar names see Kansas King.

Kent White Prolific. Man. For similar names see White Prolific.

Keystone Mammoth Pride. Hlm.

King of Illinois. Lvr Vn.


Similar Names. Goldard's King of the Earliest, Salzer's King of the Earliest.

King Philip. Anb Brd Btg CSC Dm1 Gcr Hry Hen J&M Kei Kg Kra Lam Lar May JMM NK Por Pri Rob RP Sal S&O Sie Sim Thr Vn Vn Vn Vn W&D Wer.

Similar Names. Early King Philip, Extra Early King Philip, Improved King Philip, Red King Philip.

Klondike. 1st Man.

Similar Names. Cary's Klondike, Manhe's Klondike, Early Klondike.

Koss' Golden Beauty. Entered as Golden Beauty.

Landreth's Southern Prolific. Entered as Southern Prolific.

Large Early Rural White Flint. HP. For similar names see Rural White Flint.

Large Eight-Rowed Yellow Flint. Sic.

Similar Names. See Eight-Rowed Yellow Flint.

Large Grain Golden Dent. Gldn. For similar names see Golden Dent.
American Varieties of Vegetables

Large Maryland White. Bui. For similar names see Maryland White.

Large Mastodon. Shm. For similar names see Mastodon.

Large Mexican June. Drum. For similar names see Mexican June.

Large Northern White Dent. Shm. For similar names see Northern White Dent.

Large White Canada. Græ.

Similar Names. See Early Eight-Rowed Yellow Canada.

Large White Flint. Bdg Bui Cam CSC EBC Drv Eic RE Loh Mzy Ncb Shw Stk SB.

Similar Names. Long White Flint, Improved Large White Flint, Early Large White Flint.

Seedsman's Synonyms. Sanford, EBC.

Large Yellow Dent. Js Ger Gh1 Pks.

Large Yellow Flint. CSC EBC C&B Ger Hen Loh Mzy Ncf Ptt Pri Shm W&D.

Large Yellow Leaning. Shm. For similar names see Leaning.

Late Golden Dent. CSC Shw. For similar names see Golden Dent.


Legal Tender. Ber Ebr Fmr Hde low J&S Kra Lam JL Mgd Ncb Rob S&O Shm Spf Stw Trc Thr.

Lenocher's Homestead. Iow.

Liberty. CSC Rco Shw.

Livingston's Early Golden Surprise. JL. For similar names see Golden Surprise.

Livingston's Gold Coin. Cle. For similar names see Gold Coin.


Similar Names. Improved Longfellow, Longfellow Eight-Rowed Jersey, Early Longfellow, Yellow Longfellow, Early Yellow Longfellow, Golden Longfellow.

Longfellow Eight-Rowed Jersey. Bng. For similar names see Longfellow.

Long White Flint. Bdg Thr Wd. For similar names see Large White Flint.

Seedsman's Synonyms. Rare Rgpr, Wd.

McCullough's Champion White Dent. JMM.

Similar Names. See Champion Yellow Dent.

Mammoth Early Eight-Rowed Flint. D&H.

Similar Names. See Eight-Rowed Yellow Flint.

Mammoth Eight-Rowed Yellow. Brg Shm.

Similar Names. See Eight-Rowed Yellow Flint.

Mammoth Early Eight-Rowed Yellow Flint. Hum.

Similar Names. See Eight-Rowed Yellow Flint.

Mammoth Golden Beauty. Brg. For similar names see Golden Beauty.

Mammoth White Columbian. Ar. For similar names see Pride of Columbia.
Mammoth White Dent.  Liv Min Tkr Sal Trm Wer.

**Similar Names.** Early Mammoth White Dent.

Mammoth White Hite.  WS.

Mammoth White Pearl.  McM.  For similar names see Champion White Pearl.

Mammoth White Surprise.  Bui Mzy Thr.

**Similar Names.** See Golden Surprise.

Mammoth Yellow Field.  MWJ Trm.  For similar names see Yellow Field.

Marlboro’s Prolific.  Alx.  For similar names see White Prolific.

Marshfield Yellow Dent.  Aub.  For similar names see Yellow Dent.

Maryland White.  Big G&T.

**Similar Names.** Large Maryland White, Improved Maryland Yellow Dent.

Maryland Yellow Dent.  Gry.  For similar names see Maryland White.

Mastodon.  Brk Crs Chm Egg MWJ J&M Mzy NK Sal Thm Trr Van Wd.

**Similar Names.** Clark’s Mastodon, Clark’s Early Mastodon, Clark’s Early Yellow Mastodon, Early Mastodon, Improved Early Mastodon, Maul’s Improved Early Mastodon, Large Mastodon, Early Yellow Mastodon.

Maurle’s Improved Early Mastodon.  Entered as Early Mastodon.

Maurle’s Klondike.  Ham.  For similar names see Klondike.

Maumee Valley Extra Early Gilhouse.  HP.

**Similar Names.** Emr LiB May NK Rob Sal Til.

**Similar Names.** Northrup, King & Co.’s Mercer.

**Seedmen’s Synonyms.** Ridont Flint, Sal.

Mexican June.  Alx Bak Eic Ggy Gtg Hde Hst Hry Shw Sk Tex Thm Wl Wd.

**Similar Names.** Large Mexican June, Giant Mexican June.

Michell’s Extra Early.  D&H.

Michell’s Gold Coin.  Mbl.  For similar names see Gold Coin.

Mills’ Golden Superior.  Ham Bls.  For similar names see Golden Superior.

Mills’ Mammoth Early Eight-Rowed Yellow Flint.  Mls.

**Similar Names.** Same as Eight-Rowed Yellow Flint.

Minnesota King.  Eer Brn Gll Hbt Iow J&M Lam Lnc Mgd May NK OV Old Rob Sal Til Tpk Wl.

**Similar Names.** Northrup, King & Co.’s Minnesota King, Early Minnesota King, Minnesota White Flint, Northrup, King & Co.’s Minnesota White Flint, Minnesota Number Thirteen.

Minnesota Leaning.  Fmr NK OId.  For similar names see Leaning.

Minnesota Number Thirteen.  Fmr May.  For similar names see Minnesota King.

Minnesota White Flint.  Fmr NK Til.  For similar names see Minnesota King.

Monarch Early White Dent.  Gll.

Moore & Simon’s Poor Man’s.  M&S.  For similar names see Poor Man’s.


**Similar Names.** Everitt’s Mortgage Lifter, Improved Mortgage Lifter.

Mosby’s Prolific.  Eic MWJ Shw Skk Wd.  For similar names see White Prolific.

Murdock’s Favorite.  Put.  For similar names see Farmer’s Favorite.

Murdock’s Golden Dent.  Fmr.  For similar names see Golden Dent.

Murdock’s Ninety Day.  DD.  For similar names see Ninety Day.

Nebraska Gold Mine.  Neb.  For similar names see Iowa Gold Mine.

Nebraska White Prize.  Bak Grw Neb.

**Similar Names.** Nebraska Yellow Prize.

Nebraska Yellow Prize.  Bak Grw.  For similar names see Nebraska White Prize.

**Seedmen’s Synonyms.** Hogue’s Yellow Dent, Bak.

Nelson’s Yellow Field.  Ggy.  For similar names see Yellow Field.

New Century Wonder.  Dov.  For similar names see Griswold’s Wonder.

Ninety Day.  G&T Mls.

**Similar Names.** Ninety Day Yellow, Murdock’s Ninety Day.
Ninety Day Yellow.  G&F.  For similar names see Ninety Day.
Ninety Days Learning.  Neb.  For similar names see Learning.
Norfolk Market.  Tat.
  Similar names.  Tait's Norfolk Market.
Normandy.  Pot.
North Carolina White Prolific.  Shw.  For similar names see White Prolific.
North Dakota Extra Early Prize Taker.  M&S.
North Dakota Flint.  Rob.  For similar names see Dakota Dent.
North Dakota White Flint.  D&H Ewg Gra NK McK Ren Sal Sim.  See Dakota Dent.
North Dakota Yellow Flint.  D&H Gra McK Ren Sal.  See Dakota Dent.
Northern Prolific.  Ren.  For similar names see White Prolific.
Northern White Dent.  WS.
  Similar names.  Early Northern White Dent, Large Northern White Dent, Northwestern Dent, Will's Northwestern Dent.
Northrup, King & Co.'s Dakota Dent.  Northrup, King & Co.'s Mercer, Northrup, King & Co.'s Minnesota Dent, Northrup, King & Co.'s Minnesota Learning, Northrup, King & Co.'s Minnesota White Flint.  Entered as Dakota Dent, Mercer, Minnesota King, Minnesota Learning, and Minnesota White Flint.
North Star Yellow Dent.  Lnr.
Northwestern Dent.  May NK Wll.  For similar names see Northern White Dent.
  Seedsmen's synonyms.  Bloody Butcher, NK.
O'Connell's Early.  Sox.
  Seedsmen's synonyms.  Farmer's Reliance, Sox.
Ohio Early Gold Mine.  HP.  For similar names see Iowa Gold Mine.
Old Cabin Home.  Lan.
Oldham County Yellow.  WS.
Old Virginia.  Frd.  For similar names see Virginia White Dent.
One Hundred Day.  D&H.
  Similar names.  Early One Hundred Day Bristol, One Hundred Day Bristol.
One Hundred Day Bristol.  Est G&T Hen J&S Mhl M&S.
  Similar names.  See One Hundred Day.
Owen's Red Cob.  Gdn.  For similar names see Red Cob.
Oxblood Red Dent.  Sal.
Paragon.  Gra.
Pearce's Early Prolific.  McK.  For similar names see Pearce's Prolific.
Pearce's Prolific.  D&H.
  Similar names.  Pearce's Early Prolific.
Peerless White Dent.  H&I'.  For similar names see White Dent.
Pennsylvania Eight-Rowed Early Yellow Flint.  Bal.
  Similar names.  See Pennsylvania White Dent.
Pennsylvania Long Early Yellow Flint.  Lan.
  Similar names.  See Pennsylvania White Dent.
Pennsylvania White Dent.  Wlt.
  Similar names.  Pennsylvania Yellow Dent, Pennsylvania Long Early Yellow Flint, Pennsylvania Eight-Rowed Early Yellow Flint.
Pennsylvania Yellow Dent.  Wlt.  For similar names see Pennsylvania White Dent.
Philippus' Pere.  JMP.
Pierson's Eureka.  Prn.  For similar names see Henderson's Eureka.
Poor Land.  Gig.  For similar names see Poor Man's.
Poor Man's. Alx.

SIR SIMILAR NAMES. Moore & Simson's Poor Man's, Poor Land.

Powell's Improved White Pearl. Entered as White Pearl.

Prehistoric. Brk Del Ext Frd Iow MWJ JL Vk.

Pride of Canada. May. For similar names see Early Eight-Rowed Yellow Canada.

Pride of Columbia. Brl.

SIR SIMILAR NAMES. Mammoth White Columbian.

Pride of Nishna. Rtk Rs Trs.

SIR SIMILAR NAMES. Ratekin's Queen of Nishna, Queen of Nishna.

Pride of the North. Air. Aurb Bai Bzk Bdl Bkt Ber Bow Brk Bgs Brn Bng Buc Brz Col Crs Cur Dlw DD Ebe Ebr Ewg Fmr Fqr Fer Frd Hb Hm Hmy Iow J&m Kgl Kg Kos Kra Lam Lur LB Lwv JL May Mic MV Myz NK Ov Old Pac Py HP Pnt Ptr Ppr Pri Qkr Ren Rnc RP Sal Shw S&O Slim Sie Sim Sox Swh S&H TB Thr Til Tpr Trn Vav Vc Vln Wer Wll Wlr Wff.

SIR SIMILAR NAMES. Sibley's Pride of the North, Early Pride of the North.


Prince Charles White. Shw. For similar names see St. Charles.

Prize Medal Southern White Snowflake. Bnl.

SIR SIMILAR NAMES. See Southern White Snowflake.

Profit. Fmr Iow Sph.

Prosperity. Fmr.

Pure Gold. Anb.

Queen of the Field. Lrr Vun.

Queen of Nishna. Rtk. For similar names see Pride of Nishna.

Queen of the North. Sal Wr. For similar names see Queen of the Prairie.

Queen of the Prairie. Bdg Bng Csc Ebc C&B Fmr Hen Ptt Raw S&H W&d. Wr.

SIR SIMILAR NAMES. Queen of the North.

Queen of the Yellows. Jn.

Race Horse Yellow Dent. Hrn.

Rare Ripe. Kg Wd.

SEEDSMEN'S SYNONYMS. Long White Flint, Wd.

Ratekin's Gold Standard Yellow, Ratekin's Queen of Nishna. Entered as Gold Standard Yellow and Queen of Nishna.


SIR SIMILAR NAMES. Early Red Blazed, Yellow Blazed, Blue Blazed.

Red Cob. Drr Ewg Frd J&S Mns Man Jmm Til.

SIR SIMILAR NAMES. Owen's Red Cob, Fitche's Antique Red Cob, Red Cob Mammoth White Dent.

Red Cob Mammoth White Dent. Jn.

Red Driver. Ws.

Red King Philip. Csc. For similar names see King Philip.

Reid's Yellow Dent. Low Old. For similar names see Yellow Dent.

Reliance Yellow Dent. Old. For similar names see Yellow Dent.

Rennie's B. B. Ren.

Rennie's Early Giant White Dent. Ren.

SIR SIMILAR NAMES. See Early Giant White Dent.

Rennie's Learning. Entered as Learning.

Rhode Island White Cap Flint. Brt Pot.

SIR SIMILAR NAMES. See White Cap Yellow Dent.

1329—No. 21—02——10
Rideout. Sal Tii.

SEEDSMEN'S SYNONYMS. Mercez, Sal.


SIMILAR NAMES. See Farmer's Favorite.

Robb's Improved Calico Dent. Entered as Calico Dent.

Rural White Flint. CSC Hry Hen low Kei Ren Sim W&D Wdr.

SIMILAR NAMES. Large Early Rural White Flint.

Rustler. GH NK.

St. Charles. Eic Gdn.

SIMILAR NAMES. St. Charles White, Prince Charles White.

St. Charles White. Aro Dl Pnt ScCt Sk Tpk.

SIMILAR NAMES. See St. Charles.

Salzer's All Gold, Salzer's Golden Combination, Salzer's King of the Earliest, Salzer's Leaning, Salzer's North Dakota White Flint, Salzer's North Dakota Yellow Flint, Salzer's South Dakota Yellow Flint. Entered as All Gold, Golden Combination, King of the Earliest, Leaning, North Dakota White Flint, etc.

Salzer's Early Giant White Dent. Sal.

SIMILAR NAMES. See Early Giant White Dent.

Sanford. CSC EBC Chn E1t Ewg Gtr Gya McK Ptt Raw Rob Thr Wdr.

SIMILAR NAMES. Early Sanford, Improved Sanford, White Sanford.

SEEDSMEN'S SYNONYMS. Large White Flint, EBC.

Shaker's Early Yellow Dent. CSC. For similar names see Yellow Dent.

Shannon's Extra Early Prolific. MWJ. For similar names see White Prolific.

Shannon's Large Early. MWJ.

Shaw's Improved. AIX CA MWJ McM.

Sheep Tooth. Chn Dw.

SIMILAR NAMES. Improved Early Sheep Tooth, White Sheep Tooth, Southern White Sheep Tooth.

SEEDSMEN'S SYNONYMS. Southern Fodder, Drr.

Sibley's Pride of the Market. Entered as Pride of the Market.

Siegel's First Crop. Entered as First Crop.

Silver King. Kg. For similar names see Gold King.

Silver Mine. Ber Hly NK. For similar names see Iowa Gold Mine.

Silver Triumph. Ber. For similar names see Triumph.

 Sioux White Pearl. Sox. For similar names see Champion White Pearl.

Sixty Day Flint. Ham.

SIMILAR NAMES. Hammond's Sixty Day Flint.

Smut Nose. D&H Fmr Hry NK.

SEEDSMEN'S SYNONYMS. Early Red Blazed, Fyr.

Snowflake. Ber Gin Shw. For similar names see Southern White Snowflake.

Snow White Dent. Ale CSC D&H Man Py Van.

SIMILAR NAMES. See White Dent.

South Dakota Yellow Flint. D&H Ren Sal. For similar names see Dakota Dent.


SIMILAR NAMES. Virginia Horse Tooth, White Horse Tooth, Yellow Horse Tooth, Improved Early Horse Tooth.

Southern Prolific. Lan. For similar names see White Prolific.

Southern Sweet Mammoth. Ren.

Southern White. Brk Fqr Gry Pri Rs T&J.

SIMILAR NAMES. Southern White Gourd, Giant Southern White.

Southern White Gourd. Lan.

SIMILAR NAMES. See Southern White, Gourd Seed Golden Dent.

Southern White Sheep Tooth. Drr Rec. For Similar names see Sheep Tooth.

Southern White Tooth.
Southern White Snowflake. Alex Cam Ele G&T Hst Jae Put Wld.

Similar names. Alexander's Southern White Snowflake, Buist's Prize Medal Southern White Snowflake, Improved Southern White Snowflake, White Snowflake, Snowflake, Prize Medal Southern White Snowflake.

Squaw. Ele NK.

Similar names. Extra Early Squaw.

Star Learning. D&H Iow. For similar names see Learning.

Steelman's Early Hickory King. Entered as Early Hickory King.

Sturgeon's "White. WS.

Similar names. Silver Triumph, Golden Triumph.

Twelve-Rowed Early Yellow Canada. C&I.

University Number Thirteen. NK.

Up-to-Date Calico Dent. Ber. For similar names see Calico Dent.

Vail's New Wonder Golden Dent. T&L.

Similar names. See Griswold's Wonder,

Virginia Horse Tooth. Thr.

Similar names. See Virginia White Dent, Southern Horse Tooth.

Virginia Mammoth White. Raw.

Virginia White Dent. Kg Wld.

Similar names. Old Virginia, Virginia Horse Tooth.

Walker White Dent. Akr.

Walker Yellow Dent. H&P Wld. For similar names see Yellow Dent.

Washakum Yellow Flint. Sal.

Waterloo Early Dent. Ham.

Similar names. Waterloo Extra Early Dent.


Similar names. See Waterloo Early Dent.

Wernich's Sweet Pearl. Entered as Sweet Pearl.

Wernich's Ten Weeks. Wer.

Western White Dent. Roc.

Similar names. Western Yellow Dent.

Western Yellow Dent. Kei May Roc.

Similar names. See Western White Dent.

White Australian. Pir.

White Canada. Ewg Gra.

Similar names. See Early Eight-Rowed Yellow Canada.

White Cap Early Yellow Dent. Bui III.

Similar names. See White Cap Yellow Dent.

White Cap Yellow Dent. Brl Bkt Ber Bru Buc Bar CSC Col Car Dlw D&H DD RE Ewg Fmr Frd Gra Ham Hde Hrs Hvy Hen Hop Iml J&S Kei Kg Koe Kos Loc Liv Mgd May Ms NK OV Old Pg Por Qkr Ren Rob Roc Rs St&R Shw Sim Sf$ SB Sw S&H Tex Tpk Wld Wer Yng.

Similar names. Hammond's White Cap Yellow Dent, White Cap Early Yellow Dent, Rhode Island White Cap Flint.
White Dent. Cam Gdn H-st J&S McM Pir WS.

Similar names. Improved White Dent, Early White Dent, Hammond's White Dent, Bonanza White Dent, Peerless White Dent, Snow White Dent. See also Western White Dent, Wisconsin White Dent, Northern White Dent, etc.

White Elephant. Mic.

White Face Dent. Brn.

White Flint. Bon Cle C&J CF Gra Gng Hen MWJ MV Rob Roe Shm Sox Thr.

Similar names. Early White Flint, Gilbert's White Flint, Houghton's Silver White Flint. See also Large White Flint, Rural White Flint, etc.

Seedsmen's synonyms. Old Honing, MV Son. Pearl, Brn.

White Hickory King. Bai Hly Shw Ying. For similar names see Hickory King.

White Horse Tooth. Lan. For similar names see Southern Horse Tooth.

White Kansas King. Amb Btl. For similar names see Kansas King.

White Majestic. Wd.

White Perfection. Hrn.

Similar names. Harnden Seed Co.'s White Perfection.

White Prolific. G&T MWJ.


White Rockdale. Eic Hst Stk.

White Sanford. Brd Bgs Brb Crs D&H Lm May Rce Rs.

Similar names. See Sanford.

White Sheep Tooth. Lan. For similar names see Sheep Tooth.

White Snowflake. Ber Kg. For similar names see Southern White Snowflake.

White Surprise. Gdn. For similar names see Golden Surprise.

Seedsmen's synonyms. Extra Early Pearl, Gdn.


Winn's Hybrid. Hrn K&W.

Wisconsin Silver. Wer. For similar names see Wisconsin White Dent.


Similar names. Early Wisconsin White Dent, Wisconsin Yellow Dent, Wisconsin White Flint, Wisconsin Silver.

Wisconsin White Flint. Ccr. For similar names see Wisconsin White Dent.

Wisconsin Yellow Dent. CSC GH Sim.

Similar names. See Wisconsin White Dent.


Yankee. WS.

Similar names. Eight-Rowed Yankee, Extra Early Yellow Yankee, Extra Early Large Yellow Yankee.

Seedsmen's synonyms. Yellow Flint, Sox.

Yard Long Yellow Dent. Eyr. For similar names see Yellow Dent.

Yellow Blazed. Y&H. For similar names see Red Blazed.

Yellow Canada. Ewg Gra Kei Py Ptu Rs SB.

Similar names. See Early Eight Rowed Yellow Canada.

Yellow Clarage. Liv.

Similar names. Early Yellow Clarage.

Yellow Creole. Eic Stk.

Yellow Dent. Bug RE Gng Lam Pir Sim SB Tpk.

Similar names. Hague's Yellow Dent, Holmes' Yellow Dent, Marshfield Yellow Dent, Reid's Yellow Dent, Walker Yellow Dent, Reliance Yellow Dent,
Barnard's Early Yellow Dent, Shaker's Early Yellow Dent, Golden Row Yellow Dent, Yard Long Yellow Dent, Improved Large Yellow Dent, Ford's Sure Crop Yellow Dent. See also Golden Dent, Champion Yellow Dent, Cloud's Yellow Dent, etc.

**Seedsmen's synonyms.** Pride of the North, Lam Vin.

**Yellow Early Rose.** TB. For similar names see Early Rose.

**Yellow Field.** Brk.  
**Similar names.** Nelson's Yellow Field, Mammoth Yellow Field.

**Yellow Flint.** Bai Brd Bar Cle Hbt LB MV Sox.  
**Similar names.** Early Yellow Flint, Improved Yellow Flint.  
**Seedsmen's synonyms.** Early Canada, LB. Yankee, Sox.

**Yellow Giant Gourd.** Hly. For similar names see Gourd Seed Golden Dent.

**Yellow Golden Dent.** Hly. For similar names see Golden Dent.

**Yellow Horse Tooth.** RE Ewg Ren Sim SB.  
**Similar names.** See Southern Horse Tooth.

**Yellow IXL Golden Dent.** Sal. For similar names see Golden Dent.

**Yellow Leaning.** Ar Cox Ewg Liv JI. JCM JMM Mzy Qkr S&O.  
**Similar names.** See Leaning.

**Yellow Longfellow.** Emr RE SB. For similar names see Longfellow.

**Yellow Spanish.** Ger.

### CORN (POP CORN)

<table>
<thead>
<tr>
<th>Name</th>
<th>Synonym</th>
<th>Type</th>
<th>Source</th>
<th>For similar names see</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amber Rice</td>
<td>Brk Bur</td>
<td>Iow.</td>
<td></td>
<td>Rice</td>
</tr>
<tr>
<td>Black Diamond</td>
<td>Buc Roc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys' Favorite</td>
<td>Evr</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buckbee's Snowball</td>
<td></td>
<td></td>
<td></td>
<td>Snowball</td>
</tr>
<tr>
<td>Burpee's Tom Thumb</td>
<td></td>
<td></td>
<td></td>
<td>Tom Thumb</td>
</tr>
<tr>
<td>California Yellow</td>
<td>Brk Bar Pac</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cook's Improved Egyptian</td>
<td></td>
<td></td>
<td></td>
<td>Egyptian</td>
</tr>
<tr>
<td>Dye</td>
<td></td>
<td>Iow.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Amber Rice</td>
<td>Hcn</td>
<td></td>
<td></td>
<td>Rice</td>
</tr>
<tr>
<td>Early White Rice</td>
<td>Hp</td>
<td></td>
<td></td>
<td>similar names see Rice</td>
</tr>
<tr>
<td>Egyptian</td>
<td>Cok Ggy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Similar names.</strong> Cook's Improved Egyptian</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seedsmen's synonyms.</strong> White Rice, Ggy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eight-Rowed White</td>
<td>Brk JMM Hcn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excelsior</td>
<td>Hrm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>German White Rice</td>
<td>H&amp;P</td>
<td></td>
<td></td>
<td>Rice</td>
</tr>
<tr>
<td>Golden Dwarf</td>
<td>Eas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden Tom Thumb</td>
<td>Brk Bar Pg</td>
<td></td>
<td></td>
<td>similar names see Burpee's Tom Thumb</td>
</tr>
<tr>
<td>Golden Yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois Snowball</td>
<td>Old Vau</td>
<td></td>
<td></td>
<td>Snowball</td>
</tr>
<tr>
<td>Improved White Rice</td>
<td></td>
<td></td>
<td></td>
<td>White Rice</td>
</tr>
<tr>
<td>Mapledale Prolific</td>
<td>Air Bag Bar CE CSC Col D&amp;H Evr Fmr Frd Gis Ham Hrv Him Hop Hov J&amp;S Kg Kra Lar Mau May Nof Pg Rice Roe Shw Spf S&amp;II Vau 149 Wd WS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miniature</td>
<td>Iow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monarch</td>
<td>MWJ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seedsmen's synonyms.</strong> White Rice, Col.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monarch Red Rice</td>
<td>Fld</td>
<td></td>
<td></td>
<td>similar names see Rice</td>
</tr>
<tr>
<td>Monarch White Rice</td>
<td>Ber CA Fld Frd Hnd Hde Iow Kg Lar Mau Shw Spf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Similar names.</strong> See Rice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonpareil White</td>
<td>Ptt</td>
<td></td>
<td></td>
<td>White</td>
</tr>
<tr>
<td>Old Homestead White Rice</td>
<td>Brk</td>
<td></td>
<td></td>
<td>similar names see Rice</td>
</tr>
<tr>
<td>Page's Striped Rice</td>
<td></td>
<td></td>
<td></td>
<td>Striped Rice</td>
</tr>
</tbody>
</table>

**Page's Striped Rice.** Entered as Striped Rice.
AMERICAN VARIETIES OF VEGETABLES.

Pearl.  Fst Fld Gng Gry Hrm Iml MWJ McM Pac sim.
   SIMILAR NAMES.  See White Pearl.
   SEEDSMEN'S SYNONYMS.  Silver Lace, Iml.  Small White, Bow.

Pride of Hiram.  Hse.

Queen's Golden.  Alr Amb Ar Bt! Bkt Brk Bng Buc Brb Bur Brr CE CSC Col
   Cur D&H Del DD D&C Dwr Emr Ext Fst Fld Frd HsX Grw Ham Hde Hrm
   Hbt H&C Hly Hlm Hap Hse Iml Iow MWJ J&S Kg Lnr LB Mgd Mns Man
   May JCM JMM McK Mnl Nfl Nt Old Pg HP JMP Pir Pme Ptt Pri Raw Rec
   R fl Rce R fl Rce sal SC shw Sht Sht &H Tat Tem Tex Til Trm Van Tz
   Wt Wd Wdr WS Wyg.

   SIMILAR NAMES.  Ruby Beauty, Striped Beauty.

Red Rice.  Bur DD Fmr Lnr Pac Ptt.  For similar names see Rice.

Rice.  Btg Bow Bbs Bng Brb Ebe Fer Gry TG Hrm Iml MWJ Ken LB Loh May
   Nfl Pg Ptt Rec Rec Tat Til Tpk Vin Wd Wdr WS Y&H.
   SIMILAR NAMES.  Yellow Rice, Red Rice, Monarch Red Rice, Monarch White
   Rice, Old Homestead White Rice, German White Rice, Improved White Rice,
   Early White Rice, White Rice, Amber Rice, Early Amber Rice, Page's Striped
   Rice.

Ruby Beauty.  Chl.  For similar names see Red Beauty.

Salzer's Silver Ball.  Entered as Silver Ball.

Silver Ball.  Sal.  For similar names see Silver Lace.

Silver Lace.  Brb Brk Bur CE CSC Cur DD Ggy TG Hap Iml J&S Kbs Man JMM
   Nfl Pg Ptt Rec Rec Tat Tv Wt.
   SIMILAR NAMES.  Salzer's Silver Ball, Silver Ball.
   SEEDSMEN'S SYNONYMS.  Pearl, Iml.  White Pearl, Tat.

Small White.  Bow Pac.
   SEEDSMEN'S SYNONYMS.  Pearl, Bow.

Smooth White.  CSC Lm.  For similar names see White.

Snowball.  Alr Buc Ext Fmr GN Roc.
   SIMILAR NAMES.  Buckbee's Snowball, Illinois Snowball.
   SEEDSMEN'S SYNONYMS.  White Rice, Alr.

Striped.  Buc D&H May Ken Spf.
   SIMILAR NAMES.  Striped Beauty, Page's Striped Rice.
   SEEDSMEN'S SYNONYMS.  Variegated, Buc D&H.

Striped Beauty.  DD.  For similar names see Red Beauty, Striped.

Striped Rice.  Low Rec.
   SIMILAR NAMES.  Striped, Striped Beauty, Page's Striped Rice.

Tattooed.  Jcr Red.
   SIMILAR NAMES.  Tattooed Yankee.

Tattooed Yankee.  Brb CE Eas Pmc Wnt.  For similar names see Tattooed.

Tom Thumb.  Brr.
   SIMILAR NAMES.  Golden Tom Thumb, Burpee's Tom Thumb.

Variegated.  Buc Cok D&H Roc.
   SEEDSMEN'S SYNONYMS.  Striped, Buc D&H.

White.  Eas Pmc Wnt W&D.
   SIMILAR NAMES.  Smooth White, White Market, Nonpareil White.

White Market.  Bai.  For similar names see White.

White Pearl.  Ar Bt! CE CSC C&B Cox DD Drr Ert Fmr Hde Hen H&C Hop Lnr
   May JCM JMM McK Pri Raw Rec SC shw Tat Thr Trm Wt Wt Wyg.
   SIMILAR NAMES.  Pearl.
   SEEDSMEN'S SYNONYMS.  Silver Lace, Tat.

White Rice.  Alr Amb Ar Bt! Bkt Del Brk Buc Bur Brr CE CSC C&B Col Cox Del DD
   Drr Ert Ert RE Ext Ewr Fmr Fst Gls Gra Ggy Grw Hen Hrm Hrs Hry Hst
CORN. SWEET.


SILVER NAMES. See Rec.

SEEDSMEN'S SYNONYMS. Egyptian, Gwy. Massacs. Col. Rec Treat, C&B. Snowball, Air.

Wisconsin Eight-Rowed. Lnr.
Wisconsin Prolific. Fst.
Yellow Rice. Gwy. For similar names see Rec.

CORN (SWEET CORN).

Acme. For May.

SILVER NAMES. May's Acme.

Allen's Golden. K&W.

Alnere's Extra Early Columbia, Alnere's Improved Evergreen. Entered as Ever.

Early Columbia and Evergreen.

Amazement. GN.


Aspinwall. Pri.

Asylum. CE CSC Cle Elce Illm J&S Lam May Pri Roc Thr.

SILVER NAMES. Early Asylum.

SEEDSMEN'S SYNONYMS. Early Mammoth, J&S. Bpg's, Bdg. Ever'or, Bdg. Mammoth Sugar, J&S.

Ballard. Air Grs Kra Lnr Wyg.

SILVER NAMES. Ballard's Early, Ballard's Early Chicago Market, Ballard's Red Cob.


Ballard's Early. CE CSC Cle PD 71H Rob Y&H. For similar names see Ballard.

SILVER NAMES. Chicago Market, Rob Sal. Perry's Hybrid, Sal.


SILVER NAMES. See Ballard, Chicago Market.

Ballard's Red Cob. Etc. For similar names see Ballard.

Baltimore Market. M&S. For similar names see Early Baltimore.

Banana. Fgr. For similar names see Banana Cream.

Banana Cream. CSC Wil.

SILVER NAMES. Will's Banana Cream, Farrow's Banana, Banana.

Bearsfoot. Bt EBC.

Best of All. Buc Roc S'h.

SILVER NAMES. Buckbee's Best of All.


SILVER NAMES. Black Sugar, Vaughan's Black Sugar, White Mexican, Extra Early White Mexican, Mexican, Early Mexican.

Black Sugar. May No Prn Van W&D. For similar names see Black Mexican.

SEEDSMEN'S SYNONYMS. Mexican, Prn.

Bloomsdale Sugar. Lam. For similar names see Sugar.


SILVER NAMES. Early Bonanza, Simon's Early Bonanza.
Boston Market. Cox D&H Vin.

Similar names. Early Boston Market.


Brazilian. Btl.

Breck's Premier, Breck's Zigzag. Entered as Premier and Zigzag.

Buckbee's Best of All, Buckbee's Early Sunrise, Buckbee's First of All, Buckbee's Hickox. Entered as Best of All, Early Sunrise, First of All, and Hickox.

Buck Mountain Early Table. M&S.

Burbank's Early. K&W. For similar names see Burbank's Early Maine.

Burbank's Early Maine. Entered as Early Maine.


Similar names. Early Burlington, Burlington Hybrid, Early Burlington Hybrid.

Seedsmen's synonyms. Early Adams, Buc C&B Fer Hen Por Roc, etc. Extra Early Adams, Bar Cur Grw Ptt Vk. Large Early Adams, Wdr.


Similar names. See Burlington.

Seedsmen's synonyms. Early Adams, H&C.

Burpee's Early Cosmopolitan, Burpee's Early Fordhook, Burpee's Early Sheffield, Burpee's First of All, Burpee's Sheffield. Entered as Early Cosmopolitan, Early Fordhook, Early Sheffield, First of All, and Sheffield.

Burr's Evergreen. Entered as Evergreen.

Burr's Improved. CSC.

Champion. Bel C&J CE CSC EBC CF Croc Evr Ggy GH TG Lan Lnr Ni Ptt Poo Pot Pri Rec Rob Y&H.

Similar names. See Early Champion.


Childs' Honey Dew. Entered as Honey Dew.

Clarke County Champion. Shaw. For similar names see Early Champion.

Clark's Nonesuch, Clark's Early Evergreen, and Clark's Old Colony. Entered as Nonesuch, Early Evergreen, and Old Colony.

Colossal. Roc.

Similar names. Price & Reed's Extra Early Colossal Extra Early Colossal.

Columbus Market. Liv JL Mzy Rec.

Concord. Wer. For similar names see Moore's Concord.

Cooper's Large Early Shoe Peg. Entered as Large Early Shoe Peg.

Corn-Bearing. CSC.


Cosmopolitan. Lan Yk.

Similar names. Early Cosmopolitan, Burpee's Early Cosmopolitan.


SIMILAR NAMES. Henderson's Country Gentleman.


Craig's Champion. Entered as Champion.

Crosby. Brk Bgs CE Fmr Ggy Hrm Mnd Nol NK Rec Skk Thr Y&H.

SIMILAR NAMES. See Crosby's Early.

Early Bonanza. Air Hrn Lnr M&S Pat Rob Shm. For similar names see Bonanza.
Early Boston Market. Eas Ggy. For similar names see Boston Market.
Early Burlington. Bui Ec. For similar names see Burlington.
Seedsmen's synonyms. Early Adams, Bui Ec.
Early Burlington Hybrid. G&T. For similar names see Burlington.
Early Champion. Bnl Bkt Big Egg Bw Bar Cle C&B Col DD Drv Fqr Tld Hrn
Hen loa J&S Jns Kra Jl Mgd PM Jnd Mic MV M&S Mzy Neb Nol Old Jmp
Pnr Put Rs SaL Sie Sax Spf Ten Thr Tlh Vau V&D Wdr.
Similar names. Improved Early Champion, Early Dwarf Champion, Dwarf
Champion, Clarke County Champion, Price & Reed's Champion, Champion.
Early Chicago Market. Air Gra Shm. For similar names see Chicago Market.
Seedsmen's synonyms. Ballard,Alt.
Early Colony. Brl. For similar names see Old Colony.
Early Concord. CE Fqr Gh Ggg Lan May Tpk Vl Wea.
Similar names. See Moore's Concord.
Early Cory. Brl Bdl Egg Bkg Brv Cor C&B Crs Cur DD Fxg Gyl Gyr Hop
H&P Jbc RHH J&S Kel Lnr Mnd OV Frc Frr Pri S&R S&F Sie S&W Tem Thr
Trm Vl Vau Vtn Wea.
Similar names. See Cory.
Early Cosmopolitan. Bar. For similar names see Cosmopolitan.
Early Dakota. Wil.
Early Dwarf Champion. Koe. For similar names see Early Champion.
Early Egyptian. Cmn Shw. For similar names see Egyptian.
Early Eight-Rowed. Bow Bui Elt H&P Mhl Pri Vn.
Similar names. See Eight-Rowed.
Early Eight Weeks. Man.
Early Evergreen. Brd Bll Pw Bkw Cpc EBC Drr &b Fcr Gh Hbt J&S Jns Kra
Lan Lnr Loh Mns May Jmm Mhl MV M&S Mzy Nol OV Old Pri Rec Rec Rob Rs Sie
Sim Sox NB &H Tpk Vau.
Similar names. See Stowell's Evergreen.
Early Fordhook. Bly Btr Bar Cpc Cle Col Frl Hbt Hlm H&P Lam Pq Rec Rec
Shw Wdr.
Similar names. Burpee's Early Fordhook.
Early Giant. SB Tlh.
Similar names. Improved Giant, Giant, Lohrman's Early Giant, Moore &
Simon's Early Giant.
Early June. Wil.
Similar names. Wil's Early June.
Early La Crosse. SaL.
Early Large Cob. Lan.
Early Large Eight-Rowed. Cle TG J&S Min Rob W&D.
Similar names. See Eight-Rowed.
Seedsmen's synonyms. New England Sugar, J&S.
Early Maine. Brd Brk Brh Brw C&D CE Chl Cpc EBC Cle Cur Fcr Fqr Gh
Tg Jcr J&S Jns Kra Mzy Ptt Pri Raw Rec Rec Rob S&F Sie Thr Wea Wdr Y&H.
Similar names. Burbank's Early Maine, Burbank's Early.
Seedsmen's synonyms. June Twenty-First, Chl.
Early Mammoth. Bkt Bllg Bow Bk Bk Bru Bng Bui Brw Cam CE Cpc Cle
C&B CE Crg Crs Prn Gqr GI G&T Tg Hrn Hst H'C H'm H&P Iml MWJ
J&M J'S Kel Ken Koe Lnr Mnl Man Mns May Mzm Mhl M'h MV Mzy Nol PaC
Ptt Pri Rec Rec Rob Shw Sox Spf S&W Thr Tll Vl Vau W&D Wd Wdr Y&H.
Similar names. See Mammoth.
Seedsmen's synonyms. Asylum, J&S.
Early Mammoth White Cory. Buc Crs. For similar names see Cory.
Early Maple Sugar. Bel. For similar names see Sugar.
Early Marblehead. Anb Bdg Bgs Buc Bui Bur Cle Crs Dm Re Eft GII Hrm K&W Man JCM McW Mzy XI Pri Ren Rob Roc Sal SR TB Tpk Vin Y&H.

Similar names. See Marblehead.
Early Marblehead Mammoth. EBC. For similar names see Marblehead.
Early Market. HCC McK Ren VI.

Early Melrose. CSC. For similar names see Melrose.
Early Metropolitan. Bel CSC Hen HIm Roc Shr. *

Similar names. See Metropolitan.
Early Mexican. Ewg. For similar names see Black Mexican.

Similar names. Extra Early Minnesota, Minnesota.
Early Monarch. Ebe.

Similar names. Ohio Monarch.
Early Narragansett. Bri.

Similar names. Extra Early Narragansett.
Early Pee and Kay. Bow Pri Y&H. For similar names see Pee and Kay.
Early Perfection. Pg.

Similar names. Price's Early Perfection, Grey's Perfection, Low's Perfection, Price & Reed's Perfection.
Early Red Cob Cory. Bnl Brk Bui CSC Del Gra Hns Hen Man MV Ncb Qgr Rob Sim Sox Web Wer Yng.

Similar names. See Cory.
Early Red Marblehead. CSC. For similar names see Marblehead.
Early Sheffield. Air Bkt Bel Bar CSC Evg Hlm J&S Man May JMM OV Rec Sie Sim Tpk Yng.

Similar names. See Sheffield.
Early Sugar. Stk. For similar names see Sugar.

Seedmen's synonyms. Eight Rowed, 1ml Stk.
Early Sunrise. Ber Buc Tov.
Early Surprise. Shw.
Early Sweet or Sugar. Crs Fer Hw Iml Pks Shw Stk Thb.

Similar names. Large Early Sweet, Darling Sweet, Crosman's Genesee Sweet, Quaker Sweet, Genesee Sweet.

Seedmen's synonyms. Sugar, Crs Fer Pks Stk.
Early Tom Thumb. CSC Hns.

Similar names. Extra Early Tom Thumb, Price & Knickerbocker's Extra Early Tom Thumb.
Early Triumph. Bdg Bui. For similar names see Triumph.
Early Vermont. Bkt CSC Pri Rob.

Similar names. Extra Early Vermont.
Early White Cory. Bnt Brr Brr Brr Bui Bui Bui Brr>CSC Cle Crs Chm Dlv Del Fnr Gra Hde Hop Jns Kra Lam Mnd Mck Ncb Pnt RP Sim Spf Trm Web.

Similar names. See Cory.
Early Windsor. May OV Tpk.
Early Yankee. \textit{NoL}.
Eastman's Early. \textit{Eas}.


\textbf{Eclipse.} Bt Pri.

\textbf{Similar names.} Price & Reed's Eclipse.

\textbf{Egyptian.} \textit{Anb Ar BrbBtI Bkt Bgg Brk Bdg Bgs Bng Bue Bui Bar CE CEC EBC Cle CF Crs Cur Chm Drf Ebr Eic Eit Emr RE Evr Fqr Fst Frd GH Ggy Gry G&T Tg Hns Hrn Hs Hlm Hse H&P Iml MWJ J&S Kei Kg Lam Lan Lar Liv JL Mnd Man Man Man May JCM JMM Mhl MV M&S Myz Nef Nol NK HP Ptn Ptt Pot Pri Raw Ree Ren Ree Rob Roe RP Sal Shr Sim Sox Spf S&H S&W Tat Til Tpk Thr Trm 17 Vt Wat Web W&D Wd Wh.

\textbf{Similar names.} Hyde's Egyptian, Large Egyptian, Late Egyptian, Early Egyptian.

\textbf{Seedsmen's synonyms.} \textit{Washington Market}, \textit{Brd Bar J&S Raw Ree Vk}, etc.

\textbf{Eight-Rowed.} CE CEC Iml Lan Tat.

\textbf{Similar names.} Early Eight-Rowed, Early Eight-Rowed, Early Large Eight-Rowed.

\textbf{Emerson's First Crop.} Emr. For similar names see \textit{First Crop}.

\textbf{Everbearing.} Bae Man Roe Shw.


\textbf{Similar names.} See \textit{Stowell's Evergreen}.

\textbf{Everitt's Excelsior.} Evr. For similar names see \textit{Potter's Excelsior}.

\textbf{Excelsior.} Bkt Drw Eit TG Hrv Lan Man. For similar names see \textit{Potter's Excelsior}.

\textbf{Seedsmen's synonyms.} \textit{Asylum}, \textit{Bdg.}, \textit{Burr's}, \textit{Bdg.}, \textit{Mammoth Sugar}, \textit{Bdg.}\textit{Squawum}, Bkt Eit Drw Lan.

\textbf{Extra Early.} Cok Gng Hnt Jns Stk.

\textbf{Similar names.} Michell's \textit{Extra Early}, \textit{Market Gardener's Extra Early}, \textit{Potter's XX Early}.


\textbf{Similar names.} See \textit{Early Adams}.

\textbf{Seedsmen's synonyms.} \textit{Burlington, Bar Cur Grw Ptt Vk}, \textit{Early Burlington}, \textit{Eie Vk}.

\textbf{Extra Early Baltimore.} G&T.

\textbf{Similar names.} Baltimore Market.

\textbf{Extra Early Beverly.} H&P Lan.

\textbf{Extra Early Challance.} Koe.

\textbf{Extra Early Colossal.} Pri. For similar names see \textit{Colossal}.

\textbf{Extra Early Columbia.} Arl.

\textbf{Similar names.} \textit{Ahner's Extra Early Columbia}.

\textbf{Extra Early Concord.} Gig.

\textbf{Extra Early Cory.} \textit{A1x Bai Bel Roe Bdg Bue Cmr Chl EBC Cox Drm Ebr Eit Emr Gis TG low J&M Kg Liv JL Loh Mav JCM Nol NK Bue JMP Pug Roe RP Shn Tat TaB Tk W& D Wd Whr}.

\textbf{Similar names.} See \textit{Cory}.

Similar names.  See Crosby’s Early.

Seedsmen’s synonyms.  Boston Market, Raw.

Extra Early Evergreen.  Bldy Sis S&W.  For similar names see Stowell’s Evergreen.

Extra Early Maine.  CF.  For similar names see Early Maine.

Extra Early Mammoth.  HD.  For similar names see Mammoth.

Extra Early Mammoth Cory.  Kg.  For similar names see Cory.

Extra Early Marblehead.  CF Ebe Shm.  For similar names see Marblehead.

Extra Early Minnesota.  Ar Bldg Corn EBC D&H Fld Hns Lan McK Ren Stw.

Similar names.  See Early Minnesota.

Extra Early Narragansett.  Tpk.  For similar names see Early Narragansett.

Extra Early Red Cob Cory.  CF TG Mic Ms Se Sox Spf.

Similar names.  See Cory.

Extra Early Rockford Market.  Shm.  For similar names see Rockford Market.

Extra Early Sheffield.  Buc Shw Shm.  For similar names see Sheffield.

Extra Early Tom Thumb.  Hen Pri.  For similar names see Early Tom Thumb.

Extra Early Vermont.  Buc Frd Hbt Hse Lov Roc.

Similar names.  See Early Vermont.

Extra Early White Cory.  EBC Cd CF Fnr Gng TG Hns Hrn Hw K&F JL.

Mas Mic MsXK HP Ren Roc SC Sox TB.

Similar names.  See Cory.

Extra Early White Mexican.  Mic.  For similar names see Black Mexican.

Farquhar’s Banana.  Farquhar’s First Crop.  Entered as Bowman and First Crop.

Ferry’s Early Evergreen, Ferry’s Evergreen.  Entered as Early Evergreen and Evergreen.

First Crop.  For Ggy Raw S&F.

Similar names.  Emerson’s First Crop, Moore & Simon’s First Crop, Reliance First Crop, Farquhar’s First Crop.

First Early Neck.  Big Mrs Min.

Similar names.  Gillespie’s First Early Neck.

First in the Market.  TG H&P S&F.

Similar names.  Hammond’s First in Market.

Seedsmen’s synonyms.  Imitation Sugar, H&P.

First of All.  Bkt Rogy Bri Brn Buc Brr Cle Col Crs Crs D&C D&H D&I D&C Drr

Fnr Est Fld GH Gng GN Ham H&C Hrm Hop J&S Lov Liv Man Man JCM

McK Mhl Ms Neb Ncf Old Pg Qkr Ren Ree Rob Rs Sal S&O Shm Sim SB Tom

Van Wer Wdr Yng.

Similar names.  Buckbee’s First of All, Burpee’s First of All, Dreer’s First of All, Mills’ First of All, Salzer’s First of All, Simmers’ First of All, Improved First of All.

Seedsmen’s synonyms.  Red Cob Cory, SB.

Five X.  Wd.

Similar names.  Will’s Five X.

Ford’s Early.  CSC Frd Hrs Hbt Iml Rt.  For similar names see Eastman’s Early.

Ford’s Improved Mammoth.  Entered as Mammoth.

Forsythe’s Favorite.  Btl.  For similar names see Tracker’s Favorite.

Fottler’s Early.  S&F.  For similar names see Eastman’s Early.

French Honey.  M&S.  For similar names see Honey.

Genesee Sweet.  Crs.  For similar names see Early Sweet.

Gentry Early Market.  Wd.  For similar names see Early Market.

Giant.  Lbk Mau Shm.  For similar names see Early Giant.

Giant Early Adams.  Wdr.  For similar names see Early Adams.

Gillespie’s First Early Neck.  Entered as First Early Neck.
Gold Coin Evergreen. Illm. For similar names see Stowell's Evergreen.
Golden Hybrid. Eas.
Gold Medal. Ms.
Grey's Perfection. Gry. For similar names see Early Perfection.
Hance's Early. Liv. For similar names see Eastman's Early.
Harmorn. Hrn.
Harvey's Early. Hrv Vk. For similar names see Eastman's Early.
Hastings' Yexo. Entered as Yero.
Henderson's Country Gentleman, Henderson's Early Metropolitan. Entered as Country Gentleman and Early Metropolitan.
Henderson's Early Sugar. Lam Shw. For similar names see Sugar.
Henderson's Sugar. Bgs CSC Cle C&B Chm Frd Hen Man.
Henderson's No. 1. Illm.
Honey. Frd Illm J&S.
Honey Dew. Chl CF Mhl. For similar names see Honey.
Honey Sweet. Air Buc CSC Exg Roc Shw Sim Tem. For similar names see Honey.
Hyde's Egyptian. Entered as Egyptian.
Imitation. Bg.

SEEDSMEN'S SYNONYMS. First in the Market, H&P.
Improved Cory, Improved Early Adams, Improved Early Champion, Improved Crosby's Early, Improved Evergreen, Improved First of All, Improved Giant, Improved Large Adams, Improved Large Mammoth, Improved Ne Plus Ultra, Improved Ruby, Improved Shoe Peg, Improved Stowell's Evergreen, Improved Triumph. Entered as Cory, Early Adams, Early Champion, Early Crosby, Evergreen, First of All, etc.
Indiana Wonder. Evr.

Similar names. Kendel's Early White Wonder, Philipps' Wonder.
June Market. May.
June Twenty-First. Chl.

SEEDSMEN'S SYNONYMS. Early Maine, Chl.


Similar names. Kendel's Giant, Kendel's Large Early, Kendel's Early White Wonder.

Similar names.  See Kendel's Early Giant. Indiana Wonder.

Kendel's Giant.  Gra Rec Tat.  For similar names see Kendel's Early Giant.

Kendel's Large Early.  Shm.  For similar names see Kendel's Early Giant.

Kendel's Large Early Giant.  Bac.

Keystone Wonder.  Th.

Lackey's Early.  For Ggy.  For similar names see Eastman's Early.

Landreth's Early Market.  Entered as Early Market.

Landreth Sugar.  Bri 11w H&P MWJ Lan Rum Trm VI.

Similar names.  See Sugar.

Seedsmen's synonyms.  Old Colony, Hrt.

Large Adams.  Shw.  For similar names see Early Adams.

Seedsmen's synonyms.  Early Adams, Shw.

Large Early Adams.  Ele 1st MWJ.  For similar names see Early Adams.

Seedsmen's synonyms.  Burlington, Wh.

Large Early Shoe Peg.  M&S.

Large Early Sweet.  Haw.  For similar names see Early Sweet.

Large Egyptian.  Ebr.  For similar names see Egyptian.

Large Eight-Rowed.  Bdg Fst Thr.  For similar names see Eight-Rowed.

Large Excelsior.  Nd.  For similar names see Potter's Excelsior.

Large Late Mammoth.  Big Brw EBC C&B Crs Vin Y&H.

Similar names.  See Mammoth.

Large Mammoth.  Min Shw.  For similar names see Mammoth.

Large Sugar.  Shw.  For similar names see Sugar.

Seedsmen's synonyms.  Mammoth Sugar, Shw.

Large White Cob Cory.  Bel Bar Pks Rec Yng.  For similar names see Corn.

Late Concord.  M&S.  For similar names see Moore's Concord.

Late Egyptian.  EBC.  For similar names see Egyptian.

Late Mammoth.  Bkt Bow Bk Brs Bri Bng Gem CE CSC Clw CE Crg DD Elt

Emr Fst GH Gdg G&T TG Hrn Hry 1st Hlm H&P Iml MWJ J&M J&S Jns

Kel Lan Mnd Mgd Man PM Mns May Mls MV M&S Neb Nol NK Pac JMP

Put Ptt Qkr Rob Rt RP S&O Sic Sor Spf S&W Tat Thr Tlb Vak Vt Web

Wd WS.

Similar names.  See Mammoth.


Leet's Early.  Hry Sic.  For similar names see Eastman's Early.

Little Gem.  EBC Drr Mth Ptt.


Livingston's Evergreen. Livingston's White Cob Evergreen.  Entered as Evergreen

and White Cob Evergreen.

Livingston's Red Cob Evergreen.  Liv.

Similar names.  See Stowell's Evergreen.

Livingston's Silver Coin.  Liv.

Lohrman's Early Giant.  Loh.  For similar names see Early Giant.

Low's Perfection.  Ren.  For similar names see Early Perfection.

McKenzie's Northern Success.  Entered as Northern Success.

McMillan's Early Market.  McM.  For similar names see Early Market.

Main Crop.  M&S.

Malakoff.  Fst.

Mammoth.  Alx Bai Brd Ber Bon Bdq Brn Brw Bac C&J Cam CE Chl Col Cox

Cur D&H Drr Ebc Eic RE Ext Eaf For Frd Gdn Gra Gyl Gyd Gro Ham

Hen H&C Hly Hnt Iow Jnc Kei Ken Kg Kos Kra Lam Lnr LB Liv JL Mau
AMERICAN VARIETIES OF VEGETABLES.


Similar names. Hammond's Mammoth, Maule's Mammoth, Shumway's Mammoth, Ford's Improved Mammoth, Large Mammoth, Late Mammoth, Large Late Mammoth, Improved Large Mammoth, Mills' Late Mammoth, Early Mammoth, Extra Early Mammoth.

Seedsmen's synonyms. Asplen, Bdg. Barry's, Bdg. Excursion, Bdg. Large Sugar, Shw. Late Mammoth, Gyg.

Mammoth Cory. Yng. For similar names see Cory.
Mammoth Evergreen. Anb Ar Bd Cox Del Hns Loh.

Similar names. See Stowell's Evergreen.

Mammoth Southern Sweet. RE.


Similar names. See Cory.

Manhattan. Thr.

Marblehead. CE Ebr Emr Mnd May MV Ree Soc Thr Vin.


Marblehead Mammoth. Ggy Raw Rs. For similar names see Marblehead.

Market Gardener's Extra Early. Shn. For similar names see Extra Early.

Maule's XX. Man.

Maule's Mammoth. Entered as Mammoth.

May's Acme. Entered as Acme.

Melrose. Bkt Ebr Nl Thr.

Similar names. Early Melrose.

Metropolitan. Bkt Ggy Bdg Bdy Bor Bur EBC Der Ebr Fgr Frd J&S Jos Lan Man May Ptt Rob S&W Thr Van Wdr.

Similar names. Early Metropolitan, Henderson's Early Metropolitan.

Mexican. Ggy Prn. For similar names see Black Mexican.

Seedsmen's synonyms. Black Sugar, Prn.

Michell's Delicious. Mhl.

Michell's Extra Early. McK. For similar names see Extra Early.

Mills' Earliest Large. Mls.

Mills' First of All, Mills' Late Mammoth. Entered as First of All and Late Mammoth.


Similar names. See Early Minnesota.

Moonarch. Mzy Wdr.


Similar names. Moore's Early, Moore's Early Concord, Early Concord, Late Concord, Concord.

Moore's Early. Nl. For similar names see Moore's Concord.


Similar names. See Moore's Concord.

Moore & Simon's Early Evergreen. Entered as Early Evergreen.
Moore & Simon's Early Giant. M&S. For similar names see Early Giant.
Moore & Simon's First Crop. M&S. For similar names see First Crop.
Mosby's Prolific. Etc. For similar names see Russell's Prolific.
Ne Plus Ultra. Bldg Bng Buc Bui Bur Brtr CE Chl CSC EBC Cle C&B CE Cok ebe G&T TG Ham Hen Hrn Kal Kra May Mls MV NoJ Pitt Pri Ren Rec Roe Sim Sim Sox Tat Thr.
   Similar names. Improved Ne Plus Ultra.
   Seedsmen's synonyms. Country Gentleman, C&J Elt Ham Kra Sim Pitt, etc.
   Similar names. New England Early.
   Seedsmen's synonyms. Early Eight-Rowed, Mhl.
   Similar names. New England Early, J&S.
New York's Best. Pg.
Ninety Day Red Cob. Bldg.
   Similar names. Owen's Red Cob.
Nonesuch. Air Bgu Brn CSC Col Crs Del DD Gra Hlm Hen Mud Man Mzy NZ Ren SC Shw Sim S&H Tat Tem Yng.
   Similar names. Clark's Nonesuch.
Norfolk Market. Tat.
Northern Success. McK.
Northrup, King & Co.'s XXXX. NK.
Northrup, King & Co.'s Zigzag Evergreen. Entered as Zigzag Evergreen.
North Star. GN.
Northwest. McK.
   Seedsmen's synonyms. Old Sugar, McK.
Oakview Early Market. For Jas Van.
Ohio Monarch. JMM. For similar names see Early Monarch.
Ohio Red Cob Evergreen. HP. For similar names see Storel's Evergreen.
   Similar names. Early Colony.
   Seedsmen's synonyms. Laundrom Sugar, Hrn.
Owen's Red Cob. Juc. For similar names see Ninety Day Red Cob.
Pee and Kay. CE EBC Cle Crs Gra TG Lur Liv Pitt Rec Rob Rro Wdr.
   Similar names. Early Pee and Kay, Price & Knickerbocker's Early Pee and Kay.
Pep O' Day. For Old Van.
Perkins' Early Market. Bui. For similar names see Early Market.
Perry's Early Hybrid. Bgs Shu. For similar names see Perry's Hybrid.
   Similar names. Perry's Early Hybrid.
Philadelphia Evergreen. M&S. For similar names see Storel's Evergreen.
Philippus' Wonder. HP. For similar names see Indiana Wonder.

1329—No. 21—02 —11
AMERICAN VARIETIES OF VEGETABLES.

Portland.  Fmr NK.

Potter's Excelsior.  Big Brk Brk Bdg Bui Bar Brw CE CSC EBC Cle CF Cox Crs Cur Der Eas Else Emr Fqr Fst Fux Frd GII Ggy Gry TG Hrm Hrs Hlm JK'S K&W Kna Prn Pne Pot Raw Rec Rob Roe Rs S&F Tat Thr Thb Vl Wat Wdr.

Similar names.  Large Excelsior, Everett's Excelsior, Shumway's Excelsior, Excelsior, Potter's XX Early, Potter's Sugar.

Seedmen's synonyms.  Squantum, Bui Bar Fqr J&S Mhl Raw, etc.

Potter's XX Early.  Pot.  For similar names see Extra Early, Potter's Excelsior.

Potter's Sugar.  Bdg.  For similar names see Potter's Excelsior.

Seedmen's synonyms.  Squantum, Bdg.

Premier.  Brk.

Similar names.  Breck's Premier.

Premo.  Ms Brd Brw Egy Ggy Hlm Thb Vl Wdr.


Price & Reed's Champion, Price & Reed's Eclipse, Price & Reed's Extra Early Colossal.  Entered as Champion, Eclipse, and Extra Early Colossal.

Price & Reed's Perfection.  Pri.  For similar names see Early Perfection.

Price's Early Perfection.  M&S.  For similar names see Early Perfection.

Price's 1900.  Pri.

Pride of Chenango.  Pg.

Prosperity Evergreen.  H&H.  For similar names see Slowell's Evergreen.

Quaker Sweet.  Chl CSC Ptt Tat.  For similar names see Early Sweet.


Quincy Market.  Bt Brk Ggy.

Red Cob Cory.  Bt Brs Brs Cle Chm Ebe RE Fmr GH Grw Jns Kei Lan McK S&O S&W Wil T&H.

Similar names.  See Cory.

Seedmen's synonyms.  First of All, SB.

Reliance First Crop.  M&S.  For similar names see First Crop.

Rhode Island.  Pot.

Similar names.  Rhode Island Bearfoot.

Rhode Island Bearfoot.  Emr.  For similar names see Rhode Island.

Rice's Early Evergreen.  Entered as Early Evergreen.

Riley's Favorite.  Btl.  For similar names see Trucker's Favorite.

Rockford Market.  Buc Roe.

Similar names.  Extra Early Rockford Market.


Ruby.  Buc Bar Hlm Roe.

Similar names.  Improved Ruby.

Russell's Prolific.  Bkt Bgs Pri CSC Cok Frd GII TG Hse HHP Rob Shw Vl.

Similar names.  Mosby's Prolific.

St. Louis Market.  Pot.

Salzer's First of All.  Entered as First of All.

Schwill's Early Market.  Shw.  For similar names see Early Market.

Schwill's Early Surprise.  Shr.

Schwill's Improved Large Adams.  Entered as Large Adams.

Second Early Adams.  Bdg.  For similar names see Early Adams.

Shaker's Early.  Bkt Bdg Bgs CF CSC EBC Cle CF Crs Cur Chm J&H DD Drr Ebr RE Fmr Fst Ggy GH TG Hrm Hrs Hen Hlm Hop Hut Iml J&S Kel Lar Liv
1

CORN, SWEET.

JLLoh
S(

:

S&l

I...11

Mns MayJCM JMM Min
Tpk Yng Y&H.

163

MV Neb HP

Pnt

Pri

Ren Rce Rob Ks

Sir Sox Tin- Til

>

Similar names.

Shaker's Extra Early, Shaker's Large Early.

Shaker's Extra Early.
Shaker's Large Early.

For similar names see Shaker's Early.

Spf.

Bru Buc Bur Brw Ebe Haw Qkr Roc Wdr.

Similar names. See Shaker's Early.
Enl TG Mgd Sim Vk.

Sheffield.

Similar names.
Burpee's Sheffield, Burpee's Earlj Sheffield, Early Sheffield,
Extra Early Sheffield.
TG H&C J&S K& K&F Mau Min
Shoe Peg-. Buc Bui (hi CSC Cox Ewg

W

GH

Pnt l'tt RocTB.
Improved Shoe Peg, Shoe Peg Evergreen.
Similar names.
Seedsmen's synonyms. Country Gentleman, D&C K&F Man III Rce Tern, etc.
Littl,
Improved .V Pin Ultra, Mis.
Gem, Drr Mhl Mis Btt. .V- Plug Ultra,
Chi Cox Drr Hen J&S Ptt, etc. Quaker Sweet, Chi Mis Ren Ptt. Zigzag, Hen.
Shoe Peg Evergreen. Ebe. For similar names see Sho< Peg, Evergreen.
Seedsmen's synonyms. Ne Plus Ultra, Ebe.
Shumway's Excelsior. Sinn. For similar names see Potter's Excelsior.
Shumway's Extra Early Cory, Shumway's Mammoth, Shumway's Western Queen.
Entered as Extra Early Cory, Mammoth, and Western Queen.
Simmers' First of All. Entered as First of All.
Simon's Early Bonanza. Entered as Early Bonanza.

Snowrlake.

Thm.

Southern Express. Eic.
Southern White Snowrlake. Alx.
Squantum. Brt Bkt Bit; Bgg Bdg Bui Brr C&J CSC EBC CI.- CF Cur Drr Elt I'.mr
Potter's Excelsior, Bui
Excelsior, Bkt Elt Ihw l.au.
Seedsmen's synonyms.
Bur Fqr J&S Raw Vk, etc Potter's Sugar, Bdg.
Stabler's Early. Brt Buc CE CSC EBC Cox Drr Ggy GH G&T TG Hen Him J&S

Mau

l'tt

Pri

Bee Roc

SiMtLAR names.
-

W&D

Wdr.

Stabler's Extra Early, Stabler's

Hybrid, Stabler's Pedigree,

Nonpareil.

Stabler's Extra Early.

Air Bui Bur Cur

BM

Mill

M&S

Neb.

Similar n en -. Se Stabh r's Early.
Early.
Stabler's Hybrid. Cle.
For similar names see v
Stabler's Nonpareil.
Mhl M&S. For similar names see Stabler's Early.
Stabler's Pedigree.
Big CSC 1st Him Raw Bee Rob Y&H.
Similar names. See Stabler'i Early.
Stowell's Evergreen. Alx Air Anl. Ar Bai Brd Brt Btl Bkt Be]
Bgg Brk Bdg Bgs Bri Brn Bru Bng Buc Bui Brb Bur Brw Cam

/;, ,

Big Bou

Bow

CE CSC EBC Cle
Chm Dlw D&H Del DD D&C Drr Drm Dun Eas
C&B Col CF Cox Crs Cur
els
Gdn (.11 Gng
Ebe Eic Elt Emr RE Evr Ewg Fmr Fqr E.-t Fax Fer Enl Ger
<.\ Gg\ Cry Gfg I. AT TG Ham linn //, » Hrs
H&C lily Him
r\ Hsl Hen III
Hop H&PIml lowJac MW J <J,&M J&S Jns Kei Kel K&W Ken K&F Kg Koe
Kos Era Lam Lea Lnr LB LivJL Loh Lon Mini Mgd Man BM Mns Mas Vlau
Maj JMM MeM MieMhl MV Mzy Neb Nef No! XI NK OV Old Pac Pg II B .1MB
(

S.

1

Pir

Bin Pne But Ptt Poo Por Pot

Bri

Qkr

Etk

t

Baw Bee Ren Rce Rim Rob Roc

RsEPSalS&E SC S&FS&B ShwS&OShm Si Sim Sox Spf Stk SB S&H S&W
Tal Tern Tex TB Thm Thr Thb ACT Tlh Til Tnn TAB VI Vau Vk Vin Wal
Web W&D Wer Wit Wd Wdr \VS Wyg Yng Y&H.
I's
Evergreen, improved Stowell's Evergreen, Hamn
Similar names.
Rt

Improved

St.

.well- Evergreen,

Bun's Evergreen, Ferry's Evergreen, LivingShoe Peg Ever-

ston's Evergreen, Prosperity Evergreen, Philadelphia Evergreen,



Sugar.  Crs For Haw Pks Van.

Similar names.  Bloomsdale Sugar, Landreth Sugar, Henderson's Sugar, Early Sugar, Henderson's Early Sugar, Early Maple Sugar, Large Sugar.

Seedsmen's synonyms.  *Early Sweet*, Fer Crs Pks.

Sugar Productive.  Kei.

Tal's Market Garden.  Tat.

Thorburn's Melrose.  Entered as *Melrose*.

Tilton's Twelve-Rowed.  Til.

Triumph.  *CE CSE FBC Dyr GH H&P Lan McM Mhl M&S Mzy No1 Pir Pri Raw Rec Rob Sim Tat Thr Wd WS*.

Similar names.  Early Triumph, Improved Triumph.

Troy Market.  Y&H.

Trucker's Favorite.  Y&H Wd.

Similar names.  Forsythe's Favorite, Riley's Favorite.

Tuckit.  Dry.

Tuscarora.  Ewg Ren Sim Tex Thr.

Similar names.  White Tuscarora.

Vaughan's Black Sugar.  Entered as *Black Sugar*.

Vick's Earliest of All.  Entered as *Earliest of All*.


Washington Market.  Brd Blg Bg Crs Efd Frd G&T TG Hrs Inl J&S Man Mzy No1 Pir Raw Rec Rob Sim Wd Yk.

Similar names.  Washington.

Seedsmen's synonyms.  *Egyptian*, Bar Brd Frd G&T Pir Sim, etc.

Western Queen.  Shm.

Similar names.  Shumway's Western Queen.


Similar names.  See Cory.

White Cob Evergreen.  Liv.  For similar names see Stowell's Evergreen.

White Early Adams.  Put SC Sox.  For similar names see Early Adams.

White Mexican.  *Flt MV Sox*.  For similar names see Black Mexican.

White Tuscarora.  *CSE*.  For similar names see Tuscarora.

Will's Banana Cream.  Will's Early June, Will's Five X.  Entered as *Banana Cream, Early June, and Five X*.

Wisconsin Beauty.  May.

Yexo.  Hbt.

Similar names.  Hastings' Yexo.

Zigzag.  Brk Min.  For similar names see Stowell's Evergreen.


Similar names.  See Stowell's Evergreen.
CORN SALAD.

Also called Fetticus.

CORN SALAD.

Bel Bru Bue Bui Cox Cur Ebr Eie Evi Ewv For Grr Gra Grw Han H&C H&P Iow MWJ Ken Lam Liv Mgd PM Mns Pri Pug Raw Rt Sal SC Shw Spf Stk SB Stw Tpk Van Vl Vl Vin.

Broad-Leaved. Alv Blt Blw Gll GH Tz Hns J&S Lam Min Nol Pir Shn Sim Tz.

Similar names. Small-Seeded Broad Leaf, Large-Seeded Broad Leaf, Broad-Leaved Dutch.

Broad-Leaved Dutch. M&S.

Similar names. Large-Leaved Dutch, Small-Seeded Dutch, Large-Seeded Dutch.

Green Cabbaging. Crs Mnd Thr.

Similar names. Improved Green Cabbaging, Large Green Cabbaging.

Improved Green Cabbaging, Improved Large-Leaved, Improved Large-Seeded.

Entered as Green Cabbaging, Large-Leaved, and Large-Seeded.

Italian. Krl.

Similar names. Large-Seeded Italian Broad-Leaved.

Large German. Pac T&B.

Large Green Cabbaging. CE Hst Ree Sic Til Y&H.

Similar names. See Green Cabbaging.


Similar names. Improved Large, Large-Seeded Large-Leaved, Large-Leaved Dutch, Large-Leaved Fetticus.

Large-Leaved Dutch. Ren. For similar names see Broad-Leaved Dutch.


Similar names. See Round-Leaved.

Large Round-Leaved Large-Seeded. Brr Hlm Res.

Similar names. See Round-Leaved.

Large-Seeded. Amb Blt Bkt Bdg Brn Bng Cle CF Crs Drr Ett Ger GH Gry Hrv Hrd Kg Kos Lnt Mnd, Mau May J/C J/MM MV Mzy Nef HP Por S&R S&F Sax S&W Tat Tex Th Thr Til Trm VI W&D Wdr.

Similar names. Improved Large-Seeded, Large-Seeded Dutch, Large Seed Broad-Leaved, Large-Seeded Large-Leaved, Large Round-Leaved Large-Seeded, Large-Seeded Broad Leaf. CE.

Similar names. See Broad-Leaved, Large-Seeded.

Large-Seeded Dutch. Res. For similar names see Broad-Leaved Dutch.

Large-Seeded Italian Broad-Leaved. M&S. For similar names see Italian.

Large-Seeded Large-Leaved. Loh.

Similar names. See Large-Leaved, Large-Seeded.


Similar names. Large Round-Leaved Large-Seeded, Round-Leaved.

Small-Leaved. D&. For similar names see Small-Seeded.

Small-Seeded. Bdg Ebe GH May J/MM Mzy Thr.


Small-Seeded Broad Leaf. CE. For similar names see Broad-Leaved.
American. Hen Mud W&D.

**American.**

Similar names. American Land.

Seedsmen's synonyms. **Land,** Hen Mud W&D.

American Land. RHJ Kei. For similar names see American.

Australian. Bdg Hen RHJ Kei Vk W&D.

Similar names. Henderson's Australian.

Seedsmen's synonyms. **Golden,** Bdg Kei. **Golden Yellow,** Bgs.

Broad-Leaved. Ar Brn Brn RE Gra Gng Kei Lan MV HP Pri Ren Sim Sar Stw Thr.


Broad-Leaved Garden. Sox Vk.

Similar names. Curled Garden.

Broad-Leaved Gray-Seed. Eic Gll. For similar names see Broad-Leaved.

Broad-Leaved Green. SB. For similar names see Broad-Leaved.

Broad-Leaved Winter. MV Sar Thr. For similar names see Broad-Leaved.

Curled. Ar Ber Brk Brn Buc BuI Bar CF Crs Dw dDc Eas Ewq Flo GlG GgG GgT GgT Hde Hen H&C HAP J&M Koe Kra Lan Lan Lnr LB Loh May McM Min MV Mzy Neb Nol NK Pk Pk R Pnt For Pri Qkr RP S&R S&P Shw Shm SOR Sk SW S&H S&W Tat Tem Thr Tpk Vin Wat Wdl WS Y&H.


Seedsmen's synonyms. Pepper, Nk. **Peppergrass,** Buc Fer H&P Neb Pk HP, etc.

Curled Garden. Ebe Fnr JL Min’s Oft Roe Van Wer.

Similar names. See Curled, Broad-Leaved Garden.

Seedsmen's synonyms. **Peppergrass,** Frd.

Curled Peppergrass. Brs C&J CE Fer Vl. For similar names see Peppergrass.

Curled Upland. Thm. For similar names see *Upland Cress.*

Double Curled. Brd Cle Dun Ebr Hn Kei TB Trm. For similar names see Curled.

Seedsmen's synonyms. Peppergrass, Trm.

Dwarf Fine Curled. Ebe Mgd. For similar names see Curled.

Early Curled. Til. For similar names see Curled.

Erfurt. Drr Mud JMM Mhl S&W W&D.

Similar names. Erfurt Sweet.

Erfurt Sweet. Thr. For similar names see Erfurt.


Similar names. See Curled.

Seedsmen's synonyms. Peppergrass, Brt Bkt Drr J&S Lam Liv, etc.

Extra Curled Peppergrass. Ham. For similar names see Peppergrass.

Extra Curled Upland. Hst. For similar names see *Upland Cress.*

Extra Double Curled. JCM. For similar names see Curled.

Extra Early Curled. Cam. For similar names see Curled.

Extra Fine Curled. Hrs S&O Sox. For similar names see Curled.

Extra Triple Curled. McK Ren. For similar names see Curled.

Fine Curled. Brgg Bur Col RE Hlt Hlm Ind Lea M&S Sd Vk Will.

Similar names. See Curled.

Seedsmen's synonyms. Peppergrass, Bur Del Hlm Mls.
CRESS—CUCUMBER.

Fine Double Curled. VI. For similar names see Curled.
Golden Yellow. Bgs. For similar names see Golden.
   Seedsmen's synonyms. Australian, Bgs.
Gray-Seeded Early Winter. For Lah. For similar names see Winter.
Improved Large-Leaved. Entered as Large-Leaved.
Land Cress. Hen Mnd W&D.
   Seedsmen's synonyms. American, Hen Mnd W&D.
Large-Leaved. Ggy.
   Similar names. Improved Large-Leaved.
Peppergrass. Ar Brk Bkt Ber Brg Brk Brn Buc Bui Bar Dlw DD Drr Fer Fle Gls
   Gll Gg G&T Hde Hen Hbt H&C H&P Jus Koe Kos Kra Lam Lar LB Loh
   JMM McM Mh M&S Mzy Neb NX Pg Pks HP Prt Pri Rt RP S&F Smt S'Or
   Sgk S&W Tat Tex Thr Thr Thr Wdr Y'&H.
   Similar names. Curled Peppergrass, Extra Curled Peppergrass.
   Seedsmen's synonyms. Common, DD, Cress, Bui. Curled, Buc Fer H&P Neb
   Pg Prt, etc. Curled Garden, Frdl. Double Curled, Trmm. Extra Curled, Brt Bkt
   Drr J&S Lam Liv, etc. Fine Curled, Bar Ddl Hln Mls.
Plain. Ewg.
Single Curled. TB. For similar names see Curled.
Triple Curled. Man Pac. For similar names see Curled.
Upland Cress. Alx Brd Bkt Bgy Brk Bdg Buc Bar Col Cur Drr RE Ewg Fqr Fst
   Spl Vau Van W&D Wer Wgg Whg.
   Similar names. Curled Upland, Extra Curled Upl'and, Land Cress.
Water Cress. Alx Ar Brd Brt Btt Bkt Bow Bow Brg Brk Brg Bri Brn Brn Buc Bui
   Bud C&I Cam CE Chl Cle CR Cox Crs Cur Del Ebe Ebr Eic Eit Err RE Eyr
   Ewg Fmr Fqr Fst Fer Fle GGr Gld Gll Gg Gy Ggy Ggy Ggy Gtgr Hrn Hrn
   Hrs Hrv Hst Hen H&C Hlm H&P MWJ RHJ J&M J&S Kei K&W Ken Kg Kos
   Lam Lar LB Liv Lh Loh Mund Mgd Mns May JCM M'C McM Min MV M&S Mzy
   Neb Nol NK Pac HP Pr Hrn Prt Ptt Poo Por Ppr Prg Raw Ren Rce Rr
   S&R S&F S&B Shw S&O S'm Sox Spl Stw S&H S'l Tk Thr Thr Thr Thr Thr
   Tpr T'B VI Vau Vkg Vir Wat Wea W&D Wer Wd WS Yng Y&H.
Winter. MWJ.
   Similar names. Gray-Seeded Early Winter, Broad-Leaved Winter.

CUCUMBER.

African Horned. Chl D&H Fmr Ggy Ior Jse Man M's Shw Wer.
Alaska. Buc Rcc.
   Similar names. Buckbee's Alaska.
Albino. For Lnr Liv Pz Vau.
   Similar names. White Albino.
Arlington Early White Spine. Buc M&S Xk Ptt Sio S'B.
   Similar names. See Arlington White Spine.
Arlington White Spine. Alx Ar Bak Brd Brk Brk Brm Brr Brr Bui Bar
   Brb Cam CE Cle CCR Col CF Cox Crs Cur Dlw D&H DD D&C Drn Ebr Emr
   RE Exr Ewg Fqr Fer GH Gra Ggy Ggy Gry Ham H&C Hlm Hse Hml RHJ J&S
   Kg Lan Lea Lnr Liv Mnd Mgd Mns May Mie MV M&S Neb Nol Orld Orp Hr Ptt
   Pri Raw Ren Rob Roc Rt S&F S'O S'O S&W Thr Thr Thr Thr Thr Vau Vwr WS Y&H.
AMERICAN VARIETIES OF VEGETABLES.


Similar names. See Arlington White Spine.

Arnstade's Green Giant Forcing. Koe. For similar names see Norbiton Giant.

Astro. Iow Lar.

Seedsmen's synonyms. Rollinson's Telegraph, J.L.

Austrian Gherkin. Lar.

Baltimore White Spine. G&T. For similar names see White Spine.

Bell's Prolific Pickling. Bel. For similar names see Green Prolific.

Bennett's Early White Spine. C&J.

Similar names. See Bennett's White Spine.


Similar names. See Evergreen White Spine, Bennett's White Spine.

Bennett's Improved Early White Spine, Bennett's Improved White Spine. Entered as Bennett's Early White Spine and Bennett's White Spine.


Similar names. Bennett's Improved White Spine, Bennett's Improved Early White Spine, Bennett's Evergreen White Spine. See also White Spine.


Similar names. See White Spine.

Bolgiano's Improved Extra Early White Spine. Entered as Bolgiano's Extra Early White Spine.

Boston Market. Iam M&S Ren Stw. For similar names see Boston Pickling.

Seedsmen's synonyms. Boston Pickling, Iam Stw. Prize Taker, M&S.

Boston Market Forcing. Fgr. For similar names see Boston Pickling.


Jersey, SC. Jersey Pickling, Cle HP Iow Nfl. Short Green, Brg.

Breck's Forcing White Spine. Brk. For similar names see White Spine.

Briggs' Early Green Prolific. Entered as Early Green Prolific.

Brunning's White Spine. Bug. For similar names see White Spine.


Burner's Monarch. RE. For similar names see Monarch White Spine.


Burr. Axl Ar Btl Brl Bui C&B Col Crs Drr Eic Elt Egw Frd Gls G&W T G Hde Hm Iow J&S Kg Pm Mns Nol JMP Pnt Poo Por Raw Rim S&R SC Shin Sim Son TB Til Trm 17 Wd WS Yng.

Similar Names. See Gherkin.


California Pickling. J&K.

Cardiff Castle. Raw.

Carter's Earliest of All, Carter's Tender and True. Entered as Earliest of All and Tender and True.

Carter's Model. Brk D&H Gry S&F SB Van. For similar names see Model.

Chesterfield. Jns.

Seedsman's Synonyms. Chicago Pickling, Jns.

Chicago. Ebr Nk. For similar names see Chicago Pickleg.

Seedsman's Synonyms. Westerfield, Ebr.


Seedsman's Synonyms. Chesterfield, Jns. Westerfield Pickling, Bkt Btl Fer Lam Liv May, etc.

Childs' Early Beauty, Childs' Ivory Monarch. Entered as Early Beauty and Ivory Monarch.

Chinese Long-Remaining Green. Drr.

Similar Names. See York's Early Chinese.

Chinese Snake. Kei. For similar names see York's Early Chinese.

Seedsman's Synonyms. Soo Yum, Kei.

Cincinnati Pickle. JCM.

Climax Forcing. Tatt.

Climbing. Bel Brr.

Climbing Delicatessen. Ger.


Similar Names. Henderson's Cool and Crisp.
Covent Garden. Mhl.
  Similar names: Covent Garden Favorite, Covent Garden Frame.

Covent Garden Favorite. Bui. For similar names see Covent Garden.
  Similar names: See Covent Garden, Lord Kenyon's Favorite.

Covent Garden Frame. Bui. For similar names see Covent Garden.

Cox's Early White Spine. Cox. For similar names see White Spine.


Coy's Early Cyclone, Coy's Cyclone, Coy's Cumberland. Entered as Early Cyclone, Cyclone, and Cumberland.

Cream City Pickling. Kos.
  Similar names: Koss' Cream City Pickling.

Crosse & Blackwell Pickling. NK.

Cumberland. Ar Brd Blt Bly Rgy Brk Brk Brk Bar Cox Cres Cur Der Ebr Ebr Ebr Fur Fax Fer Gyg Iow J&MC K&S K&W Lnr Liv Mgd Man May JMM Mzy Ptt Rob &F See Sim Spf &H Thr Van Vr Vr Wt Wt Wt HN.

Currie's Milwaukee Pickling. Entered as Milwaukee Pickling.

Cuthill's Black Spine. Hen Raw SB S&W W&D.
  Similar names: See Cuthill's White Spine.

  Similar names: Cuthill's Black Spine. See also White Spine.

Cyclone. Ggy Thh.

Darch & Hunter's Improved Long Green. Entered as Long Green.

Duke of Edinburgh. Bng Bui Cres Drr Elt RE Gry Hrv Hen Mund JMM Mzy Pks Pot Ren SB Tat Thr Vin W&D.

Dwelling House. Mhl.

Earliest of All. D&H. For similar names see Extra Early.

Early Beauty. Chi.
  Similar names: Child's Early Beauty.

Early Boston Market. Ebe JMM. For similar names see Boston Pickling.

Early Chinese. Vk.


  Similar names: Coy's Early Cyclone.

Early Evergreen. Brd Cam. For similar names see Evergreen White Spine.

Early Express. Iow.

Early Fordhook White Spine. Jer. For similar names see Fordhook White Spine.

CUCUMBER.

Neb Nef Nol NI NK OV Old Pac Pg JMP Pir Pnt Ptt Pot Pug Rik Raw Ree Ron Ree Rob Rt Rs RP SC S&F Shw S&O Shm Sim Sox Spf Stk NB Sw S&H Tex TB Thm Thb Tpk Trm T&B Vl Van Vl Vin Web W&D Wll Wlt Wdr WS Wyg Yng.

SIMILAR NAMES. Early Frame, Early Frame Short Green.

SEEDSMEN'S SYNONYMS. Early Green Cluster, Bdg. Early Prolific Short Green, Buc. Early Short Green, Bur Bow Col Fst Fer Pg, etc. Early Short Pickling, Bdg. Gherkin, Cur. Short Green, Cur Drr Ehr Fqr Low J&S, etc.

Early Frame Short Green. Mie Sox.

SIMILAR NAMES. See Early Frame, Short Green.

Early Green Cluster. Bdg Bg Bgs Bui Brr Bur Cam CE Chl Col Cok Crs CA DD Drw Dnn Dun Emr Evr Fst Gls Hde Hrm Hrs Hst Haw HIm Hop H&P Ind Kei K&W Kea Liv JL Man Mns Man MV May NI NK J&P Jpt Pri Qkr Raw RP SC Shw Shm Sip &or SB S&W Tat Thr Vl Vin Web WS.

SIMILAR NAMES. Paris Early Green Cluster, Early Cluster.

SEEDSMEN'S SYNONYMS. Early Frame, Bdg. Early Short Pickling, Bdg.

Early Green Prolific. Bgs D&C Fmr Fst Hbt HIm Hop M&S Ree Wdr Y&H.

SIMILAR NAMES. See Prolific.

SEEDSMEN'S SYNONYMS. Boston Pickling, Brr Fst Fmr HIm Hop.

Early Long Green. Roc. For similar names see Long Green.

Early Long White Spine. Bow RE.

SIMILAR NAMES. See Extra Long White Spine.

Early Market. Sal.

SIMILAR NAMES. Salter's Market Garden.

Early Netted Russian. H&P. For similar names see Early Russian.

Early Prize. May.

SIMILAR NAMES. Prize Taker, Prize Pickle, English Prize.

Early Prolific Short Green. Buc Roc.

SIMILAR NAMES. See Short Green, Green Prolific.

SEEDSMEN'S SYNONYMS. Early Frame, Buc.


SIMILAR NAMES. Improved Early Russian, Extra Early Russian, Early Netted Russian.

SEEDSMEN'S SYNONYMS. Extra Early Siberian, Bur. Moronian Gherkin, Sim.


SIMILAR NAMES. See Short Green.

SEEDSMEN'S SYNONYMS. Early Frame, Bow Col Fst LB Pug SC, etc. Extra Early Frame, HP.

Early Siberian. Buc Hop Rob. For similar names see Northrup's Siberian.

Early Spine. Hns. For similar names see White Spine.

AMERICAN VARIETIES OF VEGETABLES.

Soy Stk SB S&H S&W Tem Tex TB Thbl AGT Tpk Trm VI Vt Wat W&D Wlt Wd Wdr WS Wgy Yng Y&C II.

Similar names: See White Spine.


Emerald. Alx Air Bri Bru Bue Bar Brw C&J Cam Col Drr Pmm Evg Far Fer GH Gra Ggy Gry Ham Hrs Hst Hlm H&P low MWJ Kg Lan Lnr RL Man May Mhl Mzy OV Pg HP Pue Pnt Ptt Qkr Raw Rece Rece Rim Rob Shw Shm Sim S&H S&W Tem Thl Tpk VI Van Vt Wd WS.


Emerald Gem. M&S. For similar names see Emerald.

Emerald Green White Spine. Ber Hst. For similar names see Emerald.

Empress of India. SB. For similar names see White India.

English Forcing. G&T.

Similar names. English Frame.


Similar names. See English Forcing.

Seedsmen's synonyms: Telegraph, C&J.

English Gherkin. Bru. For similar names see Gherkin.

English Prize. M&S. For similar names see Early Prize.

Eskimoso. J&S.


Similar names: Cox's Everbearing, Page's Everbearing, Philippis' Everbearing, Salser's Everbearing, Thorburn's Everbearing.

Seedsmen's synonyms: Siberian, J&S.

Evergreen. Anb Ar Bai Blg Brk Bgs Bri Buc Bnr Cm C&B Cnl CF Cok Eas Ehr RE Evr Fld Frl GH Ggy TG Ham Hln Hbt Hlm Hop Jer MWJ Lnr Liv RL Mgd Man Mns Man May JMM Mhl Ms MV Pac HP Pue Ptt Qkr Rece Rob S&O Sim Ser SB Thr Thn Van Vt Wdr Yng.

Similar names. See Evergreen White Spine.

Seedsmen's synonyms. Extra Long White Spine, HP.

Evergreen Early White Spine. Brl Bng Bui Dlw Eic.

Seedsmen's synonyms. See Evergreen White Spine.


Seedsmen's synonyms: Extra Long White Spine, Bar Bkt Buc Fer Frd Hlm, etc.

Excelsior Long Green. Blg. For similar names see Long Green.

Extra Early. Bkt Eas Hw MWJ.


Extra Early Frame. HP. For similar names see Early Frame.

SEEDSMEN'S SYNONYMS. Early Short Green, HP.

Extra Early Green Prolific. Brd Bur Cle C&B Cur Ebe RE Frl Hen Van Ms Put PoO Pre Rob Shw Spf Tem Van W&D.

SIMILAR NAMES. See Green Prolific.

SEEDSMEN'S SYNONYMS. Boston Pickling, D&C Frl Bur.

Extra Early Green Turkey. Ar. For similar names see Long Green Turkey.


SIMILAR NAMES. See Long Green.

Extra Early Russian. Bdg CE DD Drn Haw Ise Lam Liv JL JCM McK Ren Rec Sox Tat Tem.

SIMILAR NAMES. See Early Russian.

Extra Early Siberian. Bgs Col D&H Gra Shw Shm.

SIMILAR NAMES. Early Siberian, Northrup's Siberian, Siberian.

SEEDSMEN'S SYNONYMS. Early Russian, Bur.

Extra Early White Spine. Bri Bur Cam (Co Del E1t G&T Ham lst Hbt Hlm Iml J&M Neb Qkr S&H.

SIMILAR NAMES. See White Spine.

SEEDSMEN'S SYNONYMS. Arlington White Spine, Iml.

Extra Green Prolific Pickling. HP. For similar names see Green Prolific.


Extra Long Evergreen. Iml. For similar names see Evergreen White Spine.

SEEDSMEN'S SYNONYMS. Bismarck, Iml.

Extra Long Green. Rai Ken Pac Raw S&W.

SIMILAR NAMES. See Long Green.


Extra Long Green Giant. Cok Neb Tem Vl.

SIMILAR NAMES. See Norblin Giant, Long Green.

Extra Long Green Prickly. Bur. For similar names see Long Green.

Extra Long Green Turkey. Bow Put.

SIMILAR NAMES. See Long Green Turkey.


SIMILAR NAMES. Long White Spine, Long White, Early Long White Spine.

See also White Spine.

SEEDSMEN'S SYNONYMS. Evergreen, HP. Evergreen White Spine. Buc Bkt Bur Fer Frl Trn, etc.

Favorite Pickling. May OV Tpk. For similar names see Lord Kenyon's Favorite.

Florida Emerald. Bgs CE Cle. For similar names see Emerald.

Forcing White Spine. Bkt Bri Pot S&E. For similar names see White Spine.

Fordhook Famous. Buc. For similar names see Fordhook White Spine.

Fordhook Pickling. Air Brn Buc Bur Cle Frl GI Gg Gg Hbt J&S Jns Msd Ms May old Pg Rob Rec Sd Shw Shm S&W Thu Til Van Wdr.

SIMILAR NAMES. See Fordhook White Spine.

Fordhook White Spine. Buc Buc Bur Ebe Frl Jer McK Ren.

SIMILAR NAMES. Improved Fordhook White Spine, Improved Early Fordhook White Spine, Fordhook Famous, Fordhook Pickling, Burpee's Fordhook Pickling. See also White Spine.


Garden Gem. May.

SIMILAR NAMES. May's Garden Gem.

General Grant. DD May Pnt.
Gherkin.  Alx Anb Ar Bai Brd  Bow Chl Cle C&B Col Cox Crg Cur Eic RE Evr Fer Glu Gln G&T Grw TG Hld Hrn Hen Hnt Iml MWJ RHJ J&M Kei Kg Lam Lam LB PM Mns JMM Min Nef Nk Par Pks JMP Ptt Qkr Ren Rim Sc Shw Shm Sox Spf Tat TB Til T&B 17 Van Vq Wat Wea Wd Ws.

Similar names.  English Gherkin, Moromin Gherkin, Paris Gherkin, Small Gherkin, Short Stem Gherkin, Small West Indian Gherkin, West India Gherkin, West India Burr, Burr.


Giant German.  Ggy.  For similar names see White German.

Giant Green.  Fqr.  For similar names see Noribton Giant.

Giant of Arnstadt.  Crs DD JMM Mzy Thr Vq.

Giant Pear of Guadeloupe.  Evg.


Similar names.  See Long Pera.

Giant Tailby Hybrid.  Sal.  For similar names see Tailby Hybrid.

Giant White.  Alr Col D&H Furn Fqr Hrs Hop M&S Vin.

Similar names.  See Noribton Giant.

Giant White Perfection.  Evg Gra.  For similar names see Lockie's Perfection.

Gladiator.  M&S.

Similar names.  Moore & Simon's Gladiator.

Glory of Erfurt.  Crs DD.  For similar names see White Erfurt Spine.

Goliath.  Crs Gre Old Thm Thr Van Wer.

Similar names.  Goliath Long Green.

Seedsmen's synonyms.  Chicago Giant, Old.

Goliath Long Green.  D&H Shw.  For similar names see Goliath, Long Green.

Grand Pera.  Fle.  For similar names see Long Pera.

Green Fournier.  M&S.


Seedsmen's synonyms.  Jersey Pickling, Buc Mhl Wat.  Boston Pickling, Bow Buc Evr Ewg Lam Live, etc.

Green Prolific Pickling.  Brn Chl Ehr H&P Ken Lea Mnd MV Nol Prn Thr Wfa W&b Wd.

Similar names.  See Green Prolific.

Half Long.  Big Mns.

Hammond's Earliest.  Ham.  For similar names see Extra Early.


Hammond's White Spine.  Ham.  For similar names see White Spine.
Hampel’s Forcing. Koe.

Hastings’ White Spine. 1st. For similar names see White Spine.

Henderson. Hen.

Henderson’s Cool and Crisp. Entered as Cool and Crisp.

Hill’s Arlington White Spine. Bgs. For similar names see Arlington White Spine.

Hill’s Early Forcing White Spine. Bsi Etr.

Similar names. See Hill’s Forging White Spine.

Hill’s Forging. Cox. For similar names see Hill’s Forging White Spine.

Hill’s Forcing. Buc. For similar names see Hill’s Forging White Spine.

Hill’s Forcing White Spine. Buc Bur Tg Hlm Jl. Mls Ree Rob Roe SB Wtr.

Similar names. Hill’s Early Forcing White Spine, Hill’s Forging, Hill’s Arlington White Spine. See also White Spine.

Holmes’ Early White Spine. Hlm. For similar names see White Spine.

Holmes’ Improved Early White Spine, Holmes’ Improved Jersey Pickling. Entered as Holmes’ Early White Spine and Jersey Pickling.

Ideal. Mhl.


International. Buc Roe.

Similar names. Buckbee’s International.

Ivory King. Buc Roe.

Ivory Monarch. Chl. For similar names see Monarch White Spine.

Japanese. Lam. For similar names see Japanese Climbing.


Japanese Climbing Green. Fqr S&F. For similar names see Japanese Climbing.

Japanese Climbing White. Fqr S&F. For similar names see Japanese Climbing.


Similar names. See Jersey Pickling.

Jersey Pickling. Alx Bkt Blg Bgs Bri Brn Bru Buc Biv Bur Brw Cam CE Cle CF CA Dlw DD Evr Fst Fer Gdn Gtt Gv Tg Hmr Hms Hln Hop Hs Pnl Jou Jac J&S Ken Koe Lam Lnr Lix Mnd PM Mns Man May JCM JMJ Mbl Mel Mhl Nef Nol NK Pks HP Pnt Pri Raw Rec Rim Rob SC Shw S&O Shm SB Stw Tem Til VI Van Wat Ws.


AMERICAN VARIETIES OF VEGETABLES.

Jersey Prolific. Min. For similar names see Jersey Pickling.
Johnson & Stokes’ Perfected Jersey Pickling. J&S.
King of Picklers. Ham.
Klondike. Ham.
Koss’ Cream City Pickling. Entered as Cream City Pickling.
Landreth’s Choice. Lan.
Landreth’s First. Dlw Gif Lan.
Lemon. Ggy May Vk.
Livingston’s Emerald, Livingston’s Evergreen. Entered as Emerald and Evergreen.

Livingston’s Extra Early White Spine. liv.

Similar names. See White Spine.

Livingston’s Medium Green. Jl.

Similar names. See Nichols’ Medium Green.

Lockie’s Perfection. Bru Bui D&H Drr Elt RE Gra Hen Lnr Raw Thr W&D.

Similar names. Salzer’s Perfection, Giant White Perfection.

London. JMM. For similar names see Long Green.

Seedsmen’s synonyms. Extra Long Green, Ebe. Long Green, JMM.

London Extra Long Green. Ebe. For similar names see Long Green.


Similar names. See Long Green.

Long China. Chl. For similar names see Early Chinese.

Long Evergreen White Spine. Gra. For similar names see Evergreen White Spine.

Long German. Fst. For similar names see White German.


Long Giant. Sal. For similar names see Norblin Giant.

Long Giant Pera. Pac. For similar names see Long Pera.

Long Grecllan. Fst.


Long Green Giant. Ger.
CUCUMBER.

Long Green Giant Pera. Ebr. For similar names see Long Pera.
Long Green Parisian. Thr. For similar names see Parisian Pickling.

Seedsmen's synonyms. Jersey Pickling, Pnt.

Long Green Prolific. Drw Eic. For similar names see Long Green.

Long Green Southgate. Sal. For similar names see Long Green.

Long Green Turkey. Anb Bon CE' Cle Cox Cur Drw Drm Emr Est. Gil Ggy Grg Grw Tg Hen MWJ Koc Lan May Mel Mhl Min MV Roe Rob RP SC Shw Sox Stk Sw Tat Th Th Th Thr Web.

Similar names. Extra Long Green Turkey, Improved Extra Early Long Green Turkey, Extra Early Green Turkey. See also Long Green.

Long Gun. May.
Long Island Pickling. Bug.

Long Pera. Hut.

Similar names. Giant Pera, Burpee's Giant Pera, Mammoth Giant Pera, Long Giant Pera, Long Green Giant Pera, Grand Pera, White Pera.

Long Prickly. Bui. For similar names see Long Green.

Long Slim. Lou.

Long White. Fqr. For similar names see Extra Long White Spine.


Similar names. See Extra Long White Spine.

Seedsmen's synonyms. New Jersey Hybrid, Bdg.


Lord Kenyon's Favorite. Bui Gry Hen S&W W&D.

Similar names. May's Favorite Pickling, Covent Garden Favorite, Favorite Pickling.

McKenzie's Prolific. M.K.


McMillan's White Spine. McM. For similar names see White Spine.

Mammoth Giant Pera. Shn. For similar names see Long Pera.

Mammoth Long. Mic.

Market Garden. Sal. For similar names see Early Market.

Marquis of Lorne. Bui Eit RE Ewg Gra Mhl Prn Ren Sim SB Vin W&D.

Matchless. Mhl. For similar names see White Spine.

Matchless Extra Early White Spine. Nol. For similar names see White Spine.

Matchless White Spine. M&S. For similar names see White Spine.

Maule's Early White Spine. Man. For similar names see White Spine.

Maule's Extra Early. Man. For similar names see Extra Early.

Maule's Improved Long Green. Entered as Long Green.


Meaux Pickling. Crs.

Medium Green. Del Hns Lan May OV Stw Tpk 11.

Similar names. See Nichols' Medium Green.

Medium Pickling. Eas. For similar names see Nichols' Medium Green.

Mills' Earliest. Mls. For similar names see Extra Early.

Milwaukee Pickling. Cur Koc.

Similar names. Currie's Milwaukee Pickling.

Model. Crs Sim Wd.

Similar names. Model Forcing, Tait's Model, Carter's Model.

Model Forcing. Wtr. For similar names see Model.

1320—No. 21—02—12
AMERICAN VARIETIES OF VEGETABLES.


Morning Star. Sal. For similar names see Star of the West.

Mororamin Gerkin. Sim. For similar names see Gerkin.
  Seedsmen's synonyms. Early Russian, Sim.

New Orleans Market. Eic Put Shw Stk Thu Thr.
  Similar names. Frouselle's New Orleans Market.
  Seedsmen's synonyms. Improved Long Green, Eic. Tulip Hybrid, Bui.

  Similar names. Livingston's Medium Green, Medium Pickling, Medium Green.

Noa's Forcing. Gng Koe Liv Thr Van Vl Vin.

Nonesuch. Sal.

Norbiton Giant. Ggy.

Northrup, King & Co.'s Pickling. NK.

Northrup's Siberian. Entered as Siberian.

Page's Everbearing. Entered as Everbearing.


Paris Gerkin. RIIJ Mgd. For similar names see Gerkin.

Parisian Long White Ridge. Elc RIIJ. For similar names see Stockwood Ridge.


  Similar names. See Parisian Pickling.

Pearce's Improved Long Green. Entered as Long Green.

Pearl. Alr. For similar names see White Pearl.

Peerless. GII Mnd Mns Mau May Nol Vn.
  Similar names. See Peerless White Spine.

Peerless Improved White Spine. Entered as Peerless White Spine.

  Similar names. Peerless Improved White Spine, Peerless, May's Peerless, Vincent's Peerless. See also White Spine.

Imperfect White Spine. GIJ J&S PM Nol.

Perfected Jersey Pickling. Entered as Jersey Pickling.

Perfection Early White Spine. Bui. For similar names see White Spine.

Perfection White Spine. Cam Joy Vl. For similar names see White Spine.

Philipps' Everbearing. Entered as Everbearing.

Pickling. CE.
Pierson’s Long Green. Entered as Long Green.
Plant Seed Co.’s Early White Spine. Entered as Early White Spine.
Prescott Wonder. Mend Thr. For similar names see White Wonder.

Pride of Canada. Sim.
Prize Pickle. Ren. For similar names see Early Prize.
Prize Taker. M&S. For similar names see Early Prize.

Seedsmen’s synonyms. Boston Market, M&S.

Prolific Pickling. Sal. For similar names see Green Prolific.
Rawson’s White Spine. Brt Raw. For similar names see White Spine.

Rochford. For.


Rochford’s Market. Dort S&F. For similar names see Rockford.
Rochford’s Market Garden. Mhl. For similar names see Rockford.
Rockford Market. W&B. For similar names see Rockford.
Rockford Pickle. Buc GN Roe. For similar names see Rockford.

Rollinson’s Telegraph, Rollinson’s Telegraph Forcing, Rollinson’s Telephone. Entered as Telegraph, Telegraph Forcing, and Telephone.

St. Louis Pickling. DD SC.
Salzer’s Earliest. Sal. For similar names see Extra Early.

Salzer’s Everbearing, Salzer’s Giant Tailby Hybrid, Salzer’s Japanese Climbing, Salzer’s Long Giant, Salzer’s Market Garden, Salzer’s Morning Star, Salzer’s Prolific Pickling. Entered as Everbearing, Giant Tailby Hybrid, Japanese Climbing, Long Giant, Market Garden, etc.

Salzer’s Perfection. Sal. For similar names see Locke’s Perfection.

San Francisco Pickling. Cox.

Similar names. Cox’s San Francisco Pickling.


Similar names. See Snake.

Seedsmen’s synonyms. Snake, Buc Bur Brr J&S Liv Neb, etc.

Short Green. Air Bak Bel Brr C&B Cur Del Ebr Gis GH Ggy Gry Ggr Grr Hns Hde Hrn Hrn Hrv Hen Hrm Hop H&P Htl Ion Jns Kel K&W Lam Lnr Liv Man Man Min Nef NK Pnt Ptt Pri Pri Pug Rec Rs RP S&R S&F Shm SB Tex Trn Vi Vk Wea W&D W&Y W&H.

Similar names. Early Short Green, Improved Short Green, Early Prolific Short Green, Early Frame Short Green.


Short Green Gherkin. CA SB. For similar names see Gherkin.

Short Prolific. Hrs. For similar names see Green Prolific.

Short Prolific Pickling. Bdl Dlw Koe Lan Rim 17.

Similar names. See Green Prolific.

Shumway’s Giant. Shm. For similar names see Northton Giant.

Shumway’s Improved White Spine. Entered as Shumway’s White Spine.

Shumway’s White Spine. Shm. For similar names see White Spine.

Siberian. Anb Brl Btt Brr Fmr Frd Ger Hns Hrs J&S Mgl Neb NK Sim Trn Van Wdl WS.

Similar names. Early Siberian, Extra Early Siberian, Northrup’s Siberian.

Seedsmen’s synonyms. Everbearing, J&S.

Simmers’ Early Extra White Spine. Sim. For similar names see White Spine.


Small Gherkin.  Bow Bri Drr Emr JL Mnd Man Mhl MV Neb Nol HP Por S&R Svr Thr Tpk Trm.

Small Green Pickling.  S&W.

Small West Indian Gherkin.  Kei.  For similar names see Gherkin.


Star of the West.  Bui.

Sterling.  CE.

Stockwood Ridge.  Brui.

Sutton's Matchless.  Entered as Matchless.

Sutton's Progress.  Bng Thr.

Swan Neck.  DD Mzy Vk.

Tailby Hybrid.  Anb Bui Brt Btl Brk Bdg Bsi CE Cle Cur DD Fst GH Ggy Gry Hns Hrn Hrs Hen Mnd Man May Mhl MV M&S Mzy OV HP Pnt Ree Rob SC S&F Shm Sjt Thr Tpk Van Wea W&D.

Tait's Climax Forcing, Tait's Improved White Spine.  Entered as Climax Forcing and Tait's White Spine.

Tait's Model.  Tat.  For similar names see Model.

Tait's White Spine.  Tat.  For similar names see White Spine.

Telegraph.  Brd Bri Ebg Bri Bran Ebg Bri C&J Crs Drr Ebg Elit RE Ewg Fqr Gra Gng Gry Hnn MWJ Ken Lnr Liv JL Mnd Mm Mm Mhl Mzy Pks Prn Ptt Por Pot Raw Ren S&R S&W Sim SB S&W Tat Thr Til Van Vk Wea W&D.

Telegraph Forcing.  Koe Wer.  For similar names see Telegraph.

Telephone.  Ewg Gra.  For similar names see Telegraph.

Toledo Market Evergreen White Spine.  HP.

Triumph.  Pot.

Vaughan's Improved White Spine.  Entered as White Spine.

Vaughan's Prolific Forcing.  Van.  For similar names see Green Prolific.
CUCUMBER.

Vick's Early Chinese, Vick's Perfection White Spine. Entered as *Early Chinese* and *Perfection White Spine*.

Vincent's Peerless. Entered as *Peerless*.

Walker's Prolific. For similar names see *Green Prolific*.

Washington White Spine. *I.B.* For similar names see *White Spine*.

Wernich's Chicago Pickling. Entered as *Chicago Pickling*.

Westfield. *Ebr Iow Roc.* For similar names see *Chicago Pickling*.

**Seedsmen's Synonyms.** *Chicago, Ebr.*

**Westfield Chicago Pickling.** Air Ar Btl Bvr Ber CE Cle Evr Frd GHI TGG Hst H&C Hse Ind J&S Kra Man MV Rec SC S&O Shm Sim Sox Spf Tem Van Wd WS Yng Y&H.

**Similar Names.** See *Chicago Pickling*.

**Westfield Pickling.** For Ham Lam *Lur Liv May NK OV Por S&R S&B SB Tpk Vk*.

**Similar Names.** See *Chicago Pickling*, Bkt Btl Fer Lan Liv NK, etc.

**West India Burr.** Grw Mzy. For similar names see *Gherkin*.


**Similar Names.** See *Gherkin*.

**Seedsmen's Synonyms.** *Burr, Bari Hen low J&S Lur Raw, etc.* *Gherkin, Eic.* *Jerusalem Pickle, Liv.*

**White Albino.** Mic. For similar names see *Albino*.

**White Apple Shape.** Ger.

**White Dutch.** CE Del.

**White Erfurt Spine.** Sal.

**Similar Names.** Glory of Erfurt.

**White German.** Sal.

**Similar Names.** Long German, Giant German.

**White India.** Air Shm.

**Similar Names.** Empress of India.

**Seedsmen's Synonyms.** *White Pearl, Alr.*

**White Japan.** Fst Liv Mzy. For similar names see *Japanese Climbing*.

**Seedsmen's Synonyms.** *White Pearl, Liv.*

**White Pearl.** Bel Bsg Brk Bsg Brn Bvr CE Cle Col D&H Fgr Fst Frd Hrv Iow J&S Lnr Liv May Ms Mzy Pac Ptt Por Pri Raw Ren Rec Rob Shm Thr Vk.

**Similar Names.** Burpee's White Pearl, Pearl.

**Seedsmen's Synonyms.** *Japan White, Liv.* *White India, Alr.*

**White Pera.** Sal. For similar names see *Long Pera*.

**White Snow.** Lon.


Similar names. Burpee’s White Wonder, McMillan’s White Wonder, Prescott Wonder.

Wild Cucumber. Bue Crt Eic Kos Neb.

Windsor Pickling. C&J.

DANDELION.

Dandelion. Bow Bdg CE Clc C&B D&H Fer Ger GH Ggy Hns Hm Hmr Hrv Haw low Man MV Rec Rs S&F Tat Vk Wll.

Arlington. Ggy Rs.

Broad-Leaved. Cur Drr Hm Hop Lnr.

Similar names. Improved Broad-Leaved, Large Broad-Leaved, Extra Early Broad-Leaved.

Cabbaging. Clc Hrm Lan Mhl M&N Nol Vnn Yng.

Seedsmen’s synonyms. Improved Thick-Leaved, Hrn. Thick-Leaved, Mhl M&N Nol Vnn Yng.

Common French. Fer.

Cultivated. Lam.

Seedsmen’s synonyms. Common French, Fer.

Endive Leaved. May.

Extra Early Broad-Leaved. Tat. For similar names see Broad-Leaved.

French. Bdg CF Elt Lam Lnr Mzy Nol Rs W&d.

Similar names. French Garden, French Thick-Leaved.


Similar names. See French.


Similar names. See Thick-Leaved.

Giant Erect. Tat.

Improved. Crs Ger. For similar names see Improved Large-Leaved.

Improved American. Bdg Brk Emr May Rs.

Similar names. Improved American Thick-Leaved.

Improved American Thick-Leaved. Brt Sic. For similar names see Thick-Leaved.

Improved Broad-Leaved. CF Fax Haw Mas Pot Tat.

Similar names. See Broad-Leaved.

Improved Cabbaging. SB.

Improved Large-Leaved. Bue Brb Bur Cht Clc Crs D&H Elt Fqr Fst Grw Hst Htn J&S Lnr Mls Nol Pg Hpl Wnt W&d Wdr.

Similar names. Improved, Large-Leaved, Very Early Improved.

Improved Large Thick Leaf. Man. For similar names see Thick-Leaved.
Improved Thick-Leaved.  Bai Bny Bri Bng Brw C&J CE CF Drr Dun Emr Fer 
Ggy Hrn J&S K&W Ken Lnr Pnt Ree Tem Thr Wat.  

SIMILAR NAMES.  See Thick-Leaved.  
SEEDSMEN’S SYNONYMS.  Cabbaging, Hrn.  
Large Broad-Leaved.  Brr.  For similar names see Broad-Leaved.  

SIMILAR NAMES.  See Improved Large-Leaved.  
Large Thick-Leaved.  Hrs SC.  For similar names see Thick-Leaved.  
Thick-Leaved.  Mhd M&S Mzy Not Sim Van Yng.  

SIMILAR NAMES.  Large Thick-Leaved, Improved Thick-Leaved, Improved 
Large Thick Leaf, Improved American Thick-Leaved, French Thick-Leaved.  
SEEDSMEN’S SYNONYMS.  Cabbaging, Mhd M&S Not Van Yng.  

Very Early Improved.  Ggy.  For similar names see Improved Large-Leaved.
Early Round Purple.  Anb Bow CE Fur Gh Tg Jow May Sox.

Similar names.  See Round Purple.

Eichling's Early Purple.  Eic.  For similar names see Long Purple.

Eichling's Large Purple.  Entered as Large Purple.

Excelsior Tree.  Man.

Extra Early Dwarf.  Frd.  For similar names see Early Dwarf Purple.

Extra Early Dwarf Purple.  Hrs.  For similar names see Early Dwarf Purple.

Extra Early Dwarf Round Purple.  Bur Evr Fst Hbt M&S.

Similar names.  See Round Purple.

Extra Early Long Purple.  Roc.  For similar names see Long Purple.

Extra Early Round Purple.  Ber.  For similar names see Round Purple.

Extra Large Long Purple.  Buc.  For similar names see Long Purple.

Ferry's Improved Large Purple.  Entered as Ferry's Large Purple.

Ferry's Large Purple.  Fer Ggy.  For similar names see Long Purple.

Fordhook Improved Spineless.  Entered as Fordhook Spineless.

Fordhook Spineless.  Bur.  For similar names see Spineless.

Griffing's Improved Spineless.  Entered as Griffing's Spineless.

Griffing's Spineless.  Gtg.  For similar names see Spineless.

Guadaloupe.  Bdg.

Seedsmen's synonyms.  Striped, Bdg.

Hastings' Improved Large Purple Spineless.  Entered as Hastings' Large Purple Spineless.

Hastings' Large Purple Spineless.  Hst.  For similar names see Spineless.

Henderson's Improved New York Spineless.  Entered as New York Spineless.


Landreth's Spineless.  TB.  For similar names see Spineless.

Landreth's Spineless Large Round Purple.  Lan Stw.

Similar names.  See Round Purple.

Landreth's Spineless Round Purple.  Dbw Rim.

Similar names.  See Round Purple.

Large New York Improved Spineless.  Entered as Large New York Spineless.

Large New York Spineless.  Blg.  For similar names see New York.

Large Oval Dark Glossy Purple Spineless.  Blg.

Similar names.  See Spineless.


Similar names.  See Long Purple.

Seedsmen's synonyms.  New Orleans Market, Stk.

Large Purple Spineless.  Jl.  For similar names see Spineless.

Large Round Purple.  Bou.  For similar names see Round Purple.

Large Smooth.  Cle.  For similar names see Smooth Stew.

Large Spineless.  Can Gdn.  For similar names see Spineless.


Livingston's Mammoth Purple.  Liv.  For similar names see Mammoth Purple.

Long Purple.  Blt Brn Brn Brn Cg Cg Del Ess Emr Exx Gt Gh Gra Ggy TG HJ Ki JCM JMM Pcr Pct Pot Sal Shm Thr T&B Vin.

Similar names.  Early Long Purple, Extra Early Long Purple, Extra Large Long Purple, Improved Purple, McMillan's Improved Purple, McMillan's Purple, Early Purple, Eichling's Early Purple, Large Purple, Bucklee's Large Purple, Improved Large Purple, Ferry's Improved Large Purple, Ferry's Large Purple, Thornless Large Oval Purple.
**EGGPLANT.**

**Long White.** *Kei Sim Thr.*

**Similar Names.** Early Long White, Long White Chinese, Buckbee's White, White Ornamental, White Egg-Shaped, White, Round White.

**Long White Chinese.** Bld. For similar names see Long White.

**Louisiana Purple.** Btl Jns.

**McMillan’s Improved Purple.** Entered as *McMillan’s Purple.*

**McMillan’s Purple.** McM. For similar names see Long Purple.

**Mammoth Pearl.** Fer Thr. For similar names see White Pearl.

**Mammoth Purple.** Liv.

**Similar Names.** Livingston’s Mammoth Purple, Mammoth Purple Spineless, Mammoth Smooth Stem.

**Mammoth Purple Spineless.** Tex. For similar names see Mammoth Purple.

**Mammoth Smooth Stem.** Mns. For similar names see Mammoth Purple.

**Michell’s New York Improved Large Purple.** Entered as New York Large Purple.

**New Jersey.** *Cam Cle Mic Rs S&R TB Y&H.*

**Similar Names.** New Jersey Improved, New Jersey Improved Large Purple, New Jersey Improved Early Large Purple, New Jersey Improved Large Smooth, New Jersey Improved Large Purple Smooth Stem, New Jersey Improved Large Dark Purple Smooth Stem, New Jersey Early Large Purple.

**New Jersey Improved, New Jersey Improved Early Large Purple, New Jersey Improved Large Dark Purple Smooth Stem, New Jersey Improved Large Purple, New Jersey Improved Large Purple Smooth Stem, New Jersey Improved Large Smooth.** Entered as New Jersey, New Jersey Early Large Purple, New Jersey Large Dark Purple Smooth Stem, New Jersey Large Purple, etc.

**New Jersey Large Dark Purple Smooth Stem.** NoL. For similar names see New Jersey.

**New Jersey Large Purple.** Fst Kg. For similar names see New Jersey.

**New Jersey Large Purple Smooth Stem.** J&N.

**Similar Names.** See New Jersey.

**New Jersey Large Smooth.** Bld Gll. For similar names see New Jersey.

**New Orleans Market.** Ele Skt.

**Seedsman’s Synonyms.** Large Purple, Skt.

**New York.** Alr Ber Bon Brk CE Chl Cox Crg CA Del DD Drw Drm Ebc RE Fqr Fst Gry Gtg Hrn Hrn Hrs Hnt Hnt hul low Kos Kra Lan Mas May JCM JMM Mic Mhl Mzy Nef Old HP Prn Pot RP Sox Spf SB Stw Thm Thb Trm Wat Web Wer Wl Ying.


**New York Giant.** Koe. For similar names see New York.

**New York Giant Spineless.** Chl. For similar names see New York.

**New York Giant Round Purple.** Bgs. For similar names see New York.

less, New York Improved White. Entered as New York, New York Large Purple, New York Large Purple Spineless, New York Large Round Purple, etc.

**New York Large Purple.** Ar Bow Bro Brr Drt Evr Grg Gwv Ham Hst Liv Loh PM Mhl Mls M&S HP For Rce S&R Tex Tpk Van.

**Similar names.** See New York.

**New York Large Purple Spineless.** J&S Nol Sim Wdr.

**Similar names.** See New York.

**New York Market.** Ev Stk. For similar names see New York.

**New York Oval Purple.** Pnt SC S&F. For similar names see New York.


**Similar names.** See New York.

**Seedsman's Synonyms.** Large Oval Purple, Bdg. Round Purple, Bdg.

**New York Purple Spineless.** Bng CF Crs Hde Lnr Rce Vk.

**Similar names.** See New York.

**New York Round Purple.** Bil Brw Cle Ggy. For similar names see New York.

**New York Spineless.** Brt Btk Btr Brw C&J Cur Eic Elt Frd GH Hen H&G Kg May Ptt Poo S&O S&W Tom Thr Wea.

**Similar names.** See New York.

**New York White.** NK. For similar names see New York.

**Perfection Spineless.** Bel Gra. For similar names see *Purple Perfection*.

**Prolific Tree.** Chl.

**Purple.** Alv. For similar names see *Long Purple*.

**Purple Perfection.** Brg TB.

**Similar names.** Purple Perfection Spineless, Perfection Spineless, Tait's Purple Perfection, Improved Purple Perfection.

**Purple Perfection Spineless.** Gra. For similar names see *Purple Perfection*.

**Purple Spineless.** Bon. For similar names see *Spineless*.

**Round French.** Thr.

**Round Purple.** Brw MV Ree S&O Vk.

**Similar names.** Early Round Purple, Extra Early Round Purple, Extra Early Dwarf Round Purple, Dwarf Round Purple, Landreh's Spineless Round Purple, Landreth's Spineless Large Round Purple, Large Round Purple Spineless, Large Round Purple, Early Round.

**Seedsman's Synonyms.** Improved New York Purple, Bdg. Large Oval Purple, Bdg.

**Round White.** Shm Thr. For similar names see *Long White*.

**Salzer's New York Purple.** Entered as New York Purple.

**Scarlet Chinese.** Bdg Tat Thr.

**Spineless.** Chl Cle TG Hst Joc Ws.

**Similar names.** Improved Spineless, Large Spineless, Purple Spineless, Improved Large Purple Spineless, Hastings' Improved Large Purple Spineless, Buist's Improved Large Spineless, Buist's Large Spineless, Griffith's Improved Spineless, Griffith's Spineless, Landreth's Spineless, Fordhook Improved Spineless, Fordhook Spineless, Improved Large Spineless, Large 'Oval Dark Glossy Purple Spineless, Hastings' Large Purple Spineless.

**Striped.** Bdg Ewg Gra Thr.

**Similar names.** Tricolor Large Streaked Purple Green and White.

**Seedsman's Synonyms.** *Caudalampae*, Bdg.

**Tait's Purple Perfection.** Tat. For similar names see *Purple Perfection*. 
Thornless Large Oval Purple. SC. For similar names see Long Purple
SEEDSMEN'S SYNONYMS. Thornless Smooth Stem, SC.
Tomato. Buc.
Tricolor Larga Streaked Purple Green and White. Koe.
SIMILAR NAMES. See Striped.
White. Hrn K&W Man McK Ren Roc Sal Tat. For similar names see Long White.
White Egg-Shaped. Bdg. For similar names see Long White.
White Ornamental. Cts. For similar names see Long White.
White Pearl. Alx Alr Bbl Brk Chi CG Col Eig Ecr Frd Ggy Grw Hns Low J&M
SIMILAR NAMES. Pearl, Mammoth Pearl.
Wild. Bdg.

ENDIVE.

Berlin Giant. Bri J&S.
Bordeaux. M&S.
SIMILAR NAMES. Simon's Bordeaux.
Broad-Leaved. Bly Bgg Brk Bdg Bri Bai CE Cox Ebe Eig Einr GilH Lam MV Pri
SC Sse Sw S&W Thr Van Wnr.
SIMILAR NAMES. Green Broad-Leaved, White Broad-Leaved, Yellow Broad-
Leaved. See also Broad-Leaved Batavian, Broad-Leaved Escarole.
SEEDSMEN'S SYNONYMS. Batavian, Bui SC. Escarole, Ebe Thr.
Broad-Leaved Batavian. Bai Brd Brt Btl Bkt Bow Bai Bur C&J Con CE Cie C&B
Col CF Cts Cur Drr Ebr Fnr Evr Fqj Fst Fer Frd Ger Gls Ggy Gry TG Hns
Hrn Hrv Hn H&C Hlm Hop Iml Jns Koe Lam Lnr Liv JL Loh Man Man May
JCM JMM Mhl Mls Min M&S Mrs Mzy Nfl Nol OV Pac HP JMP Ftr Prn
Ptt For Pot Raw Rec Roc Sal S&R SC S&F S&O Shm Shx Sx TIl Tpk Trm T&B
Vl Vk Vin Wta W&D Wdr YaH.
SIMILAR NAMES. Green Broad-Leaved Batavian, White Broad-Leaved Batavian,
White Batavian, Imperial Broad-Leaved Batavian, Round-Leaved Batavian.
SEEDSMEN'S SYNONYMS. Escarole, Bow Drr Fpr Hen J&S Raw, etc. Escarole. Vin.
Broad-Leaved Escarole. Bng BD Eic J&S. For similar names see Escarole.
Brussels Chicory. Bdg.
Champion Moss Curled. Lam Sx. For similar names see Moss Curled.
Curled. Ewg Gra.
Dallwig's Green Curled, Dallwig's Yellow Curled. Entered as Green Curled and
Yellow Curled. *

De Ruffec. Fqr.
SIMILAR NAMES. Large Green Curled de Ruffec.
Dreer's Giant Fringed. Entered as Giant Fringed.
Early Green Curled. Cam Sim. For similar names see Green Curled.
SEEDSMEN'S SYNONYMS. French Moss Curled, Sim.
Ear'y Summer Moss Curled. Mzy. For similar names see Moss Curled.
SIMILAR NAMES. Broad-Leaved Escarole.
SEEDSMEN'S SYNONYMS. Broad-Leaved, Ebe Thr. Broad-Leaved Batavian, Bow
Cox Drr Fpr Hen J&S, etc. Broad-Leaved Green, Put. Broad-Leaved Imperial
Batavian, Sim.
SIMILAR NAMES. See White Curled.
Extra Fine Curled. Eig.
Fine Curled. Ebe.
Fine Moss Curled. Ggy Shn Vau. For similar names see Moss Curled.

EGGPLANT—ENDIVE. 187
AMERICAN VARIETIES OF VEGETABLES.

French Curled. Bdg. For similar names see Green Curled.
Similar names. Moss Curled, Bdg.

French Green Curled. TB VI. For similar names see Green Curled.

French Green Moss Curled. Ger Neb. For similar names see Moss Curled.

French Moss Curled. Air Cle C&B EIt Fqr Hen May Pac Sim Vin.
Similar names. See Moss Curled.

Giant Fringed. Bar Der Hbt Jow J&C Mhl Mrs.
Similar names. Dreer’s Giant Fringed.

Giant Green Curled. Wat.

Green Broad-Leaved. Dhr Mnd Put. For similar names see Broad-Leaved.
Similar names. Escarole, Put.


Green Curled. Alx Alr Ar Biv Bak Brl Btl Bel Biv Bow Brr Brk Bts Brn Bng Buc Bui Bar C&J Cam CE C&B CF Cox Dlw D&H Del Drw Don Ebr Eic Elt Emr Efr Efr Fqr Fst Fax For Frl Gdn Gry GgF G&T Grw TG Hmns Ham Hrm Hrs Hst Hen Hbt H&G Hlm Hop Hnt H&P Hml Tow Jac RHLJ J&K Jns KeJ K&W Ken Kg Kos Lam Lea Lnr Liv J&L Mgd Ml Mrs Mas Mau May JCM JMM McM Mel Mhl Ms Mns Min Mrs Neb Nef N1 NK OY Old Pac Pg Pks HP Fir Pnm Pnc Pnt Poo For Pri Pug Raw Ren Rim Roc RP Sal S&R SC S&F Shw Sis Sex Spj SB Stv S&H S&W Fat Tem Tex Thm AGT Til Tpk Trm T&B 17 Van Vkm Wat Wca Wcb Wdb Wfl Wll Wd WS Yng Y&H.

Green Curled Edge. Dlw. For similar names see Green Curled.

Green Curled Italian. Pot. For similar names see Green Curled.

Green Curled Summer. Bdg DD Hde Kra Rec.
Similar names. See Green Curled.

Green Curled Winter. CE Cle C&B Cts Cur DD Drr Elsc GH Hde H&C Kra Mnd MV Myz Rec Rec S&O Thr.
Similar names. See Green Curled.

Green Moss Curled. Brd Dlw. For similar names see Moss Curled.

Imperial Broad-Leaved Batavian. Sim.
Similar names. See Broad-Leaved Batavian.

Improved Green Curled. Entered as Green Curled.

Laciniate. Thr.

Large Curled. Ger.
Similar names. Ruffled-Leaved, Ger.

Large Green Curled. Bkt For Gls Lan Liv Loh Mrs Mnd Rs Thr.
Similar names. See Green Curled.

Large Green Curled de Rouféc. Thr. For similar names see De Roufée.

Large Round Black. Lan.

Lettuce-Leaved. Cts Hde.

London Curled. Eas. For similar names see White Curled.

London Green Curled. Ger Ggy Ptt Wdr. For similar names see Green Curled.
Long Green Curled. Pac. For similar names see Curled.
Similar Names. See Green Curled.
Mammoth Green Curled Italian. M&S. For similar names see Green Curled.
Model Prize Curled. Man.
Moore's Mammoth Green Curled Italian. Entered as Mammoth Green Curled Italian.


Oyster. Bur J&S Man Mrs Wat.
Seedsmen's synonyms. Giant Fringed, Bur Mkl Mrs.

Paragon Curled Summer. M&S. For similar names see Paragon Curled Winter.

Paragon Curled Winter. M&S.
Similar Names. Paragon Curled Summer.

Parisian Curled. Brk.
Seedsmen's synonyms. Moss Curled, Brk.

Round-Leaved Batavian. Kei. For similar names see Broad-Leaved Batavian.

Ruffled-Leaved. Ger.
Seedsmen's synonyms. Large Curled, Ger.

Salzer's Moss Curled. Entered as Moss Curled.

Savoy Leaved. Thr.
Seedsmen's synonyms. Pumalier, Thr.

Self-Blanching. 100 Ebr.

Simon's Bordeaux. Entered as Bordeaux.

Small Green Curled. Loh. For similar names see Broad-Leaved Batavian.

Staghorn. Mrs.

White Batavian. Cam. For similar names see Broad-Leaved Batavian.

White Broad-Leaved. Crs Hkr. For similar names see Broad-Leaved.

Seedsmen's synonyms. Letter Leaved, Crs.


Similar Names. See Broad-Leaved Batavian.

Similar Names. White Curled Guillande, Ever White Curled.
Seedsmen's synonyms. Moss Curled, Frd.

White Curled Guillande. M&S. For similar names see White Curled.

White Moss Curled. HIP. For similar names see Moss Curled.

Winter. Fmr.
Seedsmen's synonyms. Green Curled, Fmr.

Yellow Broad-Leaved. Dw. For similar names see Broad-Leaved.

Yellow Curled. Dw.

Yellow Moss Curled. Dw. For similar names see Moss Curled.
FETTICUS. (See CORN SALAD.)

FLAG. (See LEEK.)

FRENCH SPINACH. (See ORACH.)

GARLIC.


Erfurt. H&C.

Large Italian. Brn.

GERMAN CELERY. (See CELERIAC.)

GRASS NUTS. (See CHUFAS.)

GUMBO. (See OKRA.)

HERBS.

(Excluding those used only for medicinal purposes.)

Agrimony. Nol Thr.

Alocost. Iow. Also called Balsam Mint and Costmary.

Angelica. Btk Brn Ewg Ger GH Gra Nol Raw Shm Thr.


Artemisia. Iow. Also called Broton.

Asperula Odorata. Btk Dlw Thr.

SYNONYMS: Woodruff, Sweet Woodruff, Woodroof, Waldmeister.


Balm, Sweet. JCM JMM OV Rcn.

Balsam Mint. Iow. Also called Herost and Costmary.

Basil. Ar Cle Emr RE Fqr G&T Hde Kei Koe Lnr Loh Man Mns.

SYNONYMS: Melissa, Kei.

Basil, Sweet. JCM JMM OV Rcn.

Basil, Bush or Dwarf. Brn Mund Nol Thr.

Basil, Sweet Large-Leaved. SC Stk.
Basil, Sweet Small-Leaved. SC Stk.
Basilicum. Fur. Also called Basil.
Bermamot, Scarlet-Flowering. low. 

SEEDSemen's Synonyms. Monarda didyma, low. Oswego Tea, low.
Böhmen Kraut. Low. Also called Summer Savory.
Brotan. low. Also called Artemisia.
Calamus. low. Also called Sweet Flag.

SYNONYMS. Catnip.


SYNONYMS. Catmint.

Chervil, Sweet. See Sweet Cicely.
Cicely, Sweet. Man. Also called Sweet Chervil.

Costmary. low. Also called Acorost and Balston Mind.
Cumin. Bkt C&B Cox Drr Ger Hen MWJ LB Liv Man M&S.
Dill. Alx Alr Anb Ar Bak Brd Brt Btl Bkt Bow Brk Bdg Bgs Brn Brn Bng Buc Bar Brr C&C Chl Cie C&B Col CF Cox Crs Cur Dlw D&H Del DD Ddr Dnm Eas Ebe Eic Ekt Emr RE Ewg Fmr Fqr Fst Fer Fld Frd Ger GH Gry Gry G&T Gry Gw Hns Ham Hde Hrm Hrn Hrs Hrv Hen H&C Hlm Hop Hse H&P Imd Iow MWJ J&M J&S Jns Kei K&W Ken Kg Kos Kra Lam Lan Lnr
AMERICAN VARIETIES OF VEGETABLES.

LB Liv Jl. Loh Mnd Mgd Man PL Mns Man May JCM JMM MeM Mel Mhl Mls MV M&S Mzy Neb Nol NK ov Old Pks HP JMP Pir Pmt Ptt Poo Poo Por Pot Pri Pug Raw Ren Rec Rs Sal S&R SC S&S F &O Shm Sie Sim Sox Spf Stk SB Stw Tat Tem Tex Thn Thr AGT Til T&B Van Vk Vin Wea Web W&D Wer Wll Yng Y&H.

Dill, Mammoth. Big Nol Thr W&D Wdr.
Estragon. Mzy Thr. Also called Tarragon.
Fennel. Anb Ar Bnl Bkt Bug Brk Brt Cur DlW D&H DD Drn Eas Elt Ewg Fmr Fgr Fst Gra Grw Hrm Hrn Hlm Hse H&P Iow MWJ Kei Kg Kos Kra Lan Lnr Liv Man May JCM JMM MeM Mel Mhl Min Myn Nol Ov HP JMP Pnr Pnt Raw Rs Sc S&S Spf SB Tat T&B Van W&D Wll Yng.
Fennel, Bolognese Sweet. Koe.
Fennel, Celery-Rooted. M&S.
Fennel, Celery-Rooted Florence. Buc.
Fennel, Florence. C&B J&S LB MV Ptt Thr W&D.
Fennel, Large Sweet. Vk.
Fennel, Naples. My Ptt Thr W&D.
Hibiscus Sabdariffa. See Roselle.
Hop. Bkt Brk Bld Buc Bcr C&B DD Drn Fst Ger Hen Hop Iow MWJ Kra Lan LB Liv Mhd Por Sal Sim Sox Thr Van Vk Yn.
Lavender, Sweet. Hde.
Lemonade Plant. J&M.
Sedsmen's Synonyms. Roselle (Hibiscus sabdariffa) J&M.
Lovage. Bkt Brk Fgr Gry Nol Pot S&F Sim Thr Wea.
Marjoram. Ar Cam Ebe Fnr Fqr G&T Grw Hns Hrn Ind Kei Loh Man PM Mns Pug Qkr S&O Spf.

Marjoram, Pot. Bkt Brn DD Elt Ewg Gra Hen LB Mnd Nol Pks Ren SB Thr W&D.


Melissa. Kei.

SEEDSMEN'S SYNONYMS. 

Balm, Kei.

Mint. D&H Ebe Gra NK Pks Sim SB. Also called Spearmint.

SIMILAR NAMES. Catmint, Catnip, Spearmint, Spearmint (Variegated), Bal-sam mint.

Monarda Didyma. Iow.

SEEDSMEN'S SYNONYMS. 

Scarlet-Flowered Bergamot, Iow. Oswego Tea, Iow.

Opium Poppy. Buc Cle DD Ger Hen Iow J&S LB Mzy Neb Raw S&F Thr Vin W&D.

Oswego Tea. Iow. See also Monarda didyma.

Peppermint. Dly Ebe Gra Man Nol Pks Pot Sim Thr Vk.

Pimpinell. Pnt. Also called Salad Burnet.

Pimpinella. Vau.

Purslane. Mud Sal.


SEEDSMEN'S SYNONYMS. 

Lemonade Plant (Hibiscus sabdariffa), J&M.


Sage. Alx Air Anb Ar Brt Btl Bkt Ber Brk Bdg Brn Bue Bui Brb Bar Cam CE Chl Cle C&B CE Cox Crs Cur CA Dlw D&H Del DD Drr DmQ Eme Ebe Elic Elt Emr RE Ewg Fnr Fqr Fst Fax Fer Frd Ger GYH 1329—No. 21—02—13.
American Varieties of Vegetables.

Sage, English Broad-Leaved. Crs Ptt Wdr.
Sage, Large-Leaved. Koe.
Sage, Mammoth. Fld.
Sage, Purple. Thr.
Sage, Red. Thr.
Sage, Variegated Mammoth. Iow.
Salad Burnet. See *Pimpinella*.
Savory, Ar Btl Fld PM May OV.
Savory, Perennial. SB.

Synonyms. Bohm Krnth.
Spearmint. Dlw Iow. Also called *Mint*.
Spearmint, Variegated. Iow.
Sweet Flag. See *Calaminus*.
Sweet-Scented Marigold. See *Tagetes lucida*.
Tagetes Lucida. Bur. Also known as *Sweet-Scented Marigold*.

Synonyms. Estragon.
Tarragon, Russian. Mnd.
Thyme. Alx Alr Brk Brd Brt Bkt Bow Bgs Bri Brn Bng Buc Bur Brr C&J Cm CE Chl Cle Crg Dlw D&H Del Dnm Eas Ebe Ele Ekt Emr RE Fqr Fqr Fst Fxcr Frd Ger Gys Grx Grw TG Hns Ham Hde Hrm Hrn Hrs Hvy Hst H&C Hlm Hop Imd MWJ RHJ J&M J&S Jns K&W Ken Kg Kos Kra Lam Lan Liv JL Loh Mgd

194
Man FM Mns Man May JCM JMM McK McM Mhl Mls Min MV M&S Neb NK OY Old Pge Pks JMP Pir Prn Puc Poo Por Pri Raw Ree Ren Ree Rs RP Sal S&F S&O Sm Sic Sim Spf Stk Stw S&H Tat Tem Thm Thb AGT Til T&B Van Vin Web Wer Wil Y&H.

**Thyme, Broad-Leaved.** Amb Bel Brk CF Crs Cur DD Elt Ger Hen Hse H&P Iow Kei LB Man Sox SB S&W Wea W&D Yng.

**Thyme, Broad-Leaved English.** Air Big C&B Cox Gis Ggy G&T Lam Mund Mzy NoT Pht Thr Vk Wea Wdr.

**Thyme, English.** Bdg Brn Drr Tpk.

**Thyme, French.** Bdg Drr Ggy Mund Nol Thr Wea.

**Thyme, French Summer.** Cox Wea.

**Thyme, Golden Variegated.** Iow.

**Thyme, Lemon.** Kei.

**Thyme, Summer.** Ewg Gra Koe Pot Tex Vk.

**Thyme, Sweet.** Col HP Put SC.

**Thyme, Winter.** Bkt Ewg Gra Sim Vk.

**Waldmeister.** See *Asperula odorata.*

**Woodruff.** Ken Mund Put S&F Wer.

**Synonyms.** *Asperula odorata, Waldmeister, Sweet Woodruff, Woodruff.*


**HORSE-RADISH.**


**KALE.**

(Known also as Sprouts and Greens. Sea Kale is a form of beet, with thickened leaf stems.)

**Abergeldie.** Kei.

**American.** Mns.

**Similar Names.** Extra Curled American.

**Seedsmen’s Synonyms.** Long Standing, Mns.

**Bloomdale.** MWJ Lam Stw.

**Brown Curled.** Bdg Put Ree S&F.

**Similar Names.** Dwarf Brown, Dwarf Brown Curled, Tall Brown Curled, Tall Brown Scotch, Brown Dutch. See also Brown German.

**Seedsmen’s Synonyms.** Curled Purple, Bdg Put. Purple, Ebe.

**Brown Dutch.** Ebr.

**Brown German.** Man Nef Wea. For similar names see German.

**Carter’s Thousand Head.** Ggy.

**Similar Names.** Salzer’s Thousand Head.
Cow Cabbage. Thr.
Seedsmen's synonyms. Jersey Winter, Thr.

Curled Dwarf German. Ken JMM RP Shw Sim TB Til Yng.
Similar names. See German.

Curled Dwarf Purple. Bai Crs Elt S&F. For similar names see Dwarf Purple.
Seedsmen's synonyms. Dwarf Brown Curled, Elt S&F.

Curled German. Big PM Mns. For similar names see German.

Curled Green German. S&O. For similar names see German.

Curled Intermediate. Bui. For similar names see Intermediate.

Curled Mosbach. Bri Bui Bar Frd Mgd Mos. For similar names see Mosbach.

Curled Purple. Bdg H&P Ptt Raw. For similar names see Dwarf Purple.
Seedsmen's synonyms. Brown, Bdg Ptt.

Curled Purple German. Hen. For similar names see Dwarf Purple, German.
Seedsmen's synonyms. Brown German Curled, Hen Raw.

Curled Purple Scotch. Wdr.
Similar names. See Dwarf Purple, Green Curled Scotch.

Similar names. See Siberian.
Seedsmen's synonyms. German Greens, Ebe J&S. Hardy German Greens, Bdg. Winter Sprouts, Bdg.

Curled Striped. Thr.
Similar names. Striped Garnishing, Curled Variegated, Dobbie's Variegated.

Curled Variegated. Thr. For similar names see Curled Striped.


Dobbie's Variegated. Gra. For similar names see Curled Striped.

Dobbie's Victoria. Ewg Gra.

Diser's Imperial Long-Standing. Entered as Imperial Long-Standing.

Dwarf Brown. Bkr S&W W&D. For similar names see Brown Curled.

Dwarf Brown Curled. Dlw Elt Thr. For similar names see Brown Curled.
Seedsmen's synonyms. Dwarf German Purple, Rec. Dwarf Purple Curled, Elt S&F.

Dwarf Curled. Air Bel Fax Ger Pac Pot Pri.
Similar names. See Dwarf Green Curled.
Seedsmen's synonyms. German Greens, Air Fax Ger Pac.


Dwarf Curled Erfurt. Bui Ptt.

Dwarf Curled Scotch. Bak Ber Bgg Bri Bar Dlr Fer Gdn Ham Iml Jac Kg Lan
Lvr LB Pq Raw Rce Shm Tem Tex Wyg Yng.
Similar names. See Green Curled Scotch.
Seedsmen's synonyms. Dwarf German, Bar Ham NK. German Greens, Ber Fer Ham Iml NK Pq, etc. Siberian, Bar. Sprouts, NK.

Dwarf Curled Slow Seeder. Lan. For similar names see Dwarf Green Curled.

Dwarf Erfurt. Sal. For similar names see Dwarf Curled Erfurt.

Dwarf German. Alx Anb Ar Brd Brt Btl Bkt Bri Bru Bui Bar Bur Cam Cbl Cle Cox Crg CA Dl Ebr Eic Est Fax Fil Gdn GII GT Grw TG Hns Ham HBt H&C Hm Hop H&P Iml Iow J&M Ken Kos Lea JL May McM Mls Min Mol XI NK Old JMP Pnr Ptt Sal SC Spd Spk Tpk Vin Wgt Wdr Yng.
Similar names. See German.

Dwarf German Brown Curled. GII Mzy HP. For similar names see German.
Dwarf German Green. Ele low Tem 17 Vin.
Dwarf Green. Tir. For similar names see Dwarf Green Curled.
Dwarf Green Curled. Bow Bng C&J DLw Emr RE Fpr Guy Gry Hde Hrn Hrn Hrs Jns Kra Lnr Mhl Neb Ree S&F Sic S&H Wlt Y&H.
  Seedsmen’s synonyms. German Greens, Bow Buc Emr. Sprouts, Buc.
Dwarf Green Curled Erfurt. Ptl SC. For similar names see Dwarf Curled Erfurt.
  Similar names. See Green Curled Scotch.
  Seedsmen’s synonyms. Norfolk, Wd WS.
Dwarf Green Curled Siberian. CE Hop Rec Wd. For similar names see Siberian.
Dwarf Green Erfurt. Bdg. For similar names see Dwarf Curled Erfurt.
Dwarf Green Extra Curled Scotch. Alx.
  Similar names. See Green Curled Scotch.
Dwarf Moss Curled. Ptl. For similar names see Half Dwarf Moss Curled.
Dwarf Purple. Anb Emr XK Vk.
  Similar names. Curled Purple, Tall Purple, Curled Dwarf Purple, Dwarf Purple German, Dwarf Purple Scotch, Tall Purple Scotch, Curled Purple Scotch, Curled Purple German, Purple Curled Dwarf German.
Dwarf Purple German. Bld Bow Bar CE Emr Fpr GfH Ken Lam Lan LB Liv Rec.
  Similar names. See Dwarf Purple, German.
  Seedsmen’s synonyms. Dwarf Brown Curled, Rec.
Dwarf Purple Scotch. JMM.
  Similar names. See Dwarf Purple, Green Curled Scotch.
Dwarf Scotch. Del MWJ. For similar names see Green Curled Scotch.
Dwarf Siberian. EBr Gs Wd. For similar names see Siberian.
  Seedsmen’s synonyms. Sprouts, Gs.
Early Curled Blue. Nol.
Early Dwarf Siberian. Wdr.
  Seedsmen’s synonyms. Dwarf German Sprouts, Wdr.
Early Curled Siberian. Wd WS. For similar names see Siberian.
Early Green Curled. Hst. For similar names see Dwarf Green Curled.
Early Moss Curled. Bri. For similar names see Half Dwarf Moss Curled.
Early Short-Leaved White Vienna. G&B.
Extra Curled American. G&T. For similar names see American.
Extra Curled Dwarf German. Gig Lm Loh MV Sox Til Yng.
  Similar names. See German.
Extra Curled Mosbach. Low. For similar names see Mosbach.
  Similar names. See Green Curled Scotch.
  Seedsmen’s synonyms. Norfolk, Bdg.
Extra Early Dwarf German. Pug. For similar names see German.
Favorite Green Curled. Tat. For similar names see Dwarf Green Curled.
Frishby’s Crested. Kei.
German. Alb Ber Bow Brk Bng C&F Emr Fpr Fpr Fer Ger GN Gry Ham Lnr LB Lvm Mny Nol P.tc Pj Ptt Pot Raw Rec S&F.
  Similar names. Dwarf German, Extra Early Dwarf German, Holmes’ Improved Dwarf German, Philadelphia Dwarf German, Curled Dwarf German,
Green Curled Dwarf German, Purple Curled Dwarf German, Extra Curled Dwarf German, Curled German, Curled Green German, Curled Purple German, Dwarf Purple German, Half Dwarf German Moss Curled, German Brown Curled, Dwarf German Brown Curled, Tall German Brown Curled, Brown German.

**SEEDSMEN’S SYNONYMS.** Dwarf Curled, Alr Fax Ger Pac. Dwarf Curled Scotch, Ber Fer Ham 1ml LB Pg, etc. Dwarf German, Ham XK. Dwarf Green Curled, Bow Buc Emr. Siberian, Brc Buc Fer Ggy Por S&K, etc. Siberian Curled, Elb J&S. Sprouts, Buc Fqr Fer Liv NK Pit Raw, etc. Winter, Fqr Por Raw S&F.

German Brown Curled. CE Cle C&B Del Hen Hly Neb Raw.

**SIMILAR NAMES.** See German.

**SEEDSMEN’S SYNONYMS.** Purple German Curled, Hen Raw.

**Green Curled.** Els Hqv H&P Man Mic Min XI S&O AGT VI.

**SIMILAR NAMES.** See Dwarf Green Curled.

**SEEDSMEN’S SYNONYMS.** Scotch, H&P.

**Green Curled Dwarf German.** Cam Cov Drl Fyr Fnr Grn Hrn Lrr HP Sim Tex Tpl Web.

**SIMILAR NAMES.** See German.

**SEEDSMEN’S SYNONYMS.** Sprouts, Sim. Siberian, Hrn.

**Green Curled Scotch.** Alr Bai Brl Bow Brg Brn Brw Cwm D&H Eas Fst Fax Ger Ghn Gwr Th Hrm Hrv H&P J&S Kei K&W Man Min Neb Pac Prn Pte Pri Rs Sal Sox TB VL Vin Wat Wea Wll.


**Green Dwarf Curled Mosbach.** RHJ. For similar names see Mosbach.

**Half Dwarf Curled Mosbach.** Dlw. For similar names see Mosbach.

**Half Dwarf German Moss Curled.** Roe.

**SIMILAR NAMES.** See German, Half Dwarf Moss Curled.

**Half Dwarf Green Curled.** Cur Wer. For similar names see Dwarf Green Curled.

**Half Dwarf Green Curled Scotch.** CF.

**SIMILAR NAMES.** See Green Curled Scotch.

**Half Dwarf Mosbach.** Roe. For similar names see Mosbach.

**Half Dwarf Moss Curled.** Col Del Fer Koe Lam Liv May VI.

**SIMILAR NAMES.** Semi-Dwarf Moss Curled, Half Dwarf German Moss Curled, Dwarf Moss Curled, Tall Moss Curled, Tall Green Moss Curled, Early Moss Curled.

**SEEDSMEN’S SYNONYMS.** Scotch, Col.

**Half Dwarf Scotch.** Col. For similar names see Green Curled Scotch.

**Holmes’ Improved Dwarf German.** Entered as Dwarf German.

**Imperial.** Bri Fcr J&S Mil.

**SIMILAR NAMES.** Johnson & Stokes' Imperial, Dreer's Imperial Long-Standing, Imperial Long-Standing, Imperial Green Curled Scotch.

**SEEDSMEN’S SYNONYMS.** Long-Standing, Mil J&S.

**Imperial Green Curled Scotch.** Man M&S.

**SIMILAR NAMES.** See Green Curled Scotch, Imperial.

**Imperial Long-Standing.** Drr Nol.

**SIMILAR NAMES.** See Imperial, Long-Standing.

**Improved Dwarf Green Curled, Improved Siberian, Improved Early Dwarf Siberian, Improved Standing.** Entered as Dwarf Green Curled, Siberian, Early Dwarf Siberian, and Standing.

Similar names. Curled Intermediate.

Jersey Winter. Thr. For similar names see Winter.

Seedmen's synonyms. Cow Cabbage, Thr.

Johnson & Stokes' Imperial. Entered as Imperial.

Large-Leaved Jersey. Ggy.

Large-Seeded. Raw.

Seedmen's synonyms. Spring, Raw.

Large-Seeded Spring. Fqr Gry S&F. For similar names see Spring.

Late Siberian. Tat. For similar names see Siberian.

Long-Standing. Bri Brw J&S MUL. 

Similar names. Very Curly Long-Standing, Improved Standing, Dreer's Imperial Long-Standing, Standing, Imperial Long-Standing.

Seedmen's synonyms. American, MUL. Improved Standing, Imperial, MUL. Johnson & Stokes' Imperial, J&S.


Mosbach Winter. 17. For similar names see Mosbach.

Norfolk. Big G&T MWJ.

Seedmen's synonyms. Dwarf Green Curled Scotch, Wd WS. Extra Dwarf Green Curled Scotch, Big.

Norfolk Dwarf Green Curled Scotch. Nol.

Norfolk Green Curled Scotch. M&S Wd WS.

Similar names. See Green Curled Scotch.

Norwood Dwarf Curled. JMM.

Ostrich Plume. Mgd Man.

Pe-Tsai. Alex Fqr Tat Thr Vau Vin.

Seedmen's synonyms. Chinese Cabbage, Alex Fqr Tat Thr Vau Vin.

Philadelphia Dwarf German. Lan. For similar names see German.

Philadelphia Green Curled Scotch. Gh.

Similar names. See Green Curled Scotch.

Phenix. Kei.

Plain. Tat.

Seedmen's synonyms. Spring Sprouts, Tat.

Predeck's Winter. DD. For similar names see Winter.

Purple. 17.

Purple Curled Dwarf German. Bgg.

Similar names. See Dwarf Purple, German.

Salzer's Dwarf Erfurt. Entered as Dwarf Erfurt.

Salzer's Thousand Head. Sal. For similar names see Carter's Thousand Head.

Semi-Dwarf Moss Curled. Crs. For similar names see Half Dwarf Moss Curled.


Similar names. Improved Siberian, Late Siberian, Dwarf Siberian, Curled Siberian, Dwarf Green Curled Siberian, Thorburn's Improved Curled Siberian, Early Curled Siberian.


Smooth. Kg Wd WS.

Seedmen's synonyms. Spring, Kg Wd WS.
AMERICAN VARIETIES OF VEGETABLES.

Spring.  Bdg Kg Raw Tat Wd WS.

Similar Names.  Large-Seeded Spring.

Seedsmen’s Synonyms.  Large-Seeded, Raw.  Plain, Tat.  Smooth, Kg Wd WS.

Standing.  Bri.  For similar names see Long-Standing.

Striped Garnishing.  Bdg.  For similar names see Curled Striped.

Tait’s Favorite Green Curled.  Entered as Favorite Green Curled.

Tall Brown Curled.  Thr.  For similar names see Brown Curled.

Tall Brown Scotch.  Wer.  For similar names see Green Curled Scotch.

Tall Curled.  Bel.  For similar names see Dwarf Green Curled.

Tall Curled Scotch.  Bgn Bri CA Hns Hbc’l Mr RLJ Lan Lnr Min For S&R Shm Stw Web Wyg T&H.

Similar Names.  See Green Curled Scotch.

Tall German Brown Curled.  GII.  For similar names see German.

Tall Green.  DD.  For similar names see Dwarf Green Curled.


Similar Names.  See Dwarf Curled Green.

Seedsmen’s Synonyms.  Scotch, S&O.


Similar Names.  See Green Curled Scotch.

Tall Green Moss Curled.  Crg.  For similar names see Half Dwarf Moss Curled.

Tall Green Scotch.  Finr Hde Hrn Mnd.

Similar Names.  See Green Scotch.

Tall Moss Curled.  Gra.  For similar names see Half Dwarf Moss Curled.

Tall Purple.  Mnd.  For similar names see Dwarf Purple.

Tall Purple Scotch.  Mhl.

Similar Names.  See Green Curled Scotch, Dwarf Purple.

Tall Scotch.  Bng Col H&P MWJ Ken Man May JMM Pks Put S&O.

Similar Names.  See Green Curled Scotch.

Seedsmen’s Synonyms.  Green Curled, H&P.  Half Dwarf Moss Curled, Col.

Tall Green Curled, S&O.

Thorburn’s Improved Curled Siberian.  Entered as Curled Siberian.

Thousand Head.  Tcr.

Very Curly Long-Standing.  Bdg.  For similar names see Long-Standing.

Welsh Curled.  M&S.

Winter.  Fqr Raw S&F Thr Wer.

Similar Names.  Jersey Winter, Predeck’s Winter.

Seedsmen’s Synonyms.  German Greens, Fqr Por Raw S&F.  Siberian, Cur Wer Thr S&W.  Sprouts, Fqr Por Raw S&F.  Hardy German Greens, Bdg.

Siberian Curled, Bdg.  Thorburn Improved, Thr.

Yale Curled Scotch.  Bri.  For similar names see Green Curled Scotch.

KOHLE-RAI.

Bohemian.  CE.

Curled of Naples.  Koe.

Dallwig’s Star of the Market.  Entered as Star of the Market.


Earliest White Erfurt.  DD Drr M&S Put SC.

Early Green.  RE Kei.  For similar names see Green.

Early Green Vienna.  Drr S&W.

Similar Names.  Short-Leaved Early Green Vienna, Long Green Vienna, Vienna, Early Vienna, Extra Early Vienna.  See also Early Purple Vienna, Early White Vienna.

Seedsmen’s Synonyms.  Early White Vienna, Drr.
Early Purple.  

**Similar names.** See Purple.

**Early Purple Vienna.**  

**Similar names.** Improved Early Purple Vienna, Short-Leafed Early Purple Vienna, Large Purple Vienna, Salzer's Purple Vienna, Purple Vienna, Vienna, Early Vienna, Extra Early Vienna. See also Early Green Vienna, Early White Vienna.

**Early Vienna.**  

Cox Ebr Hop Sal.

**Similar names.** See Early White Vienna, Early Green Vienna, Early Purple Vienna.

**Early White.**  

Cox K&W. For similar names see White.

**Early White Forcing.**  

Y&H. For similar names see White.

**Early White Vienna.**  


**Similar names.** Short-Leafed Early White Vienna, Improved Early White Vienna, White Vienna, Vienna, Early Vienna, Extra Early Vienna. See also Early Green Vienna, Early Purple Vienna.

**Seedsmen's synonyms.** Early Green Vienna, Ppr.

**Extra Early Vienna.**  

Chl.

**Similar names.** See Early White Vienna, Early Purple Vienna, Early Green Vienna.

**Extra Early White Forcing.**  

WS. For similar names see White.

**Green.**  

Bar Del Him Lan.

**Similar names.** Large Green, Large Late Green, Large Early Green, Early Green.

**Seedsmen's synonyms.** White, Him.

**Green Giant.**  

Neb. For similar names see White Giant.

**Green Goliath.**  

Ren. For similar names see Purple Goliath.

**Imperial.**  

Man. For similar names see White Imperial.

**Improved Early Purple Vienna.**  

Improved Early White Vienna, Improved Green Goliath, Improved Imperial. Entered as Early Purple Vienna, Early White Vienna, Green Goliath, and Imperial.

**Large Early Green.**  

Vk. For similar names see Green.

**Seedsmen's synonyms.** Large Early White, Vk.

**Large Early Purple.**  

Brn CE Gls AGT. For similar names see Purple.

**Large Early White.**  

Gls AGT Vk Vin. For similar names see White.

**Seedsmen's synonyms.** Large Early Green, Vk.

**Large Green.**  

Brn Bar Brn CE CG Cox Cur DD Elt For GH Hrs Hly Kos Lam Lan Lob Mnd Mgd May Put Roe Roe SC Thr Til Wer.

**Similar names.** See Green.

**Seedsmen's synonyms.** Large White, Bui Bar Lan Mum Roe, etc.
Large Green Giant. Frd. For similar names see White Giant.

Purple. At Ebe Hnt Lan Stw.

Similar names. Early Purple, Smooth Early Purple, Large Early Purple.


Similar names. Large Late Purple Goliath, Improved Green Goliath, White Goliath, Late Goliath, Green Goliath.


Short-Leaved Early Green Vienna. Bgs.

Similar names. See Early Green Vienna.

Short-Leaved Early Purple Vienna. Pri W&D.

Similar names. See Early Purple Vienna.

Short-Leaved Early White Vienna. Bui Cur Elt Hen Lnr Pri SC W&D.

Similar names. See Early White Vienna.

Smooth Early Purple. Bgs Idle XI. For similar names see Purple.

Smooth Purple. J&S Spf. For similar names see Purple.

Smooth Purple Short-Leaved. M&S. For similar names see Purple.


Star of the Market. Dlw.

Similar names. Dallwig's Star of the Market.

Vienna. GN Hop.

Similar names. See Early White Vienna, Early Purple Vienna, Early Green Vienna.

White. Bel Bui Bur CE Ebe Ewg Hlm RJH Lan Pnt Roc.

Similar names. White Short-Leaved, Smooth White Short-Leaved, Late White Short-Leaved, Early White, Early White Forcing, Extra Early White Forcing, Large White, Large Early White, Large Late White.

White Giant. Bll Bkt Koe.

Similar names. Green Giant, Purple Giant, Large White Giant, Large Green Giant, Large Purple Giant.

White Goliath. Van. For similar names see Purple Goliath.

White Imperial. Gra.

Similar names. Improved Imperial, Imperial.
White Short-Leaved.  Brd.  For similar names see White.

White Vienna.  Alx Bel Cam CF CA Gry G&T Hrm RHJ Jus Ken Lan M&l Stw Ws.

Similar names.  See Early White Vienna.

LEEK.

(Also called Flag.)


Similar names.  Improved American, Broad American, Large American.

Seedsman's synonyms.  Large Roman, Bow Bow &R Vin.

Brabanter.  Dw.

Broad.  D&H DD Fax Gng Ggy H&P Mau Sim Vl Vk.


Broad American.  Brr CE Cle CF Del Gls Hrn May Ree Sie Y&H.

Similar names.  See American.

Seedsman's synonyms.  Flag, Brr.

Broad London.  Brn Bug Bur Cle Col D&H RE Fst Fax GH Hde Hlm Kei K&W PM McK Nef Nl Sal SB.

Similar names.  See London.

Seedsman's synonyms.  Broad Flag, Fax.  Large American Flag, Bur PM.

Broad Scotch.  CF Drn Frd Ggy Hrv H&C Jns Liv Tem Van Yng.

Similar names.  See Scotch Champion.


Buist's Mammoth.  Bui.  For similar names see Mammoth.


Similar names.  French Carentan, Giant Carentan, Monstrous Carentan, Large Carentan, Extra Large Carentan.


Champion.  Brr Man.  For similar names see Scotch Champion.

Seedsman's synonyms.  Carentan, Brr.  Large Scotch, Brr.

Dobbie's Champion.  Ewg.  For similar names see Scotch Champion.

English.  M&K.

Extra Large.  Big G&T.  For similar names see Large.

Extra Large Carentan.  Brn CF RE Gry Raw.  For similar names see Carentan.

French Carentan.  McK Ren.  For similar names see Carentan.

Giant Carentan.  Bkt Dw Drx RE For Hrn Lnr Mhl S&F Spd SB.

Similar names.  See Carentan.

Giant Musselburgh.  Mhl Mrs Thm Wat Ws.  For similar names see Musselburgh.

Giant Palermo.  Ewg.

Godden's Mammoth.  Gdn.  For similar names see Mammoth.

Improved American.  Improved Italian Giant, Improved Large London.  Entered as American, Italian Giant, and Large London.


Similar names.  Improved Italian Giant.

Large.  Bel Brk CE Cox CA RE McM MV Pot Sox Thr Til Ws.

Similar names.  Extra Large.

Seedsman's synonyms.  Large London Scotch, Anb.  London, Cox CE.

Similar names. See American.

Seedsmen's synonyms. Broad London, Bur PM.

Large Carentan. Bdg Bur Cam CE Cle Crs DD Drr Eelt GH Ggj TG Hst J&M Kg Mnd May MV Mzy Rey Sox Stk Stw S&W Tat Thr Wer.

Similar names. See Carentan.

Seedsmen's synonyms. Musselburgh, Thr.

Large London. Btl Bgs Bui CE Crs CA Del DD Elt Gdn Hns Hrn MWJ Kos Lam Mns HP Put Rey Roe RP SC Sbw Stk Sw Wll.

Similar names. See London.

Seedsmen's synonyms. Flag, Btl CA, Scotch, Btl.

Large London Scotch. Anb Btl. For similar names see Scotch Champion, London.

Seedsmen's synonyms. Large Flag, Anb.


Similar names. See Musselburgh.


Similar names. See Rouen.

Seedsmen's synonyms. American Flag, Bow Per S&R Vin.

Large Scotch. Brt Brs Sim. For similar names see Scotch Champion.


Large Winter. See Thr Vau.


Long. Fqr S&F.

Lyon. Gra Gr.

Mammoth. Aix.


Similar names. See Carentan.

Seedsmen's synonyms. Scotch Champion, Bur Ham Hlm D&H Mns Sic.


Similar names. Giant Musselburgh, Large Musselburgh, Scotch Musselburgh.


Rouen. Bkt RHJ Lam S&K Vau.

Similar names. Large Rouen, Salzer's Large Rouen.

Salzer's Large Rouen. Entered as Large Rouen.
Scotch. Fqr. For similar names see Scotch Champion.


SIMILAR NAMES. Scotch, Broad Scotch, Large Scotch, Large London Scotch, Champion, Dobbie's Champion.


Scotch Musselburgh. Y&H. For similar names see Scotch Champion, Musselburgh.

Sir Ayton Castle Winter. M&S.

LETTUCE.

Advancer. Mhl.

Alaska. Bai.

All Cream. Agn Illy May OV Sal Tpk.

SIMILAR NAMES. See California Cream Butter.

All Heart. Drr W&D. For similar names see California All Heart.

All Seasons. Col Lur Por S&R S&H Van.

All Right Spring and Autumn. Mhl Rm. For similar names see Myer's All Right.


SEEDSMEN'S SYNONYMS. Black-Seeded Butter, Yng.

American Gathering. Agn Bdg Cox Crs GH TG Koe Lam May Mls MV Mzy Raw Rec Ree S&c Thr.

American Oak-Leaved. Tat. For similar names see Oak-Leaved.

Arlington White-Seeded. Raw. For similar names see Black-Seeded Tennis Ball.

Arlington White-Seeded Tennis Ball. Bai Brw J&S M&S.

SIMILAR NAMES. See Black-Seeded Tennis Ball.


Atlanta Market. McM.

SIMILAR NAMES. McMillan's Atlanta Market.

Australian White Triumph. M&S. For similar names see Triumph.

Balloon Cos. RE RIJ.

Baltimore Cabbage. G&T.

Baltimore Oak-Leaved. G&T J&S Mns Nor. For similar names see Oak-Leaved.


Batavian Brown Head. Ebe. For similar names see Brown Head.

Bath Cos. Mrs Raw.

Beckert's Brown Curled. Bkt. For similar names see Brown Head.

Beckert's Golden Curled. Bkt Bri. For similar names see Golden Curled.

Big Boston. Agn Alx Alr Brd Brt Btl Bkt Bel Blg thru Hon Phg Brk Bdg Bgs Bri Brn Bng Buc Bui Brb Bar Brw C&J Cam CE Cle C&B CF Cox Crg Crs Cur CA Del Di Drr Dum Eic Elt Emr Eyr Fqr Fst Fer Fle Frl Gls Ghn GH Gra Gry Gig G&T TG Hns Hde Ham Hrm Hrn Hrs Hvy Hst Hen H&C Hlm Hop H&P Jac MWW J&M J&S Jns K&G Kg Lam Lan Lea Lnt LP Liv Mgd Man PM Mns Mas Man May JCM JMM McK Mcl McI Mhl M&S Mrs Mzy Neb Nol Nk NV Pac Py HP Prn Ptt Ptt Tono Pot Pri Raw Ren Ree Rmn Rck Rk Rt Rs SC S&F Sw Shm Sie Sim SB S&W Tat Tem Tex Thm Thr Til Tpk Trm Vi Van Vk Wat Wey Web Wd&D Will Wt Wd Wr WS Y&H.

SIMILAR NAMES. See Boston Market.
Big Boston Forcing. May. For similar names see Boston Market.


Black-Seed Summer. Big G&T.


Black-Seed Vegetable. Big G&T.


Blonde Blockhead. Bug Fnr Brx Cox Fnr Fqr Frd GI Ggy Hbt JUJ Mnd Mrs Neb Xk Roc S&W Tat Tex Til Wat W&D.

Blonde de Berlin. Mrs.

Blonde Early Summer. Dlw Koe Rim.

Bloomsdale Butter. Lan Rim. For similar names see Bloomsdale Reliable.

Bloomsdale Reliable. Ggy MWJ Lan.

**LETTUCE.**

**Bloomdale White Cos.** *Lan.*

**Similar names.** See Bloomdale Reliable, White Cos.

**Bolgianno's Early Spring, Bolgianno's White Forcing, Bolgianno's Big Head, Bolgianno's White Leaf, Bolgianno's Black-Seeded Summer. Entered as Early Spring, White Forcing, Big Head, White Leaf, and Black-Seeded Summer.

**Bonanza.** *Shw.*

**Bon.** *Ton.*

**Similar names.** Livingston's Bon Ton.

**Boston Curled.** *Brk Brb Bur* CE Cle C&B CF Cox Cur DR Dun Eas Ebe Emr Ewg Fqr Fst Fax GH Gra Ggy Gry Tg Hrm Hn Hbt H&P K&W Koe Kos Kra Lnr Mac Man May Mrs Neb Xi JMD Pri Prn Pot Pri Raw Rec Ree RP S&O Sox S&W Trm WY Y&H.

**Similar names.** See Boston Market.

**Boston Early Curled.** *Pug.* For similar names see Boston Market.

**Boston Extra Fine Curled.** *Shm.* For similar names see Boston Market.

**Boston Fine Curled.** *Emr Fqr Rs SC S&F.* For similar names see Boston Market.

**Boston Forcing.** *Vk.* For similar names see Boston Market.

**Boston Forcing White-Seeded Tennis Ball.** *Fqr.*

**Similar names.** See Black-Seeded Tennis Ball.

**Boston Glass House.** *Nol.* For similar names see Glass House, Boston Market.

**Boston Head.** *Ebr.* For similar names see Boston Market.

**Seedsman's synonyms.** *Hothouse, Ebr.*

**Boston Hothouse.** *Brw.* For similar names see Boston Market, Hothouse.


**Similar names.** Breck's Boston Market, Holmes' Improved Boston Market, Large Boston Market, Large Boston, Early Boston Market, Big Boston, Improved Big Boston, Big Boston Forcing, Boston Head, Boston Curled, Boston Early Curled, Boston Fine Curled, Boston Extra Fine Curled, Boston Hothouse, Boston Forcing, Noll's Boston Glass House, Boston Glass House.

**Seedsman's synonyms.** *Tennis Ball, Big Bur Hrm Lea PM Vl Vk, etc. White-Seeded Tennis Ball, Brt Brd Bur J&S Ptt Rs, etc.* White Tennis Ball, Ggy.

**Brecks' Boston Market.** Entered as Boston Market.

**Briggs Forcing and Garden.** *Brs Thr.*

**Briggs' Prize Head.** Entered as Prize Head.

**Bronzed Curled.** *Lan.* For similar names see Bronzed Head.

**Bronzed Head.** *Brr.*

**Similar names.** Hartford Bronzed Head, Bronzed Curled, Bronzed Red.

**Bronzed Red.** *Eas.* For similar names see Bronzed Head.

**Bronzed Tomhannock.** *TB.* For similar names see Tomhannock.

**Brown Curled.** *CF Cox Mrs.* For similar names see Brown Head.


**Brown Genoa Cabbage.** *Ggy.*

**Brown Head.** *Dlw Raw.*

**Similar names.** Batavian Brown Head, Shotwell's Brown Head, Early Brown Cabbage, Brown Curled, Beckert's Brown Curled.
Brown Speckled Dutch. Tat. For similar names see Dutch Butter.

Bruce's Nonpareil. Entered as Nonpareil.

Buckbee's Earliest Forcing. Buc. For similar names see Earliest Forcing.

Buckbee's Ice Drumhead, Buckbee's Superb. Entered as Ice Drumhead and Superb.

Buckeye. Til.

Buist's Perfection White Forcing. Entered as Perfection White Forcing.

Burnell's White Cos. D&H. For similar names see White Cos.

Burpee's Hard Head, Burpee's Prize Head, Burpee's Silver Ball, Burpee's Tomhannock, Burpee's White Heart Cos. Entered as Hard Head, Prize Head, Silver Ball, Tomhannock, and White Heart Cos.


Similar names. Early Buttercup, Golden Buttercup, Golden Ball Buttercup.


Butter Head. Hns.

Seedsmen's synonyms. Early Cabbage, Hns.

Butter Salad. HP.

Seedsmen's synonyms. Early Butter Salad.

Seedsmen's synonyms. Phillipse Early White Cabbage, HP.

California All Heart. Air Bel D&H H&I Kei Mzy Rec VI.

Similar names. Brewer's All Heart, All Heart.

California Cream Butter. Acm Alx Alr Anh Bai Brd Btl Bkt Ber Brg Brr Bri Brr Brw Cms CE Chl Col Cok Cox D&G Drr Drw Eic Eyr Egw Fmr Fer Fld Frd Ger Gll Gra Gng Grw Hns Hst Hbt H&C Hlm Hop Iml Jow Jer J&M J&S Kg Kee Lam Lar Lnr Liv Lom PI JCM McK NW M&S Mrs Nol NK Pac Pg HP Put Poo Qkr Raw Rec Ren Rec Roh Shw S&O Shm Ste Sox SB Tat Tsc Thm Thr Til Trn T&B Vl Van Vkl Vin Htt Web Wd WS.

Similar names. Shumway's California Cabbage, Cox's California Cream Butter, Cream Butter, All Cream, California Curled, California giant White Forcing, California All Heart, California Passion.


California Curled. Sim W&D. For similar names see California Cream Butter.

Seedsmen's synonyms. Green Fringed, Sim Ten Ying.

California Giant White Forcing. M&S Nol.

Similar names. See White Forcing.

California Passion. Del. For similar names see Passion.


Similar names. Parisian Celery Cos.

Seedsmen's synonyms. Cos, Hen Mhl Fmr. Dwarf White Heart, Buc Rec.


Triumon, Hen Kg Liv Tem. Triumon Cos, Air Frd J&S Man Xeb Ren TG. Triumon Self-Closing Cos, Ken.

Champion. Brw. For similar names see Champion Spring and Summer.


Similar names. Champion, Johnson & Stokes' Champion Spring and Summer, Moore's Champion Spring and Summer, Michell's All Right Spring and Autumn, All Right Spring and Autumn.

Chartier. Bkt Cle Ebe Lnr Sal Shm Wyg.

Seedsmen's synonyms. Beckert's Brown Curled, Bkt.

Chicago Forcing. Fmr.
LETTUCE.

Cincinnati Market. JCM.
Cold Frame. W&D. For similar names see Cold Frame White Cabbage.
Cold Frame White Cabbage. Lan MV Sec Thr.

Similar names. New York Cold Frame, Cold Frame.

Constitution. G.V.

Continuity. Bar Joe.

Cox’s California Cream Butter, Cox’s Improved Hanson, Cox’s Improved Large Passion, Cox’s Royal Summer, Cox’s White Cos. Entered as California Cream Butter, Hanson, Large Passion, Royal Summer, and White Cos.

Cream Butter. Bui Chi CF 111 L. For similar names see California Cream Butter.

Seedsmen’s synonyms. Improved Royal Cabbage, Bui.

Crisp as Ice. Bar Cox Liv JL Man Mrs Shw Tem Vk Wl.

Crosman. Crs.

Crumpled Leaf. Brw Fqr Raw S&F.

Similar names. Rawson’s Crumpled Leaf.

Crystal Palace. Bar.

Similar names. Giant Crystal Head, Holmes’ Giant Crystal Head.

Curled Black-Seeded Simpson. Air Bai Brg Jac Stw.

Similar names. See Black-Seeded Simpson.

Curled India. Lan Mel Shw. For similar names see India.

Seedsmen’s synonyms. Hanson, Tat.

Curled Silesia. Btr Bri RE Ewq Grn Liv VI.

Similar names. See Early Curled Silesia.


Similar names. See Black-Seeded Simpson.

Seedsmen’s synonyms. Perpetual, Wl.

Currie’s Prize Head. Entered as Prize Head.

Cut and Come Again. M&S.

Dallwig’s Defiance Summer. Entered as Defiance Summer.

Dammann’s Improved. Ewq.

Deacon. Agn Bai Bkt Bkg Bng Bg Bgs Bri Buc Bai Brb Bar Brr C&J CE Cle Col CF Cox Cts Cur Dlw Drz Ewr Flw Fqr Frz Frz Fst For Gls GH Gra Ggy Gry Tg Hrn Hrs Hry Haw Hen Hm J&J J&S Jns K&W Ken Kg Kos Lam Lan Lnr LB Liv Loh Mgr May JCM Mel Mhl MV Mrs Noj NK Pac Pg Prn Poo Pp Pct Qkr Raw Ren Rce Roh Rs S&F Shw Sic Snc SB S&H Tat Tem Thr Til T&B Vtn Vkr Wat Wea W&D Wlt Wdr WS Yng Y&H.

Similar names. Improved Deacon.

Seedsmen’s synonyms. Nuparreil, JCM. San Francisco Market, Buq Bur Ren Sic Yng.

Defiance. Brg Bri CE Cle Col Cur Drz Ewr Fqr Fax Ggy Gry G&T Hm Lnr Mhl Mrs Raw Rce S&F Tat.

Similar names. Defiance Summer, Dallwig’s Defiance Summer, Improved Defiance Summer, Mann’s Defiance Summer, Perpignan Defiance Summer.

Seedsmen’s synonyms. Perpignan, Bri.

Defiance Summer. Bel Dlw GH Hde J&S Krr Liv JL PM JMM Vtn W&D.

Similar names. See Defiance.

Seedsmen’s synonyms. Perpignan, J&S Liv Vtn.

Delicate. Pg.

Denham’s Mammoth Green. Hr.

Density. Hen.

Denver Market. Axl Air Anb Ar Bai Bak Brl Brt Btl Bel Bow Brk Bri Bui Bur Brr C&J CE Chi Cle CF Cox Cts Cur CA D&H Del Drm Ebe RE Evr Ewr Fqr 1329—No. 21—02—14
AMERICAN VARIETIES OF VEGETABLES.

Dutch Butter. Btl Crg Fst Hat MWJ Wat Wd WS.

Early Black-Seeded Simpson. Bow Ehr.

Early Black-Seeded Tennis Ball. Ber Bow Brn Buc Dm Fur Lnr Lam LB JL Mhl Prf S&R Tg.

Early Brown Cabbage. 11P. For similar names see Brown Head.

Early Buttercup. Bui. For similar names see Buttercup.

Early Butterhead. Ggy Hns. For similar names see White Butterhead.

Early Butter Salad. W&D. For similar names see Butter Salad.

Early Cabbage. Btl Bn Bui Crg Dlw Gyr Hns Jae Mhl Rim Stk Yng.


Dickmann’s St. Louis Market White-Seeded. Entered as St. Louis Market.

Dickmann’s Private Stock. Dd.

Dwarf White Heart Cos. Buc Bur Hbt Man Roc.

Earliest Cutting. Dlw Fer. For similar names see Earliest Forcing.

Earliest Forcing. MWJ Roc.

Early Boston Market. Bow Buc Bui Roc. For similar names see Boston Market.

Early Black-Seeded Tennis Ball. Ber Bow Brn Buc Dm Fur Lnr Lam LB JL Mhl Prf S&R Tg.

Earliest Cutting. Dlw Fer. For similar names see Earliest Forcing.

Earliest Forcing. MWJ Roc.

Early Black-Seeded Simpson. Bow Ehr.

Early Black-Seeded Tennis Ball. Ber Bow Brn Buc Dm Fur Lnr Lam LB JL Mhl Prf S&R Tg.

Early Brown Cabbage. 11P. For similar names see Brown Head.

Early Buttercup. Bui. For similar names see Buttercup.

Early Butterhead. Ggy Hns. For similar names see White Butterhead.

Early Butter Salad. W&D. For similar names see Butter Salad.

Early Cabbage. Btl Bn Bui Crg Dlw Gyr Hns Jae Mhl Rim Stk Yng.


Seedsmen’s synonyms. Savoy, Chl Grw Ham Kg.
LETUCE. 211

Early Challenge. May.  
SIMILAR NAMES. May's Early Challenge.

Early Curled. 111t. For similar names see Black-Seeded Simpson.

Early Curled Black-Seeded Simpson. Brr CE CF Del Ebe To Mem Mic JMP Sim T&B.
SIMILAR NAMES. See Black-Seeded Simpson.


SIMILAR NAMES. Price & Knickerbocker's Improved Early Curled Silesia, Green Early Curled Silesia, Curled Silesia, Simpson's Curled Silesia.


SIMILAR NAMES. See Black-Seeded Simpson.

SEEDSMEN'S SYNONYMS. Silesia, Inl Vkl. White-Seeded Simpson, JCM.

Early Dutch Butter. Bui Gdn Joc. For similar names see Dutch Butter.

Early Golden Stone Head. Ebr. For similar names see Golden Stone Head.

Early Golden Yellow Stone Head. 8kr. For similar names see Golden Stone Head.

Early Green Black-Seeded Tennis Ball. Hrs.

SIMILAR NAMES. See Black-Seeded Tennis Ball.

Early Green Summer. Bui. For similar names see Summer.

SEEDSMEN'S SYNONYMS. Periplyus, Bui.

Early Hanson. Ato Bgs Bui Gdn Hde Joc HP SB. For similar names see Hanson.

Early Market. May.

SIMILAR NAMES. Eichling's Early Market.

Early Ohio. RE. For similar names see Extra Early Ohio.

Early Paris Market Forcing. RE.


SIMILAR NAMES. See Prize Head.

Early Simpson. Sal. For similar names see Black-Seeded Simpson.

Early Speckled Dutch Butter. Brr M&S. For similar names see Dutch Butter.

Early Spring. Brg.

SIMILAR NAMES. Bolgioni's Early Spring.

Early Stone Head. Agn. For similar names see Golden Stone Head.

Early Tennis Ball. Abn Btl Fer GY Hns J&M K&W Mic Pac Sal Shm.

SIMILAR NAMES. See Black-Seeded Tennis Ball.

SEEDSMEN'S SYNONYMS. Early Boston Market, Brg. Stone Tennis Ball, Fer.

Early White Butter Head. Bui CF Drw SC.

SIMILAR NAMES. See White Butter Head.

SEEDSMEN'S SYNONYMS. Early White Cabbage, Bui CF SC.
**American Varieties of Vegetables.**

Similar names. See White Cabbage.  
Seedsmen's synonyms. Early White Butter, Bak CF SC. Butter Salad, HP.

Early White Head. Anb Hde Lam LB Liv JCM Pks.  
Philadelphia Early Butter White Head, Pg.

Early White-Seeded Simpson. Ehr Sal Tat.  
Similar names. See Black-Seeded Simpson.

Early White-Seeded Tennis Ball. Anb Brl Bdg Brn Crs DD Dnm Evr Gls Tg  
Lm Pg Pnt Pug Rce RP Sal Smm VI Wll.  
Similar names. See Black-Seeded Tennis Ball.

Early White Self-Folding Cos.  
Similar names. See White Cos.

Eichling's Early Market. Evr. For similar names see Early Market.

Elliott's Hothouse. Entered as Hothouse.

Engel's Forcing. Loh.  
Seedsmen's synonyms. Detroit Market Gardener's Forcing, Loh.

Eureka. Crs.

Evans' Early Ohio, Evans' Hamilton Market. Entered as Early Ohio and Hamilton Market.

Everitt's Everlasting. Entered as Everlasting.

Everlasting. Evr.  
Similar names. Everitt's Everlasting.

Excelsior. Ewg.  
Similar names. Kendel's Excelsior Head.

Express Cos. Hen Vat. For similar names see White Cos.

Extra Early Curled Simpson. Shm. For similar names see Black-Seeded Simpson.

Extra Early Ohio. Brn.  
Similar names. Evans' Early Ohio, Ohio Cabbage, Early Ohio.

Farquhar's Long-Standing. Fqr. For similar names see Standwell.

Faust's Queen. Fst. For similar names see Golden Queen.

Ferry's Early Prize Head, Ferry's Prize Head. Entered as Early Prize Head and Prize Head.

First Early. GN.

Florida Favorite. Lan. For similar names see Rudolph's Favorite.

Florida Head. Crs Hst. For similar names see Rudolph's Favorite.

Forcing Cabbage. MWJ. For similar names see White Cabbage.

Forcing White-Seeded Tennis Ball. Pot.  
Similar names. See Black-Seeded Tennis Ball.

Forty Day. Mau.

Frankfort Head. Bak Brn CE Cle Ken Loh Til Tpk.  
Similar names. Frankfort Head White-Seeded.

Frankfort Head White-Seeded. Brn. For similar names see Frankfort Head.  
Seedsmen's synonyms. Salamander, Bak Loh Sox.

Frotscher's New Orleans Improved Large Passion. Entered as New Orleans Large Passion.

Gardener's Favorite. Bru Sim. For similar names see Rudolph's Favorite.

Genezzano. Koe.

German Butter Head. Sal. For similar names see White Butter Head.

German Early Head. Bdg.
German Incomparable.  84.

Giant Crystal Head.  Ilm Mid Mrs &F Shw Sic Thr Wva.
Similar names.  See Crystal Palace.

Giant Glacier.  Bar Main Pac.

Giant White Cos.  But Cle Crs Cur Mrs Xef NK.
Similar names.  See White Cos.

Glass House.  C&B Ebr Thr V&D.

Godden's Black-Seeded Forcing.  Gdn.

Godden's Early Butter Head.  Gdh.  For similar names see White Butter Head.

Seedsmen's synonyms.  Godden's Early Cabbage, Gdh.

Godden's Early Cabbage.  Gdh.  For similar names see White Cabbage.

Seedsmen's synonyms.  Godden's Butter, Gdh.

Golden Ball.  Ber CE Ger GH Hrn Hop Ms Ev Xeb XK Sol Wl.
Similar names.  Northrup, King & Co.'s Golden Ball, Golden Head, Golden Heart, Golden Ball Buttercup.

Seedsmen's synonyms.  Buttercup, Hrn.

Golden Ball Buttercup.  Sp.  For similar names see Golden Ball, Buttercup.

Golden Beauty.  Man Thr.  For similar names see Blonde Beauty.

Golden Butter.  Wdr.

Seedsmen's synonyms.  Yellow-Seeded Butter.  Wdr.

Golden Buttercup.  Pmt SC.  For similar names see Buttercup.

Golden Curled.  MWJ Lan Mc Mrs.

Similar names.  Beckert's Golden Curled.

Golden Gate.  Bkt Ber Dll J&S M&F Mrs &F VI.

Golden Head.  Tem.  For similar names see Golden Ball.

Golden Heart.  Clt Frl.  For similar names see Golden Ball.

Seedsmen's synonyms.  Stone Head Golden Yellow, Frl.

Golden Heart Stone Head.  Hms.  For similar names see Golden Stone Head.

Golden Queen.  Agh Bly Bdg Bar C&B Cur Egt Frl Hen J&S Lbh PM Mhl Mrs Reh Shw Sim Thr Vkl W&D Ws.

Similar names.  Golden Queen Forcing, Faust's Queen, Yellow Queen.

Seedsmen's synonyms.  Early Egg, PM.  Gold Nugget, Frl.

Golden Queen Forcing.  Drr GH.  For similar names see Golden Queen.

Golden Spotted.  Dlwy.

Golden Stone Head.  Ar Btl Bdg CE Cle Ebe Egt Ewg GH Tg Mdh Mnt Mzy Pmc Reh Shw Sim Thr Trm Van W&D.

Similar names.  Golden Heart Stone Head, Golden Yellow Stone Head, Early Golden Yellow Stone Head, Early Stone Head.

Seedsmen's synonyms.  Yellow-Seeded Butter, Blg.

Golden Sunset.  Ewg.  For similar names see Sunset.

Golden Yellow Stone Head.  Bpl Bar Dlwy Frd Ggy Tg Hlm Lbh Mrs Xef.

Similar names.  See Golden Stone Head.

Seedsmen's synonyms.  Golden Heart, Frl.

Gold Nugget.  Bar Bar Frd Hlm Mrs Roc S&W.

Seedsmen's synonyms.  Golden Queen, Frl.


Similar names.  Grand Rapids Forcing, Grand Rapids Early Forcing.
American Varieties of Vegetables.

Grand Rapids Early Forcing. RP. For similar names see Grand Rapids.


Similar names. See Grand Rapids.

Grey-Seeded Butter. Cle Mzy.

Similar names. Large Gray-Seeded Butter.

Green Cos. Lhn M&K Rtn.

Green Curled Silesia. Sim. For similar names see Early Curled Silesia.

Green Early Curled Silesia. SB. For similar names see Early Curled Silesia.

Green-Fringed. Air Bar CE Car Del Ebc Fst GII Ggy Grw Hde Mau Mrs Nub NI NK Raw Rec Rec RP Smn Sim Ten Vmm Veb W&D Yng.

Seedsmen’s synonyms. California Curled, Sim Ten Yng. Red-Fringed, Ebc.

Green Winter. Sd. For similar names see Hardy Green Winter.

Griffith & Turner Co.’s Black-Seeded Summer, Griffith & Turner Co.’s White-Seeded Summer. Entered as Black-Seeded Summer and White-Seeded Summer.

Half Century. Bgs Chl.

Similar names. Childs’ Half Century.

Hamburger’s Butter Head. Thm. For similar names see White Butter Head.

Hamilton Market. Brn Bru RE.

Similar names. Evans’ Hamilton Market.

Hammersmith. Vkg. For similar names see Hardy Green Hammersmith.

Seedsmen’s synonyms. Hardy Green Winter, Bdg Vkg.

Hammersmith’s Summer Drumhead. M&S.

Similar names. See Hardy Green Hammersmith, Hammersmith.

Hammond’s Earliest Forcing. 11am. For similar names see Earliest Forcing.

Hammond’s Wonderful. Entered as Wonderful.


Similar names. Dreer’s Hanson, Dreer’s Improved Hanson, Cox’s Improved Hanson, Manic’s Improved Hanson, Improved Hanson, Large Hanson, Improved Early Hanson, Early Hanson.

Seedsmen’s synonyms. Curled India, Tat.

Hanson Hard Head. Mhi.

Hard Head. Bar Col D&C Frd Hrn Mls Mrs Rec Wil.

Similar names. Burpee’s Hard Head, Schwill’s Hard Head.

Hardy Green. Bdg. For similar names see Hardy Green Winter.

Hardy Green Hammersmith. Thr W&D.

Similar names. See Hammersmith, Hammersmith Summer Drumhead.

Hardy Green Winter. Bkt Crs Crv DD Mrs HP Put SC Shw.

Similar names. Hardy Green, Hardy Winter, Green Winter, Large White Winter, Hardy Red Winter, Hardy Green Hammersmith, Hardy White Winter.

Seedsmen’s synonyms. Hammersmith, Bdg Vkg.
Hardy Red Winter. R.H.J. For similar names see Hardy Green Winter.

Hardy White Winter. R.H.J. For similar names see Hardy Green Winter.

Hardy Winter. Mrs. For similar names see Hardy Green Winter.

Harris' White Cos. Entered as White Cos.

Hartford Bronzed Head. C&J. For similar names see Bronzed Head.

Hastings' Drumhead White Cabbage. Hst. For similar names see Drumhead.

Heat-Resisting Cos. Est MWJ Lan Swt.

Similar names. Landreth's Heat-Resisting Cos, Price's Heat-Resisting.

Heavy Weight. Sal.


Hero. Vk.

Similar names. Vick's Hero.

Hittinger's Belmont. Brk Raw Til.

Similar names. See Hittinger's Belmont Forcing.

Hittinger's Belmont Forcing. Brk Bar Brk Emr Fqr Gry Hlm K&W Rs S&F.

Similar names. Hittinger's Belmont, Hittinger's Forcing.

Hittinger's synonmys. Hubbed, Bur.

Hittinger's Forcing. Ggy. For similar names see Hittinger's Belmont Forcing.

Holmes' Giant Crystal Head. Holmes' Improved Boston Market. Entered as Giant Crystal Head and Boston Market.

Hornberger's Dutch Butter. Brw J&S. For similar names see Dutch Butter.

Hotbed. Bur. For similar names see Hothouse.

Seedsman's synonmys. Hittinger's Belmont Forcing, Bur.


Similar names. Rawson's Hothouse, Elliott's Hothouse, Boston Hothouse, Hothouse Forcing, Hotbed.

Seedsman's synonmys. Boston, Ebr.

Hothouse Forcing. Ggy. For similar names see Hothouse.

Houston Market. Thm.

Hubbard. Cox May. For similar names see Hubbard's Market.

Hubbard's Forcing. Mrv. For similar names see Hubbard's Market.

Hubbard's Market. Agn Bgs Cle CF For Gls Gldn GH Brk HIm Lam Lar Mrs Pit Rec Sal Shw S&W Thr Til.

Similar names. Hubbard's Forcing, Hubbard.

Iceberg. Brk Bkt /& Bar Erk Brk Bae Bnr CE/Col Cox D&H Elt Emr Fred Gldn Grn GN Gry Ham Hrs 1st HtC HIm Hse H&P 1nd Low Jer MWJ J&M J&S Jns Lar LB Liv JA Lou Mgd Man FM Man Men Min McK Mhl MrS MtS NK Ncr Pcr Pg HP Poe Pot Peo Qkr Rec Ren Rec Roe Rob Sal S&F Shw Shm Shl Sc&W Sr Tc Thr Til 17 Van Wlt W's Yng.

Ice Cos. Bdj.

Ice Drumhead. Bdj Bae Cox Ebe Gldn Kei Poe Roe Sal Tat T&B Vr

Similar names. See Drumhead.

Seedsman's synonymys. Malva, Bdj. Royal Cabbage, Bdj.

Ice Head. Gldn.

Iceland. Pg.

Immensity. Hen.

Similar names. Henderson's Immensity.

Imperial Asiatic. Dlw. For similar names see Imperial Cabbage.

Imperial Cabbage. Crg Lan Swt Ws.

Similar names. Tait's Imperial Cabbage, Imperial White Cabbage, Imperial Asiatic.
Imperial White Cabbage. MWJ Vk. For similar names see Imperial Cabbage.

Improved Big Boston, Improved Black-Seedled Simpson, Improved Crosman, Improved Deacon, Improved Defiance Summer, Improved Early Black-Seedled Simpson, Improved Early Hanson, Improved Emperor William, Improved Hanson, Improved Hanson Hard Head, Improved Large Black-Seedled Tennis Ball, Improved Large Hanson, Improved Large Passion, Improved Mammoth Salamander, Improved New York, Improved Royal, Improved Salamander, Improved Silver Ball, Improved White-Seedled Simpson, Improved Yellow-Seedled Butter. Entered as Big Boston, Black-Seedled Simpson, Crosman, Deacon, Defiance Summer, Early Black-Seedled Simpson, etc.

India. Ebe MWJ Mrs.

Similar names. Large India, Curled India, Large Curled India.

Seedsmen's synonyms. Prize Head, Ebe.

Italian Ice. Koe.

Jacob's Early Cabbage. Jac. For similar names see White Cabbage.

Johnson & Stokes' Champion Spring and Summer, Johnson & Stokes' Summerlead, Johnson & Stokes' Hothouse. Entered as Champion Spring and Summer, Summerlead, and Hothouse.

Kaiser Wilhelm. Sal.

Kansas City Market. Trm.

Kansas City White-Seedled Forcing. Pnt.

Similar names. See White-Seedled Forcing.

Keene. Vk.

Kendel's Excelsior Head. Ken. For similar names see Excelsior.


Kingsholm Cos. Drr Mrs.

King's Royal. Entered as Royal.

Laciniated Beauregard. Sal.

La Crosse Market. Sal.


Landreth's Early Summer. Lan. For similar names see Summer.


Large Black-Seedled Butter. Bldg.

Large Boston. Ggy Ken Vol. For similar names see Boston Market.

Large Boston Market. Thr. For similar names see Boston Market.

Large Butter Head. Col. For similar names see White Butter Head.

Large Curled India. Min. For similar names see India.

Large Drumhead. Bow Cle Ger Hrn Lam LB Min XI Pks Pug Shw.

Similar names. See Drumhead.


Large Gray-Seedled Butter. Thr. For similar names see Gray-Seedled Butter.

Large Hanson. Bow Egg Hrn H11 JMP. For similar names see Hanson.

Large Ice Drumhead. Shm. For similar names see Drumhead.

Large India. CF Crs W&D. For similar names see India.

Large Loaf. G&T Mrs.

Similar names. White Loaf, Bolgiano's White Loaf, Large White Loaf, Sugar Loaf.

Large Passion. Bow Cox Ele Gra Pac Soc Tex T&IB. For similar names see Passion.

Large Salamander. But. For similar names see Salamander.

Large White Cabbage. Mzy Shw. For similar names see White Cabbage.

Large White Loaf. Mns. For similar names see Large Loaf.
Large White Russian. Mns. For similar names see Russian.

Seedsmen's Synonyms. Big Head, Mns.

Large White-Seeded Tennis Ball. C&J.

Similar names. See Black-Seeded Tennis Ball.

Large White Summer Cabbage. CE, C&B Cur Hen Mas Neb Ree VI.

Similar names. See White Cabbage.

Large White Winter. RHJ. For similar names see Hardy Green Winter.

Large Yellow Butter. Pri Til. For similar names see Yellow-Seeded Butter.

Large Yellow Market. Bui Gdn.

Largest of All. MWJ Koe Lan Mel Stw.

Leaving. Lca.

Leaving's Improved. Entered as Leaving.

Lettuce No. 37. GN.

Leviathan. Elt.

Limagne Cos. Mal.

Livingston's Bon Ton. Entered as Bon Ton.

London Cos. C&B.

Seedsmen's Synonyms. Paris White Cos, C&B.

Long Island Winter. Lih.

Longstreth's Earliest. Lon. For similar names see Earliest Forcing.

Longstreth's Prize Head. Entered as Priz Head.

Los Angeles Market. J&M.

McCullough's Nonpareil. Entered as Nonpareil.

McKenzie's Prairie Queen. Entered as Prairie Queen.

McMillan's Atlanta Market. Entered as Atlanta Market.

McMillan's Cabbage. MeM.

Magnum Bonum. M&S Nol.

Similar names. Moore's Magnum Bonum.

Malta. Anb Bdg CF Cur Ger Hrv Kei Lea Md Mrs Ren Sim SB W&D.

Seedsmen's Synonyms. Drumhead, Cur CF Kei Md Mrs Ren W&D, etc.

Ice Drumhead, Bdg. Large Drumhead, Ger. Royal Cabbage, Bdg.


Similar names. See Black-Seeded Butter.

Mammoth Cabbage. Jus.

Mammoth Erfurt Yellow. Dlw.

Mammoth Head. Pri.

Similar names. Price & Knickerbocker's Mammoth Head.


Similar names. See Salamander.

Mammoth Yellow-Seeded Butter. H&G 17.

Similar names. See Yellow-Seeded Butter.

Mann's Defiance Summer. Mns. For similar names see Defiance.

Marblehead Mammoth. Bel CE Ggy Hst Liv Mrs Ree Thom Til.

Similar names. Shumway's Mammoth.

Market Garden Salamander. Brw. For similar names see Salamander.

Market Gardener's Forcing. Air.

Similar names. See Market Gardener's Private Stock.

Market Gardener's Private Stock. Btl Bgg Bdg Bur C&B Ebr Fer Ggy TG Lan Mrs Mzy Shw Tex Thr Til Wd Ws.

Marvel. RHJ.

Seedsmen's synonyms. Red Bozum, RHJ.

Mastodon. Ar.

Maule's Improved Hanson. Entered as Hanson.


Similar names. Thorburn's Maximum.

May's Early Challenge. Entered as Early Challenge.

May's Market Gardener. May OV Tpk.

Similar names. See Market Gardener's Private Stock.

Mette's Forcing-Head. Dlw.

Meyers' All Right. Brg Ebr Fqr Ggy J&S Man Mrs Shw.

Similar names. Meyers' All Right.

Miehell's All Right Spring and Autumn. Entered as All Right Spring and Autumn.

Miehell's Very Best. Mrh.

Mignonette. Bdg Buc Bur C&B Col Drf Elt Fpr Grw Hen Hlm Iow M&W J&S Lan Mas Man Mrs Rtk Rec Roe Shw Sie S&W Thr Tlh Wll.

Seedsmen's synonyms. Salad, Lam.

Mills' Earliest. Mis. For similar names see Earliest Forcing.

Milly. Gra Yau.

Mongolian. J&S.

Moore's Champion Spring and Summer, Moore's Magnum Bonum, Moore's Summer Gem. Entered as Champion Spring and Summer, Magnum Bonum, and Summer Gem.

Morse. Bkt Bur D&H Frd Gyy Ti Ham Hlm Iow J&S Lnr Man McM Mrs NK Por Rec Sal S&R Van Wat.

Nansen. Bur Gyy Mrs Mzy.

Neapolitan. Mrk.

Neapolitan Sash. M&S.

New Orleans Large Passion. Ee Stk. For similar names see Passion.

New York. Agn Alx Alr Bkt Bou Brk Bdg Bgs Bri Bui Bur Cam CE Cle C&B CF Cox Crs Cur Del Elr Elt Ext Fqr Frd Ger Gh Gigt G&TT Hry Haw Hen Hlt Hlm J&S Lan Lnr Mud Man Mis Mas Man May Mrs Nol NK OV HP JMP Pne Ptt Poo Ftd Pri Rec Ree Rl Rs Shw Shm Sic S&H S&W Tmt Thr Tpk Tl Van Wat Wet W&D Wer Wll Wlr WS Wyg Yng Y&II.


Seedsmen's synonyms. Wonderful, Frd Bur J&S.


Similar names. See New York, Black-Seeded Butter.

New York Cold Frame. Crs.

Similar names. See New York, Cold Frame White Cabbage.


Similar names. See New York.

New York Market Gardener's. Y&II.

Similar names. See New York, Market Gardener's Private Stock.

Ninety and Nine. Crs.

Noll's Boston Glasshouse. Entered as Boston Glasshouse.
LETUCE.

Nonpareil.  Brn RE Ewg Grg Klg JMM McK Mrs Ren Si6 SB.
  Similar names.  Bruce's Nonpareil, McCullough's Nonpareil, Rennie's Non-
  pareil, Simmers' Nonpareil.
  Seedsmen's synonyms.  Beacon, JCM.

Norfolk Royal.  Lam.  For similar names see Royal.

North Pole.  Bur Mrs.

Northrup, King & Co.'s Golden Ball, Northrup, King & Co.'s Sterling.  Entered
as Golden Ball and Sterling.

Norwood.  JMM.

Number One.  M&S.

Number Thirty-Seven.  GN.

Oak-Leaved.  Blg Bui Brn CE Drr Ggy Hrv Hnt H&P Lar Liv Man May JMM
  Mrs Pot Raw Rec Sal SC S&F S&T TB Vin.
  Similar names.  American Oak-Leaved, Baltimore Oak-Leaved, Southern
  Blunt Point Oak-Leaved.

Ohio Cabbage.  SB Ti.  For similar names see Extra Early Ohio.

Onondaga.  Bur Drr Ire.
  Similar names.  Onondaga Market Garden.

Onondaga Market Garden.  Ebe.  For similar names see Onondaga.

Pan-American.  Mls.

Paris Early White Cos.  RHJ.  For similar names see Paris White Cos.

  Similar names.  See Paris White Cos.
  Seedsmen's synonyms.  Romaine, Bdg.

Paris Self-Closing White Cos.  Bur Mrs.  For similar names see Paris White Cos.

Paris Sugar.  Dlw.

Paris White Cos.  Brd Brn Brt Bow Brk Bdg Brn Buc Bui Brn Cam CE Chl C&B
  Cbs Drr Eir RE Ewg Evr Egr Ger Gls Grg Ggy Ggy G&T Hins Hrs Bro
  Hst Hen Hnt Hlm RHH J&M Jns Kei Lar Mnd May JMM JCM JMK MV Pae
  Pks Prn Ptt Prf Pot Pri Ren Rec Rec S&R SC S&F Sim Sim SB Stk S&H
  Ten Thm Vnu Vkc Vna W&D Yng Y&H.
  Similar names.  Paris Green Cos, Paris Early White Cos, Paris Self-Closing
  White Cos, Self-Closing Cos.
  Eir Prf Vrc Vna, etc.  Ice Cos, Bdg.

Parishian Celery Cos.  M&S.  For similar names see Celery Cos.

Passion.  Bui Bk May Mrs Pae Pot Sal Shw Tem Tm Vtn.
  Similar names.  Large Passion, Improved Large Passion, Cox's Improved
  Large Passion, Frotscher's New Orleans Improved Large Passion, California
  Passion, San Francisco Passion, New Orleans Large Passion.
  Seedsmen's synonyms.  San Francisco Market, Pae.

Peer of All Summer.  Sal.

Pennsylvania White Cabbage.  Shw.  For similar names see White Cabbage.

Perfected Salamander.  Entered as Salamander.

Perfection White Forcing.  Bui.  For similar names see White Forcing.

Perpetual.  CE Frd Haw May Mrs Sol JMP Rec Wll.
  Similar names.  Shingway's Perpetual.
  Improved Simpson, Sol.

Perpignan.  Bdg Bui Ggy J&S Mnd Mrs Stk.
  Similar names.  Perpignan Defiance Summer.
  Green Summer, Bui.  Summer, Bdg.

Perpignan Defiance Summer.  Kra.  For similar names see Perpignan, Defiance.


Seedsmen’s synonyms. Early White Head, Anb Hde Lanm Liv JCM LB Pks.

Philadelphia Cabbage.  Wat. For similar names see Philadelphia Butter.

Philadelphia Early Butter.  Pg. For similar names see Philadelphia Butter.

Seedsmen’s synonyms. Early White Head, Pg.

Philadelphia Early Cabbage.  Pac. For similar names see Philadelphia Butter.


Similar names. See Dutch Butter.


Similar names. See Philadelphia Butter.

Philadelphia Late White Butter.  Lan.

Similar names. See Philadelphia Butter.


Philadelphia Speckled Dutch Butter.  GI J&S.

Similar names. See Dutch Butter.

Philadelphia White Dutch Butter.  Min. For similar names see Dutch Butter.

Philippus’ Early White Cabbage. Entered as Early White Cabbage.

Pink-Edged Victoria.  Kei. For similar names see Victoria.

Plant Seed Co.’s Early White Cabbage. Plant Seed Co.’s Standwell. Entered as Early White Cabbage and Standwell.

Prairie Queen.  McK.

Precocity.  Hnr.

Premier.  Sim.

Similar names. Simmers’ Premier.

Premium Cabbage. Brn CE Cle Eas Gls H&P Jns PM Mns Mrs Ree Shw Vlk.

Similar names. Vick’s Premium Cabbage.

Price’s Heat-Resisting.  Pri. For similar names see Heat-Resisting Cabbage.

Price & Knickerbocker’s Improved Early Curled Silesia. Price & Knickerbocker’s Mammoth Head. Entered as Early Curled Silesia and Mammoth Head.

Prince of Wales Cos.  Gra.

Private Stock.  Hr&D Wer.


Similar names. Early Prize Head, Briggs’ Prize Head, Burpee’s Prize Head, Currie’s Prize Head, Ferry’s Prize Head, Ferry’s Early Prize Head, Longstreet’s Prize Head, Quaker City Prize Head, Red-Fringed Prize Head, Salzer’s Prize Head, Shumway’s Prize Head.

Seedsmen’s synonyms. Brown Cabbage, J&S. Early Brown Cabbage, HP.

India, Etc. Satisfaction, Ar Lan.

Quaker City Prize Head.  Qkr. For similar names see Prize Head.

Rawson’s Crumpled Leaf. Rawson’s Hothouse. Entered as Crumpled Leaf and Hothouse.

Red Besson.  Ggy RHJ.

Seedsmen’s synonyms. Marvel, RHJ.

Red-Edged Victoria.  CE Cle RHJ Ren Ree Sim SB. For similar names see Victoria.
LETTUCE.

Red-Fringed. Ebe.
SEEDSMEN'S SYNONYMS. Green-Fringed, Ebe.

Red-Fringed Prize Head. Kei. For similar names see Prize Head.

Red Winter Cos. Ger.

Reichner's Butter. Nol Tat Thr.

Reichner's Early White Butter. J&S. For similar names see Reichner's Butter.

Reichner's Forcing. Rec. For similar names see Reichner's Butter.

Reichner's White Butter. Bkt. For similar names see Reichner's Butter.

Rennie's Nonpareil. Entered as Nonpareil.

Rochester Market. Gds.

Romaine Cos. Bow Brk Bdg Bui Gum Der'Eic Lan Mhl Pnt Raw S&W T&B Wat Wei.
SIMILAR NAMES. See White Cos.

Rosedale. D&I.

Royal. Aix Bg Bon Bdg Bui Bar Brr Cam Cle Crg DD Eic Gdn Kg Kse Lan Mel Min Stk Tat Tex Vk Win.
SIMILAR NAMES. Improved Royal, Norfolk Royal, King's Royal, Vick's Royal, Royal Summer, Cox's Royal Summer, Royal White Summer, Royal White Cabbage.

Royal Summer. Cox Fer Grw Mhl Mrs Nol Pnr Rec Shw Til T&B.
SIMILAR NAMES. See Royal.

Royal White Cabbage. GH Shw Tat. For similar names see Royal.

Royal White Summer. SC. For similar names see Royal.
SEEDSMEN'S SYNONYMS. Drumhead, SC.

SIMILAR NAMES. Gardener's Favorite, Sutton's Favorite, Florida Favorite, Florida Header.
SEEDSMEN'S SYNONYMS. Buttercup, Fuir.

Russian. Mrs.
SIMILAR NAMES. White Russian, Large White Russian.
SEEDSMEN'S SYNONYMS. Large Black-Seeded Butter, Bdg. Turkish Cabbage, Bdg.

St. Louis. Brd Ewg Gna Lnr.
SIMILAR NAMES. St. Louis Butter, St. Louis Market, St. Louis Forcing Black-Seeded.

St. Louis Butter. Agn Ctr DD Mrs Shw Van War.
SIMILAR NAMES. See St. Louis.

St. Louis Forcing Black-Seeded. DD Pnt SC Wer.
SIMILAR NAMES. See St. Louis.

St. Louis Market. Brd DD Ebr Hde Nbh Pnt SC Shw Tex Wyg Yng.
SIMILAR NAMES. See St. Louis.

Salad. Lam.
SEEDSMEN'S SYNONYMS. Mignonette, Lam.

Similar names. Perfected Salamander, Henderson’s Perfected Salamander, Improved Salamander, Improved Mammoth Salamander, Mammoth Salamander, Large Salamander, Market Garden Salamander.

Seedsmen’s synonyms. *Frankfort, Sex.* *Frankfort Head* Bak Loh. Satisfaction, Big Brr Ggy ImI Prt Vj.

Salzer’s Colossal Head. Sal. For similar names see Tail’s Colossal Cabbage.

Salzer’s Earliest. Sal. For similar names see Earliest Earling.

Salzer’s Early Simpson, Salzer’s German Butter Head, Salzer’s Prize Head, Salzer’s Sunlight, Salzer’s Wonderful. Entered as Early Simpson, German Butter Head, Prize Head, Sunlight, and Wonderful.

Sandahl. Pkg.

San Francisco Market. Bow Buc Bar Tg LB Pac Roc Sal Yng.


San Francisco Passion. Bui. For similar names see Passion.


Similar names. White-Seeded Satisfaction.

Seedsmen’s synonyms. *Salamander, Bdg Brr Ggy ImI Prt Vj.* Prize Head, At Lan.

Saunders. Bkt.

Savoy. Chl Grw Kg.

Seedsmen’s synonyms. *Denver Market, Chl Grw Hm Kg.*

Schwill’s Hard Head. Shw. For similar names see Hard Head.

Schwill’s Market Gardener’s Private Stock. Entered as Market Gardener’s Private Stock.

Self-Closing Cos. Alx. For similar names see Paris White Cos.

Seedsmen’s synonyms. *Triumon, Alx.*


Shotwell’s Brown Head. Bdg Mrs Mzj Prn Thr H’S.

Similar names. See Brown Head.

Shumway’s California Cabbage. Shm.

Similar names. See California Cream Butter.

Shumway’s Mammoth. Shm. For similar names see Marblehead Mammoth.

Shumway’s Perpetual. Shm. For similar names see Perpetual.

Shumway’s Prize Head. Entered as Prize Head.


Similar names. *Burpee’s Silver Ball, Improved Silver Ball.*

Simmers’ Nonpareil, Simmers’ Premier. Entered as Nonpareil and Premier.

Simon’s Early Speckled Dutch Butter, Simon’s Neapolitan Sash, Simon’s Summer Queen Drumhead, Simon’s White Peach. Entered as Early Speckled Dutch Butter, Neapolitan Sash, Summer Queen Drumhead, and White Peach.

Simpson’s Curled Silesia. Bdg. For similar names see Early Curled Silesia.

Seedsmen’s synonyms. *Early Curd Salad, Bdg.*

Slow Seeder. Gig Lan.
LETTUCE.

Solid-Headed Yellow Butter. Bgs. For similar names see Yellow-Seedled Butter.
Southern Blunt Point Oak-Leafed. Rcv. For similar names see Oak-Leafed.
Southern Heart. Sal.
Speckled Dutch Butter. Cle Dlw Lan Mhl Mrs Nol Rim Swf Thb.
Similar names. See Dutch Butter.
Seedsmen’s synonyms. Early Cabbage, Dlw.
Spotted. Fpr.
Seedsmen’s synonyms. Trout, Fpr.
Standwell. Del Phl.
Similar names. Plant Seed Co.’s Standwell, Farquhar’s Long-Standing.
Steckler’s French Market. Stk.
Sterling. Nk.
Similar names. Northrup, King & Co.’s Sterling.
Stinger’s Early Hardy White Butter Head. M&S.
Similar names. See White Butter Head.
Stone Black-Seeded Tennis Ball. Nol Thr.
Similar names. See Black-Seedled Tennis Ball.
Stubborn Head. Bui Vui Wer.
Similar names. Stubborn Head Yellow, Stubborn Seeder.
Stubborn Head Yellow. Dlw. For similar names see Stubborn Head.
Seedsmen’s synonyms. Trotzkopf, Dlw.
Stubborn Seeder. Mod. For similar names see Stubborn Head.
Sugar Loaf. Guy Rec. For similar names see Large Loaf.
Summer. Bdg.
Similar names. Bolgiano’s Black-Seedled Summer, Griffith & Turner Co.’s Black-Seedled Summer, Black-Seedled Summer, Landreth’s Early Summer, Early Green Summer, Tait’s Midsummer, Summerlead, Johnson & Stokes’ Summerlead.
Seedsmen’s synonyms. Perpignan, Bdg.
Summer Drumhead. Tex. For similar names see Drumhead.
Seedsmen’s synonyms. Royal Cabbage, Tex.
Summer Gem. M&S. For similar names see Toronto Gem.
Summer Queen Drumhead. M&S. For similar names see Drumhead.
Summerlead. Bar Haw J&S May. For similar names see Summer.
Sunlight. Sal. For similar names see Sunset.
Sunset. Fnr Fnd Mnd S&I W&D Yng.
Similar names. Golden Sunset, Salzer’s Sunlight, Sunlight.
Seedsmen’s synonyms. Blonde Beauty, Fnd Fnr Liv Yng. Blonde Blockhead, Frd Fnr Mnd S&W W&D.
Superb. Buc Rec.
Similar names. Buckbee’s Superb.
Sutton’s Favorite. Mhl. For similar names see Rudolph’s Favorite.
Sutton’s Giant. Mhl.
Tait’s Colossal Cabbage. Tat.
Similar names. Salzer’s Colossal Head.
Tait’s Imperial Cabbage. Tat Tem. For similar names see Imperial Cabbage.
Tait’s Midsummer. Tat. For similar names see Summer.
Tender and True. Mls.
Tennis Ball. Bri Cam Crg Dyw Ewg Gdn Hnf Mfl J RLJ Kei Koe NL Pot Pri Shw Sim Thm Vin Web W&D.
Similar names. See Black-Seedled Tennis Ball.
Seedsmen’s synonyms. Boston Market, Bdg Bru Htn Lea PM Vkg, etc.
Thick Head Yellow. Bar Him Mus Man M&S Vkg.
Thorburn’s Glass House, Thorburn’s Mammoth Black-Seedled Butter, Thorburn’s Market Gardener’s Private Stock, Thorburn’s Maximum, Thorburn’s Yellow

Tilton's White Star. Air Blq Bri Bue CE Cur Evr Fer Fle Frd GH Hlm H&P J&8 Kos Lam Lnr LB Liv Mau Mrs Neb Por Ree Roe S&R S&O Shm Tem Thr Til VI Van WS.

Similar names. White Star, White Star Forcing.


Similar names. Burpee's Tomhannock, Bronzed Tomhannock.

Tom Thumb. Bur Ewg Fqr Gra Mls Mrs Pks Ren Wat.

Similar names. Wheeler's Tom Thumb.

Toronto Gem. Fle Mck SB.

Similar names. Moore's Summer Gem, Summer Gem.

Toronto Market. Sim SB.


Similar names. Henderson's Trianon Cos, Trianon Self-Closing Cos, White Trianon Cos.

Seedsmen's synonyms. Self-Closing Cos, Alx. Celery, Hen Kg Liv Ten J&S Ren, etc.

Trianon Self-Closing Cos. Brk Bdq CE Crs Drf Ebr Ebr Fqr Ger Grw Hrs Ken Mud Nol Ree S&F Sim S&K Thr Til Vin Wea.

Similar names. See Trianon Cos.


Triumph. Mrs.

Similar names. Australian White Triumph.

Trocadero. Alx Bui Cle Eie Ghn Hrn Hc Pst Shw Stk Thr.

Trotzkopf Large Brown. Koe.

Similar names. See Trotzkopf Large Yellow.

Trotzkopf Large Yellow. Koe.

Similar names. Trotzkopf Large Brown.

Trout. Fqr.

Seedsmen's synonyms. Spotted, Fqr.

Turkish Butter. M&S.

Twentieth Century. Nol.

Unrivalled. Bru Sim.

Unsurpassed. Lan.

Vick's Hero, Vick's Premium Cabbage, Vick's Royal. Entered as Hero, Premium Cabbage, and Royal.


Vincent's Passion. Entered as Passion.

Virginia Solid Head. Koe Lan Stw.

Waldorf. Hen Mrs.

Wheeler's Tom Thumb. Entered as Tom Thumb.

White Batavian. RHI.

White Butter Head. Alx Brw Cle Mhl M&S Stk Yng.

Similar names. White Dutch Butter Head, Salzer's German Butter Head, German Butter Head, Stinger's Early Hardy White Butter Head, Early White
LETTUCE.

Butter Head, Golden's Early Butter Head, Early Butter Head, Large Butter Head, Hamburger's Butter Head.

SEEDSMEN'S SYNONYMS. Early Cabbage, Bui Mu Sk Young.


White Cabbage Forcing. May. For similar names see White Cabbage.

White Cabbage Winter. Cam. For similar names see White Cabbage.

White Chavigne. Bri Hrm Til.

White Cos. Bai Bdg Bri Cox Etc Elt GH Hrn Koe Kra Lan Jau RP Sal She Thm T&B.

SIMILAR NAMES. Early White Self-Folding Cos, Burnell's White Cos, Cox's White Cos, Haines' White Cos, Dwarf White Heart Cos, Burpee's White Heart Cos, Giant White Cos, White Romaine Cos, Romaine Cos, Bloomdale White Cos, Express Coss.

White Dutch Butter Head. Min. For similar names see White Butter Head.

White Forcing. Bdg.

SIMILAR NAMES. Buist's Perfection White Forcing, California Giant White Forcing, Bolgiano's White Forcing.

White Giant. Ely.

White Heart Cos. Bar M&S. For similar names see White Cos.

White Loaf. Bdg PM M&S. For similar names see Large Loaf.

White Peach. M&S.

SIMILAR NAMES. Simon's White Peach.

White Romaine Cos. Elt Mzy Nol S&W Tat Thr.

SIMILAR NAMES. See White Cos.

White Russian. Hm J&S Mh Nol. For similar names see Russian.

White-Seeded Forcing. Bdg Gdn.

SIMILAR NAMES. Kansas City White-Seeded Forcing.

White-Seeded Satisfaction. Cle. For similar names see Satisfaction.

White-Seeded Simpson. Brg Btk Mnd May JCM Nol S&O Thm Vi.

SIMILAR NAMES. See Black-Seeded Simpson.

SEEDSMEN'S SYNONYMS. Perpetual, Nol. Early Cased Simpson, JCM.

White-Seeded Summer. G&T.


SIMILAR NAMES. See Black-Seeded Tennis Ball.

SEEDSMEN'S SYNONYMS. Boston Market, Brg Brg Bar Elt Gns Hrs, etc. Early Boston Market, Brg Bui.

White Star. Brg Hly Ken May Nk. For similar names see Tilton's White Star.

White Star Forcing. May. For similar names see Tilton's White Star.

White Stone Head. Mic.

White Summer Cabbage. Agn Bdg Cle Emr Fwr For Gcr Ji, Mud Man MV Mrs Nol NK Par JMP Ptt For Rok RP S&R Sox Spf SB Thir Thr T&B W&D.

SIMILAR NAMES. See White Cabbage.

SEEDSMEN'S SYNONYMS. Stone Cabbage, Brg. Winter Butter, Bdg.
White Trianon Cos.  Col.  For similar names see Trianon Cos.

White Winter Cabbage.  Lam.

Wonderful.  Ax Bkt  Bag  Buc  Bar  C&J  D&H  Drr  Fqr  Frd  Ger  Gng  G&T  Hum
Hrs  Hlm  J&M  Liv  Lar  JL  Mdl  Mus  May  Mhl  Mrs  Nol  NW  Pnc  Roc  Sal  S&E
Shw  Shr  Sim  Tem  Th1  Vn  WM  W&D  Yng.

Similar names.  Hammond's Wonderful, Salzer's Wonderful.


Wood's Cabbage.  Wd.  For similar names see White Cabbage.

Yellow Butter.  May.  For similar names see Yellow-Seeded Butter.

Yellow Queen.  May.  For similar names see Golden Queen.

Yellow-Seeded Butter.  Brd  Bur  Cle  C&B  Crs  Cur  DD  Drr  Emr  RE  Fqr  Fax  Gry  Hrm
Hrn  Hrv  Hen  J&S  K&W  Lar  Liv  Mnd  JMM  Mhl  MV  M&S  Nef  Pg  Prr  Ptt  Pot
Raw  Res  Roc  SC  S&E  Sim  S&W  Tat  Shr  Thr  Wea  W&D  Wdr  Yng.

Similar names.  Improved Yellow-Seeded Butter, Mammoth Yellow-Seeded Butter, Large Yellow Butter, Solid-Headed Yellow Butter.


Yellow Winter.  Thr.

Similar names.  Thorburn's Yellow Winter.

MARTYNA.

Martynia.  Bkt  D&H  Elc  Elt  Lam  May  Pnc  Por  Rs  S&R  Shm.

Craniolaria.  Bdg  Thr.

Lutea.  Thr.

Proboscidea.  Brd  Brt  Brk  Bar  C&B  Crs  Cur  DD  Drr  Emr  RE  Fqr  Fax  Gry  Hrm
Hrn  Hrv  Hen  J&S  K&W  Lar  Liv  Mnd  JMM  Mhl  MV  M&S  Nef  Pg  Prr  Ptt  Pot

MEADOW.  (See MUSKMELON and WATERMELON.)

MUSKMELON.

Acme.  Bsk  Bkt  Btw  Bgs  Bri  Brn  Buc  Bui  Bur  Cam  CE  Cle  C&B  Cox  Crs  Cur  Del
DD  Dmr  Ent  Fqr  Fst  Fer  Frd  Gdn  Ghl  Gff  Tg  Hde  Hrm  Hln  Hnt  Jae  MWJ
J&S  Kg  Koe  Lan  Lam  Lan  Liv  Loh  PM  Man  May  JCM  JMM  M&S  Nbc  NK  Vb
Old  Pch  Pnt  Prr  Por  Rch  Rob  Roc  Sal  S&R  Shw  Shr  Sm  Spt  Sw  Tat  Tex  Tpk  Vl
Wd  WS.


Seedsmen's synonyms.  Anne Arundel, Ptt.  Baltimore, Buc  Bar  Fqr  For  Man

Albany Market.  Y&H.

Similar names.  Cornings Albany Market.

Ambulance.  Koe.

American Breakfast.  Pri  Y&H.

Similar names.  Price's American Breakfast, Paris Breakfast.

Anne Arundel.  Ax  Bkg  Bri  Gra  G&T  Hlm  J&M  J&S  Kg  Lan  Lnr  M&S  Ptt  Reb
Shw  Shr  Stw  Tat  Til.

Seedsmen's synonyms.  Acme, Ptt.

Arabian Sweet.  Sal.

Arlington Green Nutmeg.  Gll  Hlm  Raw.  For similar names see Arlington
Nutmeg.
Arlington Long Yellow.  GH Raw.

Similar names.  See Arlington Nutmeg, Long Yellow.

Arlington Nutmeg.  Brt Cle Egw Fqr Fax Gry Pae Pot Rob S&F Shw Y&H.


Atlantic City.  MWJ Lan.

Augusta Market.  Alx.

Baltimore.  Air Rak Bkt Bgs Bri Brn Buc Bur Cam CE C&B Cox Cur DD Brm Evr Fqr Fst Fer Frd GH Gzy G&T TG Hde Hrm Hln J&8 Kg Lnr Lnr Liv Lob PM Mne Man May M&S Neb NK KY HV Hl Rec Rec Rec Shw Srg Spf Tex Vk Vin W&D Wd WS.

Similar names.  Early Baltimore, Improved Large Baltimore, Large Baltimore, Baltimore Market, Bolgiano's Baltimore, Baltimore Acme.


Baltimore Acme.  Lnr YL.  For similar names see Baltimore, Acme.

Baltimore Market.  Brg Bui Cle CF Gdn H&P Jne Kg MV Mzy Nef Shen Srg Tat Thm Thr Y&H.

Similar names.  See Baltimore.


Banana.  Air Ar Brd Brl Bkt Bel Ber Brg Bui Buc Brn Bur CE Chl Cle CG Col Cox Crs Del DD Ebr Emr Evr Fst Frd Fld Fld Gls Gdn Grn Gry G&T Tg Hns Hst Hen Hlm Hop Hse Low J&8 Jn Jn Kg Lnr Lnr Liv Mne Man PM May JMM Mhl MV Mzy Neb NK Pae JMP Pae Pot Raw Rec Rec Rec Rec Rt Rs RP S&O Sox Spf SB Tat Tem TB Thu Thr Tit Ten T&B VL Van Vin Web Wd WS Wyg.

Similar names.  Improved Banana, Salzer's Improved Mexican, Mexican Banana, Improved.

Banquet.  Bui Bkt Bkt Bel Ber Brg Bdg Bri Brn Buc Bui Bur Rec Cam CE Cle CG Col CF Cox Cur Del DD Ens Eit RE Evr Evsg Fqr Fst Fld Frd Gls Gdn Gna Gry G&T Tg Hns Hst Hen Hlm Hop Hse Low J&8 Jn Jn Kg Kra Lnr Lnr Lnr Lnr Low J&8 Jn Jn Kg Kra Lnr Lnr Lnr Lnr Low J&8 Jn Jn Kg Kra Lnr Lnr Lnr Lnr Low J&8 Jn Jn Kg Kra Lnr Lnr Lnr Lnr.

Similar names.  Henderson's Banquet.

Boston Mango.  Bur PM.  For similar names see Mango.

Boston Pet.  TG.

Seedmen's synonyms. *Christiana*, Gg.  *Orange Christiana*, TG.

Breck's Improved Emerald Gem.  Entered as *Emerald Gem*.

Buckbee's Ideal.  Buc.  For similar names see Ideal.

Buckbee's Prolific Green Nutmeg.  Buc.  For similar names see Nutmeg.


California Beauty.  J&M Thm.  For similar names see *Long Island Beauty*.

California Citron.  Dlw Fld Lar Gan.

California Large Nutmeg.  Cox.


Similar names. *Texas Cannon Ball*.

Seedmen's synonyms. *Cosmopolitan*, Bak Eie.

Cape May.  MWJ Rob 17.  For similar names see *Extra Early Cape May*.

Carmes.  Hen M&S.


Similar names. Improved Casaba, Bell's Improved Casaba, Persian Casaba.


Champion.  Chl Dlw Rec.  For similar names see *Champion Market*.


Similar names. Burpee's Champion Market, Champion.

Seedmen's synonyms. *Stavin's Favorite*, Man J&S.

Chicago Giant.  Drnl.  For similar names see *Chicago Market*.


Similar names. See *Chicago Market*.


Seedmen's synonyms. *Nutmeg*, Bái.

Chicago Nutmeg.  GI.  For similar names see *Chicago Market*.

Chicago Prolific Nutmeg.  Lar.  For similar names see *Chicago Market*.

Childs' Great Combination.  Entered as *Great Combination*.

Christmas.  *Eas*.

Christiana.  Bái Bál Bkt Brb Cle C&B Col CF Ebr Eit Emd Ewq Gra Kra Mnd Raw Ren Roc Sim 17 Vk Wea W&D.

Similar names. See *Orange Christiana*.


Christopher Columbus.  Bái Evr.  For similar names see *Columbus*.

Cincinnati Market.  Lan.

Climbing Orange.  Sal.

Similar names. *Horny Climbing*. 
Colorado. Brk *Giant* DD Pnc.

Similar names: Giant of Colorado.

Seedsmen’s synonyms: *Rocky Ford*, Brk.

Columbia. *CE* Tel. For similar names see *Colorado*.


Similar names: Beck’s Columbus, Christopher Columbus, Columbia.

Conqueror of Europe. W&D.

Coral-Fleshed Japan. W&D. For similar names see *White Japan*.


Corning’s Albany Market. Entered as *Albany Market*.

Corning’s Superb. Pri. For similar names see *Superb*.

Cosmopolitan. Alr Bri Bgg Buc Bur Crs Del Drr Eie RE Fer Frd Gls Hde Hrs Hlm Kp Lam Lac LB Mas Mhl N K Roc Rob Roc Rs S&R Shw Shm SB Tex Thr Vau Vk.

Similar names: Ferry’s Cosmopolitan.

Seedsmen’s synonyms: *Gunn Ball*, Brk Eie.

Creole. Bui Cle Eie.

Seedsmen’s synonyms: New Orleans Market, Bui Cle Eie.

Currie’s Osage. Entered as *Osage*.

Defender. Ewg *Fert* Fer Vun.

Delmonico. Bai Bri Bri Bgg Bdg Bri Brg Bur Brr Cle CF Crs Cur Del DD Elt RE Ext Fmr Fet Ger GH Ggy Tg Hns Hmr Lmr Mnd Man PM May JCM MV Mzy Prn Ptt Roc Rob Sal Snc Sc Wt Tat Til Trm Vun Vin Wea W&D Wdr Y&H.

Similar names: Improved Delmonico, Henderson’s Improved Delmonico, Henderson’s Perfection Delmonico, Perfected Delmonico.

Diamond Jubilee. *Van*.

Dickmann’s Best. *DD*.

Dominion Day. *SB*.

Dominion Green-Fleshed. *Sim*.

Similar names: Simmers’ Dominion Green-Fleshed.

Earliest of All. Ren. For similar names see *Extra Early*.

Early Baltimore. Bow Por S&R. For similar names see *Baltimore*.

Seedsmen’s synonyms: *Acme*, Bow Por S&R.

Early Bristol. *Lan*.

Early Burlington. *Lan*.

Early Christiana. Amb Brk Bdg C&J Crs Eas Fqr GH Pot S&F.

Similar names: See *Orange Christiana*.

Early Emerald Gem. Ax. For similar names see *Emerald Gem*.

Early Golden Netted Gem. H&P. For similar names see *Netted Gem*.

Early Grand Rapids. Bri Brg Bur Gls. For similar names see *Grand Rapids*.


Similar names: See *Grand Rapids*.

Early Green Citron. CE GH S&O. For similar names see *Green Citron*.

Early Green Nutmeg. *Bgg Col Hde Hrn Liv JL May Rob Spf*.

Similar names: See *Nutmeg*.

Early Hackensack. Ar Bri Brw C&J Cam CE Cox Dlw DD Drm Eic RE Fst Gdn GH Gra Gg Gw Tg Hde Hrn Hrs Hrn Iml low Jac RIJI J&S Ken K&F Kra Lmr Mnd Mas M&K XI Plk Pnt Poo Ren Roc RO Sal Shm Sim Sth SB S&H Thb Trn Wat Web W&D Wyg Y&H.

Similar names: See *Hackensack*.

Seedsmen’s synonyms: *Turk’s Cup*, RP.


Similar names. See Jenny Lind.

Early Jersey Hackensack. Gls. For similar names see Hackensack.

Early June. Mel VI. For similar names see Extra Early June.

Early Matchless. M&S. For similar names see Matchless.

Early Netted Gem. Col G&T Hst JMM NK Old Pac Shw.

Similar names. See Netted Gem.

Early Nutmeg. Bar Kra Lnr Man Pac Van. For similar names see Nutmeg.

Seedsman's synonyms. Green Citron, Ggy.

Early Orange Christiana. Brn VI. For similar names see Orange Christiana.

Early Prolific Nutmeg. CE GH. For similar names see Nutmeg.

Early Rough. Min.

Early Round Yellow. GIL. For similar names see Large Yellow.

Early Surprise. TG. For similar names see Surprise.

Early White Japan. DP Fer Pnt Stk Tat Wdr.

Similar names. See White Japan.

Early Yellow. Bow Sim Tpk. For similar names see Large Yellow.


Excelsior Nutmeg. Bdg. For similar names see Nutmeg.

Exquisite. SB.

Extra Early. Koe.


Extra Early Cape May. Can Hde Hst Hlm Koe Lmn Mlh Rim Stw.

Similar names. Cape May.


Similar names. See Green Citron.

Seedsman's synonyms. Nutmeg, NK Sal.

Extra Early Giant Prolific. Lnr. For similar names see Nutmeg.

Extra Early Grand Rapids. Bar D&H Hlm Man Neb Roc S&O Shm Tem VI Wat Y & H.

Similar names. See Grand Rapids.


Similar names. See Grand Rapids.

Extra Early Green Citron. Cle CE GH Hns Hde Rob SB Tex Til.

Similar names. See Green Citron.

Extra Early Green Nutmeg. Del Jns. For similar names see Nutmeg.

MUSKMELON.

JCM JMM Mic Mhl MV M&S Xeb Xol NK OV Old Pac Pg HP Fir Prn Por Pri Pug Qkr Rkh Raw Ree Rob Rs S&R SC S&B Shw S&O Sio Sox Sp Shw S&W Tat Tex Thrn Thr Thl Til Tpk Vl Van Vk Wat Wea Wer Wil Wd Wdr WS Yng.

SIMILAR NAMES. See Hackensack.

Extra Early Hanover. Wd WS.

Extra Early Jenny Lind. Est Mss Shw Sox Tat.

SIMILAR NAMES. See Jenny Lind.

Extra Early Jenny Lind. (New Jersey Improved Button Strain.) Bar.

SIMILAR NAMES. See Jenny Lind.


SIMILAR NAMES. Early June.

Extra Early Netted Gem. See Sim. For similar names see Netted Gem.

SEEDSMEN'S SYNONYMS. Rocky Ford, Sim.

Extra Early Nutmeg. Ken Lan Qkr Van. For similar names see Nutmeg.

Extra Early Orange Christiana. H&P.

SIMILAR NAMES. See Orange Christiana.

Extra Early Prize. J&S M&S.

Extra Early Round Netted Gem. Bdg.

SIMILAR NAMES. See Netted Gem.

Farquhar's Honey Drop. Farquhar's Improved Arlington Nutmeg. Entered as Honey Drop and Arlington Nutmeg.

Ferry's Cosmopolitan. Entered as Cosmopolitan.

Fine-Netted Nutmeg. CE Rec Shw. For similar names see Nutmeg.

French Cantaloupe. M&S. For similar names see Large White French.

French Perfection. Thr. For similar names see Large White French, Perfection.

Garden Lemon. Bue Cld Col D&H RE Fmr Fld GX low Lan Man Ms Roe Shw Sim SB Yr.

Gem. Kg. For similar names see Netted Gem.

SEEDSMEN'S SYNONYMS. King's Epineur, Kg.

German's Autumn. Ger.


SIMILAR NAMES. Giant of Colorado, Reedland Giant, Shumway's Giant, Thorburn's Giant, Hammond's Mammoth Giant, Western Giant, Northern Giant, Mammoth Giant.

SEEDSMEN'S SYNONYMS. Giant of Colorado, J&S.

Giant of Colorado. J&S. For similar names see Giant and Colorado.

SEEDSMEN'S SYNONYMS. Giant, J&S.

Gilbert's Green Flesh. Mmd Thr.

Glass Melon. Wd WS.

Golden Eagle. Bar D&H Frd Hrs NK Pac Shw Tem Vk Yng.

Golden Gem. CE Crg CA Fqr Est Gll Man Tat.

SIMILAR NAMES. See Netted Gem.

SEEDSMEN'S SYNONYMS. Golden Jenny, BAI. Netted Gem, Bkt CE CA Fst Gll.

Rocky Ford, Bkt.

Golden Jenny. BAI C&B Drr Lan Mhl. For similar names see Jenny Lind.


Golden Mango. M&S. For similar names see Mango.


SIMILAR NAMES. See Netted Gem.

Golden Perfection.  Bdg.  For similar names see Perfection.
Golden Triumph.  May.  For similar names see Triumph.
Grand Rapids.  Air Btl Bkt Ber Brn Cle Cur Evr Hns Hom Hrs Hry Hlm Low J&G Kos Rec Rif Sol Blk SB Trn Y&H.
Grand Rapids Market.  Ebe Lar Vi.  For similar names see Grand Rapids.
Grand View.  Pri.
   Similar names.  Price & Reed’s Grand View.
Granite State.  Eas.
Great Combination.  Chi.
   Similar names.  Child’s Great Combination.
Green Citron.  Bdl Bdag Brr C&J CE Cle Cox Crs Cur Der Eas ToI Hrm Hnt K&W Kg Kos Lea Man May MV Nef Pir Rec Wea W&D Wer.
Seedsmen’s synonyms.  Early Nutmeg, Ggy.
   Similar names.  See Osage.
Green-Fleshed Providence.  Thr.
Green Gage.  M&S.
Green-Netted.  Min.  For similar names see Green Citron.
Green-Netted Citron.  Bdl Ebe Gdn Mbl Shw.
   Similar names.  See Green Citron.
Green Nutmeg.  Brd RE Ewg Gra ToI Hrm Hrs Iow May JCM JMM MV XI JMP Rec R- RP Sal Shw Shm Sox Spf Tpk Vin.
   Similar names.  See Nutmeg.
Green Persian.  Iml Lam LB Rec RP SB.  For similar names see Persian.
Seedsmen’s synonyms.  Casabia, Evr Iml Lam Rec RP LB SB.
Grower’s Pride.  Bri Evr.  For similar names see McCuller’s Pride.
   Similar names.  Large Hackensack, Late Hackensack, Improved Hackensack, Early Hackensack, Henderson’s, Extra Hackensack, Improved Early Hackensack, Early Jersey Hackensack, Improved Extra Early Hackensack.
Seedsmen’s synonyms.  Turk’s Cup, Bur Fer Lan LB Liv PM, etc.
Hamilton Market.  RE.
Hammond’s Superb.  Ham.  For similar names see Superb.
Hardy Ridge.  Man.
Hero of Lockinge.  W&D.
Holmes’ Improved Nutmeg.  Entered as Holmes’ Nutmeg.
Holmes’ Nutmeg.  Hlm.  For similar names see Nutmeg.
MUSKMELON.

Honey Drop.  Ewi For S&F.

Similar names.  Finghual's Honey Drop.

Hoosier.  Evt.


Similar names.  Horny Climbing.

Horny Climbing.  Koe.  For similar names see Horned African.

Hybrid Bay View.  Tat Thr.  For similar names see Bay View.

Ideal.  Air Roe Shr Shn Van.

Similar names.  Beck's Ideal, Buckbee's Ideal, Tait's Ideal.


Improved Cantaloupe.  Ber Buc Cle DD Ebe Kg Lrr Man JCM JMM NI Roc Tpk Trm

Seedsmen's synonyms.  Large Nutmeg, Ebe.

Improved Citron.  Hst.  For similar names see Green Citron.

Improved Delmonico.  Hen Pri Shn.  For similar names see Delmonico.

Improved Yellow.  Rob.  For similar names see Large Yellow.

Invincible Scarlet.  Md Thr.

Iowa Mastodon.  Iow.


Similar names.  Vaughan's Ironclad.

Irondequoit.  Bkt Bgs Drr Gls Ggy Hrs Lnr Lob Ren Rob Sal Sic SB TB Tk Vn Web.

Similar names.  Vick's Irondequoit.

Island Beauty.  Ken.  For similar names see Long Island Beauty.

Ivy Gem.  J&S.  For similar names see Netted Gem.

Jackson First Market.  Jus.

Jenny.  Lan.  For similar names see Jenny Lind.

Jenny Lind.  Air BAl Bkt BgB GgB Bri Bug Buc Cam CE Cle C&B CF Cox Crs Cur Dlw DD Drr Eas Elt Emer Evr Ewg Fgr For Flid Gdn G&T Hde Hrn Hst Hen Hlna MWJ J&S Ken Kg Cra Lam Lan Lnr LB Liv Loh Mud Mgd Man Mus JCM JMM Mhl Ms Min MV May Nex NK Pg JMP Put For Pot Raw Ree Ren Rec Rob RP Sal S&R S&O Shm Spf Stw S&H S&W Tex TB Thr Thr ACT Trm Van Vn Vin Wat Wca W&D Wd Ws Y&H.


Jenny Lind (Button Strain).  May.  For similar names see Jenny Lind.

Jersey Belle.  Bkt Bel Brn Bur CE Cle Crs D&H Drr RE Ewg Frd Gls Ggy Gd TG Hde Hrn Hsc Jer J&S Lnr Liv JL MV M&S Neb Pac Ree Rob S&O Sic Sim Tem Thr Til Wca Yng.

Similar names.  Texas Belle.

Jerusalem Pickle.  Liv.

Jewel.  Tat.

Similar names.  Tait's Jewel.

Johnson & Stokes' Superb.  Drn.  For similar names see Superb.
AMERICAN VARIETIES OF VEGETABLES.

Khiva. Brt.

SEEDSMEN'S SYNONYMS. Winter, Brt.

King's Epicure. Kg.

SEEDSMEN'S SYNONYMS. Perfect Gem, Kg.

Kinsman's Queen. Bkt Bur Der Hrs HMw J&S Liv JMM Rob Shw.

Kiokke. AIX.

Klundike. Gdn.

Landreth's Early Citron. Van. For similar names see Green Citron.

Landreth's Extra Early. TB. For similar names see Extra Early.

Landreth's Extra Early Green Citron. Mic. For similar names see Green Citron.

Large Acme. Lan Sw. For similar names see Acme.

Large Baltimore. Shw. For similar names see Baltimore.

SEEDSMEN'S SYNONYMS. Improved Baltimore, Shw.


Large Green Citron. JWJ Ken Wd. For similar names see Green Citron.

Large Green Nutmeg. Bow Brn Drn Fer Gdn Haw H&P Lam Lea LB Liv Loh Til Tpk Wd.

SIMILAR NAMES. See Nutmeg.

Large Hackensack. Anb Ar Bbg Bgs Brn Brn Rue Bui Cle Cox DD Ger J&M J&S Mls May JCM Mic Nfl OV Pac Spî SB Tpk Vk Wd Wdr WS.

SIMILAR NAMES. See Hackensack.

SEEDSMEN'S SYNONYMS. Turk's Cap, Ar Cle Cox J&S WS Wd, etc.

Large Montreal Market. Shm. For similar names see Montreal.

Large Netted Cantaloupe. Bui Bow.

Large Nutmeg. Air DD. For similar names see Nutmeg.

SEEDSMEN'S SYNONYMS. Improved Cantaloupe, Ebe.

Large Persian. BtI Crs JCM. For similar names see Persian.

SEEDSMEN'S SYNONYMS. Osaba, BtI Crs JCM.

Large Round Yellow. Dun Hrm K&W. For similar names see Large Yellow.


SIMILAR NAMES. French Perfection, French Cantaloupe.

Large Yellow. Brk Cox Ewg Ger Gls GH Hrm Hop K&W Lam Mgd Mas Pac For Rec Yce S&H S&O SB T&B Vin W&D.

SIMILAR NAMES. Arlington Long Yellow, Improved Large Yellow, Long Yellow, Improved Yellow, Round Yellow, Early Round Yellow, Large Round Yellow, Yellow Cantaloupe, Early Yellow.

Late Hackensack. MV Sox. For similar names see Hackensack.

SEEDSMEN'S SYNONYMS. Turk's Cap, Sox.

Little Gem. Min. For similar names see Netted Gem.

Little Heath. Mgd Thr.

SIMILAR NAMES. Monroe's Little Heath.

Livingston's Market. Anb Frd MWJ Liv JL.

Livingston's Tiptop. Entered as Tiptop.

Lone Star. J&S M&S.

Long Green Nutmeg. Jns. For similar names see Nutmeg.


SIMILAR NAMES. Island Beauty, Netted Beauty, Southern Beauty, California Beauty.

Long Persian. Brc Shm. For similar names see Persian.

SEEDSMEN'S SYNONYMS. Osaba, Buc.


SIMILAR NAMES. See Large Yellow.
MUSKMELON.

Lord Beaconsfield.  Mnd Thr.
McGraw's Improved Jenny Lind.  Entered as Jenny Lind.
McCotter’s Pride.  CF D&H For Gls Gdn Low Lam Loc Pg Rec Vk.

Similar names: Grower’s Pride.

Malta Giant.  Fst.  For similar names see Giant.
Mammoth Montreal.  Whl.  For similar names see Montreal.

Mango.  Air Brl Brk Buc Col D&H Drr Elt RE Evr Ewg Fgr Frd Gra GN Gry Gry Ham Kg Mls MV Pnt Raw Roe Sal &F Shm Sim Sce SB Thr Vin Wer.

Similar names: Boston Mango, Golden Mango.

Seedsman’s synonyms: Vine Orange, Frd Thr.  Vine Peach, Brd Col Ert Gg Gry Sal, etc.  Vegetable Orange, Cur Drr Frd Raw Sal Vin.  Vegetable Peach, Brd Elt Evr RE Pnt Thr, etc.

Matchless.  Brr.

Similar names: Early Matchless, Burpee’s Matchless.

Matthew’s Prize.  Shw.

Maule’s Bay View, Maule’s Netted Gem, Maule’s Prize Jenny Lind, Maule’s Superior.  Entered as Bay View, Netted Gem, Prize Jenny Lind, and Superior.

Maule’s Perfection.  Cle Man.  For similar names see Perfection.


Similar names: See Vine Peach.

Melrose.  Air Brl Bg Bng Buc Bur CF Cox CA Ebr Frd TG Hrs Hbt Him Hop MM1 J&J Kg Lnr Mgd JMM Neb NK Pri Rec Ren Rec Rob Roe &O Spf Tem Thr Vk Wdr.

Similar names: Burpee’s Melrose.

Memphis Market.  Shw.

Mexican Banana.  Sal.  For similar names see Banana.

Miller’s Cream.  Alx Air Ar Rai Bnl Brt Btl Btk Ber Bow Bgg Brk Bgs Bri Bru Bn Bnr Brk C&J Cm CE Cle Col CF Cox Crs CA Dlw D&H Del DD Drr Drr Ebr Elt Etm Fgr Frd Gls Gdn GI Gra Ggy Gry’. &T Grw Tvl Hhs Hm Hrs Hen Hln Hse Iml J&J M&J Kg Koe Kra Lm Hn Mnd May JCM JMM M&S Mau Neb OV Pct Hl Ptt Poo Por Pot Pri Qkr Raw Rec Ren Rec Rim Rob Rt Rsp &F RC Sc &F Shw Shw S&O Shw S&O Shm Sim Sce SB Spf SB Tem TB Trk Trom Vn Wnt Woa W&D Wll Wdr Yng Y&H.

Similar names: Improved Miller’s Cream.

Seedsman’s synonyms: Orange, Buc Fcr NK JMM Raw Wd, etc.  Red-Fleshed Orange, J&J, Princess, Kg &F.

Mills’ Earliest.  Mls.  For similar names see Extra Early.

Milwaukee Market.  Cnr.

Minnesota Perfection.  May.  For similar names see Perfection.

Missouri.  Lan.

Model.  Man Thk.

Monroe’s Little Heath.  Entered as Little Heath.


Seedsman’s synonyms: Outstanding Beauty, Gra.

Montreal Market.  Alx Amb Brl Brt Bkg Bgg Bgs Bri Buc Bui LB CE Cle C&B Crz Crs CA D&H Del DD Drr Ebr Elt Evr Ewg Frd Gdn GI Gng Hmr Hrs Hst
AMERICAN VARIETIES OF VEGETABLES.


SIMILAR NAMES. See Montreal.

Moore & Simon's Perfect Gem. Entered as Perfect Gem.
M. & W. Surprise. Entered as Surprise.

Neapolitan. Bug.

Netted Beauty. Bel Cle C&EB DD Gdn J&S Man MV HP Rob Shw Sor.

SIMILAR NAMES. See Long Island Beauty.


SIMILAR NAMES. See Nutmeg.

Netted Pineapple. Mhl RF.

SeeSEEDSMEN'S synonyms. Nutmeg, Mhl.

Nevers' Warted. Thr.

New Orleans. Cle. For similar names see New Orleans Market.


SIMILAR NAMES. New Orleans.

SeeSEEDSMEN'S synonyms. Creole, Bui Cle Eic.


SIMILAR NAMES. Henderson's Newport, Newport Favorite.

Newport Favorite. For. For similar names see Newport, Bishop's Favorite.

Nixon. Alx CA Hst MWJ McM Wht.


Northern Giant. GN. For similar names see Giant.

Northrup, King & Co.'s Cream. NK.

Northrup's Yellow-Meated Japan. Entered as Yellow-Meated Japan.


SIMILAR NAMES. Large Nutmeg, Improved Large Nutmeg, Large Green Nutmeg, Small Green Nutmeg, Improved Large Green Nutmeg, Long Green Nutmeg, Green Nutmeg, Improved Green Nutmeg, Early Green Nutmeg, Early Extra Green Nutmeg, Prolific Green Nutmeg, Backbee's Prolific Green Nutmeg, Prolific Nutmeg, Improved Prolific Nutmeg, Early Prolific Nutmeg, Vick's Prolific Nutmeg, Prolific Netted Nutmeg, Extra Early Giant Prolific, Early Nutmeg, Extra
Early Nutmeg, Improved Nutmeg, Holmes' Improved Nutmeg, Holmes' Nutmeg, Excelsior Nutmeg, Netted Nutmeg, Fine-Netted Nutmeg, Sugar Nutmeg.

**Seedsmen's synonyms.** Chicago Market, Bui. Extra Early Citron, NK Salt. Netted Pineapple, Mhl.

**Oblong Netted Gem.** Big Bar Mls Nol S&O Thr.

**Similar names.** See Netted Gem.

**Onondaga.** Ebe.

**Orange.** Wea.'

**Similar names.** Blenheim Orange, Vegetable Orange, Vine Orange.

**Orange Christiana.** Bow Bri 'CE' Ebe Tg Haw JCM MV Mzy Nol Por Pri Ree RP Sal S&R S&O Sur Tat Thr Til Web Y&II.

**Similar names.** Early Orange Christiana, Extra Early Orange Christiana, Improved Orange Christiana, Improved Christiana, Early Christiana, Christiana.

**Seedsmen's synonyms.** Boston Pet, TG.

**Ornamental Pomegranate.** Bar Col Low Laur Mls Rob Sim Van.

**Similar names.** See Pomegranate.

**Seedsmen's synonyms.** Pocket Melon, Bui. Queen Anne's Pocket Melon, Iow Liv.


**Similar names.** Osage Gem, Currie's Osage, Vaughan's Osage, Green-Fleshed Osage, Red-Fleshed Osage, Yellow-Fleshed Osage.

**Seedsmen's synonyms.** Hybrid, S&F. Improved Miller's Cream, Buc Fer JMM NK. Miller's Cream, Alx Bui Bar Drr Frg Hen, etc. Miller's Hybrid, Hrv. Princess, Hrv S&F.

**Osage Gem.** Der Laur Liv Man Van. For similar names see Osage, Netted Gem.

**Our Own.** Anh.

**Oval Netted Gem.** Brn Iml Jns Rob Van. For similar names see Netted Gem.

**Paris Breakfast.** Mhl. For similar names see American Breakfast.


**Similar names.** Vaughan's Paul Rose.

**Seedsmen's synonyms.** Improved Netted Gem, Pac. Peshkei, Bui Bar Drr Fer Man Ptt., etc.

**Perfect Gem.** M&S. For similar names see Netted Gem.

**Perfected Delmonico.** Alx Brk Buc Bui Bar Cox DD Ewg Frr Frd Gra Hen Hlm Iow J&M PM Pri Rob Rce Shw Sim Thr Yng.

**Similar names.** See Delmonico.

**Perfected Gem.** Entered as Gem.
AMERICAN VARIETIES OF VEGETABLES.


Similar names.  French Perfection, Manie's Perfection, Minnesota Perfection, Wood's Perfection, Unsworth's Perfect, Golden Perfection, Yellow-Fleshed Perfection, Sutton's Perfection.

Seedsmen's synonyms.  Princess, Bt Bkt Mls Pir Wyg, etc.

Perfection Montreal.  Bel.  For similar names see Montreal.

Persian.  Bkt Bui TG Mhl Sim Stk Vin.


Seedsmen's synonyms.  Casaba, Bkt Bui Lan Mhl Mgd Rt Sim, etc.

Persian Casaba.  Ren.  For similar names see Persian, Casaba.

Persian Giant.  M&S.  For similar names see Persian.

Persian Monarch.  J&S Sal.  For similar names see Persian.

Petoskey.  A1x Alr Ar Bui Bar Brp CE Cox Dlw Ftr Fer Ger Gng Gx Grw TG Ham Hlm Hmd J&S Lam PM Mns Man McK MV M&S Old JMP Pnt Ptt Prq Kr Rs Sal Shm Sis Sim Sos TB Vl Wea Yng.

Seedsmen's synonyms.  Paul Rose, Bui Bar Drr Fer Lam Man, etc.


Pocket.  Bar.

Pomegranate.  Brk MWJ My Shw S&O Thr.

Similar names.  Ornamental Pomegranate.

Ponce de Leon.  Hst.

Price's American Breakfast.  Entered as American Breakfast.

Price & Knickerbocker's Surprise.  Entered as Surprise.

Price & Reed's Grand View.  Entered as Grand View.

Princess.  Alr Bt Bt Bkt Bcl Bgg Bri Brn Brn Bar CE Chl Cle Cur CA Ebr RE Fhl Frd TG Hms Hlm Iow J&S Kg Kos Kra Lnr Loh Lon Mnd Man PM May JMM Miv Mls MV Nef JP Pir Pnt Ptt Ren Ree Rob Rob Sal Sal &O Shm Sim Sos SB Stw S&H Tlh Til Trm Vl Wer Wer Wyg Y&H.

Similar names.  Miller's Cream, Kg S&F, Miller's Hybrid, Hrv.

Perception.  Eftr Roc Vi.  For similar names see Nutmeg.

Prolific Green Nutmeg.  Eftr Roc Vi.  For similar names see Nutmeg.

Prolific Netted Nutmeg.  Ar Brk Shw.  For similar names see Nutmeg.

Prolific Nutmeg.  Brk Bks Bri Buc Bar Cle CA Fst Ger Gls TG Hbt Hlm Kg Mnd Man PM Neb NL Rob Tm Web Wer Wdr.

Similar names.  See Nutmeg.

Queen Anne Pocket Melon.  Liv.


Queen Anne Sweet-Scented Pocket Melon.  Drw.

Queen of All.  Sal.

Similar names.  Salzer's Queen of All.

Rajah.  D&W.

Red-Fleshed Lyons.  Thr.

Red-Fleshed Osage.  Hlm J&S.  For similar names see Osage.

Seedsmen's synonyms.  Miller's Cream, J&S.

Reedland Giant.  MWJ J&S Lan Liv PM Stw.  For similar names see Giant.

Roberts.  Lan.


Rocky Ford Gem.  Alx Web.  For similar names see Rocky Ford, Netted Gem.

Rocky Ford Netted Gem.  OY Tpk Wd.

Similar Names.  See Rocky Ford, Netted Gem.

Rocky Ford Pineapple.  Brt Bl.  For similar names see Pineapple.


Similar Names.  See Netted Gem.


Similar Names.  See Large Yellow.

Royal Favorite.  Thr H&D.  For similar names see Bishop's Favorite.

Royal Sovereign.  S&F.

St. Louis Market.  Pue Put SC.

Salmon and Green.  Lan Mic.

Salzer's Mexican Banana.  Salzer's Queen of All.  Entered as Mexican Banana and Queen of All.

Santa Claus.  Frd.

Seedsmen's Synonyms.  Winter Pineapple, Frd.

Shipper's Delight.  Bri Brw J&S.

Shumway's Giant.  Shumway's Silver Netted.  Entered as Giant and Silver Netted.

Silver Netted.  Air Sal Simu.

Similar Names.  Shumway's Silver Netted, Silver Netted Gem.

Silver Netted Gem.  Buc Roc.  For similar names see Silver Netted, Netted Gem.

Simmers' Dominion Green-Fleshed.  Entered as Dominion Green-Fleshed.

Skillman's Early.  Brn.  For similar names see Skillman's Netted.

Skillman's Fine-Netted.  Cle CF Fqr Gie Ggy Tg; H&P Lea Jl.  Sim Tpk Trn.

Similar Names.  See Skillman's Netted.


Skillman's Netted Gem.  Beg May S&O.

Similar Names.  See Skillman's Netted, Netted Gem.

Small Green Nutmeg.  Ber Bow Fer Inl Lami LB Loh Por S&R SB.

Similar Names.  See Nutmeg.
Southern Beauty. Gig G&T Hst MWJ Tex.  
Similar names. See Long Island Beauty.
South Jersey. Hst.

Starn's Favorite. Man. For similar names see Bishop's Favorite.  
Strawberry. Brd Buc CE Chl Col D&H J&S Liv Man Mls Pac Ree Roe Sal.  
Similar names. Beck's Strawberry.
Sugar Nutmeg. GN. For similar names see Nutmeg.
Superb. J&S PM.  
Similar names. Corning's Superb, Hammond's Superb, Johnson & Stokes' Superb, Sutton's Superb.
Similar names. Manue's Superior.
Surprise. Bai Brd Brt Brt Blvd Bon Bow Bgg Brk Edg Bri Brn Bur CE Cle Cox  
Crs Cur Else Ebr Emr Ewg Fqr Fst Fer Gls Ggy Gry Grw Hrn Hrv Haw Hop  
K&W Ky Kos Lmn Lmn Lmr LB Liv JL Mnd May Min MV May Net Prn Ptt Poo  
Pri Raw Ree Rob Roe Rs RP Sal S&F S&O Sie Sim Sox SB Stw TB Thr Vk Wea  
Web W&D Wdr Y&H.  
Similar names. Improved Surprise, Early Surprise, M. & W. Surprise, Price & Knickerbocker's Surprise.

Sutton's A 1. S&F.
Sutton's Invincible. S&F.
Sutton's Perfection. S&F. For similar names see Perfection.
Sutton's Scarlet. Mhl.
Sutton's Scarlet Masterpiece. S&F.
Sutton's Superb. S&F. For similar names see Superb.
Sutton's Triumph. S&F. For similar names see Triumph.
Sweet Home. D&H J&S Lnr Vau.
Syracuse. Vau.
Tait's Ideal. Tat. For similar names see Ideal.
Texas Belle. Hst. For similar names see Jersey Belle.
Texas Cannon Ball. Hst Hly May Rob S'th Thr.  
Similar names. See Cannon Ball.
Theropial. Roc.
Thorburn's Giant. Entered as Giant.
Tiptop. Air Ans Ar Brd Brt Bht Brh Brk Brr Brj Brj Buc Bar CE Col Crs Cuu Dlw  
D&H DD Ehe Ebr Frl Glh H&C Hlm Hop H&P Imi Jow MWJ J&S Kos Kra  
Lur JL Lon Mgd Man May JCM JMM Mhl M&S Mzy Ncb NK HP Pnt Ptt Pot  
Raw Ree Rob Roe Sal S&F Shw S&O Shw Sim SB S&H S&W Tem Thr Til Vl  
Vau Vl Wk Web W&D Wer Wgg Yng.  
Similar names. Livingston's Tiptop.
Togoodeo Spanish Winter. J&S. For similar names see Winter.
Toledo Early Market. HP.
Trevoux Orange-Fleshed. Thr.
Triumph Hybrid. May. For similar names see Triumph.
Turk's Cap. Ar Bri Bui Bar CE Cle Cox Fer Glh Grw Tg Hlm Imj Jac J&S Ken  
Lan LB PM Ms Sox Stw Tll Vl Wd Ws.  
Seedsmen's synonyms. Early Hackensack, RP. Hackensack, Bur Fer Lan Liv  
LB PM, etc. Large Hackensack, Ar Bri Cox J&S Vl Wd, etc. Late Hackensack,  
Sox.
Unsworth's Perfect. Bru. For similar names see Perfection.

Vandalia. Bgg.

Vaughan's Ironclad, Vaughan's Osage, Vaughan's Paul Rose. Entered as Ironclad, Osage, and Paul Rose.

Vegetable Orange. Air Drr Ham Raw Rob Shm Vr.

Similar names. See Orange.

SEEDSMEN'S SYNONYMS. Mango, Drr Frd Raw Sal Vin. Vine Peach, Cur Frd Rob Sal.


Similar names. See Vine Peach.

SEEDSMEN'S SYNONYMS. Mango, Buc Elt Evr RE J&S Thr, etc. Vine Orange, Elt Frd Thr. Vine Peach, Ham Sim SB.

Vegetable Vine Peach. Wer.

Very Early Jenny Lind. Qkr. For similar names see Jenny Lind.

Vick's Irondequoit. Entered as Irondequoit.

Vick's Prolific Nutmeg. Brb CE Ree Vr. For similar names see Nutmeg.

Vine Orange. Elt Kg MV Sox Thr. For similar names see Orange.

Vine Orange Vegetable Peach. Shw.

Vine Peach. Air Ch Col Cur Fmr Ggy Ham low Koe Luc Mls M&S Pac Rob Sal Shm Sim Thm Thr.

Similar names. Vegetable Peach, Melon Peach.

SEEDSMEN'S SYNONYMS. Mango, Brd Col Cur Elt Ggy Sal Sim etc. Vegetable Orange, Cur Rob Sal. Vegetable Peach, Elt Ham Sim SB.

Waldorf. Bui.

Ward's Nectar. Bgg CE Fqr Ggy Ree Thr W&D.


Western Giant. Buc Roc. For similar names see Giant.


Wilson's Extra Early. Ber Sox. For similar names see Extra Early.

Winter. Brl.

Similar names. Malta Winter, Togoodo Spanish Winter.

SEEDSMEN'S SYNONYMS. Khira, Brl.


Similar names. See Pineapple.

SEEDSMEN'S SYNONYMS. Casaba, J&M Thm. Santa Claus, Frd.


Wood's Perfection. Wd. For similar names see Perfection.

Yellow Cantaloupe. Wb. For similar names see Large Yellow.

Yellow-Fleshecl Japan. May Nk Van.

Yellow-Fleshed Osage. M&S NoL. For similar names see Osage.

Yellow-Fleshed Perfection. Gdn. For similar names see Perfection.

MUSTARD.

Black. Aum Ar Brd Btt Bton Bgg Brk Blg Bgs Buc Brb Brf Bar CE Cle C&B CA Dmr Ebr Enr Fmr Fst Frd Ger GH TG Ham Hde Hrm Hyl Hul Hul Hui J&S K&W Kg Lnr Liv JL Man Mau May MeM Mel Mls MV Mzy Neb Nef XI OV Pac Pir

1329—No. 21—02—16
AMERICAN VARIETIES OF VEGETABLES.

Put Ptt Pri Raw Ree Ree Ree SC Shw Sim Sox Spf S&W Tat Tex Thm Thr Til Tpk Trm T&B 17 Wea W&D Wer Wd WS.

SIMILAR NAMES. Black London.

SEEDSMEN’S SYNONYMS. Brown, Brdl Bur Frl tier Hen J&S, etc.

Black London. Bui Ky Show.


Bloomdale Large-Leaved. MWJ Lm.


SEEDSMEN’S SYNONYMS. Black, Brdl Bur Frl tier Hen J&S, etc.


Brown Italian. Min. For similar names see Brown.

Brown London. Bui Gln Shw. For similar names see Brown.

SEEDSMEN’S SYNONYMS. Black London, Bui.


SEEDSMEN’S SYNONYMS. Giant Southern Curled, Evr Lnr Pir Van.

Chinese Broad-Leaved. Mdg THR. For similar names see Chinese.

Chinese Curled. DD Fld Gna Hrm Nbc Put Qkr Spf Weh.

SIMILAR NAMES. See Chinese.

SEEDSMEN’S SYNONYMS. Giant, Neb. Southern Curled, Spf.

Chinese Giant. Afr Col. For similar names see Chinese.

Chinese Golden. Lou. For similar names see Chinese.

Chinese Large-Leaved. Eic. For similar names see Chinese.

Chinese Mammoth. Shw. For similar names see Chinese.

Chinese Southern Curled. Hly. For similar names see Chinese, Southern Curled.

Chinese Very Large Cabbage-Leaved. Stk. For similar names see Chinese.

Creole. Aix Hly Lan Shw.

SIMILAR NAMES. Southern Creole, Southern Creole Curled.

SEEDSMEN’S SYNONYMS. Giant Southern Curled, Aix.

Curled. At.

SIMILAR NAMES. Giant Curled, Mammoth Curled, Large Curled, Silver Curled.

SEEDSMEN’S SYNONYMS. Giant Ruggled, At.

English. Aix CF Crs RHJ Mgd.

SIMILAR NAMES. White English, Brown English.

SEEDSMEN’S SYNONYMS. White, Aix Crs.


Georgia. CA.

SEEDSMEN’S SYNONYMS. Mammoth Curled, CA.

Giant Curled. Bui Btl DD G&T Nbc. For similar names see Curled.

SEEDSMEN’S SYNONYMS. Chinese Curled, Neb.
Giant Ruffled. Ar.

Seedsmen's synonyms. Curled, Ar.

Giant Southern. Hop Sal. For similar names see Southern Curled.

Giant Southern Curled. Alx Bak Blg Bon Bow Bgs Bar Cam CE Cle C&B Cox Crg Ctr Del Drm Eic Elt Eff Far For GH Gre Grg Hns Hde Hst Hen H&C Hlm Iow MWJ J&S Lam Lan LB Liv JL Loh Msd Mgl Man Men MCM MV Mrs Pir Put Por Rec Roc S&R SC Shw Sbr S&W Tat Tex Thm Thr Trm 17 Van Vk Wt Wd WS.

Similar names. See Southern Curled.


Large Curled. Stk. For similar names see Curled.

London. Hop.


Mammoth Curled. CA Gdn Jac. For similar names see Curled.

Seedsmen's synonyms. Georgia, CA.

Mammoth Ostrich Plume. Bui. For similar names see Ostrich Plume.

Mammoth Southern Curled. Bui Grw. For similar names see Southern Curled.

Ostrich Plume. Cam Iow MWJ Mgd May Vk Wt Wd.

Similar names. Mammoth Ostrich Plume.

Silver Curled. CE Rec. For similar names see Curled.


Southern Creole. Bui. For similar names see Southern Curled, Creole.

Southern Creole Curled. Gdn. For similar names see Southern Curled, Creole.

Southern Curled. DD Eic Iow J&M May Spf.

Similar names. Mammoth Southern Curled, Giant Southern Curled, Giant Southern, Chinese Southern Curled, Southern Creole Curled.

Seedsmen's synonyms. Chinese Curled, Spf.


Seedsmen's synonyms. English, Alx Crys. Yellow, Bai Bgd Col Elt RE S&F, etc.

White American. Msd. For similar names see White.


Similar names. See White.


White London. Aib Bnd Brk Brr Cam CE C&B Cur CA Dw D&H Drr Dnm Enr Gdr Gdn GH Tg Hde Hmn Hrs Hrv Hgn Hlm Iow J&S K&W Kg Kos Mnd Mas MV M&S Myn Nol Pbn Put Ptt Poo Pri Pug Rec SC Shw Sox S&W Tat TB Thr Trm 17 Wfa Wd&D Wdy.

Similar names. See White, London.


Yellow. Bai Bgd Col Eic Elt RE Fax Ggr K&F May Mhl Xol XY Pac Raw S&F Spf Tpk T&B.

Similar names. Yellow California, Yellow London.

Seedsmen's synonyms. White, Bai Bgd Elt RE Ggy K&F, etc.
Yellow California. Bow. For similar names see Yellow.
Seedsmen's synonyms. White English, Bow.

Yellow London. Bui Gdn Neb Pnt.
Similar names. Yellow, Yellow California. See also London.
Seedsmen's synonyms. White London, Bui Gdn Neb Pnt.

OKRA.
(Also called Gumbo.)

Buist's Dwarf. Bui. For similar names see Dwarf.
Creole. Mhl S&F.
Similar names. White Creole.
Seedsmen's synonyms. White Velvet, S&F.
Density. Bng Frd Hlm J&S Lcr Mns Nol Ptt 17 Wd WS.
Similar names. White Density.
Dwarf White. Hrs. Improved Dwarf Green Prolific, J&S Mns. Improved Dwarf Prolific, Bng Wd WS.

Dreer's Little Gem. Entered as Little Gem.

Dwarf. Anb Ar Brd Brt Bk Bt Bow Bri CA Di Dst Hms Hnt Lca Lnr McM Pw Pri Tat TB T&B Van Yng Y'H.
Similar names. Improved Dwarf, Buist's Dwarf, Early Dwarf, Extra Early Dwarf, Dwarf White, Early Dwarf White, Improved Dwarf White, Dwarf Green, Early Dwarf Green, Improved Dwarf Green.

Similar names. See Dwarf.

Dwarf Prolific. Bng Bur CE C&B Crg Frd GH G&T Hn Hbl Hlm Lcr Mnd HP 17 Vin Bng Wd WS.
Seedsmen's synonyms. Density, Frd Hlm Bng Wd WS. Early Dwarf Green, Bdg.

Similar names. See Dwarf.
Seedsmen's synonyms. Density, Hrs.

Dwarf White Velvet. Ber Bdg Cam Crs Di DI Gdn Grw TG Iow Jac.
Similar names. See White Velvet.

Early Dwarf. Dm Eic Ger Gyg MV Sal Sox. For similar names see Dwarf.
Early Dwarf Green. Bdg Shw. For similar names see Dwarf.
Seedsmen's synonyms. Improved Dwarf Prolific, Bdg.

Early Dwarf White. CE Ree Roc. For similar names see Dwarf.
Extra Early Dwarf. CE Ree. For similar names see Dwarf.
Extra Long Green. Bdg. For similar names see Long Green.

French Market Dwarf Prolific. Eic Stk. For similar names see Dwarf Prolific.
Green Dwarf Prolific. A lx Bdg Cam Gdn Jac J&S Kg Mns Nol Ptt Stk Thr W't.
Similar names. See Dwarf Prolific.
Seedsmen's synonyms. Density, Ptt J&S Mns.

Green Dwarf Prolific Extra Early. Eic.
Holt's Stringless Early Green Dwarf Prolific. M&S.

Similar names. See Dwarf Prolific.

Improved Dwarf, Improved Dwarf Green, Improved Dwarf Prolific, Improved Green Dwarf Prolific, Improved Dwarf White, Improved Long Green, Improved White, Improved White Velvet. Entered as Dwarf, Dwarf Green, Dwarf Prolific, Green Dwarf Prolific, etc.


Little Gem. Drt.

Similar names. Dreser's Little Gem.


Similar names. Extra Long Green, Improved Long Green, Pale Long Green, Griffin's Long Green, Landreth's Long Green.

Seedsmen's synonyms. Long White, Neb SC. Mammoth Long Pod, Spf. Tall, Gdn Hly Jac. Tall Green, Bui.

Long White. Air CE Lan M&S Neb Pac Reo Roe. For similar names see White.

Seedsmen's synonyms. Long Green, Neb SC.

Mammoth Green Pod. Mgd. For similar names see Perkins' Mammoth Long.

Mammoth Long. Spf. For similar names see Perkins' Mammoth Long.

Seedsmen's synonyms. Long Green, Spf.

New South. Lan.

Pale Long Green. Sim. For similar names see Long Green.

Perfection White. Shw. For similar names see White.

Perfection White Velvet. Shw.

Perkins' Mammoth Green Pod. Alx Bui Bur Man.

Similar names. See Perkins' Mammoth Long.


Similar names. Perkins' Mammoth Green Pod, Mammoth Green Pod, Mammoth Long.

Round White. Thr. For similar names see White.

Tall. Btl Brg Bui CE Crg DD Eic Fst Gdn Hns Hly Jac Lan Lar Reo Roe Shw Thm Vnl WS Y&H.

Similar names. Tall Green, Tall White, Tall White Velvet.

Seedsmen's synonyms. Long Green, Gdn Hly Jac.

Tall Green. Brk CF Eic Elt Emr Fwr Lar May McM OV Pac Stk Tpk Vl Wea Wd.

Similar names. See Tall.

Seedsmen's synonyms. Long Green, Bui.

Tall White. Cle GH Tg Mm NV Pag. For similar names see Tall.

Tall White Velvet. Gdn Jac. For similar names see White Velvet.

White. Hly MWJ RP SC.

Similar names. Improved White, Perfection White, Round White, Long White, Landreth's Long White.

White Creole. Drr.

Seedsmen's synonyms. White Velvet, Drr Ext Vl.

White Density. Ebr. For similar names see Density.

White Velvet. Alx Air Bak Brd Brr Btr Btl Bkt Bcl Bng Bon Bow Brgy Brk Bri Bng Bui Bur Brr C&J CE Cle C&B CcC CE DcC Cock Cox Crg CA Del Dwh Drn Eic Ext Fmr Fqr Fst Fer Frd Ger Gls GH Ggy Gry Gg&t Hns Hde Hrm Hrm Hrs
AMERICAN VARIETIES OF VEGETABLES.

Hrv Hst Hen Hst Hly Hm Hop Iml J&M J&S Ken Kg Kos Kra Lam Lan Lar LB Liv Mnl Man Mns Mas Mau May JCM JMM McK Mhl Nef Ov Pw Pg Pfr Pmt Pnt Ptt Pwo Por Pri Qkr Raw Rec Rec Rec S&R SC S&F Spl Stk Stw S&W Tat Tcm Tex Thm Thr Ttl Tpk Trm T&B 'tl Van Vk Vn Hve W&D Wd Wl WS Yng.

Similar names. Improved White Velvet, Dwarf White Velvet, Tall White Velvet.

Seedsman's synonyms. 

ONION.

Adriatic Barletta. 

Similar names. White Adriatic, White Adriatic Barletta, Small White Barletta, Extra Early White Barletta. Early White Barletta, Hammond's White Barletta, White Barletta, Barletta Pickling, Extra Early Barletta, Early Barletta, Barletta.


American Silverskin. 

Similar names. See Silverskin.

Archias' Improved Early Red. Entered as Extra Early Red.

Aroostook Extra Early Flat Red. 


Australian Brown Globe. 

Similar names. See Australian Brown.

Australian Early Golden Globe. 

Similar names. See Australian Brown.

Barletta. Bkt CE Chl Cle Ger Gwy Gry Grw Hbt Mzy Pir Pme S&O Vk Yng.

Similar names. See Adriatic Barletta.

Seedsman's synonyms. Early Radish, Chl. Extra Early Pearl, Gery.

Barletta Pickling. Pks Sox. For similar names see Adriatic Barletta.

Barnard's Yellow Globe Danvers. Entered as Yellow Globe Danvers.

Beaulieu's Harcy Winter White. Entered as Hardy Winter White.


Bloomdale Danvers, Bloomdale Early Danvers, Bloomdale Early Red, Bloomdale Early White Pearl, Bloomdale Extra Early Dark Red, Bloomdale Extra Early Red, Bloomdale Extra Early White Pearl, Bloomdale Large Yellow Strasburg, Bloomdale Silverskin. Entered as Danvers, Early Danvers, Early Red, Early White Pearl, Extra Early Dark Red, Extra Early Red, etc.

Bloomdale Extra Early Gold Seal. 

Similar names. See Bloomdale Gold Seal.

Bloomdale Extra Early Red Seal. 

Similar names. See Extra Early Red.
**BLOOMSDALE GOLD SEAL.** Bri.

**Similar Names.** Bloomsdale Extra Early Gold Seal, Extra Early Gold

**BLOOMSDALE WHITE.** Lan.

Seedsmen's synonyms: Bloomsdale Silverskin, Lan.

**BLOOMSDALE YELLOW.** Dlw. For similar names see Giant Yellow.

**BOLTON.** Mrs.

**Similar Names.** Brownish Pink Bolton.

**BRECK'S YELLOW GLOBE DANVERS.** Entered as Yellow Globe Danvers.

**BROZENE KING.** GII. For similar names see Copper King.

**BROWN BEAUTY.** LK.

**Similar Names.** Livingston's Brown Beauty.

**BROWNISH PINK BOLTON.** Thr. For similar names see Bolton.

**BROWN WONDER.** Ms.


**BUIST'S YELLOW GLOBE DANVERS.** Entered as Yellow Globe Danvers.

**BUTTON.** Brk Bdg.

**CALIFORNIA EARLY RED.** Ebe Mrs.

**CALIFORNIA EARLY WHITE GLOBE.** ILK. For similar names see White Globe.

**CAMPBELL'S WHITE DUTCH WINTER.** Entered as White Dutch Winter.

**CANARY ISLAND.** LW.

Seedsmen's synonyms: Bermuda, LW.

**CHALLENGE YELLOW GLOBE DANVERS.** Egg. For similar names see Danvers.

**CHICAGO HIGH YELLOW GLOBE.** Brd. For similar names see Southport Yellow Globe.

**CHICAGO SILVERSKIN.** GII. For similar names see Silverskin.

**COLORADO YELLOW DANVERS.** Hns. For similar names see Yellow Danvers.

**COPPER KING.** CE Col Dd Low Kg Lac Rec Spf Vin Wd Ws.

**Similar Names.** Mammoth Copper King, Bronze King. See also Silver King, Spanish King.


**COVENT GARDEN WHITE PICKLING.** Kc. For similar names see White Pickling.

**CREOLE.** Alx Cam Eic Hde Hst Roe Shw Stk Tex Thm Vd. 

**Similar Names.** Thompson's Creole, Louisiana Creole.

Seedsmen's synonyms: Louisiana, Alx Hde Stk Tex.

**CRYSTAL WAX.** Cam Hst.

**Similar Names.** Hastings' Crystal Wax, Griffing's White Wax, White Wax.

**DANVERS.** Lan Liv. For similar names see Yellow Danvers.


**DOBBIE'S ALISA CRAIG.** Ewg.

**EARLY BARLETTA.** Bow Bri Hrs. For similar names see Adriatic Barletta.

**EARLY CRACKER.** Brk Mck.

**EARLY DANVERS.** Bri. For similar names see Yellow Danvers.

**EARLY EIGHT WEEKS.** Koe. 

**Similar Names.** King's Early Eight Weeks.

**EARLY FLAT RED.** Bng Ggy Jns MV Nj Pac Pot Sox Thr T&B. 

**Similar Names.** See Extra Early Red.

**EARLY FLAT WHITE ITALIAN TRIPOLI.** Crs Vk. 

**Similar Names.** See Giant White Tripoli.

**EARLY FLAT YELLOW DANVERS.** Kra Lw Hl P Ren SB.

**Similar Names.** See Yellow Danvers.
American Varieties of Vegetables.


Similar names. See White Dutch.

Early Italian White Globe. M&S. For similar names see White Globe.

Early Italian Yellow Globe. M&S. For similar names see Southport Yellow Globe.

Early Large Red. Hrs The Pot. For similar names see Early Red.

Early Large Red Globe. Alr Por S&R. For similar names see Red Globe.


Early Marzajola. Gls. For similar names see Neapolitan Marzajola.

Early Neapolitan Marzajola. Fer. For similar names see Neapolitan Marzajola.

Early Paris Silverskin. Kei. For similar names see Silverskin.

Early Queen. Mzy. For similar names see Queen.

Early Radish. Chl.

Seedsman's synonyms. Barletta, Chl.

Early Red. Anb Ehe Elt Fqr Mrs Mzy Rim Vin.

Similar names. Large Red, Early Large Red, Early Round Red, Extra Early Round Red, California Early Red. See also Extra Early Red.


Similar names. See Red Globe.

Seedsman's synonyms. Danvers, Liv.


Similar names. See Red Globe, Yellow Danvers.

Early Round Red. K&W. For similar names see Early Red.

Early Round Red Globe. EBC. For similar names see Red Globe.

Early Round Yellow Danvers. Ggy. For similar names see Yellow Danvers.

Early Silverskin. McK Ren. For similar names see Silverskin.

Early Silver White Paris. HP. For similar names see Extra Early Paris.

Early White Barletta. Alr Bai Col Ewg Vrg T6 McK Rea Ren Roc Thr.

Similar names. See Adriatic Barletta.

Early White Naples. Sal. For similar names see Naples.

Early White Nocera. Mud. For similar names see White Nocera.


Similar names. White Pearl, Extra Early White Pearl, Bloomsdale Extra Early White Pearl, Bloomsdale Early White Pearl, Mammoth White Pearl.

Early White Pickling. Vau. For similar names see White Pickling.

Early White Queen. Btl Bel Bai Bur Col Dw Fst T6 J&M Mgd JMP Rec SC Til.

Similar names. See Queen.


Early White Spanish. J&M. For similar names see White Spanish.


Similar names. See Yellow Cracker.

Early Yellow Flat. Fqr.

Seedsman's synonyms. Cracker, Fqr.

Early Yellow Globe Danvers. Hop. For similar names see Yellow Danvers.

Ebenezcr. V&H.

Egyptian. Bur Spd.

Egyptian Queen. Cam. For similar name, see Queen.

Eichling's Yellow Queen. Eie. For similar names see Queen.

El Paso. Anb Bai Btl Bow Cox Crt Del Dq Cgt SC Shn Tex Vin.

Similar names. White El Paso.

English Potato. Gng. For similar names see Potato.

English White Pickling. GH. For similar names see White Pickling.

Etna. Shn Thr.

Similar names. Red Etna, Silver White Etna.


Eureka Early Red Globe. CE Frd Hdp Mls Rec. For similar names see Red Globe.


Excelsior White Pickling. Dlw Ebr H&P Thr V.7.

Similar names. See White Pickling.

Extra Early Australian Brown. SB. For similar names see Australian Brown.


Similar names. See Australian Brown.


Similar names. See Adriatic Barletta.

Seedsmen’s synonyms. Earliest White Queen, Pg J&M. Early Radish, Bur. Improved Early White Queen, Bur. White Queen, Hlm.


Extra Early Combination. Bue Roc.

Similar names. Buckbee’s Extra Early Combination.

Extra Early Dark Red. Jan. For similar names see Extra Early Red.


Similar names. See Extra Early Red.

Extra Early Gold. MWJ. For similar names see Bloomsdale Gold Seal.


Extra Early Pearl. Col Jam Evr Fed Iow Lnr Man Tpk Tat.

Seedsmen’s synonyms. Silver White Elm, D&H Liv.


Extra Early Red Globe. Bkt Dun GII Ham Mrs Nol NK Pac Pug Raw Sal.

Similar names. See Red Globe.

Extra Early Red Globe Danvers. J&AS.

Similar names. See Red Globe, Yellow Danvers.

Extra Early Red Seal. MWJ. For similar names see Extra Early Red.

Extra Early Red Wethersfield. Ewg Gra. For similar names see Red Wethersfield.

Extra Early Round Red. H&C. For similar names see Early Red.

Extra Early White Barletta. Brr Evf Mic Qkr.

Similar names. See Adriatic Barletta.

Seedsmen’s synonyms. White Queen, Qkr.

Similar Names. See Early White Pearl.


Extra Early White Queen. Tat Wat. For similar names see Queen.

Extra Early Yellow Cracker. Lnr Sim. For similar names see Yellow Cracker.


Similar Names. See Red Wethersfield.

Flat Danvers. Agn Cox RE Kg Lnr. For similar names see Yellow Danvers.

Flat Red. May. For similar names see Extra Early Red.

Flat Red Bermuda. MV Mzy. For similar names see Red Bermuda.

Flat White Bermuda. MV Mzy Tat. For similar names see White Bermuda.

Flat White Portugal. Shm. For similar names see White Portugal.


Similar Names. See Yellow Danvers.


Flat Yellow Dutch. Bgs Shm. For similar names see Yellow Dutch.

Germain’s Yellow Globe Danvers. Entered as Yellow Globe Danvers.

Giant Blood Red Vesuvius. Gra. For similar names see Giant Vesuvius.

Giant Brown Rocca. RE Fur Mgd Sim SB Vn. For similar names see Giant Rocca.

Giant Madrid. Frl.

Giant Pompeii. Mau. For similar names see Mammoth Pompeii.

Giant Prize Taker. Ar Brn D&H RE Ewg Gra Kei Mc-K Ren.

Similar Names. See Prize Taker.

Seedsmen’s Synonyms. Mammoth Prize Taker, Kei.

Giant Red Garganus. CE C&B Lan JMM ReV W&D.


Giant Red Italian Tripoli. Bow Frl SB.

Similar Names. See Giant Red Tripoli.

Seedsmen’s Synonyms. Bermuda Red, Frl.

Giant Red Rocca. Alr Red Brk Bui Bar Cle DD Fst Gbln Lnr May Nol Pnt SC Shw Shm Tem Thr Wat.

Similar Names. See Giant Rocca.

Giant Red Tripoli. Alx Mau Ren Sal Shw.


Red Tripoli, Red Italian Tripoli, Giant Red Italian Tripoli, Large Red Italian Tripoli, Large Blood-Red Italian Tripoli.

Giant Red Vesuvius. Mau Ms Shm. For similar names see Giant Vesuvius.


Similar Names. Large Giant Rocca, Giant Rocca of Naples, Giant Rocca, McMillan’s Rocca King, Red Rocca, Giant Red Rocca, Light Red Giant Rocca, White Rocca, Giant White Rocca, Yellow Rocca, Giant Yellow Rocca, Tripoli Giant Yellow Rocca, Giant Brown Rocca, Lemon Rocca.

Seedsmen’s Synonyms. Red Globe, Ree.
Giant Rocca of Naples. Bag Bar Crs Frd Gls Hst Kei Lor Mau Rec Vg.

Similar names. See Giant Rocca.

Giant Silver King. Sal. For similar names see Silver King.

Giant Vesuvius. Low.


Giant White Garganus. CE C&B Elt Frd GH Lan Rec Shn Sw W&D.


Seedsmen's synonyms. Mammoth Silver King, Elt Frd W&D. Silver King, C&B Hen Lan Sw.

Giant White Italian Tripoli. Btl Bow Bui Bar Crs CA Evr Est Fer Frd GH Gry J&S Lor LB Pug Raw Rec SB S&H.

Similar names. See Giant White Tripoli.


Giant White Rocca. DD Lnr Wpn. For similar names see Giant Rocca.

Seedsmen's synonyms. Silver Ball, Bar.

Giant White Tripoli. Alx Bk Bri Brn Cm DD Fqr Ger Gdn Hst Ken Lwn Mnd Man Me MV Puc Put Rec Ren Rec Sal SC S&F Sor S&W Web.

Similar names. White Tripoli, Large White Tripoli, White Italian Tripoli, Large White Italian Tripoli, Early Flat White Italian Tripoli, Large Flat White Italian Tripoli, Large Flat White Italian, Giant White Italian Tripoli.


Giant White Victoria. Hrn. For similar names see White Victoria.

Giant Yellow. Ke Sim SB.

Similar names. Giant Yellow Tripoli, Large Yellow, Improved Large Yellow, Bloomstate Yellow.

Giant Yellow Prize Taker. Bui Hde Put SC. For similar names see Prize Taker.

Giant Yellow Rocca. Bui Bar DD Fst Lnr May MV Ren SC Shn Sor SB Thr Van Wnt.

Similar names. See Giant Rocca.

Seedsmen's synonyms. Spanish King, Bui Bar DD. Giant Lemon Rocca, Sim.

Giant Yellow Tripoli. Gdn. For similar names see Giant Yellow.

Giant Yellow Zittau. Mnd. For similar names see Giant Zittau.

Giant Zittau. Shn.

Similar names. Giant Yellow Zittau.

Gigantic Gibraltar. Bur Mw McK Rt Sim Spf.

Gladiator. Sal.

Similar names. Salzer's Gladiator.

Golden Ball. J&S. For similar names see Silver Ball.

Golden Globe. Air GN Jor Rec Shn.


Golden Globe Danvers. Buc. For similar names see Golden Globe.

Golden Oregon. Cok.

Similar names. Oregon Danvers Long Keeper, Oregon Yellow Danvers.

Golden Queen. Fst Wll. For similar names see Queen.

Golden Rono. Thm.

Globe Red Wethersfield. Fld Kra Xeb. For similar names see Red Wethersfield.

Globe Wethersfield. Fnr LB Mgd MV Mrs Sox.

Similar names. See Red Wethersfield.


Griffing's White Wax. Entered as White Wax.


Hardy Winter White. M.W. J. Sc Spf Ten W&D.


Hard Round Silverskin. Col J&S No. For similar names see Silverskin.

Seedmen's synonyms. White Pickling, Col.

Hard Round White Dutch. Thr Til. For similar names see White Dutch.

Harris' Large Red Globe. Entered as Large Red Globe.

Hastings' Crystal Wax. Entered as Crystal Wax.


Holmes' Improved Yellow Globe Danvers. Entered as Yellow Globe Danvers.

Ideal White Globe. Van. For similar names see White Globe.

Imperial. May O.V.

Similar names. May's Imperial.

Improved Early White Queen, Improved Large Yellow, Improved Large Yellow Globe, Improved Red Bermuda, Improved Red Globe, Improved White Bermuda, Improved Yellow Globe Danvers. Entered as Early White Queen, Large Yellow, Large Yellow Globe, Red Bermuda, Red Globe, etc.

Italian May. Bar.


Italian Queen. Koe Lan Sw. For similar names see Queen.

Italian Silverskin. Thr. For similar names see Silverskin.

Seedmen's synonyms. White Bunching, Thr.

Ivory Ball. J&S. For similar names see Silver Ball.

James' Long-Keeping. RHJ Koe Mc K. For similar names see Long Keeper.

James' Long-Keeping Yellow. M&S. For similar names see Long Keeper.

King of the Earliest. Sal.

Similar names. Salzer's King of the Earliest.

King's Early Eight Weeks. Entered as Early Eight Weeks.


Large Blood Red Italian Tripoli. Kei Vk.

Similar names. See Giant Red Tripoli.

Large Extra Early Red Globe. Bow. For similar names see Red Globe.

Large Flat White Italian. Gty. For similar names see Giant White Tripoli.

Large Flat White Italian Tripoli. Kei Vk.

Similar names. See Giant White Tripoli.

Large Flat Yellow Danvers. Shm Sim. For similar names see Yellow Danvers.

Large French. Sim.

Seedmen's synonyms. Welch, Sim.

Large Giant Rocca. R113. For similar names see Giant Rocca.

Large Late Red Globe. Sal. For similar names see Red Globe.

Large Mexican. Bow Cox Crs DD Ger SC Tex Vin.

Similar names. White Mexican, Mexico.

Large Pompeii.  Yk.  For similar names see Mammoth Pompeii.
Large Portuguese.  Yng.  For similar names see White Portugal.

SEEDSMEN'S SYNONYMS.  Silverskin, Yng.

Large Red.  Hnt.  For similar names see Early Red.
Large Red Bermuda.  Drm Hns Mhl Shm.  For similar names see Red Bermuda.

SIMILAR NAMES.  See Red Globe.

SEEDSMEN'S SYNONYMS.  Southport Red Globe, Brug.

Large Red Italian Tripoli.  C&B W&D.

SIMILAR NAMES.  See Giant Red Tripoli.

Large Red Madeira.  Sim.

Large Red Tripoli.  Drr RE.  For similar names see Giant Red Tripoli.


Light Red Giant Rocca. MV. For similar names see Giant Rocca.


Long Keeper. LB.

Similar names. Oregon Danvers Long Keeper, James' Long-Keeping, James' Long-Keeping Yellow, Moore & Simon's James' Long-Keeping Yellow.

Seedsmen's synonyms. Yellow Danvers, LB.

Louisiana. Alx Cam Hde Stk Tex Wd.

Similar names. Louisiana Creole.

Seedsmen's synonyms. Creole, Alx Hde Stk Tex.

Louisiana Creole. Crs Fic Gig lac. For similar names see Louisiana, Creole.

McMillan's Rocca King. Entered as Rocca King.

Madeira Red Globe. Thr.

Similar names. Large Red Madeira, White Madeira.

Mammoth Copper King. Lnr JL. For similar names see Copper King.

Mammoth Garganus. Cle.

Similar names. See Giant Red Garganus, Giant White Garganus.

Seedsmen's synonyms. Silver King, Brk Nol.

Mammoth Pompeii. Air Bel Bur Chl C&B Col Cur DD Est Iow MWJ Lan Lnr Liv JMM Ree Ren Sal Shw Shm Sim Spf Wat W&D.

Similar names. Giant Pompeii, Large Pompeii, Mammoth Red Pompeii.


Mammoth Prize Taker. Air Bel Blg Brn C&J Col Ger Haw H&C H&P Iow Kei Kg Lr JL Man Pac Shm Stw U'L Vk Wat Wdr.

Similar names. See Prize Taker.

Seedsmen's synonyms. Giant Prize Taker, Kei. Large Yellow Spanish, Wdr. Spanish King, Ger.

Mammoth Red Garganus. Thr.

Similar names. See Giant Red Garganus.

Mammoth Red Pompeii. CE Frd Hse Lnr Mls Ree Wer.

Similar names. See Mammoth Pompeii.

Seedsmen's synonyms. Copper King, Bgs Ree.


Similar names. See Giant Red Tripoli.

Seedsmen's synonyms. Bermuda Red, DD.


Similar names. See Red Victoria.


Similar names. See Silverskin.


Similar names. See Silver King.


Mammoth Spanish King. Air Lnr Shm. For similar names see Spanish King.
Mammoth White Garganus.  Brk Cys Mnd Thr Vk.

Similar names.  See Giant White Garganus.

Seedsman's synonyms.  Silver King, Cys Thr.

Mammoth White Pearl.  Ren.  For similar names see Early White Pearl.

Mammoth White Prize Winner.  Iow.  For similar names see Prize Taker.

Mammoth White Silver King.  Ar Bui May Pnt Sc Shw Wer.

Similar names.  See Silver King.

Seedsman's synonyms.  White Garganus, Pt.

Mammoth White Victoria.  Bui Bar Shm.  For similar names see White Victoria.

Mammoth Yellow Prize Taker.  J&S Mhl M&S.

Similar names.  See Prize Taker.

Mammoth Yellow Spanish.  Fer Jns Vau.

Similar names.  See Large Yellow Spanish.

Seedsman's synonyms.  Prize Taker, Fer Jns Vau.

Market Favorite.  Rll.

Marzajola.  CE Ger Rec Sal Thm.  For similar names see Neapolitan Marzajola.

Seedsman's synonyms.  Neapolitan, Ger.


Medium Early Red Globe.  Grw Tg My Tbb.

Similar names.  See Red Globe.

Medium Yellow Danvers.  Eas.  For similar names see Yellow Danvers.

Mexican.  Aub Bai Sim.  For similar names see Large Mexican.


Michigan Globe Danvers.  Bri Shm.  For similar names see Yellow Danvers.

Michigan Yellow Globe.  Brd Brn Bar Dw Ebe Fer Gf Tc Hm J&S Jns Lnr Loh Mgd May Mps Pj Rec Sie.

Similar names.  See Southport Yellow Globe.

Seedsman's synonyms.  Ohio Yellow Globes, Bar.


Minnesota Red Globe.  Mic NK.  For similar names see Red Globe.

Minnesota White Globe.  J&S NK.  For similar names see White Globe.

Moore & Simon's Early White Spanish, Moore & Simon's James' Long-Keeping Yellow, Moore & Simon's Yellow Globe Danvers.  Entered as Early White Spanish, James' Long-Keeping Yellow, and Yellow Globe Danvers.

Naples  Evt Ent.

Similar names.  Early White Naples.

Neapolitan.  Ger Vin.  For similar names see Neapolitan Marzajola.

Seedsman's synonyms.  Marzajola, Ger.


Similar names.  Neapolitan, Marzajola, Early Neapolitan Marzajola, Early Marzajola, White Marzajola.

Seedsman's synonyms.  Italian May, Bar Liv.

Nebraska Seed Co.'s White Pickling.  Entered as White Pickling.

Neckless Yellow Globe Danvers.  Sal.  For similar names see Yellow Danvers.

Northland.  mpk.

Ohio Globe Danvers. Bri Frf Lon. For similar names see Yellow Danvers.
Similar names. See Southport Yellow Globe.
Seedsman's synonyms. Michigan Yellow Globe, Bar
Opal. Tat.
Similar names. Tait's Opal.
Oregon Danvers Long Keeper. Hns Rec. For similar names see Long Keeper.
Oregon Yellow Danvers. Btl Bow Lam For S&R AGT.
Similar names. See Yellow Danvers.
Page's Perfection. Pg Vl.
Similar names. See Red Bermuda.
Paris Silverskin. CE CF Rec Sal. For similar names see Silverskin.
Paris Silverskin Pickling. D&H Gll. For similar names see Silverskin.
Paris White Pickling. May Neb OV Tpk. For similar names see White Pickling.
Seedsman's synonyms. Small Silverskin, Neb.
Paris White Silverskin. Brd CE NK. For similar names see Silverskin.
Peerless White Globe. May OV. For similar names see White Globe.
Perfection Red Globe. May OV. For similar names see Red Globe.
Philadelphia Early White Bunch. M&S. For similar names see White Bunch.
Similar names. See Extra Early Red.
Philadelphia Extra Large Early Red Wethersfield. M&S.
Similar names. See Silverskin.
Similar names. See Silverskin.
Seedsman's synonyms. Portugal, J&S. White Portugal, M&S.
Philadelphia Yellow Dutch. CE Drr J&S Rec.
Similar names. See Yellow Dutch.
Seedsman's synonyms. Strasburg, Drr J&S Rec.
Philadelphia Yellow Globe Danvers. M&S.
Similar names. See Yellow Danvers.
Similar names. See Yellow Strasburg.
Seedsman's synonyms. Dutch, M&S.
Pickling Queen. Bri. For similar names see Queen.
Similar names. English Potato.
Powhatan. GN.
Price & Reed's Improved Yellow Globe Danvers. Entered as Yellow Globe Danvers.
Prize Taker. Agn Als Anb Bak Brd Brt Btl Bkt Brl Bow Brk Brg Bgs Bri Bng
Ene Brh Bar Brr Brw Cam CE Chl Cle CB CF Ck Cox Cgr Crs Cur CA Dlw
D&H Dl J&D DlC Dcr Drw Drw Bram Dun Ehe Ebr Eit Emt Emr RE Rev Fnr Fqr Fld
Frd Gls GH Gng GN Ggy Gry G&G Grw Gt Hns Han Hrn Hrs Hrv Hst
Hvn H&C Hse Hnt Ism Jac MWJ RHJ J&M Jns K&W Ken Koe Kos Kra Lam
Lnp LB Liv Loh Mnd Mgl PM Mns Maz May JCM JMM McM Mel Milミ
Ml Mv Mrs Neb Nef Nol NK Xl Ov Old Prc Pgi Pks Hm JMP Pir Ptn Ptt Poo
Poo Pr Prq Rcr Raw Rec Rec Roh Rrt Rs RP Sal S&R S&F Shw S&O Sie
Sim Sox Spf Stk S&H S&W Tat Ten TB Thm Thl Tpk Trm T&B Vl Vns
Vnt Wcn Web W&D Wer Wll Wd Ws Wyg Yng Y&H.
ONION. 257

SIMILAR NAMES. Henderson's Prize Taker, Maule's Prize Taker, Giant Prize Taker, Giant Yellow Prize Taker, Mammoth Yellow Prize Taker, Yellow Prize Taker, Mammoth Prize Taker, White Prize Winner, Prize Winner, Mammoth White Prize Winner, Prize Taker Red Globe.


Prize Taker Red Globe. RE SB. For similar names see Prize Taker, Red Globe.

Prize Winner. Rec Thb. For similar names see Prize Taker.

Pure White Bermuda. M&S. For similar names see White Bermuda.

Queen. Anb Bai Brk Bkt Bow Brk Bdz Brn Cle C&B CF Cur Drm Eas Emr RE Ewg Fqr Fer Fld Fle Frd Ger GH Gra Gng Ggy Gry Gmd HtJ Jus Kei Ken Lam LB Loh Mnd Man JMM Mic Min MV Nef Pae Pg Pir Polo Pri Raw Sai SC Sx Sox Thn Trm T&B W&D Wll.

SIMILAR NAMES. Early Queen, Extra Early Queen, White Queen, Early White Queen, Improved Early White Queen, Tait's Extra Early White Queen, Extra Early White Queen, Silver White Queen, Golden Queen, Will's Golden Queen, Eichling's Yellow Queen, Pickling Queen, Small Queen, Egyptian Queen, Italian Queen.

SEEDSMEN'S SYNONYMS. Earliest White Queen, Frd.

Rapid White Pickling. Bel. For similar names see White Pickling.

Red Bassano. Thr.


SIMILAR NAMES. Large Red Bermuda, Improved Red Bermuda, Pale Red Bermuda, Flat Red Bermuda.

SEEDSMEN'S SYNONYMS. Giant Red Italian Tripoli, Frd. Mammoth Red Tripoli, DD.

Red Cracker. Fqr Vau. For similar names see Yellow Cracker.

Red Etna. Thr. For similar names see Etna.

Red Garganus. Lan. For similar names see Giant Red Garganus.


Red Giant. Buc Rec.

SIMILAR NAMES. Buckbee's Red Giant.

Red Globe. Ber Brk Bui Cle Del DD Drw Eit Ewg Fmr Fqr Fqr Fld Lnr Man May McK MCJ Old Prn Put Ptt Tat.


SEEDSMEN'S SYNONYMS. Giant Roosa, Rec.

1329—No. 21—02—17
Red Globe Danvers.  Eas.  For similar names see Red Globe, Yellow Danvers.
Red Globe Tripoli.  Gug RHJ.  For similar names see Giant Red Tripoli.
Red Italian Tripoli.  Brk CE Cle Mrs Ree.
Similar names.  See Giant Red Tripoli.
Red Rocca.  Lnr Pat.  For similar names see Giant Rocca.
Red Tripoli.  May Sim.  For similar names see Giant Red Tripoli.
Red Victoria.  Frd Lnr Liv Ms Mrs Ren Shw Sim Thir Van.
Similar names.  Mammoth Red Victoria.
Red Welsh.  Brn RE SB.  For similar names see Welsh.

Red Wethersfield.  Alx Brt Btr Bkt Bri Buc Cam Chd Cox Del DD Drw Fld Glb GN Hrs Hbt RHJ Kra Man Mns May McM Mic Mrs Poe Pg Pir Rs Sal Stk Thm Thl T&B Vin Wat Yng.

Red Wonder.  May OV.
Similar names.  May’s Red Wonder.
Rennie’s Yellow Danvers.  Entered as Yellow Danvers.
Rhode Island Yellow Cracker.  Dtr J&S Nol Shw.
Similar names.  See Yellow Cracker.
Rocca King.  McM.  For similar names see Giant Rocca.
Rose-Colored Delicatessen.  Evr.
Round White Dutch Pickling.  Dw.  For similar names see White Dutch.
Round White Silverskin.  Dw For Liv Loh Mic M&S Pg Pks.
Similar names.  See Silverskin.
Similar names.  See Yellow Danvers.

Seedsmen’s synonyms.  Flat Yellow Danvers, Buc Bar.
Salzer’s Giant Silver King, Salzer’s Gladiator, Salzer’s Improved Red Wethersfield, Salzer’s King of the Earliest, Salzer’s Neckless Yellow Globe Danvers, Salzer’s Sixty Day, Salzer’s White Pickling.  Entered as Giant Silver King, Gladiator, Red Wethersfield, King of the Earliest, Neckless Yellow Globe Danvers, etc.

Silver Ball.  Brn Est Ren.
Similar names.  Ivory Ball, Golden Ball.

Seedsmen’s synonyms.  Giant White Rocca, Bar.  White Rocca, Est.
Silver King.  Bai Cle C&B CE Crs Del Ehr Ewg For Fld Gra Hbt H&C Hay Kg Lnr McM Nef Ree Rei SC &O Tat Thm Thr Vin Yng.
Similar names.  Mammoth Silver King, Mammoth White Silver King, Buckbee’s Mammoth Silver King, Salzer’s Giant Silver King, Giant Silver King.

Silverskin.  Alr Amb Ar Btr Btl Bkt Egg Bgs Brn Brr C&B CE Cle Col Cox Crs Crs Crt CA Dlv D&H Del Drr Eas Emr RE Fld Frd Ger Glb Glk Gry Gry Tg Hde Hrm Hrs Hrv Hw Hnt H&P Ital Jow RHJ Koe Kos Kra Lan Liv JL Loh Mgd Mas Mau JCM JMM Mel Mhl Ms Min M&S Mzy Nol Old Pac HP
Silverskin Pickling. For similar names see Silverskin.

Silver White Etna. Grw. For similar names see Etna.

Silver White Queen. Bui Drm. For similar names see Queen.

Sixty Day. Sal.

Small Queen. For S&R. For similar names see Queen.

Small Silverskin. RE SB. For similar names see Silverskin.

Small White Barletta. For similar names see Adriatic Barletta.

Small White Nocera. RE Sim. For similar names see White Nocera.


Southport Early Red Globe. Crs Fmr Gls Ggy Hrs HP Vk. For similar names see Red Globe.

Southport Globe. Brk Thnl. For similar names see Red Globe.

Southport Large Early Red Globe. M&S. For similar names see Red Globe.


Southport Large White Globe. Bel J&S Jus M&S HP Sie VI Y&H. For similar names see White Globe.

Southport Large Yellow Globe. Ext Est J&S M&S Nol HP Van Y&H. For similar names see Southport Yellow Globe.

Southport Late Red Globe. Ggy. For similar names see Red Globe.

Southport Red. Thnl. For similar names see Red Globe.


Small Silverskin. See Southport White Globe.


Silverskin Pickling. Brn Ghr Ncb. For similar names see Silverskin.


Silver White Queen. Bui Drm. For similar names see Queen.

Sixty Day. Sal.

Small Queen. For S&R. For similar names see Queen.

Small Silverskin. RE SB. For similar names see Silverskin.

Small White Barletta. For similar names see Adriatic Barletta.

Small White Nocera. RE Sim. For similar names see White Nocera.


Southport Early Red Globe. Crs Fmr Gls Ggy Hrs HP Vk. For similar names see Red Globe.

Southport Globe. Brk Thnl. For similar names see Red Globe.

Southport Large Early Red Globe. M&S. For similar names see Red Globe.


Southport Large White Globe. Bel J&S Jus M&S HP Sie VI Y&H. For similar names see White Globe.

Southport Large Yellow Globe. Ext Est J&S M&S Nol HP Van Y&H. For similar names see Southport Yellow Globe.

Southport Late Red Globe. Ggy. For similar names see Red Globe.

Southport Red. Thnl. For similar names see Red Globe.


Small Silverskin. See Southport White Globe.


Silver White Queen. Bui Drm. For similar names see Queen.

Sixty Day. Sal.

Small Queen. For S&R. For similar names see Queen.

Small Silverskin. RE SB. For similar names see Silverskin.

Small White Barletta. For similar names see Adriatic Barletta.

Small White Nocera. RE Sim. For similar names see White Nocera.


Southport Early Red Globe. Crs Fmr Gls Ggy Hrs HP Vk. For similar names see Red Globe.

Southport Globe. Brk Thnl. For similar names see Red Globe.

Southport Large Early Red Globe. M&S. For similar names see Red Globe.


Southport Large White Globe. Bel J&S Jus M&S HP Sie VI Y&H. For similar names see White Globe.

Southport Large Yellow Globe. Ext Est J&S M&S Nol HP Van Y&H. For similar names see Southport Yellow Globe.

Southport Late Red Globe. Ggy. For similar names see Red Globe.

Southport Red. Thnl. For similar names see Red Globe.


Small Silverskin. See Southport White Globe.


Silver White Queen. Bui Drm. For similar names see Queen.

Sixty Day. Sal.

Small Queen. For S&R. For similar names see Queen.

Small Silverskin. RE SB. For similar names see Silverskin.

Small White Barletta. For similar names see Adriatic Barletta.

Small White Nocera. RE Sim. For similar names see White Nocera.


Southport Early Red Globe. Crs Fmr Gls Ggy Hrs HP Vk. For similar names see Red Globe.

Southport Globe. Brk Thnl. For similar names see Red Globe.

Southport Large Early Red Globe. M&S. For similar names see Red Globe.


Southport Large White Globe. Bel J&S Jus M&S HP Sie VI Y&H. For similar names see White Globe.

Southport Large Yellow Globe. Ext Est J&S M&S Nol HP Van Y&H. For similar names see Southport Yellow Globe.

Southport Late Red Globe. Ggy. For similar names see Red Globe.

Southport Red. Thnl. For similar names see Red Globe.


Small Silverskin. See Southport White Globe.


Silver White Queen. Bui Drm. For similar names see Queen.

Sixty Day. Sal.

Spaller's Yellow Oval Globe.  Ebe.  For similar names see Southport Yellow Globe.

Spanish King.  Alx Btr Btk Btd Bow Bng Bui Cle D&H Evr Ger GIH Jml Kg Kos Lnr Liv May Nk RP Spf SB Tat TB Trm Web Wd WS.  Similar names.  Mammoth Spanish King.  See also Silver King, Copper King.


Steele-Briggs' Giant Yellow.  Entered as Giant Yellow.

Straw-Colored.  Vin.

Seedsmen's synonmys.  Yellow Dutch.  Vin.

Sultan.  May OV Tpk.  Similar names.  May's Sultan.

Tait's Extra Early White Queen, Tait's Opal.  Entered as Extra Early White Queen and Opal.

Thompson's Creole.  Entered as Creole.

Thorburn's Excelsior White Pickling.  Entered as Excelsior White Pickling.

Top.  Brk Bdg.

Tripoli Giant Yellow Rocca.  Gmg.  For similar names see Giant Rocca.

Up-to-Date Yellow Globe Danvers.  D&H.  For similar names see Yellow Danvers.


Wampum.  Brc Roc.

Similar names.  Buckbee's Wampum.


Seedsmen's synonmys.  Large French, Sim.

White.  CA Hut Lan Mas Mhl M&S.

Similar names.  White Mildness.

Seedsmen's synonmys.  Silverskin, CA Mas Mhl.

White Adriatic.  Cle.  For similar names see Adriatic Barletta.

Seedsmen's synonmys.  White Barletta, Cle.

White Adriatic Barletta.  CE DD J&S Kra Raw Ree Shm Sie.

Similar names.  See Adriatic Barletta.

White Barletta.  Brl Brt Btk BBt Btrh CF Cox CA Drr Drw Fle Ham Hrn Ken Lbr JH, Man May JMM Mhl MV NK Sim Sec TB Van.

Similar names.  See Adriatic Barletta.

Seedsmen's synonmys.  Earliest White Queen, Man.  White Adriatic, Cle.  White Queen, Vh Ying.

White Bermuda.  Alx Btr Btk Btd Bum Bui Cam CE Cle Cox Cts Drh Eic GIH Glt GsT Grw Hst Low MWJ J&M Kei Kg Lan Lnr Liv Man May NK Pir Raw Ree Rt Sec Stk Tex Thm Thr W&D Wx UH Wd YN.

Similar names.  Pure White Bermuda, Large White Bermuda, White Wax Bermuda, Improved White Bermuda, Flat White Bermuda.

Seedsmen's synonmys.  Canary Island, low.
White Bunch. *Car Hen J&S Poo Thr W&D.*

**Similar Names.** Henderson’s White Bunch, Philadelphia Early White Bunch, Winter White Bunch.

**Seedsmen’s Synonyms.** *Italian Silverskin, Thr.*


**Similar Names.** Campbell’s White Dutch Winter, White Dutch Winter, Hard Round White Dutch, Round White Dutch Pickling, Early Hard Round White Dutch.

White Dutch Winter. *Y&H.* For similar names see *White Dutch.*

White El Paso. *Shw.* For similar names see *El Paso.*

White Garganus. *Hrn Nef Spf.* For similar names see *Giant White Garganus.*

**Seedsmen’s Synonyms.** *Mammoth Silver King, Hrn Spf. Silver King, Nef. White Mammoth Silver King, Ptl.*

White Globe. *Ab Bbl Br Hs Thm Brk Brn Buc Clh Col Cox Crs Drw Elt Red Ewg Fur Fnr Fst Fer Fld Ger Gls GN Gry Hns Ham Hrv Ken Lam Lnr LB Loh Lon Man May JC M McM NK Old Pg Pks Prr Prt For Prg For Pri Sal S&R S&F Shm Sie Trn T&B VI Vin Wna Will.*


**Seedsmen’s Synonyms.** *Southport White Globe, For Prg.*

White Italian Tripoli. *Bdg Clh Thm.* For similar names see *Giant White Tripoli.*

White Lisbon. *Hns Ren.*

White Madeira. *M&S.*

White Mammoth Flat. *Mud.*

White Marzajola. *Shw Thr.* For similar names see *Neapolitan Marzajola.*

**Seedsmen’s Synonyms.** *Italian May, Shw.*

White Mexican. *Shm.* For similar names see *Large Mexican.*

White Mildness. *Sal.* For similar names see *White.*

White Multiplier. *Brk Bdl Buc Bar Ham M&S Spf Tem.*

**Similar Names.** *Yellow Multiplier.*

White Nocera. *Kei.*

**Similar Names.** Early White Nocera, Small White Nocera.

White Pearl. *Bgs Clh Dw Drr Drn Ggy G&T Ky Man May Put Ree Shm Sim Thm Thr Wer Wlt.*

**Similar Names.** See *Early White Pearl.*


White Pickling. *Alr Bri CE Col Ham Hrv Hse Mls Neb NK OV Sal.*


**Seedsmen’s Synonyms.** *Hard Round Silverskin, Col.*

White Portugal. *Agn Alr Amb Ar Bri Bbl Bt Bker Bar Bow Bgg Brk Bdg Bgs Brn Brx Bar Brr C&CE ERC Cle C&B Col CE Cox Crg Crs Clh Dw Drr Ebe Elt Emr Evr Ewg Fmr Fnr Fst Fax Fer Fld Frd Ger Gls GH Gra Ggy Gry Graw Tgk Hde Hrn Hrn Hrs Hrv Hw Hen H&C Hlm H&P Jnd Jor J&H J&S Ju Kei K&W Koe Kos Kra Lam Lan Lcn Lwr LB Liv Jt Loh Mgd May JCM JMM Mls Min M&S Mrs Myz Nef NO NL NK OV Old Pae HP Pir Pnm Put Ptt Poo For*
AMERICAN VARIETIES OF VEGETABLES.


White Portugal Silverskin. Bri. For similar names see White Portugal, Silverskin.

White Prize Winner. J&S. For similar names see Prize Taker.


Similar names. See Queen.

Seedsmen’s synonyms. Extra Early Barletta, Hlm. Extra Early White Barletta, Qkr. White Barletta, Vl Yng.

White Rocca. Fst. For similar names see Giant Rocca.

Seedsmen’s synonyms. Silver Ball, Fst.


Similar names. See Silverskin.


White Spanish. May.

Similar names. Moore & Simon’s Early White Spanish.

White Tripoli. Anb Bri Lar May Sim Thr. For similar names see Giant White Tripoli.

Seedsmen’s synonyms. Mexican, Sim.

White Victoria. CE Drr Frd Lar Liv Mls Ren Rt Sim Thr Van.

Similar names. Mammoth White Victoria, Giant White Victoria.

White Wax. Gjs. For similar names see Crystal Wax.

White Wax Bermuda. Ian Thr. For similar names see White Bermuda.

White Welsh. Bru RE Ren. For similar names see Welsh.

Will’s Golden Queen. Entered as Golden Queen.

Winter White Bunch. Drr. For similar names see White Bunch.

Yellow Cracker. Brl Cox Fqr H&P Lam Mrs Rev Thr 17 Van.

Similar names. Rhode Island Yellow Cracker, Early Yellow Cracker, Extra Early Yellow Cracker, Leonard’s Extra Early Yellow Cracker, Red Cracker.

Seedsmen’s synonyms. Early Yellow Flot, Fqr.


Similar names. Medium Yellow Danvers, Rennie’s Yellow Danvers, Bloomsdale Danvers, Bloomsdale Early Danvers, Early Danvers, Colorado Yellow Danvers, Oregon Yellow Danvers, Michigan Globe Danvers, Ohio Globe Danvers, Philadelphia Yellow Globe Danvers, Yellow Globe Danvers, Alnëer’s Yellow Globe Danvers, Barnard’s Yellow Globe Danvers, Brock’s Yellow Globe Danvers, Brist’s Yellow Globe Danvers, Germain’s Yellow Globe Danvers, Hammond’s Yellow Globe Danvers, Henderson’s Yellow Globe Danvers, Manley’s
Yellow Globe Danvers, Moore & Simon's Yellow Globe Danvers, Improved Yellow Globe Danvers, Holmes' Improved Yellow Globe Danvers, price & Reed's Improved Yellow Globe Danvers, Salzer's Neckless Yellow Globe Danvers, Large Yellow Globe Danvers, Early Yellow Globe Danvers, Up-to-Date Yellow Globe Danvers, Round Yellow Danvers, Buckbee's Round Yellow Danvers, Early Round Yellow Danvers, Flat Danvers, Flat Yellow Danvers, Early Flat Yellow Danvers, Large Flat Yellow Danvers, Oregon Danvers Long Keeper, Buckbee's Golden Globe Danvers, Early Red Globe Danvers, Extra Early Red Globe Danvers, Red Globe Danvers, Challenge Yellow Globe Danvers.

SEEDSMEN'S SYNONYMS. Long Keeper, LB.

Yellow Dutch. Bld Bkt Edg Bdg Bri Bri Buc Bui Bar Cle Cox Crs CA D&H DD Ekt Frd Gls Gl Gt Hen Hut H&P RHIJ Lan Lur JL Mgd PM Man JMM Mhl Mls M&S Mrs Nef Nol NK OV HP JMP Ptt Pri Roe Roh RP SC Sie Sim Sox Tem Thr Til Trm 17 Vin Wat W&D Wtr Yng Y&H.

SIMILAR NAMES. Large Yellow Dutch, Philadelphia Yellow Dutch, Flat Yellow Dutch.

SEEDSMEN'S SYNONYMS. Large Yellow Strasburg, Sim. Philadelphia Yellow Strasburg, M&S. Yellow Strasburg, Bue Bui Bri Brl Mlh Tem Thr, etc. Strasburg, Bkt Bri Cox Fri JL Mls, etc. Straw-Colored, Vin.

Yellow Egg. M&S.

Yellow Globe. Btl Bk Br Crg Ekt Hst Fax Prc HP Pne Ptt Roe Sr.

SIMILAR NAMES. See Southport Yellow Globe.


SIMILAR NAMES. See Yellow Danvers.

Yellow Globe Spanish. Ebr Ken Nol Qkr S&W Thr.

SIMILAR NAMES. See Large Yellow Spanish.

SEEDSMEN'S SYNONYMS. Prize Taker, Bk Br Ebr Ken Qkr Nol S&W Thr.

Yellow Multiplier. Buc. For similar names see White Multiplier.

Yellow Prize Taker. Bui May. For similar names see Prize Taker.

Yellow Rocca. Lnr. For similar names see Giant Rocca.


SIMILAR NAMES. Philadelphia Yellow Strasburg, Large Yellow Strasburg, Bloomsdale Large Yellow Strasburg.

SEEDSMEN'S SYNONYMS. Dutch, Buc Bui Bri Bui Cur Mlh Thr, etc. Large Yellow, Ggy. Yellow Dutch, Man Sie Van.
American Varieties of Vegetables.

Orach.

(Also known as French Spinach.)

Orach. Bdg Mnd Sim.

Dark-Red. Ken.

Large Mountain. Sim.

Red. Thr.

White. Thr.

Oyster Plant. See Salsify.

Parsley.

Aineer's Emerald Beauty. Entered as Emerald Beauty.

Arlington Double Curled. Raw. For similar names see Double Curled.

Beauty. Buc Roc.

Similar names. Beauty of the Parterre, Emerald Beauty, Aineer's Emerald Beauty.

Beauty of the Parterre. Bgs CE Chl Cse Cvs For Grs Gty Mnd Roc Thr Til Vck.

Similar names. See Beauty.

Seedsmen's synonyms. Emerald, Vck.

Buist's Garnishing. Bui. For similar names see Myatt's Garnishing.


Champion. S&V Van. For similar names see Champion Moss Curled.

Champion Curled. Y&H. For similar names see Champion Moss Curled.

Champion Double Moss Curled. Sic.

Similar names. See Champion Moss Curled, Moss Curled.

Champion Dutch Erfurt. M& S. For similar names see Champion Moss Curled.


Seedsmen's synonyms. Covent Garden Garnishing, Sim. Fern-Leaved, Por S&R.

Chappell's Matchless. Entered as Matchless.

Common. CF.

Seedsmen's synonyms. Plain, CF.

Covent Garden. Bui Ewg.

Similar names. Double Curled Covent Garden, Covent Garden Garnishing, Carter's Covent Garden Garnishing.

Seedsmen's synonyms. Double Curled, Bui.

Covent Garden Garnishing. Gty Kvi Sic.

Similar names. See Covent Garden, Myatt's Garnishing.

Seedsmen's synonyms. Champion Moss Curled, Sim.
Curled.  Bdg Buc CF Crg CA Ext Hnt Lan Pug Shw.

**Similar names.** Extra Curled, May's Extra Curled, Market Gardener's Extra Curled, Giant Curled, Half Curled, Perfection Curled, Dwarf Curled, Extra Early Dwarf Curled.

**Seedsmen's synonyms.** Double, CF Eic Pug Shw.

**Curled Emerald.** Cam J&H J&S.  For similar names see Emerald.

**Curled Perpetual.** Ewg.  For similar names see Perpetual.

**Dark Double Curled.** Thm.  For similar names see Double Curled.

**Dark Moss Curled.** Mgd.  For similar names see Moss Curled.

**Dobie.** Fgr Gra Raw.


**Similar names.** Arlington Double Curled, Extra Double Curled, Improved Double Curled, Large Double Curled, Dark Double Curled, Fine Double Curled.


**Double Curled Covert Garden.** Mhl.  For similar names see Covert Garden.

**Double Curled Dwarf.** DD.

**Double Moss Curled.** Air Bon.  For similar names see Moss Curled.

**Elliott's Dwarf Perfection.** Drr.

**Similar names.** Weaver's Dwarf Perfection.

**Elliott's Green Summer.** Entered as Green Summer.

**Dwarf Curled.** GH Gra Ggy Gry Hop Sim.  For similar names see Curled.

**Dwarf Extra Curled Emerald.** CE.  For similar names see Emerald.

**Dwarf Extra Curled Perpetual.** Bui Drr.  For similar names see Perpetual.

**Dwarf Perfection.** Gen.

**Early Moss Curled.** Dlw.  For similar names see Moss Curled.

**Early Turnip-Rooted.** Dlw.  For similar names see Turnip-Rooted.

**Elliott's Emerald.** Entered as Emerald.

**Emerald.** Bt Bk Bl Buc Brr Buc Brr Cle Col Cox Del Del Del Elt Erd Grn Grn TG Ham Hcn H&J J&S Lan Mgd PM Mns Ms M&K NK Pm Roc Vv Yng.


**Seedsmen's synonyms.** Beauty of the Parterre, Vv.  Extra Curled Dwarf, Buc Bar Cox Frd J&S M&K, etc.

**Emerald Beauty.** Air.  For similar names see Emerald, Beauty.

**Emerald Gem.** MWJ Lan Rim Sie.  For similar names see Emerald.

**Evergreen.** W&D.

**Exquisite.** Grw Liv.

**Similar names.** Taber's Exquisite.

**Extra Curled.** Bn Br Bt C&J Cok DD Gra Hrv RHJ Kei Mnd May OV Pir Put Thr Tpk Wua.

**Similar names.** See Curled.

**Seedsmen's synonyms.** Double, Pug.

**Extra Curled Emerald.** Drr Hlm Liv.  For similar names see Emerald.

**Extra Curled Perpetual.** Mgd.  For similar names see Perpetual.

**Extra Dark Moss Curled.** Bar Hbt Jer PM Qkr Shw.

**Similar names.** See Moss Curled.
Extra Double Curled. Axl Bai Bug Chl Crs Cur Ebd Hrs Hen J&S K&W Ken Mid Mas JMM Mzy Xol NK HP Poo Pri Rs S&W Tat W&D Y&I.
Similar names. See Double Curled.

Extra Dwarf Curled. Brt Bkt Buc Bur C&B Cox Crd D&D Est Frd G&T Tg Ham J&S PM Mz Mel M&S Qkr Roc Yng.
Similar names. See Curled.

Seedsmen’s synonyms. Emerald, Buc Bur Cox D&C Ham Roc, etc.

Extra Early Dwarf Curled. VI. For similar names see Curled.

Extra Fine Curled. Fnc Raw. For similar names see Fine Curled.

Extra Fine Moss Curled. Shm. For similar names see Moss Curled.

Extra Moss Curled. Hst Pug S&W W&D. For similar names see Moss Curled.

Extra Triple Curled. Mrs. For similar names see Triple Curled.


Fine Curled. At Lan Rl Sw.
Similar names. Extra Fine Curled.

Seedsmen’s synonyms. Double, Env Swt.

Fine Double Curled. Brd Bur CE Liv Min Wat. For similar names see Double Curled.

Fine Triple Curled. Pge Pug Sim SB Top Vr Vn.
Similar names. See Triple Curled.

German. Sp.

Seedsmen’s synonyms. Turnip-Rooted, Sp.

Giant. M&S.

Seedsmen’s synonyms. Giant, M&S.

Garnishing. Eic Stk. For similar names see Myatt’s Garnishing.

German. Spf.

Seedsmen’s synonyms. Turnip-Rooted, Spf.

Giant. M&S.

Seedsmen’s synonyms. French Monitor, M&S.

Giant Curled. Blt. For similar names see Curled.

Green Curled Emerald. Shm. For similar names see Emerald.

Green Summer. Dtr.
Similar names. Dreer’s Green Summer.

Half Curled. Drr. For similar names see Curled.

Hamburg Large Turnip-Rooted. Hse Ken Ree.
Similar names. See Turnip-Rooted.

Similar names. See Turnip-Rooted.

Henderson’s Emerald. Entered as Emerald.

Holmes’ Ideal. 11m.

Improved Double Curled, Improved Garnishing. Entered as Double Curled and Garnishing.

Large Double Curled. Gdn Jac. For similar names see Double Curled.

Large Leaf Garnishing. Gdn Jac. For similar names see Myatt’s Garnishing.
Large Turnip-Rooted. Cur Ken RP. For similar names see Turnip-Rooted.

Seedsmen's synonyms. Hamburg, Cur Ken RP.

Late Turnip-Rooted. Dw. For similar names see Turnip-Rooted.

Long Turnip-Rooted. Til. For similar names see Turnip-Rooted.


Market Gardener's Extra Curled. Lan. For similar names see Curled.

Market Gardener's Triple Curled. Bg. For similar names see Triple Curled.

Matchless. Fqr.

Similars names. Chappell's Matchless.


Moss Curled. Ar Bai Bak Btl Bow Buc Brr CF Del Drw Eas Ebr Ewg Flk Gng GN Ggy Gry Gsg FT Hls Illy Hop Hnt J&M Ken Koe Lan JMM Min M&S Mzy Mrs Pd Pri Roc Sal SC Stw Tat Thm Thr Til Trm Wna Wyg.


Myatt's Garnishing. Crs Dlw DD Fer Fle GIs Ggy Kei K&F LB Pks Pnt SC Thm Tpk Trm Vk.


Seedsmen's synonyms. Double Curled, Trm. Moss Curled, SC. Triple Curled, DD Dlw Fer Lam LB Pks, etc.

Perfection Curled. Mhl. For similar names see Curled.

Perpetual. Elt Ewy Fqr Ggy.


Seedsmen's synonyms. Common. CF. Single. Bui Bar Eic HP S& E C Shw, etc.

Sheep. Gra.

Similar names. Sheep Field Fern-Leaved.

Sheep Field Fern-Leaved. M&S. For similar names see Sheep. Fern-Leaved.


Seedsmen's synonyms. Plain. Bui Bar Eic J&S Stw Vin, etc.


Sutton's Garnishing. Mhl. For similar names see Myatt's Garnishing.

Taber's Exquisite. D&H. For similar names see Exquisite.


Seedsmen's synonyms. Moss Curled, BtI Hns Koe Trm. Myatt's Garnishing, Dlw DD Fer Lam LB Pks, etc.

Triple Moss Curled. Bel Hrs. For similar names see Moss Curled.

Similar names. Early Turnip-Rooted, Late Turnip-Rooted, Long Turnip-Rooted, Hamburg Large Turnip-Rooted, Hamburg Turnip-Rooted.

Seedsmen’s synonyms. German, Spf. Hamburg, Bar Drs Fqr Fer Hen J&S, etc.

Weaver’s Dwarf Perfection. Wea.

Similar names. See Dreer’s Dwarf Perfection.

PARSNIP.

Abbott. Erk Hrn K&W Ree S&F Thr.


Seedsmen’s synonyms. Long Smooth, Dun Hrm K&W.

Abbott’s Hollow Crown. Eas RE.

Similar names. See Abbott, Hollow Crown.


Similar names. See Abbott, Hollow Crown.

Abbott’s Long Smooth. Brb Dun. For similar names see Abbott.

Arlington Long Smooth. Raw Rs. For similar names see Long Smooth.

Arlington Long White. Fqr Gyr S&F. For similar names see Long White.

Arlington Smooth Long White. EBC. For similar names see Long White.

Bloomsdale. Ar Dw Lan Mel Mic Rim Sw.

Similar names. Bloomsdale Half Long.

Bloomsdale Half Long. MWJ. For similar names see Bloomsdale.

Breach’s Market Garden. Erk. For similar names see Market Gardener’s.

Bruce’s Improved Hollow Crown. Entered as Hollow Crown.


Buckbee’s Sugar. Buc. For similar names see Sugar.

Burr’s Mammoth. Brm.

Carter’s Maltese. Bgs Kei. For similar names see Maltese.

Champion Hollow Crown. C&J.

Similar names. See Cooper’s Champion, Hollow Crown.

Cook’s Perfection. Cok.

Similar names. Pearce’s Perfection.

Cooper’s Champion. Gra.


Similar names. See Cooper’s Champion.

Crown. Ext Sal. For similar names see Hollow Crown.

Cup. Air Ar Crs Dw Lan Mzy Stw TB.

Similar names. Improved Cup, Guernsey Cup.

Seedsmen’s synonyms. Guernsey, Bdg Crs Mzy. Hollow Crown, Ar Bdg Sw.

Improved Guernsey, Air. Long White, Bdg. Sugar, Ar Bdg Sw. Sugar Hollow Crown, Dw Law.

Delmonico. Sal.

Similar names. Salzer’s Delmonico.

Dobbie. Ewg Fqr Gra.

Dutch Large Smooth Long Hollow Crown. Sim.

Similar names. See Long Dutch, Hollow Crown.
**Early Round.** Brd Brk Elt For Grv Hen Mnd NK Pks Ree Rec Sim S&W Thr W&D.

**Similar names.** Round, Early Short Round, Half Long Short Round, Short Round French, Early Scarlet Round French.

**Seedsman's synonyms.** Turnip-Rooted, Brk.

**Early Short Horn.** Tem.

**Early Short Round.** Man Vk. For similar names see *Early Round*.

**Early Short Round French.** Bur Jer May. For similar names see *Early Round*.

**Elcombe's Giant.** SB.

**Evans' Improved Hollow Crown.** Entered as Hollow Crown.

**Farquhar's Market Model.** Fqr. For similar names see *Market Gardener's*.


**Similar names.** Guernsey Cup, Improved Table Guernsey, Hammond's Improved Guernsey, Improved Guernsey, Long Guernsey, Half Long Guernsey, Table Guernsey.


**Guernsey Cup.** Pri. For similar names see *Cap*, *Guernsey*.

**Seedsman's synonyms.** Hollow Crown, Pri.

**Hadlock.** LB.

**Half Long.** Brw Fld Fle Mau Neb Pks Qkr Sim.

**Similar names.** Improved Half Long.


**Half Long Guernsey.** CF Hrs Y&H. For similar names see *Guernsey*.

**Half Long Maltese.** Alr GH Liv. For similar names see *Maltese*.

**Half Long Short Round.** Spf. For similar names see *Early Round*.

**Hammond's Improved Guernsey.** Entered as *Guernsey*.

**Henderson's Hollow Crown.** Entered as Hollow Crown.

**Hollow Crown.** Alx Alr Amb Bai Bak Brl Brt Btl Btk Brr Blg Bow Brg Brk Bgs Bri Brn Brn Brn Bng Buc Bui Brr Bur Cam CE EBC Cle C&B Col Cok Cox Crv Crs Cur CA Dlw D&H D D&C Drr Drm Ebe Ebr Ele Efr Emm ERW Efr Fst Fer Flbr Fle Fst Ger Gdn GH Gra Grv Gry Grg G&T Grw Tr Ghs Hle Hrm Hrn Hrv Hst Haw Hwn Hup Hse Ilw Iow Jae Jer RJH J&M Jms Kei K&W Ken Kg Koe Kos Kra Lam Lan Lar LB Liv JL Lah Lon Mnd Mgr Man PM Mns Mas May JCM McK Mic Mr Ms Min MV Mrs Mzy Neb Nol Nl NK NV Old Og Pks HP JMF Pir Pnr Pnt Ptt Poo Por Pot Pri Pug Qkr Rtk Raw Ree Ren Ree Roc Rs RP S&R SC S&B Shw S&O Sim Sox Spf Sf Sk St Sw S&H S&W Tat Ten Tex TB Thu Thr Thb Thil Til Tpk Trn T& B Vl Van Vin Wat Wea Web W&D Wer Wl Wd Wth WS Wyg Yng Y&H.

AMERICAN VARIETIES OF VEGETABLES.


Seedsmen's synonyms. Improved Half Long, McK Ren.

Large Dutch. Gig Hrv. For similar names see Long Dutch.

Large Hollow Crown. H&C. For similar names see Hollow Crown.

Large Improved Sugar. Entered as Large Sugar.

Large Smooth Sugar. TG. For similar names see Sugar.

Large Sugar. CE Cok CA Drr Dm Hde Hse Iml J&S K&F Liv JL Mns Neb Nol HP Pnt Fr Rec S&R SC S&B S&O Sox Spf Tex.

Similar names. See Sugar.


Large White Sugar. DD May OY Tpk. For similar names see Sugar.

Leonard's Market Garden. Lnr. For similar names see Market Gardener's.

Long Dutch. Bow Tpk.

Similar names. Long White Dutch, Long Dutch, Dutch Large Smooth Hollow Crown.

Long Guernsey. Kei Pac. For similar names see Guernsey.


Similar names. See Hollow Crown.

Seedsmen's synonyms. Long White Dutch, Vk. Sugar, Vk.


Long Smooth Hollow Crown. Chl Ham Hlm JMM.

Similar names. See Hollow Crown.

Seedsmen's synonyms. Large Sugar, J&S Nol.


Similar names. See Long Smooth.

Long Sugar. Ebr Low JCM Mel Sal Shm Trm. For similar names see Sugar.

Seedsmen's synonyms. Hollow Crown, Iow.

Long White. C&J Mhd MV Mzy Thr AGT Vin Wg.


**Seedsman's Synonyms.** Cup, Bd. Guernsey, Bd. Hollow Crown, Bd. Sugar, Bdg Brt.

**Long White Dutch.** Ahb Brn Crs Fer Gls Jns Lam Lnr LB Liv Loh Min Pg JMP.

**Similar Names.** See Long White, Long Dutch.

**Seedsman's Synonyms.** Long Hollow Crown, Vk. Sugar, Fer Gls Loh LB Wyg, etc.

**Long White Sugar.** Air Bac Cm. For similar names see Long White.

**Seedsman's Synonyms.** Hollow Crown, Air. Improved Hollow Crown, Bac.

**Long White Sugar Crown.** Air.

**Similar Names.** See Long White, Hollow Crown.

**Magnum Bonum.** Brd Bld Brh Cld Dlw Del DD Gdn Gra Jc Kg Man Mas May Mls OV Prn Sic Sox Tpk Trm Ynu.

**Maltese.** Bac DD Ebr RE Fqr Ggy Hrv May MV Roc Smh Sox Thr.


**Manitoba Prize Intermediate.** McK.

**Market Gardener.** Roc.

**Similar Names.** Breck's Market Garden, Leonard's Market Garden, Farquhar's Market Model.

**Pearce's Perfection.** D&H. For similar names see Cook's Perfection.

**Round.** Ger. For similar names see Early Round.

**Seedsman's Synonyms.** Turnip-Rooted, Ger.

**Salzer's Crown.** Salzer's Delmonico. Entered as Crown and Delmonico.

**Short Neck Hollow Crown.** WS. For similar names see Hollow Crown.

**Short Round French.** DD Low J&M Raw Reh.

**Similar Names.** See Early Round.

**Smooth Long Hollow Crown.** J&S JMM Xol Pac.

**Similar Names.** See Hollow Crown.

**Student.** Bdg Bru Bui Cdr Del DD Drr Ebr Ewr Ewr Fqr Gry TG RHJ May JMM Mhl Mr JF Xef Sal S&F Ser SB Wea W&D Yng.

**Similar Names.** Sutton's Student.

**Seedsman's Synonyms.** Guernsey, Bui Drr Mhl Xef. Hollow Crown, Bgd.

**Sugar.** Ax Ar Bui Brh Cmn Col CF Frg Fqr Gdn GN G&T Haw Hnt Jac J&M Ken Lan Lam Lnr LB Mhl Min Pg Roc Shw S&O Sck Stk Stw TB Thm Til Wht Wd WS Wyg Y&H.

**Similar Names.** Buckbee's Sugar, Wood's Sugar, Improved Sugar, Wood's Improved Sugar, Large Improved Sugar, Long Sugar, Long-Smooth Sugar, Large White Sugar.


**Sugar Cup.** TB.

**Seedsman's Synonyms.** Hollow Crown, TB.

**Sutton's Student.** Bd. CE RE Gng Hse Kei M&S Pri Ren Reh.

**Similar Names.** See Student.

**Seedsman's Synonyms.** Long Smooth, M&S.

**Table Guernsey.** Iow. For similar names see Guernsey.

**Thorburn's Hollow Crown.** Entered as Hollow Crown.

**Turnip-Rooted.** Brk Eas Ger MWJ Stw.

**Seedsman's Synonyms.** Early Round, Brk. Round, Ger.
272 AMERICAN VARIETIES OF VEGETABLES.

White. Roc. For similar names see Long White.

SEEDSMEN'S SYNONYMS. Improved Hollow Crown, Roc.

White Maltese Hollow Crown. M&S.

SIMILAR NAMES. See Maltese, Hollow Crown.

Wood's Improved Sugar. Entered as Wood's Sugar.

Wood's Sugar. Wd. For similar names see Sugar.

Zimpfer. JL.

SIMILAR NAMES. Zimpfer's Long White.

Zimpfer's Long White. Liv. For similar names see Zimpfer, Long White.

PEA.


Abbot of Bardney. Bkt Grn Rog.

Abbot of Reading. Bkt.


SIMILAR NAMES. Blis' Abundance.

Acme. Wd.

SIMILAR NAMES. Wd's Acme.

Admiral. All Bae Bgs Buc Brl Cle Fer Frd Frd Gls GHR Grn G&T Hrm Hrn Hrv Hen Hlm Hme Hnl J&S Lan Lar Liv Man Mau Ptt Ree Rog Rog Shw Spr SB Vl Wit.

SIMILAR NAMES. Admiral Dewey, All's Admiral Dewey.

Admiral Dewey. All Air Brd Bkt Bfg Frd Ggy TG H&P K&W Ken Lar JMM Rs TR 1'7 Van Vea.

SIMILAR NAMES. All's Admiral Dewey, Admiral.


SIMILAR NAMES. McLean's Advancer, Vincent's Advancer.

SEEDSMEN'S SYNONYMS. Proud Champion, Vk Tem.

Alameda Sweet. Cox Vin.

SEEDSMEN'S SYNONYMS. Yorkshire Hero, Cox.

S&H S&W Tat Tem Tex TB Thm Thr Thb Til Tpk Tru VI Van Vk Wea W&D Wer Wd WS Wyg Y&H.

**Similar Names.** Early Alaska, Extra Early Alaska, Cleveland’s Alaska, Cleveland’s Early Alaska.

**Seedsmen’s Synonyms.** *Earliest of All*, Buc Bow For Fer Lam Raw, etc. *Laxton’s Earliest of All*, Bar Elt TG.

**Alderman.** Bar.

*Allan’s Admiral Dewey,* Allan’s Dwarf Telephone, Allan’s Gradus, Allan’s Improved Telephone, Allan’s Maud S., Allan’s Sunol. Entered as *Admiral Dewey, Dwarf Telephone, Gradus, Telephone, Maud S.*, and Sunol.

**Allan’s Number One.** All.

**Alliance.** Bui Jac.

**Seedsmen’s Synonyms.** *Eugene*, Bui Gdn.

**Almeer’s First and Best.** Entered as *First and Best*.

**Alpha.** All Brk Bdg Res Bui CE Cle C&B Crs & H D D Dm Bnr Ebr Eic Elt Emr Ewg Fer Ggy Grm Gry Tg Hrn Hen Hct Hme K&W Ken Lam Lnr Mund Mas JMM MV Mzy Pg Prn Ree Sim Soe Stk S&W Tat Thr W&D.

**Similar Names.** Improved Alpha, Laxton’s Alpha.

**Ameer.** Drw Hme J&S.

**American Champion.** All Brg Brk Bar Brt CE C&B Elt Frd Gh Grn Hrn Hen Hse Mns JCM JMM Prn Pot S&W Tel Vk W&D Wdr.

**Similar Names.** See *Champion of England*.

**Seedsmen’s Synonyms.** *Duke of Albany*, Bkt Brk For Ree Thr Vk, etc.

**American Tom Thumb.** Crs Hme. For similar names see *Tom Thumb*.

**American Wonder.** Aix All Alr Anb Ar Bai Bdk Bkd Bkt Bt Bt Bel Ber Big Bon Bow Brgy Brk Bdg Bgs Brn Bnt Bng Bui Bar Brr Brw C&J Cam CE Clc C& B C J C Cox Crz Crs Car AC Chm Dw D&H Del DD Drr Dw Drn Dun Eas Ebe Ebr Elc Eic Elt Emr RE Evr Ewg Emr Fpr Fst Fst Fax Fer Fer Fld Ger Gdn Gh Gra Gng Ggy Grm Gry Ggf G&T Grw Tg Hns Ham Hde Hrn Hnr Hrs Hrv Hst Hwn Hen H& C Hm Hop Hse Hme Hnt Hm Jow Jc WJ M J & S J S & J Bki Kei Kel K&W Ken Kg Koe Kos Kra Lam Lan Lea Lnr LB Liv LL Loh Lon Mund Mgd Man PM Mas Man May JCM JMM Mck Mcm Mic Mhi Mls Min MV M&S Mzy Nol Nt Nk Ol Old Pac Pg Pks HP J M Prn Prn Pte Ptt Pto Pot Prn Prng Rtk Raw Rec Rec Log Rl Rs RP S&R SC S&F S&B Shaw S&O Shi Shi Sim Sim Sox Spf Spr Stk SB Sw S&W Tat Tem Tex TB Thm Thr Thb Til Tpk Trm T&T VI Van Vk Vin Wat Wea W&D Wer Wd WS Wyg Y&H.

**Similar Names.** Bliss’ American Wonder, Improved American Wonder.

**Anticipation.** RE.

**Arthur Field.** SB.

**Barnard’s Leader.** Brd.

**Barrett’s Maud S.** Entered as *Maud S*.

**Bell’s Extra Early.** Entered as *Extra Early*.

**Bergen Fleetwing.** All Ebe Ggy Haw Ree.

**Similar Names.** Grenell’s Extra Early Bergen Fleetwing, Fleetwing, Extra Early Bergen Fleetwing.

**Bishop.** Sqr.

**Bishop’s Dwarf Long Pod.** Stk. For similar names see *Bishop’s Long Pod*.

**Bishop’s Improved.** Entered as Bishop.

**Bishop’s Long Pod.** Hme.

**Similar Names.** Bishop’s Dwarf Long Pod, Bishop’s Improved.

**Black-Eyed Marrowfat.** Aix All Alr Anb Ar Bai Bdk Bkd Btl Bt Bt Bel Bon Bow Brgy Brk Bdg Bgs Brn Bnt Bng Bui Brb Brn Brw C&J Cam CE Cle C&B Crg Crs Car Drr Dw Drn Eas Ebe Ebr Eic Elt Emr RE Evr Ewg Fpr Fst Fax Frd Ger Gds Gdn 1329—No. 21—02—18.
AMERICAN VARIETIES OF VEGETABLES.

GH Gra Ggy Gra Gry GgG Grw TGi Ham Hrm Hst Haw Hen H&C Hlm Hop
Hme Ilow Jac MWJ J&S Jus Kei K&W Ken Kg Koa Kra Lan Lea Lnr Liv JL
Mind Man PM Mno Man May JCM JMM McM Mhl MV Mzy Ncf Nol NK OV HP
Pra Pnc Pnt Ptt For Pot Pri Pip Qkr Raw Rec Reg RP S&K SC S&F S&O Sim
Sie Sim Sox Spf Spr Sth SB S&W Tat Tem Tex Thm Thb Tpk Trm Vl Van
Vin W&D Wer Wll Wlt Wd WS Y&H.

Similar names. Large Black-Eyed Marrowfat, Early Black-Eyed Marrowfat,
Large White Black-Eyed Marrowfat, English Dwarf Black-Eyed Marrowfat,
Peruvian Black-Eyed Marrowfat. See also Marrowfat, White Marrowfat.

Entered as Abundance, American Wonder, Everbearing, and Stratagem.
Bliss' Wonder. Tpk. For similar names see English Wonder.

Blue Beauty. All BAI Bru Bui Crs Del Drr Drm Eic GH Hen Hme Lnr Mhl
M&S Nol Ptt Rec SC Sth Thr.

Similar names. See English Beauty.

Seedsmen's synonyms. Perfection, All.

Blue Field. Lnr.

Blue Imperial. BiG Bdg Bru Cle Crg Drr Dun Ewg GH Gra Grn Hme MWI J&S
Kei Lan Lnr Mhl Rec Rog Sim Tat W&D.

Similar names. Dwarf Blue Imperial.

Blue Peter. All BAI Bow Bdg Bru C'E Cle Cox Crg Crs DD Dbl RE Ewg Fer
GI Gig Gry G&T Hrs Haw H&C Hme J&S Kei Lan Lnr May JCM JMM Mzy
PKS JMP Pnt Rec RP Sal S&F Sim Trm Vin WEI W&D Y&H.

Similar names. McMahan's Blue Peter.


Blue Prussian. Ger GH Hme J&M Lam Pug S&K Sqr SB Wer.

Seedsmen's synonyms. Green Field, Pug.

Blue Tom Thumb. Bow Lnr Vin. For similar names see Tom Thumb.

Seedsmen's synonyms. Blue Peter, Bow Fer G&T H&C J&S RP Vin.


Bountiful. M&S.

Similar names. Moore's Bountiful.

Breck's Excelsior. Brk. For similar names see Nott's Excelsior.


Bridgeman's Extra Early. Entered as Extra Early.

Briggs' Extra Early. Entered as Extra Early.

British Queen. All Hme Lnr W&D. For similar names see Queen.

British Wonder. Gra Lnr. For similar names see English Wonder.

Bruce's C P R. Bru.

Brunning's Extra Early. Entered as Extra Early.

Buckbee's Extra Early Tom Thumb, Buckbee's Lightning Express, Buckbee's
Mammoth Melting Sugar, Buckbee's Starbler. Entered as Extra Early Tom
Thumb, Lightning Express, Mammoth Melting Sugar, and Starbler.

Buist's Morning Star. Entered as Morning Star.

Burpee's Best. McM. For similar names see McMillan's Best.

Burpee's Extra Early, Burpee's Profusion, Burpee's Quality, Burpee's Quantity.
Entered as Extra Early, Profusion, Quality, and Quantity.

Canadian Beauty. Gra Hme. For similar names see Canadian Field.

Canadian Blue Field. C&R Cur Ham Hen Lnr Wyg.

Similar names. See Canadian Field.

Canadian Field. Brt Bkt Bag Bgs Bng Bui Bur Brr Brw C/J C'E CF Del DD Drw
Dun Ebe Ebr Elt Fmr Fqr Fst Ger Grg G&T Grw Ham Hrn Hrs H&C Hlm Hls
MWJ J&M J&S Ken Kg Lam Lan Liv Mgd May JCM JMM Mhl Mls Mzy Neb Nol Old Pg JMP Pir Ptt Pri Qkr Raw Rec Rog Rt Rs S&F Shw Sie S&H Tat TB Thr Tm Vn Van Wea W&D Wd WS Y&H.

**Similar Names.** Canada Green Field, Canadian Blue Field, Canada White Field, Canadian Yellow Field, Canadian Beauty.

**Canadian Green Field.** Btl Brk Col Fmr GH Ham Hbt Lnr Neb Old Sox Web Wyg.

**Similar Names.** See *Canadian Field*.

**Canadian White Field.** Ar Ber Brk CE C&B Col Cur Frd Gls GH Ham Hen Hnd Jow K&W Kos Lnr Pot SC Sox Wer Wil Wyg.

**Similar Names.** See *Canadian Field*.

**Canadian Yellow Field.** Hbt. For similar names see *Canadian Field*.

**Canner's Favorite.** All.

**Similar Names.** Gardener's Favorite, Grant's Favorite, Market Gardener's Favorite, Nebraska Seed Co.'s Favorite, Favorite.

**Caractacus.** Cle Sqr.


**Champion of England.** Alx All Air Anb Ar Bai Brd Brl Btl Bkt Bcl Big Bon Bow Bgg Brk Bdg Bgs Bri Brn Brn Bng Bne Bui Brb Brr Brw C&J Cam CE Ctl Cle C&B Col CF Cox Crg Crs Cur CA Chm D&H Dl Dl Drr Drw Dnn Dn Eas Ebe Ebr Eic Elt Emr RE Exr Ewg Fmr Fqr Est Fax Frd Fld Fle Frl Ger Gls Gdn GH Gra Gmg GX Ggy Grm Gry Ggg G&T Grw TG Hns Ham Hde Hrn Hrr Hrs Chr Hst Haw Hen H&C Hly Hmu Hop Hse Hnc Hnt H&P Imf Low Jae MJW RIJ J&S Jns Kei Kel K&W Ken K&F Kg Kos Kra Lmn Lan Lea Lnr LR Liv JL Loh Mnd Mgl Man PM Mow Mas Man May JCM JMM McK McM Mcie Mhl Min MV M&S Mzy Neb Nef Nol NJ NK O V Old Pg Pks HP JMP Pir Pmn Pne Pnt Ptt Pri Pug Raw Rec Rim Rec Rog Rt Rg S&F S&B Shw S&O Shn Sje Sje Sim Sox Spf Stk Sw S&II S&W Tat Ten Tex Thm Thr Thb Thl Til Tpk Tm T&B VI Van Vn Vin Wt Web W&D Wer Wil Wlt Wd WS Wyg Yng Yk&H.


**Charmer.** Vk.

**Similar Names.** Vick's Charmer.

**Chelsea.** Elt Fle Grn Hen Lan Mdn Mas Rog Sqr Tem Thr Wea W&D.

**Childs' Morning Star.** Childs' Universal. Entered as *Morning Star and Universal*.

**Claudit.** Brk Ggy Sqr 1'k Wd WS.

**Clay-Colored.** MWJ.

**Cleveland Market.** Til.

**Cleveland's Advance.** Cleveland's Alaska, Cleveland's Early Alaska, Cleveland's Eclipse, Cleveland's First and Best, Cleveland's French Canner, Cleveland's Improved Tom Thumb, Cleveland's Rural New Yorker, Cleveland's Stratagem, Cleveland's Sugar Marrow. Entered as *Advance, Alaska, Early Alaska, Eclipse, First and Best, French Canner, Tom Thumb, Rural New Yorker, Stratagem*, and *Sugar Marrow*.

**Clipper.** Brk Raw S&F.

**Similar Names.** Rawson's Clipper.

**Seedsmen's Synonyms.** *Earliest of All, S&F.*
Conqueror.  Hme.
  Similar names.  Bruce’s Early Conqueror, Early Conqueror.
Cooper’s Goliath.  Entered as Goliath.
Cox’s Earliest of All.  Entered as Earliest of All.
Crooked.  SB.
Crosman’s First and Best.  Entered as First and Best.
Crown Prince.  Bkt Gm J&S.
Culverwell’s Telegraph.  Entered as Telegraph.
  Similar names.  Carter’s Daisy, Moore’s Daisy, Vick’s Daisy.
  Seedsmen’s synonyms.  Dwarf Telephone, C&J J&S Man Pitt Ree Wdr, etc.
Dandy.  GJ Neb Pri Spr.
  Similar names.  Price & Reed’s Dandy, Squire’s Dandy, Michell’s Dandy
  Extra Early, Dandy Extra Early.
Dandy Extra Early.  Bti Mhl.  For similar names see Dandy.
  Similar names.  Improved Daniel O’Rourke, Improved Early Daniel O’Rourke,
  Extra Early Daniel O’Rourke, Early Daniel O’Rourke.
  Seedsmen’s synonyms.  Hancock, J&S.  Philadelphia Extra Early, J&S.
Darch & Hunter’s Little Giant.  Entered as Little Giant.
Day’s Early Surise.  Entered as Early Sunrise.
Dexter.  G&I TG May.
  Similar names.  Early Dexter, Improved Early Dexter.
Dickmann’s Extra Early, Dickmann’s Prize Taker.  Entered as Extra Early and
  Prize Taker.
Doctor McLean.  All D&H XI Ren.  For similar names see McLean’s Advance.
Don.  W&D.
Dreer’s Electric Extra Early, Dreer’s Eureka Extra Early, Dreer’s Extra Early
  Pioneer.  Entered as Electric Extra Early, Eureka Extra Early, and Extra Early
  Pioneer.
Duchess.  Brg Hme.
Duchess of York.  Grn.  For similar names see Duke of York.
Duke of Albany.  All Brd Bkt Brg Brk Buc Bnr Bur Cam CE CF Cos Dlw Ewg
  Fqr Fdl GII Grn TG Hrm Hrs Hln Hme Iml J&S K&W Lan Lnr Liv NcK
  Nul Qkr Ren Ree Roe Rog Sic Spr SB S&W Thr Til Wct Wdr Wgy.
  Seedsmen’s synonyms.  American Champion, Bkt Brk Fqr Hrs Ree Thr, etc.
Duke of York.  All Bkt Brg Brk Bdg CF Dyr Fqr Gry Grn Hrv Hme Lan Lnr
  Mhl Raw Ree Rog S&R S&W Thr Til Wct W&D.
  Similar names.  Duchess of York.
Durban’s Market Garden.  A1x.  For similar names see Horsford’s Market Garden.
Dwarf Blue Imperial.  Alx All Bti Bnr Fst HIm Hmn JCM Pir Shm Sk Tm Yng.
  Similar names.  See Blue Imperial.
Dwarf Champion.  Bdg Brb Brr CE C&B Cos Dun Ear Eas Emr Fbl GII Gry Hrn
  Hw Iml Hw Lnr Mds Min Mzy Pg Prn Raw Ree Rs S&O Til Y&H.
  Seedsmen’s synonyms.  Yorkshire Hero, Mzy Prn Pitt Rs.  McLean’s Advance,
  Vk Tem.
Dwarf Champion of England.  Hop W&D.


Dwarf Debarbieux.  Rog.

Dwarf French Sugar.  Fr.  For similar names see French Sugar.


Dwarf Gem.  Spf.

Dwarf Giant-Podded Prolific Green Marrowfat.  Big Mus.

Similar Names.  See Marrowfat.


Similar Names.  See Gray Sugar.

Seedsmen's Synonyms.  Dwarf Sugar, Wyg.

Dwarf Green Wrinkled Marrowfat.  G&T.  For similar names see Marrowfat.

Dwarf Marrowfat.  RLP Mgd.  For similar names see Marrowfat.

Dwarf Profusion.  Sal.  For similar names see Profusion.


Seedsmen's Synonyms.  Dwarf Gray, Wyg.


Similar Names.  See Telephone.


Dwarf Tom Thumb.  Ber Hnt Liv.  For similar names see Tom Thumb.

Dwarf White Blossom.  Hm.

Dwarf White Marrowfat.  All Brd Brk Drm Ebe Elt Fnd Gtm Gyn Gry Hde Hrs Hme low PM McM HP JMP Raw RP S&F S&H S&I Tl Vl Van Wea.

Similar Names.  See White Marrowfat.

Dwarf White Missouri Marrowfat.  Ken S&F.

Similar Names.  See White Marrowfat.

Dwarf White Sugar.  Cle Drr Ntl.  For similar names see Dwarf Sugar.

Dwarf White Sugar Marrowfat.  Bui.  For similar names see White Marrowfat.


Similar Names.  See Dwarf Sugar.

Earliest and Best.  Hm.  For similar names see First and Best.

Earliest Dwarf.  K&W Ptu.  For similar names see Earliest of All.

Seedsmen's Synonyms.  Tom Thumb, Put K&W.

Earliest Dwarf Jumbo.  Sal.

Similar Names.  Salzer's Earliest Dwarf Jumbo.

Earliest Market.  Elt Kg.

Similar Names.  King's Earliest Market.

Earliest of All.  All Bow Buc Bnr Brr C & Co Cox Ebe Efr Fax Fer Ftc Fty Hln Hme Hr Hl L & H Loh Man Mzy Pg Pot Pri Qkr Raw Rece Rog RP S&F Sic Tat Van.

Similar Names.  Cox's Earliest of All, Laxton's Earliest of All, Maule's Earliest of All, Hampden's Earliest, Plant's Earliest Dwarf, First of All, Hunt-
Saskatchewan's First of All, Kendel's First of All, Schisler-Corneli's First of All, Thompson's First of All, Will's First of All, Earliest Dwarf.


Earliest Perfection. Shm. For similar names see Perfection.

Early Alaska. Air Eiv Hig Hle LB Lon Stk. For similar names see Alaska.

SEEDSMEN'S SYNONYMS. Earliest of All, Lon.

Early Black-Eyed Marrowfat. Sic. For similar names see Black-Eyed Marrowfat.

Early Bountiful. Brr.

Early Conqueror. Brr. For similar names see Conqueror.

Early Daniel O'Rourke. Buc Bui Br Crg Fax Fer LB JMM Shm. Similar names. See Daniel O'Rourke.

Early Dexter. All Btt CF Elt Fqr Ptt S&F Trm. For similar names see Dexter.

Early Dwarf. RHS.

Early Dwarf Sugar. C&B. For similar names see Dwarf Sugar.

Early Dwarf Wrinkled Sugar. Brk. For similar names see Dwarf Sugar.

Early Eclipse. NoL.

Early Frame. Bui Crg Lan SC.

Similar names. Improved Early Frame.

SEEDSMEN'S SYNONYMS. Early May, Ar SC Stk. Early Washington, Stk.

Early French. S&W W&D. For similar names see French Sugar.

Early Gradus. Bae D&H GN Roc. For similar names see Gradus.

SEEDSMEN'S SYNONYMS. Prosperity, Bae D&H Roc.

Early Hancock. Cle. For similar names see Hancock.

Early June. Crs Mhl M&S.


SEEDSMEN'S SYNONYMS. Early May, JCM.

Early May. Ar Bae Bui Cle Crg D0 Gdn Jce MWJ Lan LB Mens Roc Sal Shw Stk.

Similar names. Early May, Improved May.

SEEDSMEN'S SYNONYMS. Early Frame, Ar SC Stk. Early Kent, JCM. Early Washington, Stk.

Early Morning Star. Cle GH Hly Jce. For similar names see Morning Star.

Early Norther. GN.

Early Philadelphia. Brr. For similar names see Extra Early Philadelphia.

Early Premium Gem. Col Cak Ptt. For similar names see Little Gem.

Early Prize. Ggy Man.

Early Record. Mic.

Similar names. Michael's Early Record.

Early Sugar Marrowfat. M&S.

Early Summit. TB.

Early Sunrise. CA Ggy Shw. For similar names see Sunrise.

Early Surprise. TG Rz. For similar names see Surprise.

Early Tom Thumb. Bui JMP Stk Wyg. For similar names see Tom Thumb.


SEEDSMEN'S SYNONYMS. Early Frame, Stk. Early May, Stk.

Early Wrinkle. Src.

Similar names. Lohrman's Earliest Wrinkled.

Ebeling's Telephone. Entered as Telephone.

Eclipse. All Bgg Brk Brb Brr CE D&H Dnn Elbe Ggy Grn Gry Hrn H&C Hme Jus K&W Ken May JCM JMM Pot Roc Wd.

Similar names. Cleveland's Eclipse, Tait's Extra Early Eclipse.

SEEDSMEN'S SYNONYMS. Gregory's Surprise, J&M Roc Wdr. Surprise, Brk Ptt.

Edible Pod Sugar. Bel Fdl Grw NK. For similar names see Melting Sugar.
Edible Pod White Sugar.  MWJ.  For similar names see Melting Sugar.

Egyptian Mummy.  SB.

Eichling's First and Best.  Entered as First and Best.

Electric Extra Early.  Dr.

Similar names.  Dree's Electric Extra Early.

Electric Light.  D&H.

Elephant.  Bgs.

Similar names.  Carter's Elephant.

Emerald Gem.  M&S.  For similar names see Little Gem.

Emerson's Dwarf Champion.  Entered as Dwarf Champion.

Empire State.  Evr Ggy S&H.

Encore.  Tlh.

English Beauty.  Sqr.

Similar names.  Mills' Mammoth Beauty, Blue Beauty, Mammoth Beauty.

English Dwarf Black-Eyed Marrowfat.  M&S.

Similar names.  See Black-Eyed Marrowfat.

English Dwarf White Marrowfat.  M&S.  For similar names see White Marrowfat.

English Wonder.  All Gra Lor Sqr Vk.

Similar names.  British Wonder, Matchless Wonder, Bliss' Wonder, Wisbeech Wonder.

Enormous.  Ms.

Similar names.  Mills' Enormous.

Eugenie.  Bui Gdn Hme Jac Lan Stk.

Seedsmen's Synonyms.  Alliance, Bui Gdn.

Eureka Extra Early.  Bui Drr Mbl.

Similar names.  Dree's Eureka Extra Early.

Evans' Extra Early.  Entered as Extra Early.

Everbearing.  All Anb Ar Bai Bak Brd Brt Btl Bel Ber Bld Bon Bow Bgg Brk Bdg Bgs Brn Bue Bui Bub Bar Brs C&J Cam CE Chl Cle C&B Col CF Col Crs Cnr Cmn Del DD Drr Drm Dun Eas Ech Ebr Eft Emer Evr Ewq Emm Fpr Fax Fst For Frl Frd Ger Gls Gil Gra Gx Gzy Grn Gry G&T Gre Tli Hms Hpr Hrd Hrs Hst Hwh Hen Hht H&H Hly Hln Hop Hse Hme Hnt H&P Hnh Imd Iow MLH REl J&K J&S Jns Kel K&W Kg Lam Lan Ldr LB Liv Jl Mdl Mgs Mss Mw May JCM JMM Mck Mhl Msj MV M&S Myy Neb N1 NK OY Pcg Pg HPM JMP Pir Prn Put Ptt Por Pot Png Qkr Raw Ren Rim Roe Rm RP S&R SC S&F Slw S&O Shm Si Sim Sos Sqr Stw S&H S&W Tum Tex Thm Thr Tlh Tlp TkM Tm Vn Vx Wd W&D Wll Wd WS Wyg Yg Y&H.

Similar names.  Bliss' Everbearing.

Everitt's Extra Early Reliance.  Entered as Extra Early Reliance.


Similar names.  Laxton's Evolution.

Excelsior.  Gzy Mnd Pir.  For similar names see Nut's Excelsior.

Exhibition Marrowfat.  Hme.  For similar names see Marrowfat.

Exonian.  Rr For Hro Hme Lan Rer S&W Thr W&H.

Express.  WS.  For similar names see Lightning.

Extra Early.  Ar Bak Bel Bldg Bgs Bri Brn Bng Bui Bar Cam CE Crg Crs Ca Chm Dlw Dd Drm Dnt Ehr Ee RE Est Fer Fld GI Hm Hop Hnt H&F MWJ J&S Jns Kel K&W Kg Koe Lan Loh Mdl Man Mcm Mhl Min Nol Pg Pks HP Prn Pnc Put Pri Ren Rev Rim RP Spf Std SB Stw TB Til Vl Vd.

Similar names.  Improved Extra Early, Bell's Extra Early, Bridgeman's Extra Early, Briggs' Extra Early, Brumming's Extra Early, Burpee's Extra Early, Dickmann's Extra Early, Faust's Extra Early, Harden's Extra Early, Johnson & Stokes' Extra Early, Jones' Extra Early, Landreth's Extra Early, Manue's Improved Extra Early, Mingle's Extra Early, Noll's Extra Early,

**Seedsmen's Synonyms.** First and Best, CA Skic Union.

**Extra Early Alaska.** Big Brn Gym CE Col Crg Ist Jl Mtn Mhl HP Shw.

**Similar Names.** See Alaska.

**Extra Early Bergen Fleetwing.** Grn. For similar names see Bergen Fleetwing.

**Extra Early Challenge.** Cur.

**Similar Names.** Cuttie's Extra Early Challenge.

**Extra Early Daniel O'Rourke.** Buc Ggy Roe Tpk.

**Similar Names.** See Daniel O'Rourke.

**Extra Early Depoit.** Tat.

**Extra Early Dwarf Brittany.** SB.

**Extra Early Eclipse.** Put Tat.

**Extra Early Gradus.** Bui Yng. For similar names see Gradus.

**Seedsmen's Synonyms.** Prosperity, Bui.

**Extra Early Headlight.** Crg.

**Extra Early Kent.** Anb Bgs Buc LB Mag RP Shm.

**Similar Names.** See Kimish Inwota.

**Extra Early Manifold.** McK.

**Extra Early Market.** Cle C&B Mw Ebr Kos McK Thr Tlh.

**Similar Names.** Koss' Extra Early Market, Thorburn's Extra Early Market, Market Gardener's Extra Early, Holmes' Market Gardener's Extra Early.

**Extra Early Maude S.** Brr Hde Put Shw Wlt. For similar names see Maude S.

**Extra Early Morning Star.** Big. For similar names see Morning Star.

**Extra Early Nonpareil.** Big Tat. For similar names see Nonpareil.

**Extra Early Philadelphia.** Anb Bgs Bui Buc Cur Bar CE Cle C&B Cox Crg Crg Crg Del DD Ple Fst Gdn GH Ggy Grw Tg Hde Hrn Hrn Hrv Hst Hln J&S K&W Lan LB Ltr Mag JCM JMM McK Neb Pne Pri Ren Roe Roe Rs RP SC Shr Shm Spj Tat Tex TB Tpk Ttm T&J Wld Wat Wd Wd WS Yng Ye H.

**Similar Names.** Shumway's Extra Early Philadelphia, Early Philadelphia, Philadelphia.

**Seedsmen's Synonyms.** Daniel O'Rourke, J&S. First and Best, Wlt. Hancock, J&S.

**Extra Early Pioneer.** Drr.

**Similar Names.** Dreer's Extra Early Pioneer.


**Similar Names.** See Little Gem.

**Extra Early Reliance.** Est.

**Similar Names.** Everitt's Extra Early Reliance.

**Extra Early Rural New Yorker.** Shm.

**Similar Names.** See Rural New Yorker.

**Extra Early Star.** Ewg. For similar names see Morning Star.

**Extra Early Summit.** CE NK.

**Similar Names.** Northrup, King & Co.'s Summit Extra Early.

**Extra Early Surprise.** Shr.

**Extra Early Telephone.** Bkt. For similar names see Telephone.

**Extra Early Tom Thumb.** Brn Buc Fer LB MV Pks Roe Shw Shm Sor S&H.

**Similar Names.** See Tom Thumb.

**Seedsmen's Synonyms.** Strawberry, Buc Roe.
Extra Early Vermont.  Haw.

Extra Early Wrinkled.  Kg.

Extra Large Black Eye.  1st.

Name.  Ar Stk.

Family Garden.  Man.  For similar names see Horsford's Market Garden.

Faust's Extra Early.  Entered as Extra Early.

Favorite.  Neb.  For similar names see Ganner's Favorite.

Ferry's Extra Early Tom Thumb, Ferry's First and Best.  Entered as Extra Early Tom Thumb and First and Best.

Fillbasket.  All Bdg Bui Cle Drg Forg Gsy Grn Hen Hme J&S May Mhi M&S Pri Recg Shw Sqr Ten Thr Ten W&D.

Similar names.  Laxton's Fillbasket, Simon's Fillbasket, Improved Fillbasket.

First and Best.  All Air Amb Ar Bai Bak Brd Brl Bt Bkt Bv Bow Bgg Bgs Brn Buc Bui Brv Bar Cam CE Cle CF Crg Crs CA Chm D&H DP Ebr Eic Efr Ewg Fmr Fqr Fer Frd Gls Gmn Glh GN Grm Gry Ggg GgT Gvv Gwq Hns Hnd Hle HRm Hrs H&C Hly Hmn Hse Hst Iml Iow Jac J&W J&S Jns Ktd Knu Kg Kru Lam Lan Lea LB LL Loh Lnr Mnd Mgd Mul PM Mns May JCM Mic MV Mzy Nbl Nbl XI LW Pks JMP Prt Ptt Pot Pri Pug Rec Rce Rog Rs RP Sal &R S&O Shn Sic Sox Spf Stk Stw S&H Tati TB Thm Thb Til Tpk Tnn VI Van Woa W&D Wcr Wht Wd WS Wyg Yng Y&H.

Similar names.  First and Best Extra Early, Aineer's First and Best, Cleveland's First and Best, Cromwell's First and Best, Eichling's First and Best, Ferry's First and Best, Hammond's Earliest and Best, Henderson's First of All, Johnson's First and Best, Leonard's First and Best of All, Nebraska Seed Co.'s First and Best, Philipps' First and Best, Trucker's First and Best, First and Best of All, Wernich's First and Best.


First and Best Extra Early.  Hme Shw Tex.

Similar names.  See First and Best, Extra Early.

First and Best of All.  1sr.  For similar names see First and Best.

First Crop.  Amb Bdg Brn Buc CE Cle Ehe RE Ewg Hrm Kei K&W LR JMP Rece Rce Sal Shn.

Similar names.  Carter's First Crop.

Seedmen's synonyms.  First and Best, Bdg.  Sutton's Ringleader, Bdg.

First in the Market.  Big Dmn JL.

Similar names.  Livingston's First in Market, King's Earliest Market, Keith's First in Market.

First of All.  Bui CE C&B Del Hrs Hst Hen H&P Iml Ken Kos Nol Pq Pue Poo Rec SC S&W Tat Ten Thm Thr AGT VI WII Y&H.

Similar names.  See Earliest of All.

Fleetwing.  Mgd Shw.  For similar names see Bergen Fleetwing.

Fortyfold.  All Bgs Bui Cle Crs D&H Eic Ely Gd GgT Hme Lan Lar Min Sqr.

Similar names.  Improved Fortyfold.

Fortyfold Champion.  Rog.  For similar names see Champion of England.

Forty-Two Day.  Ele.

Similar names.  Perry's Forty-Two Day.

French Canner.  All Bdg Bgs Bui CE Cur Drg G&T Hme J&S Lan Lar Mns Qkr Raw Recg Rog Sqr Tat Wer Wsg.

Similar names.  Lumbroth's French Canner, Small Early French.


French Sugar.  RHJ.

Similar names.  Dwarf French Sugar, Early French.
Gardener's Favorite. Btg G&T. For similar names see Canner's Favorite.

Giant-Podded Marrowfat. Bkt Big Grn Hlm J&S M&S.

Similar Names. See Marrowfat.

Seedsmen's Synonyms. Long Island Mammoth, Him.

Giant Sugar. Big Bow Cur Der McK Ren Reg Tat Thr.

Similar Names. See Mammoth Sugar.

Glory. All Rai Hmc.

Similar Names. Harrison's Glory.

Golden Vine. Btg GH Gra Ham Lnr SB.

Goliath. All Lam.

Similar Names. Cooper's Goliath.


Grant's Favorite. Btg GN Roc. For similar names see Canner's Favorite.

Gray Sugar. Ebe Tat.

Similar Names. Dwarf Gray Sugar, Mammoth Gray Sugar, Tall Gray Sugar.

Green Marrowfat. M&S. For similar names see Marrowfat.

Green Prussian. Pug Vin. For similar names see Blue Prussian.

Gregory's Surprise. Gregory's Early Surprise. Entered as Surprise and Early Surprise.

Grenell's Extra Early Bergen Fleetwing. Entered as Extra Early Bergen Fleetwing.

Grey's Perfection. Gry. For similar names see Perfection.

Griffith's Canning. G&T.


Hampden's Earliest. Btg. For similar names see Earliest of All.

Hancock. Ggy J&S Pue Tat.

Similar Names. Tait's Hancock, Early Hancock.

Seedsmen's Synonyms. Daniel O'Rourke, J&S. Philadelphia Extra Early, J&S.

Harnden's Extra Early. Entered as Extra Early.

Harrison's Glory. Entered as Glory.

Hartford Extra Early. C&J.

Similar Names. Hawley's Improved Hartford Extra Early.


Hawkins' Market Garden. Haw.

Similar Names. See Horsford's Market Garden.

Hawley's Improved Hartford Extra Early. Entered as Hartford Extra Early.

Hearl's Reliance. Entered as Reliance.

Henderson's First of All. Henderson's Heroine. Entered as First of All and Heroine.

Hero. Big Lam.

Heroine. All Ahr Btk Bkt Big Bow Btg Brk Bdg Bri Brn Bru Bng Buc Bui Brb Bar Brr C&J CE Cle C&B Col CF Crs Cur Dd Dtw Dru Eas Ebr Elt Emr RE Etr Ewg Frq Fle Frd Ger Gdn GH Gra Gng GN Ggy Grn Gry G&T Tg.
Hns Ham Hrn Hrs Hen H&C Hlm Hme Jac Jer MWJ J&S K&W Ken Lan Lan Liv JI. Mnd Mgd PM Mas Man May JMM McK McM Mhl MV Mns Neb Nol Ov Old Pg Pks HP Prn Ptt Poo Pot Pri Raw Ren Ree Roe Rog Rs Sa SC S&F Shm Sie Sim Ssp Sqr Sr S S&H S&W Tat Tem Thr Thb AGT Til Tpk VL Van Vk Wai Wea W&D Wer WS Y&H.

Similar names. Henderson's Heroine, Medium Early Heroine.

Holmes' Extra Early. Hbn.

Holmes' Market Gardener's Extra Early. Entered as Market Gardener's Extra Early.

Home Delight. Hst.


Horsford's Early Market Garden. Mck.

Similar names. See Horsford's Market Garden.


Hundredfold. Man.

Similar names. Mann's Hundredfold.

Huntington & Page's First of All. Entered as First of All.

Imperial Dwarf. Gig.

Similar names. Large Blue Imperial.


Inexhaustible. Thb.

Iowa Challenge. Ber low Rtk.

Similar names. Currie's Extra Early Challenge.

Irish Dwarf White Marrowfat. For similar names see White Marrowfat.

Irish Large White Marrowfat. Dlw Koe Lan Stw. For similar names see White Marrowfat.

Island Prolific. TB. For similar names see McLean's Prolific.

John Bull. Ehr Lan.

Johnson and Stokes' Extra Early. Entered as Extra Early.

Johnson's First and Best. Entered as First and Best.

Jones' Extra Early. Entered as Extra Early.


Keith's First on Market. Kei. For similar names see First on Market.

Kendel's First of All. Entered as First of All.
Kentish Invicta. Blg Bdg Bgs CE Cle Crs Drm Fgr Gry Hme Hnt Lam May Pri Rec Rog.

Similar names: Early Kent, Extra Early Kent.

King of the Dwarfs. Hme Vk.

Similar names: Vick’s King of the Dwarfs.

King’s Earliest Market. Entered as Earliest Market.


Lady. MWJ.

Landreth’s Extra Early, Landreth’s French Canner, Landreth’s Phonograph.

Entered as Extra Early, French Canner, and Phonograph.

Large Black-Eyed Marrowfat. Brd Bgs Buc Cmn CE DD Drm Fer H&P Inl Loh Mic Neb Pg Pks Roc Rs Shw Til Tpk V’l Vk Wyg.

Similar names: See Black-Eyed Marrowfat.

Large Blue Imperial. Min. For similar names see Imperial Dwarf.

Large Dwarf White Marrowfat. Crs. For similar names see White Marrowfat.

Large Melting Sugar. Tho.

Large White Black-Eyed Marrowfat. MWJ.

Similar names: See Black-Eyed Marrowfat.


Similar names: See White Marrowfat.

Laxton’s Alpha, Laxton’s Earliest of All, Laxton’s Evolution, Laxton’s Extra Early, Laxton’s Fillbasket, Laxton’s Supreme. Entered as Alpha, Earliest of All, Evolution, Extra Early, Fillbasket and Supreme.

Laxton’s Prolific. Ewg Gta Grn. For similar names see McLean’s Prolific.

Laxton’s Prolific Long Pod. Sim Stk W&D.

Similar names: See McLean’s Prolific.

Leonard’s First and Best. Entered as First and Best.

Lightning. CE Drw Pri Roc YdI.

Similar names: Nebraska Lightning, Price & Reed’s Lightning, Carter’s Lightning, Buckbee’s Lightning Express, Lightning Express, Wood, Stubbs & Co’s Express, Wood’s Lightning Excelsior, Lightning Excelsior, Express.

Lightning Excelsior. Wd. For similar names see Nott’s Excelsior, Lighting.

Lightning Express. Buc Roc. For similar names see Lightning.

Lilly-Bogardus Thoroughbred. LB.


Seedsmen’s synonym. Premium Gem, Ken.
Little Giant. D&H.

Similar names. Pearce's Little Giant, Darch & Hunter's Little Giant.

Livingston's First in Market, Livingston's Prolific Giant Sugar. Entered as First in Market and Prolific Giant Sugar.

Lohrmann's Earliest Wrinkled. Loh. For similar names see Early Wrinkled.


Long Island Mammoth. All Btri Big Bui Bui CE Cle C&G CE C's DP Drw Gs GH Gra Hms Hme 1ml J&S Lnr Man Man May JMM Mid Min M&S NvOv Pit Rec Reg Shw Vnn Y&H.

Seedsmen's synonyms. Telegraph, Big Bui J&S Lnr Noi Thr. Giant-Podded Marrowfat, Hlm.

Long Island Marrowfat. Cie G&T Koe Lan Vn.

Similar names. See Marrowfat.

Longstreth's First and Best. Entered as First and Best.

Luscious Melting Sugar. GN.

Luscious Sugar. Kg Rev.


McCullough's Improved Telephone. Entered as Telephone.

McKenzie's Extra Early Manifold. Entered as Extra Early Manifold.


McLean's Prolific. Ewg Gra Hme.

Similar names. Laxton's Prolific, Laxton's Prolific Long Pod, Island Prolific.

McMillan's Best. McM.

Similar names. Burpee's Best.

McMillan's Satisfaction. McM. For similar names see Sutton's Satisfaction.

McNeal. Gfy.

Magnificent. Eyr.

Magnum Bonum. Tat.

Main Crop Long Island Marrowfat. Lan Stw.

Similar names. See Marrowfat.

Mammoth Beauty. Mls. For similar names see English Beauty.

Mammoth Gray Sugar. Myr Thr.

Similar names. See Gray Sugar, Mammoth Sugar.

Mammoth Luscious Salad. MWJ.

Similar names. See Luscious Sugar, Mammoth Sugar.

Mammoth Luscious Sugar. Low Man Wd WS.

Similar names. See Luscious Sugar, Mammoth Sugar.

Mammoth Melting Sugar. Air Btr Ber Bue Bar CE Col Gok Drr Hrs Haw Him Mw May M&S Pn Rec Rec Rec S&F Shw Thr Wat.

Similar names. See Melting Sugar, Mammoth Sugar.

Mammoth Perfection. Til. For similar names see Perfection.

Mammoth Prolific Sugar. J&S. For similar names see Mammoth Sugar.

Mammoth Sugar. Bkt Bui B1w GH JvN Sal Sor Wer.


Mann's Hundredfold. Entered as Hundredfold.

Marblehead Early Marrowfat. Gfy. For similar names see Marrowfat.
Market Garden.  Del Hut Min M&S.

Similar names.  See Hastings’s Market Garden.

Seedsmen’s synonyms. Moore & Simon’s Second Crop, M&S.

Market Gardener’s Extra Early.  Gia Hlm.

Similar names.  See Extra Early Market.

Market Gardener’s Favorite.  Qkr. For similar names see Conner’s Favorite.

Market Master.  J&S.

Marrowfat.  Fld Gng Hut MWJ Mic XI Pot.

Similar names.  Sugar Marrows, Exhibition Marrowfat, Long Island Marrowfat, Main Crop Long Island Marrowfat, Marblehead Early Marrowfat, Sander’s Marrowfat, Royal Dwarf Marrowfat, Dwarf Marrowfat, Giant-Podded Marrowfat, Improved Giant-Podded Marrowfat, Improved Sugar Marrowfat, Nutting’s Green Marrowfat, Green Marrowfat, Simon’s Green Marrowfat, Dwarf Giant-Podded Prolific Green Marrowfat, Dwarf Green Wrinkled Marrowfat. See also White Marrowfat and Black-Eyed Marrowfat.

Matchless Wonder.  NK S&CH. For similar names see English Wonder.

Maud S.  All Air Brr Egg Brk Brr Bue Brr Brr CE Cle Col CF Crg Drw Dun Emr Emr Fgr Fgr Fdr Gls Gls Gzy Gzy Grow Tg Jus Kel Krn Lnr LB Mud May JCM JMM Py Pot Pri Raw Rce Rce Sal S&F Show S&O Shm Spf Tat Til Van Y&H.

Similar names.  Allan’s Maud S., Barrett’s Maud S., Extra Early Maud S.

Seedsmen’s synonyms.  First and Best, Frd.

Maul’s Earliest of All, Maul’s Family Garden, Maul’s Improved Extra Early, Entered as Earliest of All, Family Garden, and Extra Early.

May.  SC Shm. For similar names see Early May.

May’s Midsummer.  May. For similar names see Lohrman’s Midsummer.

May Queen.  For Ggy Jms Lor M&S For similar names see Queen.

Medium Early Heroine.  Mzy. For similar names see Heroine.

Melt Sugar.  Alg Big Bow Bow Egg Era Bui Brr Brr Cle C&B CCo Cor Crs Crr DD Der Ebe Ebr Fgr Fgr Fer Ghl Gry Gry G&T Ham Hen H&G Hme Inl J&S Jns K&W Lam Ln Lnr LB Liv Lr Loh Mgd Mns Mau JCM JMM Mhl MVN NoL JMP Poo Por Pug Rog Rs S&R Shm Sic Sox Spf S&W Tat Tem Til Van Vk Wea Web Yng.

Similar names.  Tall Melting Sugar, Tall French Melting Sugar, Mammoth Melting Sugar, Buckbee’s Mammoth Melting Sugar, Sugar, Edible Pod Sugar, Edible Pod White Sugar, Wrinkled Sugar.

Michael’s Early Record.  Entered as Early Record.

Michell’s Dandy Extra Early, Michell’s Extra Early. Entered as Dandy Extra Early and Extra Early.

Mills’ Enormous, Mills’ Mammoth Beauty. Entered as Enormous and Mammoth Beauty.

Mingle’s Extra Early.  Entered as Extra Early.

Moore’s Bountiful, Moore’s Daisy. Entered as Bountiful and Daisy.

Moore & Simon’s Second Crop.  Entered as Second Crop.

Morning Star.  Cam Chl Gls Ham.


Nebraska Lightning.  Neb S&O. For similar names see Lightning.

Nebraska Seed Co.’s First and Best, Nebraska Seed Co.’s Favorite. Entered as First and Best and Favorite.

Negro.  MWJ.

Nor Plus Ultra.  All Bdg Mzy Rce Sqr.

New Era.  MWJ.

New York Market.  W&D.

Niles.  Pug.

Seedsmen’s synonyms. Small White Field, Pug.
Noll's Extra Early. Entered as Extra Early.

Nonpareil. M&S.

Similar names. Extra Early Nonpareil, Tait's Extra Early Nonpareil.

Northern Leader. Jer.

Northern Queen. Jer.

Northrup, King & Co.’s Summit Extra Early, Northrup, King & Co.’s Improved American Wonder. Entered as Extra Early Summit and American Wonder.

Northwest Premier. May McK OV Tpk.

Similar names. See Premier Extra Early.


Similar names. See Perfection.

Omega. Hme RJH.

Nutting's Green Marrowfat. Lan. For similar names see Marrowfat.

Paragon. Brb Ggy Grn Lan Mzy JMP Pot Pri Rcc Rog Stk Y&H.

Pearce’s Little Giant. Entered as Little Giant.


Perfect. Brr. For similar names see Perfection.

Perfection. All McK.


Seedsmen's Synonyms. Blue Beauty, All.

Perkins' Extra Early. Entered as Extra Early.


Similar names. Walker's Perpetual.


Similar names. See Black-Eyed Marrowfat.

Petit Pois. FqPr.


Similar names. See Extra Early Philadelphia.

Philips' Extra Early, Philips' First and Best. Entered as Extra Early and First and Best.

Phonograph. Lan.

Pierson's Extra Early. Entered as Extra Early.


Premier Extra Early. Alx Bur Gdn Min Qkr Rog Vk WS.

Similar names. Improved Premier Extra Early, Northwest Premier.

Seedsmen's Synonyms. First and Best, Alx.
AMERICAN VARIETIES OF VEGETABLES.

Premium Gem. All Bai Bak Brd Brt Btl Bkt Bld Ber Big Bow Bgg Brk Bdg Bgs Brn Bui C&J CE Cle CF Cok Crg Cw CA Cmhn Hw DkH Del Drr Drw Ebc Ehr Ftr Frd Grd Gls Glh Gru Gra Grw Grw TG Hs Hrn Hrs Hrv Hst Hen Hop Hut Hkp Iml Iow MWJ J&K Jps Kel K&W Ken Kg Lam Lan Lea Ll Loh Mld Man PM Mas Man May JCM Mhl Min MV Mzy Neb OV Pac JMM Pij Put Pot Pot Pot Tin Rin Rog Rt Rs RP S&R S&O Shm Sic Sox Spf Sqr SB S&H Tat Tex TB Thn Thr Thr Thr Tpk T&B V1 Wea Wcl Wlt.

Similar names. See Little Gem.
Seedsmen's synonyms. Little Gem, Ken.

Premium Little Gem. Thr. For similar names see Little Gem.

Price & Knickerbocker's Improved Extra Early. Entered as Extra Early.
Price & Reed's Dandy. Price & Reed's Extra Early, Price & Reed's Lightning. Entered as Dandy, Extra Early, and Lightning.

Pride of Denver. Hns.

Pride of the Garden. Hns. For similar names see Pride of the Market.


Seedsmen's synonyms. Golden Sugar, Hns.

Prince Albert Field. Rog Sqr. For similar names see White Field.

Prince of Wales. All D&H Egw Fnr Glh Gra Hrm Hme Lan Man May NK OV Rec Rog RP Sal S&O Sqr S&h Thr Wll.

Similar names. Prince of Wales Heavy Cridor.

Prince of Wales Heavy Cridor. Fnr Mzy.

Similar names. See Prince of Wales.

Princess Royal. Hme.

Prize Taker. DD Mks.

Similar names. Dickmann's Prize Taker.

Prodigious. Man Th.

Profusion. Bar RE Frd Hbt Lan Sim Thr.

Similar names. Burpee's Profusion, Dwarf Profusion.


Prolific Giant Sugar. Evr Ggr Liv Ptt. For similar names see Mammoth Sugar.


Similar names. Bennie's Prosperity.


Quality. Bai Bur. For similar names see Quantity.


Similar names. Burpee's Quality, Burpee's Quantity, Quality.

Queen. Bri Brw Buc C&J CE Col DkH Eit Emr Hrs Ken McK Raw Ren Rec Roe Rog S&F Shw Thr W&D.

Similar names. Improved Queen, Sharpe's Improved Queen, Sharpe's Queen, Rennie's Queen, May Queen, Summer Queen, British Queen, Southern Queen.
Ram's Horn. Spr.

Rawson's Clipper. Entered as Clipper.

Red Ripper. MWJ.


Rennie's Extra Early, Rennie's Prosperity, Rennie's Queen. Entered as Extra Early, Prosperity, and Queen.

Rice's Extra Early, Rice's Improved Dwarf Champion. Entered as Extra Early and Dwarf Champion.

Rough Rider. Sal.

Similar Names. Salzer's Rough Rider.


Similar Names. See Marrowfat.


Similar Names. See White Marrowfat.

Rural New Yorker. All Brd Brt Big Bgg Buc Brv CE Cle Crg DD Ebr Emr RE FeR GH Grn G&T TG Hm Hrm Hry Low K&W Kg Lan Lea LB Man Mes May MV Mzy Pg HP Ptt Rec Rep RP Sal Shw Nos Spr SB Tat Til Vl Wdr.

Similar Names. Extra Early Rural New Yorker. Cleveland's Rural New Yorker.

Rush Park Seed Co.'s Extra Early. Entered as Extra Early.

St. Disirat. Mzy.

St. Duthus. Bur Thr.

Salad. MWJ. For similar names see Luscious Sugar.

Salzer's Dwarf Telephone, Salzer's Earliest Dwarf Jumbo, Salzer's Rough Rider.

Entered as Dwarf Telephone, Earliest Dwarf Jumbo, and Rough Rider.

Salzer's Midsummer. Sal. For similar names see Lohewa's Midsummer.

Sander's Marrowfat. Brg Hme. For similar names see Marrowfat.

Schisler-Corneli First of All. Entered as First of All.

Scimitar. Eas SB.

Scotch Beauty Field. Ber Low. For similar names see White Field.

Scotch Blue Field. Frd Rog. For similar names see White Field.

Scotch Field. Cur GH Kos. For similar names see White Field.

Second Crop. M&S.

Similar Names. Moore & Simon's Second Crop.

Seedsman's Synonyms. Market Garden, M&S.

Second Early. DD Put.

Similar Names. Plant's Second Early.

Senator. All.

Similar Names. Webb's Senator.

Sensation. Hme.

Sharpe's Improved Queen. Entered as Sharpe's Queen.

Sharpe's Queen. All Brd Brk Brj Bri Bch Brr CE CF Fgr Grn Tg Hrm H&C Hme HAP J&S Lnr May Min Neb OV Rec Sqr Til Vl.

Similar Names. See Queen.

Sharpe's Triumph. All Hme. For similar names see Triumph.

Shropshire Hero. All Bt Brr Brs Bb Bbg Brk Bbl Bbg Bur Brr CE Cle C&B CG CF Crs Cur Drr Drm Ebr Elt Fgr Fer Frd &s Gdl GH Ggy Grn G&T Td Hen H&C Hme J&S Ken Lan Lar Liv Mnd Mgd Msc Man Mck Mhl Neb Nol Ov Pg Pvt Ptt Qkr Raw Ren Rec Rec Rog S&F &O Shm Spf Sqr SB Thr Tpk Trm Van Vek Wae W&D.

Similar Names. Yorkshire Hero, Improved Hero.

American Varyeties of Vegetables.

Siegel’s Extra Early. Entered as Extra Early.
Simon’s Fillbasket, Simon’s Green Marrowfat. Entered as Fillbasket and Green Marrowfat.
Small Early French. For similar names see French Conner.
Small White Field. For similar names see White Field.
Southern Queen. For similar names see Queen.
Springfield Seed Co.’s Extra Early. Entered as Extra Early.
Squier’s Dandy. Entered as Dandy.
Startler. Buc Roc.
Similar names. Buckbee’s Startler.
Station. Ggy Grn Liv Thr.

Steele-Briggs’ Extra Early. Entered as Extra Early.

Similar names. Improved Stratagem, Carter’s Stratagem, Cleveland’s Stratagem, Hammond’s Improved Stratagem.


Similar names. See Melting Sugar, Tall Sugar.
Sugar Marrowfat. All G&T Haw Hme J&S Lam Mns Put Ree.
Similar names. See Marrowfat.

Summer Queen. WS. For similar names see Queen.

Summit. Fld.
Sunol. All Bkt Ggy May Mzy Ptt Trm.
Similar names. Allan’s Sunol.

Supreme. Sim.
Similar names. Laxton’s Supreme.

Sunrise. H&C Hme.
Similar names. Early Sunrise.

Surprise. All Brd Bkt Bgg Brk Bdg Bre Bre Brw Bur C&J Crs Der Eas Fqr Fer Frd Ggy Grn Hlm J&S Jns Lnr Liv JL Mau Ms Neb Ptn Prn Raw Ren S&H Thr Til Van W&D Vk J&H.
Similar names. Gregory’s Surprise, Early Surprise.

Swiss. Lam Pug S&R.

Tall Erfurt Sugar. Thr. For similar names see Tall Sugar.
Tall French Melting Sugar. Ptt.

**Similar names.** See Melting Sugar, French Sugar, Tall Sugar.

**Tall Gray Sugar.** Ar Brk Bur CE Cle Dom GH G&T Hlm H&P J&S Jus Lnr May Neb Puc Ptt Rec Reg Sox S&W T&B Vl Van Web Wer Wyg.

**Similar names.** See Gray Sugar, Tall Sugar.

**Tall Green-Seeded Sugar.** Rog. For similar names see Tall Sugar.

**Tall Melting Sugar.** Ptt SC. For similar names see Melting Sugar, Tall Sugar.

**Tall Purple Blossom Sugar.** Lan. For similar names see Tall Sugar.

**Tall Scimitar Sugar.** Sim. For similar names see Tall Sugar.

**Tall Sugar.** Bui Brr Cox Crs DD Eic Elt Emr HE Fst Gra Hrs Hst Hlm Ken Liv MV Mzy HP Pri Qkr Sal Stk Vin W&D.

**Similar names.** Tall White Sugar, Tall Green Seeded Sugar, Tall Scimitar Sugar, Tall Erfurt Sugar, Tall Purple Blossom Sugar, Tall Gray Sugar, Tall Melting Sugar, Tall Mammoth Sugar, Tall French Melting Sugar, Sugar.

**Tall White Blossom.** Hlm.

**Tall White Marrowfat.** Gdn Jac May. For similar names see White Marrowfat.

**Tall White Sugar.** Cle Drr Lan Nef Rog. For similar names see Tall Sugar.

**Tait's Extra Early Deposit.** Tait's Extra Early Eclipse, Tait's Extra Early Nonpareil, Tait's Hancock. Entered as Extra Early Deposit, Extra Early Eclipse, Extra Early Nonpareil, and Hancock.

**Teddy Roosevelt.** NK.

**Telegraph.** All Red Ekt Btg Bdg Bgs Bue Bui CE Cle CF Crs Drr Fwg Fer GH Grn G&T TG H&C Hme H&P J&S Lan Lnr LB Mnd JMM MeK Mzy Nol Pg Ren Rec Roe Rog Sqr Thr Vl.

**Similar names.** Culverwell's Telegraph.

**Seedmen's synonyms.** Long Island Mammoth, Big Bui J&S Lan Nol Thr.


**Similar names.** Carter's Telephone, Ebeling's Telephone, Allan's Improved Telephone, Hammond's Improved Telephone, Extra Early Telephone, Dwarf Telephone, Allan's Dwarf Telephone, Salzer's Dwarf Telephone, Telephone.

**The Unknown.** MWJ.

**Thomas Laxton.** Bk Bn Buc Cur Drr Ger Ggy Hrm Lnr Put Thr Vl.

**Thompson's First of All.** Entered as First of All.

**Thorburn's Extra Early Market.** Entered as Extra Early Market.

**Tilton's Cleveland Market, Tilton's Mammoth Perfection.** Entered as Cleveland Market and Mammoth Perfection.


**Similar names.** Tom Thumb Plentiul, Dwarf Tom Thumb, American Tom Thumb, Blue Tom Thumb, Improved Tom Thumb, Cleveland's Improved Tom Thumb.
Thumb, Early Tom Thumb, Extra Early Tom Thumb, Buckbee’s Extra Early
Tom Thumb, Ferry’s Extra Early Tom Thumb.

SEEDSMEN’S SYNONYMS. Plant’s Earliest Dwarf, Put K&F.

Tom Thumb Plentiful. M&S. For similar names see Tom Thumb.

Triumph. G&T Mns Sq.

SIMILAR NAMES. Sharpe’s Triumph.

Trucker’s First and Best. 1 Int. For similar names see First and Best.

Tuxedo. Y&H.

Universal. Chl.

SIMILAR NAMES. Childs’ Universal.

Vaughan’s Improved Telephone, Vaughan’s Sweet Market. Entered as Telephone and Sweet Market.

Veitch’s Perfection. Don Elt Ewg Gra RIHJ For Pug S&R W&D.

SIMILAR NAMES. See Perfection.

Very Dwarf Sugar. Hen S&H. For similar names see Dwarf Sugar.

Vick’s Charmer, Vick’s Daisy, Vick’s Extra Early, Vick’s King of the Dwarfs.

Entered as Charmer, Daisy, Extra Early, and King of the Dwarfs.

Victory. Hen M&S.

Vincent’s Advancer. Vin. For similar names see McLean’s Advancer.

Walker’s Perpetual. Hme. For similar names see Perpetual.

Webb’s Senator. Entered as Senator.

Wernick’s First and Best. Entered as First and Best.

White Champion. Tat. For similar names see Champion of Englanda.

White Crowder. MWJ. For similar names see Yellow Crowder.

White-Eyed Marrowfat. Bri Se VI.

White Field. Buc Hme MWJ Lnr Web.

SIMILAR NAMES. Improved Field, Small White Field, Prince Albert Field, Scotch Field, Scotch Blue Field, Scotch Beauty Field.

White Gem. Hme. For similar names see Little Gem.


SIMILAR NAMES. Tall White Marrowfat, Large White Marrowfat, Improved White Marrowfat, Improved White Sugar Marrowfat, Irish Large White Marrowfat, Irish Dwarf White Marrowfat, English Dwarf White Marrowfat, Royal Dwarf White Marrowfat, Dwarf White Missouri Marrowfat, Dwarf White Sugar Marrowfat, White Sugar Marrowfat, Large Dwarf White Marrowfat, Dwarf White Marrowfat. See also Marrowfat and Black-Eyed Marrowfat.

White Sugar Marrowfat. Tat. For similar names see White Marrowfat.

William Hurst. All Bai Bgg Brk Buc Bur CE Cox D&H Emr Ggy Haw Hme J&S Lnr Liv Mck Old Ken Ree Ree Sqr Sim Sqr Thr.

SIMILAR NAMES. William the First.

William the First. Hme. For similar names see William Hurst.

Will’s First of All. Entered as First of All.

Wisbech Wonder. Hme. For similar names see English Wonder.

Wisconsin Blue. Hme Sqr.

Witham Wonder. Lnr.

Wonderful. MWJ Pg.

SIMILAR NAMES. Pagel’s Wonderful.


Wood, Stubbs & Co.’s Express. Entered as Express.
Wrinkled Sugar. Bdg. For similar names see Melting Sugar.

Yellow Crowder. MWJ.

Similar names. White Crowder.


Similar names. See Shropshire Hero.

Seedsman's synonyms. Alameda Sweet, Cox. Big Gem, NK. Dwarf Champion, Mzy Prn Ptt Rs.

PEANUT.


African Goober. Alx CCo.

Champion. Cok.

Early Sweet. Chl.

Early Virginia. Brd Sal. For similar names see Virginia.

Extra Early Spanish. JL. For similar names see Spanish.

Faust's Improved. Fst.

Florida. Cam.

Georgia Improved Ground Pea. J&S Shw.

Hammond's Earliest Mammoth. Ham.

Improved Ground Pea. Man Sim.

Improved Virginia. Liv Tem Tex WS. For similar names see Virginia.

Large White. Hde.

Large White Luxury. MWJ.

Mammoth. Wlt.

Mammoth Virginia. Bue Kra JL Old Roc Vau. For similar names see Virginia.

Old Hickory. MWJ.

Red. Del Pnt.

Red Cross. Iow Kos.

Red Spanish. Ar. For similar names see Spanish.

Red Virginia. Shw. For similar names see Virginia.

Rennie's Canadian. Ren.

Savatilla. D&H.

Savatilla Spanish. CCo. For similar names see Spanish.

Small Spanish. Hde. For similar names see Spanish.


Similar names. Small Spanish, Red Spanish, Extra Early Spanish, Savatilla Spanish.

Steckler's White Mammoth. Stk.

Tennessee Red. Ar Eic.

Virginia. Alx Air CA Gdn GN Wd.

Similar names. White Virginia, Red Virginia, Mammoth Virginia, Early Virginia, Improved Virginia.

White. Del Mls Pnt.

White Virginia. Ar Shw. For similar names see Virginia.
PEPPER.

Bell. Bak Blg Bgg Brb Brr Cle CF Ebe Eic Emr Fqr Gra Gng G&T Grw TG Ham H&C J&S Kg Lnr Mgd Mn PM Mns Mls N1 Pac Pg Put Ptt Qkr S&F Shw Sim Stk TB Web Wd WS.

Similar names. Large Bell, Improved Large Bell, Sweet Bell, Large Sweet Bell, Large Red Bell, Mammoth Bell, Golden Bell.


Black Mexican. Gra. For similar names see Mexican.


Boligiano's Mammoth Ruby King. Entered as Mammoth Ruby King.

Bonnet. Lan.


Boston Squash. TG. For similar names see Squash.

Seedsmen's synonyms. Tomato, TG.


Similar names. Improved Bull Nose, Large Bull Nose, Sweet Bull Nose.

Seedsmen's synonyms. Bell, Big Emr Fqr G&T J&S Lnr, etc. Large Bell, Bui Bar Drr Fer Hen low, etc. Large Red Bell, SB. Large Squash, Sim. Large Sweet Bell, Gls Mhl. Mammoth Bell, Cam Gdn Jac. Spanish Monstrous, Wlt. Sweet Mountain, Brn Hrm.

Burpee's Golden King, Burpee's Golden Upright, Burpee's Mikado, Burpee's Ruby King. Entered as Golden King, Golden Upright, Mikado, and Ruby King.


Similar names. Cayenne Pickling, Long Cayenne, Red Cayenne, Long Red Cayenne, Long Yellow Cayenne, Hammond's Long Red Cayenne, Small Cayenne, Small Red Cayenne, Little Red Cayenne, Large Red Cayenne.

Seedsmen's synonyms. Long Red Cayenne, Bur. Chili, JL.

Cayenne Pickling. Vun. For similar names see Cayenne.


Similar names. Childs' Celestial, Improved Celestial, Chinese Celestial.

Cheese. Min.
PEPPER.

Cherry.  Ar Brn RE Ewg Ger Gra Ggy Kei Ren Vau.

Similar Names.  Yellow Cherry, Red Cherry.

Childs' Celestial, Childs' Improved Celestial, Childs' Kaleidoscope.  Entered as Celestial and Kaleidoscope.

Chili.  Alx Bow Bru C&J Cam Cle C&B Cox Cry DD Eas Ebe Eic Elt RE Fqr Gdh Ggy Hde Hen Ken Lnr Man Mas McM Mzy Neb Pac Pir Pnt Poo Por Pot S&R Sc' Stk SR S&W Th & B W&D.

Similar Names.  Small Chili, Red Chili, Small Red Chili, Yellow Chili, Mammoth Chili, Large Mexican Chili, Mexican Chili.

Seedsmen's Synonyms.  Cayenne, Jl. Mexican, DD.

Chinese Celestial.  Anb Cum Evr VI.  For similar names see Celestial.

Chinese Giant.  Bur D&H Drr Fxr J&S Lan Mas Man MWJ M&S Rim Thr Vk.

Similar Names.  See Procopp's Giant.

Cluster.  Pac.


Columbus.  Eic.

Coral Gem.  D&H Drr Ebr RE Mhl Ree Sal S&F.

Similar Names.  Coral Gem Bouquet.


Similar Names.  Coral Gem.

Seedsmen's Synonyms.  Red Cluster, M&S.

County Fair.  Hen Liv.

Similar Names.  Henderson's County Fair.

Cranberry.  GH Mzy.

Similar Names.  Red Cranberry.


Dwarf Red Squash.  Hlm.  For similar names see Squash.


Similar Names.  See Squash.


Flat.  Ggy.

Seedsmen's Synonyms.  Squash, Ggy.

French Cayenne.  Lanc.

Giants Emperor.  Ebr Mzy.

Giant of Valencia.  Thr.

Giant Sweet Spanish.  Kg.  For similar names see Sweet Spanish.

Giant Yellow King Mango.  Liv.  For similar names see Golden King.

Golden Bell.  Bui Hnt Lan HP Qkr Stw Wlt.  For similar names see Bell.


Seedsmen's Synonyms.  Golden Bell, Bui HP Qkr Wlt. Golden Queen, Buc ROC Vk.

Golden King. Bar D&C GH Rim.

*Similar names.* Burpee’s Golden King, Giant Yellow King Mango.

Golden Prize. Hst.

Golden Queen. Brt Bkt Buc Bar CE Cle Del Drm Ehe Flh G&T Ham H&C Hlm Liv Lon Mnd Man May OV Ptt Roc Ssr Tpk Trm Vl Vin.

*Similar names.* Mammoth Golden Queen, Improved Golden Queen.

*Seedsmen’s synonyms.* Golden Down, Buc Roc Vl.

Golden Upright. Air Bel Buc Bar (FD) Fst Frd GH Lnr Ms Rs Riv Roc.

*Similar names.* Large Golden Upright.

Grossum. Bru Crs Hrv Sim Vl Vin.

*Seedsmen’s synonyms.* Monstrous, Bru Crs Hrv Sim Vl Vin.

Guthrey’s Giant. SB. For similar names see Proopp’s Giant.

Hammond’s King of Reds, Hammond’s Long Red Cayenne. Entered as King of Reds and Long Red Cayenne.

Henderson’s County Fair. Entered as County Fair.

*Seedsmen’s synonyms.* Red Cluster, Frd.


*Similar names.* Childs’ Kaleidoscope.

King of Reds. Hst.

*Seedsmen’s synonyms.* Ball Nose, Bui Hrr Fer Hen Liv Raw, etc.

Large Bull Nose. Brt CF Drw MWJ. For similar names see Bull Nose.

*Seedsmen’s synonyms.* Bell, CF.

Large Golden Upright. XK. For similar names see Golden Upright.

Large Mexican Chili. J&M. For similar names see Chili.

Large Red. Egw Gra Kel. For similar names see Long Red.

Large Red Bell. SB. For similar names see Bell.

*Seedsmen’s synonyms.* Ball Nose, SB.

Large Red Cayenne. Hrm Inl. For similar names see Cayenne.

Large Sweet. Bui G&T. For similar names see Sweet.

*Seedsmen’s synonyms.* Sweet Mountain, Bui.

Large Sweet Bell. Gis Hrv Mhl Min M&S Tex. For similar names see Bell.

*Seedsmen’s synonyms.* Ball Nose, Mhl Gls. Mountain, Tex.

Large Sweet Mountain. Alx CF Drw Evr Ger Ggy Hrv Liv JL Old Pac Roc AGT Vl.

*Similar names.* See Sweet Mountain.
LARGE SWEET SPANISH. Bak Btl Bou Cam CA Blw Drr Fst Gdn Gig MWJ Lan Mel Mhl Pac Sw TB.

SIMILAR NAMES. See Sweet Spanish.

LARGE SQUASH. Bow CE CF Crs RE Fer Hrn K&W Lnr LB MV NK For Pri Ree RS S&F Sim Sim Thr Til Y&H.

SIMILAR NAMES. See Squash.

SEEDSMEN'S SYNONYMS. Bell, Sim. Ball Nose, Sim. Tomato, Bow Bigg CF Crs Ree.

LARGE YELLOW. Kei. For similar names see Long Yellow.

LITTLE RED CAYENNE. Wd. For similar names see Cayenne.

LONG CAYENNE. Cox RE Gig 1st RHJ Kos Lan Lnr Sim Vin Web Wg Y&H.

SIMILAR NAMES. See Cayenne.

LONG RED. Btl Bkt Bel Bow Bgs Bri Brn D&H RE Gzy Lan Liv Ren Sal Sim.


SEEDSMEN'S SYNONYMS. Santa Fe, Gzy.


SIMILAR NAMES. See Cayenne.

SEEDSMEN'S SYNONYMS. Cayenne, Bur.

LONG RED-POINTED. Cox. For similar names see Long Red.

LONG YELLOW. Bgs Brn CE RE Gra H&P 1ml Ree Sal S&O.

SIMILAR NAMES. Large Yellow.

LONG YELLOW CAYENNE. Buc Crs GH Mzy Roc. For similar names see Cayenne.

MAMMOTH. Brk Bgs Brb Bur CE C&J C&B Crs Cur Elt Emr Evr Evr Frd Gls Hen low K&W Kra Mzy Nol HP Ree S&O Sox Tem Thb Trm VI Vk W&D Yng Y&H.

SIMILAR NAMES. Monstrous, Monstrons Mammoth, Sweet Mammoth, Sweet Orange Mammoth, Rose Mammoth.

SEEDSMEN'S SYNONYMS. Sweet Mountain, Bur Cur Elt Emr Hen Vk, etc. Monstrons, Evr VI. Sweet Spanish, Trm.

MAMMOTH BELL. Cam Gdn Jac. For similar names see Bell.

SEEDSMEN'S SYNONYMS. Bell Nose, Gdn Jac Cam.

MAMMOTH CHILI. S&O. For similar names see Chili.

MAMMOTH GOLDEN DAWN. McK Ren. For similar names see Golden Dawn.

MAMMOTH GOLDEN QUEEN. Air Bel Brn CE Col Frd Hse Low J&S JL Mls M&S Pir Ree Sim Sim S&H Thr Wd WS.

SIMILAR NAMES. See Golden Queen.

SEEDSMEN'S SYNONYMS. Mango, Sim.

MAMMOTH RUBY KING. Air Bel Blg Cam Dmr J&M Liv JL Mns HP S&B Sim Trm.

SIMILAR NAMES. See Ruby King.

MAMMOTH RUBY KING MANGO. Entered as Mammoth Ruby King.

MAMMOTH SWEET MOUNTAIN. Hse. For similar names see Sweet Mountain.

MAMMOTH SWEET SPANISH. Wd WS. For similar names see Sweet Spanish.
Mango.  Shim Sim.  

Seedsmen’s synonyms.  Mammoth Golden Queen, Sim.  Sweet Mountain, Shim.  

Martinique.  Eic.  

Maulé’s Ruby King, Maulé’s Improved Ruby King.  Entered as Ruby King.  

Metcalfe’s Squash.  Fqr.  For similar names see Squash.  

Mexican.  DD Lnr.  

Similar names.  Black Mexican, Mexican Chili, Large Mexican Chili.  

Seedsmen’s synonyms.  Chili, DD.  

Mexican Chili.  Ger Thm.  For similar names see Chili, Mexican.  


Monstrous.  Bru Crs Evr Hrv NK Put Sim Stk SB Thr Til Vl Vl Vin.  

Similar names.  See Mammoth.  

Seedsmen’s synonyms.  Grossum, Crs Hrv Vl Vin.  Mammoth, Evr Sim Vl.  

Sweet Spanish, Stk.  

Monstrous Mammoth.  Anb Btl Hns.  For similar names see Mammoth.  

Monstrous Sweet Spanish.  Ar CE Eic Ree Sie.  

Similar names.  See Sweet Spanish.  

Moore & Simon’s Scarlet Maddalon.  Entered as Scarlet Maddalon.  

Orange Wrinkled.  Bur.  For similar names see Wrinkled.  

Oxheart.  Hnt May Mzy NK Thr.  

Pickling.  Fqr S&F.  

Seedsmen’s synonyms.  Squash, Fqr S&F.  


Similar names.  Guthrey’s Giant, Chinese Giant, Salzer’s Giant.  

Rawson’s Italian.  Entered as Italian.  

Red Cayenne.  Del low Mhl For S&R Stw S&H Ten AGT Wll.  

Similar names.  See Cayenne.  


Similar names.  See Cherry.  

Seedsmen’s synonyms.  Red Cluster, Pac.  


Similar names.  See Chili.  

Seedsmen’s synonyms.  Red Cluster, Pac.  

Red Cluster.  Bld Bgs Bur CE Chl Crs Ebe Eic RE Fst Frd Ger Gls Hde Hst Hen Hnt Hm Iow Liv Man May Ml M&S NK Pac Ptt Qkr Raw Ree Sal Sox Spf Stk S&W Thr Van Vl Wld WD WS Y&H.  

Similar names.  See Cluster.  

Seedsmen’s synonyms.  Japan Red Cluster, Frd.  Coral Gem Bouquet, M&S.  

Red Cherry, Pac.  

Red Cranberry.  Sal.  For similar names see Cranberry.  

Red Etna.  Bur CE Ham Mls Ree.  

Red Harold.  Thr.  

Red-Pointed Calabrese.  Thr.  

Rose.  Vnr.
PEPPER.

299

Rose Mammoth. Ese. For similar names see Mammoth.


Similar Names. Burpee's Ruby King, Maule's Ruby King, Maule's Improved Ruby King, Mammoth Ruby King, Mango, Mammoth Ruby King, Polglano's Mammoth Ruby King.

Salzer's Giant. Sal.


Seedsmen's Synonyms. Long Red, Ggy.

Scarlet Maddalon. M&S.

Scarlet Wrinkled. Bar. For similar names see Wrinkled.

Small Cayenne. Lan HP Spd Stw. For similar names see Cayenne.

Small Chili. Drr Ger Grw Iml JHJ Mns May Mhl Ptt Tat Tex Vl Wea Wdr.

Similar Names. See Chili.

Seedsmen's Synonyms. Bird's-Eye, Ger.

Small Red Cayenne. MWJ. For similar names see Cayenne.

Small Red Chili. Bak Bui Can MWJ Lan Roc Shm Sim Stw Til Vk.

Similar Names. See Chili.

Spanish Mammoth. Bru Fer Ken Rec. For similar names see Sweet Spanish.

Seedsmen's Synonyms. Sweet Mountain, Fer.


Similar Names. See Sweet Spanish.


Similar Names. Large Squash, Boston Squash, Dwarf Red Squash, Early Dwarf Red Squash.


Sweet. Hly.

Similar Names. Large Sweet.

Sweet Bell. Mhl Nol. For similar names see Bell.

Sweet Bull Nose. Hly. For similar names see Bull Nose.

Sweet Columbus. Etc.

Sweet Golden Dawn. CE MV Rec Sox Tat Thr Wlt.

Similar Names. See Golden Dawn.

Sweet Mammoth. Shw. For similar names see Mammoth.

AMERICAN VARIETIES OF VEGETABLES.

Xol NL NK OY Pg Pks HP JMP Put Ptt Pot Pri Raw Rec Rec Rs Sal SC S&F
Shw S&O Shm Sox SB S&W Tum Tex Thm Thb AGT Til Tpk Vh Vau Vl
Vin Wea W&O Wdr Wg Yng Yl.

SIMILAR NAMES. Mammoth Sweet Mountain, Large Sweet Mountain, Improved
Sweet Mountain.

SEEDSMEN'S SYNONYMS. Large Sweet, Bui. Ball Nose, Bru Hrn. Mammoth,
Bar Cur Elt Hen Iow Vl, etc. Spanish Mammoth, Fer. Bell, Ptt. Sweet Span-
ish, Bow H&P SB. Margo, Shm. Large Sweet Bell, Tex.

Sweet Orange Mammoth. Liv S&B. For similar names see Mammoth, Sweet.

Sweet Spanish. Bow Big Bg Cé &B Cur CA Drm Eic Elt RE Eyr Ewg GH
Gre Hns H&P J&M Kei Lan Liv Mlo Mau J&M May NK Pace Ren RT Sal Sow
S&O Sim Stk SB S&W Tat Thm Thr Til Trm T&B W&D Wer.

SIMILAR NAMES. Spanish Monstrous, Spanish Mammoth, Large Sweet Spanish,
Giant Sweet Spanish, Mammoth Sweet Spanish, Monstrous Sweet Spanish.

SEEDSMEN'S SYNONYMS. Sweet Mountain, Bow H&P SB. Mammoth, Trm.
Monstrous, Stk.

Tabasco. Bur Col Ury Eic Jey Lan Man Pnt Sal Sow Stk Thr Wd.

Thick Long Red. Liv. For similar names see Long Red.

Tomato. Bai Bow Big Brk Bdg Bui Brb CE Cle CF Cox Crs TG Lan Lar Liv Min
Mzy Pace Put Ptt qkr Rec Thm T&B Vin.

Large Squash, Bdg Bow CF Crs Rec. Boston Squash, TG.

Tom Thumb. Man.


SIMILAR NAMES. Yellow Wrinkled, Scarlet Wrinkled, Orange Wrinkled.

Yellow Cherry. Crs GH Pnt SC Thr. For similar names see Cherry.

Yellow Chili. Fer Hly Lar NK Pj. For similar names see Chili.

Yellow Wrinkled. Bur. For similar names see Wrinkled.

PIE PLANT. (See RHUBARB.)

PUMPKIN.

Atlas. CE Iow.
Banana. Big Lar Sox.


SEEDSMEN'S SYNONYMS. Large Common Field, Bur. Mammoth Field, Bui.

Black Negro. Thr. For similar names see Negro.

SEEDSMEN'S SYNONYMS. New Hampshire, Thr.

Black Sugar. Cle Fmr Liv. For similar names see Sugar.

SEEDSMEN'S SYNONYMS. Negro, Liv Fmr. Nantucket Pie, Fmr Liv. Small
Negro, Cle.

Bright Red Etampes. Crs R111 K. En. For similar names see Red Etampes.

Buckbee's King of the Mammoths, Buckbee's Pure Gold Field. Entered as King
of the Mammoths and Pure Gold Field.

Burpee's Golden Oblong, Burpee's Quaker Pie. Entered as Golden Oblong and
Quaker Pie.

Calhoun. Bnl Bkt Bri Bue Bur CE Cur Elt Ewg Frd GH Gre Hrs Hen Iow J&S
Ken Koe Kos Kra Lnr May J&M Mlo Mzy Old Poo Rec Ren Rec Rob Roe Sie
S&W Thm Til Vau Vl Wd.


SEEDSMEN'S SYNONYMS. Kentucky Field, Thm. Connecticut Field, Thm.

Cheese. Btl Bru Ebe Emr RE Ewg Fqr Gey Hns Lan Mel Min NK Pace Prn
Stw T&B Wd.

SIMILAR NAMES. See Large Cheese.
PUMPKIN. 301

Citrouille.  J&S.
Seedsmen's synonyms. Mammoth Tour, J&S.

Common Field.  Btl Cor Dlw Gls Hns Hbt Hse H&P Koe Lam Lea Mic Mls Min Rce Sw Twm.
Similar names.  See Field.
Seedsmen's synonyms. Cor, Tex.  Connecticut Field, Tex Gls. Sugar, H&P.

Common Yellow Field.  D&H J&S.  For similar names see Field.

Connecticut Field.  Alr Anb Bai Bak Brd Bt1 Bkt Bel Big Bow Brg Brk Brl Brn Bng Bui Brb Brw Cm CE Cc Cc C&B Col CF Cox Crs Cur Del DD Ebe Elt Emr Ext Ewg Emt Eqr Est Foz Ger Gls GH Gng Gry G&T Gw Gw Tm Hrn Hrs Hrv Haw Hcn Hly low MWJ Jns Keli K&W Ken K & F Kg Kos Lnr LB Mgd Man Ms Mav May JMM McM Mhl MV Mzy Nol NK OV Pac HP JMP Pir Prn Prt Ptt Poo Por Pot Pri Pug Raw Ree Rob Rs RP Sal S&R SC S&F S&O Se Sox Spf Stk Sb S&W Tat Tex Thm Thr Th M Tpk Trm Trp Vrk Vin Wdn Web W&D Wer Wl Wd Wdr Y&H.

Connecticut Golden Field.  Brr.  For similar names see Connecticut Field.

Connecticut Large Yellow Field.  Gna Hnm PM.
Similar names.  See Connecticut Field.
Seedsmen's synonyms. Yankee Cor, Hnm.

Connecticut Yellow Field.  C&J.  For similar names see Connecticut Field.

Cornfield.  Wd.
Similar names.  Large Cornfield.
Seedsmen's synonyms. Connecticut, Wd.

Cream.  Alr.
Seedsmen's synonyms. Cushaw, Alr.

Crockneck.  Ar Btl Ber Big Bow Bri Buc Bmr Brr DD Egt G&T Tg Hns Hlm Hop J&M J&S Kg Lam Mgd PM Man Puc Pt Pug Raw Ree Ree RP S&R S&O Sox Thm VI Vkr Wd Wdr WS.
Seedsmen's synonyms. Cushaw, Buc Bwr Bow J&S Lam Man, etc. Jonathan, Brr. Yellow Cushaw, Pac.

Cucumber Pumpkin.  Brb.

Cushaw.  Alx Alr Anb Ar Bak Brd Bt1 Bkt Ber Bmn Bov Bow Bow Bow Bri Bng Buc Bmr Cm CE Cc Col CF Cox Crs CA Ebe Eb Ebr Ebr Eie RE Eyr Ewg Est Frd fir Gdn GH Gra G&I Gw Gw Tg Hns Hde Hrn Hst H&C Hlm Hop Hnt H&P Hnt Jai J&M J&S Jns Ken Kg Lam Lnr Mdr Mgd Man PM Mns Man May JCM JMM Mhl Min M&S Mzy Nef Nol XI OY Pac HP JMP Pir Pir Pri Pug Raw Ree Ree Rob Ree RP Sal S&R SC Shw S&O Sox Stk S&W Tat Tex Thm Tpk Trm T&B VI Vkr Vin Web W&D Wd WS Wyg.
Similar names.  Improved Cushaw, Green-Striped Cushaw, Striped Cushaw, Mammoth Golden Cushaw, Yellow Cushaw, Improved Yellow Cushaw, White Cushaw, Large White Cushaw.

Dunkard.  Bgs Frd Lnr Ree Sox.

Early Sugar.  Eft Nef NK Rt Thr.  For similar names see Sugar.

Enormous.  D&H.

Farmer's Pride.  Mls.
Field. Bou Hnt Lan XI Rt.

Similar names. Common Field, Common Yellow Field, Large Common Yellow Field, Large Common Field.

French Prize. May. For similar names see Mammoth Prize.

Georgia Field. CA.

Similar names. Large Georgia Field.

Gibson’s Mammoth. D&H. For similar names see Mammoth.

Golden Marrow. Bgg Bur Evr Fst Hlm J&S Man Thr Thh VI.

Seedsmen’s synonyms. Michigan Mammoth, C&J J&S.


Similar names. Burpee’s Golden Oblong.

Golden Sugar. M&S. For similar names see Sugar.

Golden Yellow King of Mammoths. CCo Cur Hse.

Similar names. See King of Mammoths.

Granite State. Raw.

Gray Boulogne. J&S.

Green-Striped Cushaw. Bui 1st J&S Thm. For similar names see Cushaw.

Seedsmen’s synonyms. Improved Cushaw, Hst.

Hammond’s Hundredweight. Ham. For similar names see Hundredweight.

Hammond’s Mammoth. Ham. For similar names see Mammoth.

Hastings’ Jumbo. Entered as Jumbo.

Hundredweight. Man Mls HN.

Similar names. Hammond’s Hundredweight.

Improved Cushaw, Improved Mammoth, Improved Yellow Cushaw, Improved Yellow Field. Entered as Cushaw, Mammoth, Yellow Cushaw, and Yellow Field.

Indiana Field. VI.

Seedsmen’s synonyms. Kentucky Field, Evr VI.

Iron Bark. Ger.


Similar names. Mammoth Jumbo.

Seedsmen’s synonyms. Big Show, Frd. Fifty Dollar Prize, Frd Imp. King of Mammoths, Bru Bur Cur Frd Hrs Imp, etc. Large Mammoth, Pg. Large Yellow Mammoth, Ham Liv. Large Yellow Mammoth Potiron, Drr. Mammoth, Frd Imp McK Ren Pg Liv, etc. Mammoth Fifty Dollars, Ham Liv. Mammoth Potiron, Buc Hlm Hrs Tex. Mammoth Tours, Anb Ger Nef. Potiron, Bur Liv Ham Ptt Roc Vk, etc. Tours, Ten.

Kentucky Field. Anb Ar Bak Bt Brk Brbr C&J CE DD Eic Eic Fer Frd GH Hns Hrm H&C Hly Imp J&S K&F Koe Krr Lam May JCM JMM Pks Pnt Rec Rs RP SC Sox Stk SB Thm Tpk Trm Vl Web WS.

Similar names. Large Yellow Kentucky Field, Mammoth Kentucky Field.

Seedsmen’s synonyms. California Field, Thm. Connecticut Field, Thm. Large
Cheese, Brk Bur Brb Rec Rs RP, etc. Large Sweet Cheese, J&S Vk. Indiana Field, Evr VI. Sweet Cheese, Fer H&C Lam LB Pks.

King of the Field. May. For similar names see King of Mammoths.


Similar names. Buckbee's King of Mammoths, Golden Yellow King of Mammoths, May's King of the Field, Mammoth King, Mammoth Yellow King, King of the Field.


Large Cheese. Axl Alr Ar Bai Pak Bel Btt Btt Bai Brk Brk Brn Bng Buc Bui Brb Bur Brw C&J Cam CE Chl C&B Col CF Cus Cur Del Dd Drr Ebr Eic Elt Evr Fst Fld Frd Gdn GH Gra Gry G'T TG Hde Hrn Hrn Hrs Hst Htt Htt H&P Iml low Jac MWJ RJH J&M Jns K&W Kg Kos Kra Lea Lnr Mdl Mng Mno Man May JCM JIM McK Mm Mhl MV M&S Mzy Nep Nol OY Pac JMP Thr Pne Put Ptt Prr Pot Pri Rik Ren Rec Roe Rsc RP Sal &K SC Shw S&O Sie Sox Stk SB &W&T Tat Tex Thm Thr Til Tpl Trm VI Vn Vin W&D Wer Wd Wdr WS Wyg Yng Y'II.

Similar names. Mammoth Cheese, Large Mammoth Yellow Cheese, Large Sweet Cheese, Sweet Chee, Cheese.

SEEDSMEN'S SYNONYMS. Kentucky Field, Bur Brk Brb C&J Rec Sox, etc. Sweet, Col.

Large Common Field. Bur Col. For similar names see Field.

SEEDSMEN'S SYNONYMS. Big Tom, Bur.

Large Common Yellow Field. Col Drrn Liv JI. Mhl M&S Nol.

Similar names. See Field.

SEEDSMEN'S SYNONYMS. Connecticut, Col Mhl Nol.

Large Cornfield. MWJ. For similar names see Cornfield.

Large Field. Bar Drrn Frd Ggy Iml Jor RJH Kra McK Pne Ren S&O Sim TB Van Y&II.

SEEDSMEN'S SYNONYMS. Yankee Cor, Frd.

Large Georgia Field. Ax. For similar names see Georgia Field.

Large Mammoth. Hly. For similar names see Mammoth.

SEEDSMEN'S SYNONYMS. Jumbo, Pg. King of Mammoths, Pg. Mammoth, Pg.

Large Mammoth Tours. Gls. For similar names see Mammoth Tours.

Large Mammoth Yellow Cheese. Sim. For similar names see Large Cheese.

Large Pie. Liv.

Large Red Etampes. RJH. For similar names see Red Etampes.

Large Sweet. Liv. For similar names see Sweet.

SEEDSMEN'S SYNONYMS. Pie, Liv.

Large Sweet Cheese. Big Bow Grw J&S Liv JI. HP Puz S&B Vk.

Similar names. See Large Cheese.

SEEDSMEN'S SYNONYMS. Kentucky Field, J&S Vk.

Large Tours. Alr Bel Bdg Brn CE C&B Drr RE Hn RJH Kg Lar Mas Man JCM Mhl Xol Pac HP Ptt Rec RP S&O Sox S&W Van Vnk W&D Yng.

Similar names. See Mammoth Tours.

SEEDSMEN'S SYNONYMS. Mammoth, Gls Mas Mhl Ptt Sox S&W, etc. Mammoth French, Van. Mammoth Tours, Hn Man HP RP.
Large White Cushaw.  J&S Ten.  For similar names see Cushaw.

SEEDSMEN'S SYNONYMS.  Jonathan, J&S Ten.

Large Yellow.  Bai Bow Brw Dun Ebr RE Fer Lam LB Loh Nl Old Pg Pks Por Png S&R Spj Tpk Vin.

SIMILAR NAMES.  Mammoth Yellow, Mammoth Golden Yellow, Small Yellow.


Large Yellow Field.  Bgs Drr Hde Hlm Pot S&H.

SIMILAR NAMES.  See Yellow Field.

Large Yellow Kentucky Field.  Shw.  For similar names see Kentucky Field.

Large Yellow Mammoth Potiron.  Drr Ger.  For similar names see Potiron.

SEEDSMEN'S SYNONYMS.  Jumbo, Drr.  King of the Mammoths, Drr.

Large Yellow Tours.  MJW.  For similar names see Mammoth Tours.

Leaving's World Beater.  Entered as World Beater.

Livingston.  Fdl.

SIMILAR NAMES.  Livingston's Improved.

Livingston's Improved, Livingston's Cushaw.  Entered as Livingston and Cushaw.


SIMILAR NAMES.  Improved Mammoth, Large Mammoth, Hammond's Mammoth, Michigan Mammoth, West India Mammoth, Globe Mammoth, Wernich's Mammoth Giant, Mammoth Giant.

SEEDSMEN'S SYNONYMS.  Jumbo, Bur Ham Liv Pg Fred Iml, etc.  King of the Mammoths, Bur Ham Liv Pg Wdr Fred Iml, etc.  Large Mammoth, Pg.  Large Yellow Mammoth, Ham Liv.  Mammoth Fifty Dollars, Liv Ham.  Potiron, Bur Chi Diw Est Ham Jl, etc.  Big Show, Fdl.  Fifty Dollar Prize, Fred Iml.  Large Tours, Gls Mhl Mas Ptt Rce S&O, etc.  Tours, Kei Ren.


SIMILAR NAMES.  See Red Etampes.

Mammoth Cheese.  Kei.  For similar names see Large Cheese.

Mammoth Chili.  DD.

Mammoth Etampes.  Brn Drm Evr TG Iow Mau Vl.

SIMILAR NAMES.  See Red Etampes.

SEEDSMEN'S SYNONYMS.  Mammoth Tours, Vl.

Mammoth Field.  Bui Tll.

SEEDSMEN'S SYNONYMS.  Big Tom, Bui.

Mammoth French.  Vau.

SEEDSMEN'S SYNONYMS.  Large Tours, Vau.

Mammoth Giant.  Wer.  For similar names see Mammoth.


SIMILAR NAMES.  See Cushaw.

Mammoth Golden Yellow.  Evr Sk.  For similar names see Large Yellow.

Mammoth Gray.  SB.

Mammoth Jumbo.  Shm.  For similar names see Jumbo.

Mammoth Kentucky Field.  WS.  For similar names see Kentucky Field.

Mammoth King.  Brk Brl Bui Hvy Mzy Xel SB Thr Tll Vl.

SIMILAR NAMES.  See King of Mammoths.

SEEDSMEN'S SYNONYMS.  Jumbo, SB.

Mammoth Potiron.  Bai Bkg Bdg Buc CE Col Evr Gll Grw TG Hde Hrs Hlm Rll Jl Lnr LB Mnd MV Roc Sal Sx Tex Thm Vl.

SIMILAR NAMES.  See Potiron.

SEEDSMEN'S SYNONYMS.  Jumbo, Buc Hrs Hlm Tex.  King of the Mammoths, Col Hrs Tex.  Large Yellow, Tex.
Mammoth Prize. Brr Dw Bae Kg Lam Lnr NK Old Vgl.

Similar names. Northrup, King & Co.'s Mammoth Prize, Simmers' Mammoth Prize, French Prize.


Similar names. See Red Etampes.

Mammoth Sugar. IB. For similar names see Sugar.

Mammoth Summit. Hop.

Seedsmen's synonyms. King of the Mammoths, Hop.

Mammoth Tours. Anb Ar Brd Btl Cam Cle Cox Crs Cur DD DRM Ebr Elt Eyr Frd Ger GH Gng Tg Hns Iow J&S Kxs Lam Lan Lnr Liv Mund Man May JMM MV Mzy Nef OV For Rck Rs RP S&K SC Shm Sic Spk Thr Tpk T&B VI Vin Web Y&H.

Similar names. Large Tours, Large Mammoth Tours, Large Yellow Tours, Mammoth Yellow Tours, Tours.

Seedsmen's synonyms. Citewell, J&S. Etampes, VI. Jumbo, Anb Ger Nef. Large Tours, Mam Man RP. Mammoth Whale, Iow.

Mammoth Yellow. Brn. For similar names see Large Yellow.

Seedsmen's synonyms. Jumbo of California, Ms. King of the Mammoths, Ms.

Potiron, Ms.

Mammoth Yellow King. MWJ. For similar names see King of Mammoths.

Mammoth Yellow Tours. MWJ. For similar names see Mammoth Tours.

Maryland Sweet Potato. G&T. For similar names see Sweet Potato.

Mauls Prize Potiron. Entered as Prize Potiron.

May's King of the Field. Entered as King of the Field.

Michigan Mammoth. Gey Rob. For similar names see Mammoth.

Seedsmen's synonyms. Golden Marrow, C&J J&S.


Similar names. Small Nantucket, Nantucket Negro.

Seedsmen's synonyms. Negro, Brk Cur Fmr Gry Rck Rob, etc. St. George, Frd JCM. Sugar, Bnt.

Nantucket Negro. May. For similar names see Nantucket, Negro.


Similar names. Black Negro, Nantucket Negro, Small Negro.


New Jersey Sweet Potato. M&S NoL. For similar names see Sweet Potato.

Northrup, King & Co.'s Mammoth Prize. NK.

Similar names. See Mammoth Prize.

Ohio Pie. Anb.

Old Tom. Egg.

Pie. Bt Bw Bdg Fer Fie Gins GN Hw Hw Lam LB Liv Loh Mus Pne RP Vkk.


Potato. Bg Shw. For similar names see Sweet Potato.

Seedsmen's synonyms. Osahaur, Shw.


Similar names. Mammoth Potiron, Yellow Mammoth Potiron, Large Yellow Mammoth Potiron, Mauls Prize Potiron.

Seedsmen's synonyms. Jumbo, Ptt Ren Vkk Bar Liv Frd, etc. King of the Mammoths, Ms Rob Ptt Vkk WS Wd, etc. Mammoth, Ren. Tours, Ren. Big

1329—No. 21—02—20

**Prize Potion.** Man.

**Prolific Field.** Tom.

**Pure Gold Field.** Buc Roc.

**Similar Names.** Buckbee’s Pure Gold Field.

**Quaker Pie.** Bkt Brk Brk Buc Bui Bur C&J CE Chl Col CF Cur *D&H Ebr* Evr Fnr Frid Ger *Gld* Gld GIH TG Ham Hbt Ily Hlm Hop H&P Iml J&S Jns Lar Lr. Mgd Man May Ms S&M Neb Nk OY Pac Pz Poo Qkr Rec Ren Rec Rob Roc S&O Sie Sox Tem Thr Tpk V1 Van Vl Wll.

**Similar Names.** Burpee’s Quaker Pie.

**Queen Luxury.** Sim. For similar names see *Winter Luxury.*

**Red Etampes.** Brn Mnd MV SoX Thr.

**Similar Names.** Large Red Etampes, Mammoth Red Etampes, Bright Red Etampes, Mammoth Bright Red Etampes, Mammoth Etampes.

**St. George.** Frd Lar JCM.

**Seedsmen’s Synonyms.** Nantucket, Frd JCM.

**Sandwich Island.** *D&H* Roc.

**Simmers’ Mammoth Prize.** Sim. For similar names see Mammoth Prize.

**Small Early Sugar.** J&S. For similar names see Sugar.

**Small Golden Sugar.** Brr. For similar names see Sugar.

**Small Nantucket.** Lnr. For similar names see Nantucket.

**Small Negro.** Cle. For similar names see Negro.

**Seedsmen’s Synonyms.** Black Sugar, Cle.


**Similar Names.** See Sugar.

**Seedsmen’s Synonyms.** New England Pie, Iow. *Sweet, Sox.* *Yankee Pie, Iow* Tem.

**Small Sweet.** Crs Del. For similar names see Sweet.

**Seedsmen’s Synonyms.** Sugar, Crs.

**Small Sweet Sugar.** Cam Evr Y&H. For similar names see Sugar.

**Small Yellow.** McK. For similar names see Large Yellow.

**Small Yellow Sugar.** Cle TG Hns. For similar names see Sugar.

**Southern Field.** Hst.

**Striped Cushaw.** Gld MV Pnt SrX Spf Thr. For similar names see Cushaw.

**Seedsmen’s Synonyms.** Crookneck, Pnt.


**Similar Names.** Early Sugar, Small Early Sugar, Golden Sugar, Small Golden Sugar, Small Sugar, Small Sweet Sugar, Yellow Sugar, Small Yellow Sugar, Black Sugar, Mammoth Sugar, Sweet Sugar, Vaughan’s Sugar.

**Seedsmen’s Synonyms.** General Field, H&P. *Nantucket, Bni.* *Pie,* *Haw Vl.*

**Small Sweet, Crs.** *Sweet, C&J Fqr Hrm Ken Jl Rec, etc.* *Yellow Sweet, Bgs.* *Winter Luxury,* Hrs.

**Sweet.** Ber Bri C&J CE Col Emr Fqr Hrm Hse Hnt Ken Jl MV Por Rtk Rec RP S&R S&F S&O Sie Sox SB AGT Wec.

**Similar Names.** Large Sweet, Small Sweet, Yellow Sweet.

**Seedsmen’s Synonyms.** Large Cheese, Col. *Pie, RP.* *Small Sugar, Sox.* *Sugar, C&J Fqr Ken Por Rec S&o, etc.*


Sweet Cheese. For H&C Lam LB Pks. For similar names see Large Cheese.

Sweet Field. J&M.

Sweet Potato. Bkt Grw Hrn Hbt Jus Lnr PM Mns Min Xi Roe Sal Vau Wll.

Sweet Sugar. Brk Mic Rs Wll. For similar names see Sugar.


Tours. Kei Ren. For similar names see Mammoth Tours.

Yellow Mammoth. For similar names see Mammoth.

White Cushaw. Brk TG Iow Roe S&O Spl Thr. For similar names see Cushaw.

Yellow Sugar. For similar names see Sugar.

Yellow Sweet. Bgs. For similar names see Sweet.

Yellow Sweet Potato. Brk Mic Rs Wll. For similar names see Sweet Potato.

Yum Yum Pie. Ber.

RADISH.

Alaska. Sal.

Alexander’s All Seasons. Entered as All Seasons.

All Seasons. Alx GgY Iow Lsn Ms Spf Vk.

Yellow Mammoth Potiron. CE Roe Sox. For similar names see Potiron.

Yellow Sugar. For similar names see Sugar.

Yellow Sweet. Bgs. For similar names see Sweet.

Yellow Sugar. For similar names see Sugar.

Yellow Sweet Potato. For similar names see Sweet Potato.

Yum Yum Pie. Ber.

RADISH.

Tours. Kei Ren. For similar names see Mammoth Tours.

Virginia Mammoth. Wd.

Wernich’s Mammoth Giant. Entered as Mammoth Giant.

Western Field. Buc J&S Roe.

West India Mammoth. Bdg. For similar names see Mammoth.
AMERICAN VARIETIES OF VEGETABLES.

All Solid. Cur.
All Year Round. Sal. For similar names see All Seasons.
Arlington First Early. Lon.
SIMILAR NAMES. See Long Scarlet.
Arrington's First and Best. Entered as First and Best.
Barteldes' Glass. Entered as Glass.
Beckert's Chartier, Beckert's Improved Chartier, Beckert's Nonpareil. Entered as Chartier and Nonpareil.
Bertram Forcing. Vau.
Black Spanish. Can Ebr Eic RE Ewg Ggy TG Hrs RHJ Kei K&W Mgd Mau Mck Mcm Mie Mzy Xi Pac Pir Pm Pgt Pot Pug Ren Sal Shm Spf Stk Tem Th Trm T&b Wat Wlr.
SIMILAR NAMES. See Long Black Spanish.
Black Spanish Oblong-Shaped. Brw. For similar names see Long Black Spanish.
Black Spanish Oval-Shaped. JMM. For similar names see Long Black Spanish.
Black Summer Turnip. Vau.
Bolgiano's Early Long Scarlet, Bolgiano's Large White, Bolgiano's Snow White Turnip. Entered as Early Long Scarlet, Large White, and Snow White Turnip.
Bolgiano's No. 1 Scarlet Globe. Blg. For similar names see Early Scarlet Globe.
Bolgiano's No. 2 Scarlet Globe. Blg. For similar names see Early Scarlet Globe.
Boston Long Scarlet. Ggy. For similar names see Long Scarlet.
Breakfast. GN Vau. For similar names see French Breakfast.
Briggs' Scarlet Globe.Entered as Scarlet Globe.
Bright Breakast. Bur Ham Jer Mgd McM.
SIMILAR NAMES. See French Breakfast.
SEEDSMEN'S SYNONYMS. French Breakfast, Ham.
Bright Red Turnip Forcing. M&S. For similar names see Red Turnip.
Bruce's In and Out, Bruce's Non Plus Ultra. Entered as In and Out and Non Plus Ultra.
Buckskin Yellow Gray. Bgs.
Buist's Early Long Scarlet, Buist's Early Long White, Buist's Earliest Scarlet Turnip, Buist's Early Short White Forcing, Buist's Yellow Summer Turnip, Entered as Early Long Scarlet, Early Long White, Early Scarlet Turnip, Early Short White Forcing, and Yellow Summer Turnip.
Burlington Early White Forcing. Lan. For similar names see Earliest White.
Burpee's Earliest. Bur Pg. For similar names see Earliest Forcing.
California Cherry. M&S.
SIMILAR NAMES. Moore & Simon's California Cherry.
California Long White Spanish. Sim.
California Mammoth Long Black Spanish. Sim.
SIMILAR NAMES. See Long Black Spanish.
309

RADISH.

Ebe Fmr Fer Lam l.nr LB Loh I'k- Tpk.
California Mammoth White China.
Similar names. See California Mammoth Whiti Winter, Chinese Rosi Winter.
Air Anb Ar Bai Btl Bel Big Bow Bgs Brli
California Mammoth White Winter.
Brn Bru Buc Bur CE C&B Col Crs Cur Del DD Ebr Elt UK Evr'Fmr Fst Frd
GerGls Gdn GH GraGrwTG Ins in IDs Hrv Hst Hen Hbt H&C Him H&P
Man May JCM McK Mic Mis
Mzy Neb
low J&M .IAS Kei Ken Lnr LB
NK PacPrrJ Pnt Pit Por Pug Qkr Raw Ree Ren Rce Roc RP Sal S&R SC Shw
I

1

1

Mm

MV

Sir Sox Stk SB SMI Tat Tem Tlh Thin Tin- Til Trm TAB VI Van Vk Web
Wer.
Similar names.
Mammoth While Winter, California Mammoth White
China, California White Winter, California Long White Spanish, Moore & Simon's
California Cherry.
Russian Mammoth White, 111'.
Seedsmen's synonyms.
California White Winter. Cle Drr Gg) Hop Ian Man Mhl Nef.

S&O

W&D

Similar names. See California Mammoth White Winter.
Large White Russian, Ggj
Seedsmen's synonyms.
Similar names. See Long Cardinal.
Seedsmen's synonyms.
Long Brightest Scarlet, Brd Bui Eic Frd sic Van.
Cardinal Globe. Drr III,,, J&S Lan MAS No! Wd WS.
Similar names. Sec Long Cardinal.
Scarlet Globe, J&S
Extra Early Scarlet Globe, Wd.
Seedsmen's synonyms.

Mhl Nol.
Carmine Forcing. H&C M&S. For similar names see
Carmine Olive-Shaped. TG Ham. For similar names
Seedsmen's
Scarlet Olive,

synonyms.

Ham.

Improved Scarlet

Short Leaf,

Ham.

Globe,

Startle,

Earliest Carmine.

see Scarlet Olive-Shaped.

Ham.

Rocket,

/.'••/

Ham.

Ham.

Entered as Long Scarlet.
Carter's Long- Scarlet.
Celestial.
Bkt Big Bgs Bri Buc Bui Bur CE Cle Cox D&H DD RE Fer Frd Gdn
Hen III,,, low J&S Lan Lnr Mgd Mns Mrs Pac 111' Rce Rim Sic Stw Tlir Van

Wat Wd WAD.
Similar names. Chinese Celestial.
Chinese Half Long
Chinese, Mgd.
Seedsmen's synonyms. All Seasom, low.
Mammoth
IF/oV, Chinese, Big Bui Bur Hen l.i\ Mns, etc.
WhiU Chinese, Air.
<

Champion.

Fst

Urn

Pri.

Similar names. Faust's Champion.
Agn Alx Air Anb Ar Bai I'.ak Brd Brt Btl Bkt Bel Ber Big Bow Bgg
Bgs Bri Brn Bru Buc Bui Bur Brr C&J Cam CE Chi Cle C&B Col CF Cok Cox
Org Crs Cur CA Dlw Del DD D&C Drr Drw Dm, Eas Ebr Eic Elt. RE Ewg Fmr
FqrFst Fer Fid Fie Frd Ger Gls Gdn GH Gra Gng G1S Ggy Cry CAT TG Hns
Ham Hde Hrn Hrs Hrv Hst lien Ill.t H&C Illy Him Hop Use H&P Iml [ow
JAM .IAS Jus Kei Ken Kg Koe Kos Lam Fan Lea Lnr LB Liv Loh
JacJer
Lon Mgd Man I'M Mns Man May JCM JMM McK McM Mel Mic Mhl Mis Mrs
Mzy Neb Nef Nol NI NK OV Old Pac Pks HP JMP Pir Prn Pnt Ptl Poo Po)

Chartier.

MWJ

Qkr Rtk Raw Ree Rce Roc Rt Rs RP Sal SC S&F Shw S&O Shm
SF. Stw SAII Tern Tex Thin ACT Til, Til Trm T&B VI Van
Vk Vin Wat Wei, WAD Wll Wyg Yng Y&H.
Pot Pri Pug

si,-

Sim Sox Spf

Similar names.

Beckert's Chartier, Beckert's Improved Chartier, Improved

Improved Chartier, Buckbee's [mproved Chartier, Cox's
Improved Chartier, Long Chartier,
g Scarlet Chartier, Long Scarlett bartiei
White-Tipped, White-Tipped Chartier, White-Tipped Scarlet chartier. White
Chartier, Long White Chartier.
Seedsmen's synonyms. Shepherd, Bgs Hen Vk Bur JL Rce, etc. Early MamLong Rosi White-Tipped, Hde Neb Pnt SC.
Long Rose, Fan I'.ak.
moth, Chi.
chartier.

Alneer's

I


Chinese Celestial. Tem Wat.

Similar names. See Celestial, Chinese Rose Winter.

Seedsmen's synonyms. Round Scarlet Chinese, low Tex.

Chinese Globe Winter. Low Tex. For similar names see Chinese Rose Winter.


Similar names. See Chinese Rose Winter.

Seedsmen's synonyms. Celestial, Lan Stw.

Chinese Mammoth White. Air Btl Cox Frd GH Lnr Shm Shw Van Vin.

Similar names. See Chinese Rose Winter.


Chinese Rose Summer. Blg. For similar names see Chinese Rose Winter.


Seedsmen's synonyms. Scarlet China, Bui Brn Liv Frd Fmr Van, etc. Scarlet Winter, Bt.


Similar names. See Chinese Rose Winter.

Seedsmen's synonyms. Chinese Rose Winter, Bui Liv Elt JL Ren Van, etc.

Chinese Stump-Rooted. Cle GII. For similar names see Chinese Rose Winter.

Seedsmen's synonyms. Celestial, Cle.

Cincinnati Long Scarlet. Mhl. For similar names see Long Scarlet.


Similar names. McCullough's Cincinnati Market, Cincinnati Long Scarlet.

Seedsmen's synonyms. Glass, Bar XK Will.

Clipper. D&II.

Colorado Glass. Van. For similar names see Glass.

Comet. J&K.

Covent Garden. Ggy.

Similar names. Covent Garden Long Scarlet.

Seedsmen's synonyms. Long Scarlet Short Top, Ggy.

Covent Garden Long Scarlet. Kei.

Similar names. See Covent Garden, Long Scarlet.

Cox's Improved Chartier, Cox's Rose Queen, Cox's Triumph. Entered as Chartier, Rose Queen, and Triumph.

Crimson Ball. Drr.
Crimson Bunch.  Red.

Crimson Red.  Shm.

Crystal Forcing.  Buc Drt Roc.
  Similar names.  Dreer's Crystal Forcing, Buckbee's Crystal Forcing.
  Seedsmen's synonyms.  *Model White Box, Alr.*


Dainty Forcing.  Hlm Vt.
  Similar names.  Holmes' Dainty Forcing.

Dallwig's Earliest Forcing.  Dlw.  For similar names see Earliest Forcing.

Dallwig's Golden Yellow Oval-Shaped, Dallwig's Twenty Day.  Entered as *Golden Yellow Oval-Shaped* and *Twenty Day.*

Danish Attraction.  Ren.

Dark Red Ball.  Bur Hrs.  For similar names see *Fire Ball.*

Deep Blood Red Turnip.  Brk 100 Ggy.  For similar names see *Red Turnip.*

  Similar names.  See Scarlet Olive-Shaped.

Deep Scarlet Turnip.  Btl Bgs Ehr Lnr LB May Mgd Ptt Tat.
  Similar names.  See Scarlet Turnip.

Deep Scarlet Turnip Forcing.  Tat.  For similar names see *Scarlet Turnip.*

  Similar names.  See Scarlet Turnip White-Tipped.

  Similar names.  See Scarlet Turnip White-Tipped.

Delicacy.  Bgs Ehr LB May St Thr.
  Similar names.  Early White Delicacy, Moore & Simon's Early White Delicacy, White Delicacy.
  Seedsmen's synonyms.  *Half Long White Summer,* Sc.

Denver Glass.  Hrs.  For similar names see Glass.

Dickmann's Model White Box.  Entered as *Model White Box.*

Dom Pedro.  JMP.
  Similar names.  Philips' Dom Pedro.

Double Quick White Forcing.  J&S.  For similar names see *Earliest White.*

Dreer's Crystal Forcing, Dreer's Crimson Ball, Dreer's Earliest White-Globe Forcing.  Entered as *Crystal Forcing,* *Crimson Ball,* and *Earliest White Globe Forcing.*


Earliest Carmine Erfurt.  Air GII Vau.  For similar names see Earliest Erfurt.

Earliest Carmine Forcing.  Cur Nol W&D.  For similar names see *Earliest Carmine.*


Earliest Carmine Turnip.  Dw Ehr GII Hrn Spi Vau.
  Similar names.  See *Earliest Carmine.*
Earliest Erfurt. Fmr Hde K&F Wer.


Earliest Erfurt Blood Red. Bai Put. For similar names see Earliest Erfurt.


Similarly named. See Earliest Erfurt.

Earliest Erfurt Scarlet Turnip White-Tipped. Gg.

Earliest Forcing. Chl.


Earliest of All Scarlet. Mbl.

Similarly named. Sutton’s Earliest of All Scarlet.

Earliest Scarlet. Mau. For similar names see Earliest Forcing.


Earliest White Forcing. Ren. For similar names see Earliest White.


Earliest White Olive. Mgl. For similar names see Earliest White.

Seedsmen’s synonyms. White Rocket, Mgl.

Early Bird. GN. Lon Sal.

Similarly named. Salzer’s Early Bird.


Early Bright Scarlet Olive-Shaped. Dlw.

Similarly named. See Scarlet Olive-Shaped.


Similarly named. See Scarlet Olive-Shaped.

Early Carmine Olive-Shaped Forcing. Y&H.

Similarly named. See Scarlet Olive-Shaped.

Early Deep Blood Red Turnip. MV Scr Thr. For similar names see Red Turnip.

Early Deep Red Turnip. Bri TB. For similar names see Red Turnip.

Early Deep Red Turnip Forcing. TB. For similar names see Red Turnip.

Early Deep Scarlet Olive-Shaped. Bar Bui Ebe Fqr Gg Hde Lam Mau Pac Rec RP Y&H.

Similarly named. See Scarlet Olive-Shaped.


Similarly named. See Scarlet Olive-Shaped.

Early Deep Scarlet Olive-Shaped White-Tipped. RE SB.

Similarly named. See Scarlet Olive-Shaped.

Early Deep Scarlet Tennis Ball. Lan.

Early Deep Scarlet Turnip. Bak Brk C&J Col D&H Ebe Elt Gdn Gg Tü HrnJae Lan Min MV Neb NK Pac Pg Pri Reo Rec Roe S&O Sie Thr Van Web Wdr Y&H.

Similarly named. See Scarlet Turnip.

Early Deep Scarlet Turnip Forcing. Brw CF Cur Fqr Fer Fle Gry Haw Jns Mel Rim Thr Wer.

Similar names. See Scarlet Turnip.
Seedsmen's synonyms. Dark Red, Col DD Fle Jns Loh. Dark Red Ball, Col.

Early Deep Scarlet Turnip White-Tipped. SB.

Similar names. See Scarlet Turnip White-Tipped.

Early Fire Ball. Liv Wat. For similar names see Fire Ball.

Early Frame. Ewg Mhl Tat. For similar names see Wood's Early Frame.

Early Frame Forcing. Shm. For similar names see Wood's Early Frame.


Similar names. See French Breakfast.
Seedsmen's synonyms. Early White-Tipped Scarlet Olive-Shaped, SC.

Early French Deep Scarlet Turnip. Thr. For similar names see Scarlet Turnip.

Early French Scarlet Forcing Turnip. Brk Fqr Thr.


Similar names. See Scarlet Turnip.

Early French Scarlet Turnip. Thr. For similar names see Scarlet Turnip.

Early French Scarlet White-Tipped Forcing Turnip. Mnd Thr.

Similar names. See Scarlet Turnip White-Tipped.

Early French Scarlet White-Tipped Turnip. Thr.

Similar names. See Scarlet Turnip White-Tipped.

Early Garnet. MWJ Ken Lan.

Early Giant White Stuttgart. C&J Fer Lan LB HP WS.

Similar names. See White Stuttgart.

Early Golden Dresden. Lan. For similar names see Golden Dresden.

Early Golden Yellow Oval-Shaped. For Gls Mgd HP Shw.

Similar names. See Golden Olive-Shaped.


Similar names. See Half Long Scarlet.

Early Half Long Scarlet. Bui Lea. For similar names see Half Long Scarlet.

Early Island Bright Scarlet. TB.

Early Long Brightest Scarlet. Bue Por Roc S&F.

Similar names. See Long Scarlet.


Similar names. See Long Scarlet.


Similar names. See Long Scarlet.


Similar names. See Long Scarlet.

Early Long White. Bui. For similar names see Long White.

Early Long White Lady Finger. Bak Pnt. For similar names see Lady Finger.

Early Long White Vienna. Lan Neb Rim Stw.

Similar names. See White Vienna, Long White.

Seedsmen's synonyms. Lady Finger, Neb.

Early Mammoth. Chl.

Seedsmen's synonyms. Shepherd, Chl. Chartier, Chl.

Early May. Fnr.
Early Nine-Pin Shape.     Sim.
Early Non Plus Ultra.     MV Sim Thr. For similar names see Non Plus Ultra.
Early Olive-Shaped.      Bow Bur For Hns.
Seedsmen's synonyms.   Half Long Scarlet, Bow.
Early Oval Dark Red.     Bar. For similar names see Round Dark Red.
Seedsmen's synonyms.   Oval-Shaped Deep Scarlet, Fri.
Early Purple Olive-Shaped White-Tipped.  Dw.
Similar names. See Early Purple Turnip.
Early Purple Turnip.     Dw Raw.
Similar names. Purple Summer Turnip, Early Purple Olive-Shaped White-Tipped.
Early Red Turnip.        Bou Crg MWJ Mns Min Wd WS.
Similar names. See Red Turnip.
Seedsmen's synonyms.   Early Scarlet Turnip, Wd WS.
Early Rose Gem.          Mls Sox. For similar names see Rose Gem.
Early Rose Turnip.       Col. For similar names see Rose Turnip.
Early Round Bright Red.  Brw. For similar names see Round Dark Red.
Hen Hlm J&S Mns Mau Mls Mrs Pir Prn Poo Ree Ree Tem Vl W&D.
Similar names. See Round Dark Red.
Early Round Dark Erfurt.  Bld Hns SC.
Similar names. See Early Erfurt.
Early Round Deep Scarlet. Bow Crs Frs Fer Gls Loh Til Tpk.
Similar names. See Scarlet Turnip.
Similar names. See Scarlet Turnip.
Early Round White-Tipped. Til. For similar names see White-Tipped.
Early Scarlet Ball.      Brw Mr K. For similar names see Fire Ball.
Early Scarlet Button.    Bur Hlm Ree Trm Vl. For similar names see Scarlet Button.
Early Scarlet Gem White-Tipped Forcing. Thr.
Early Scarlet Globe.     Alr Bak Bnd Bld Brk Brg C&B Cl C F Crs Cur
 CA DP Drn Eas Elc RE Fgr Fer Frd Gls Gl Ggy Gty Grw Ths Hns Hm
 Hen Hly Hop Iml J&K Jns Kos Lur Liv JL Loh JMM Mic Mrs Neb Nol NL NK
 OV Old Pq JMP Pne Put Ptt Pot Pri Raw Rt Sd SC S&F Sim Stn H&I Stn W&
 Thm Thr Thk Van Wca Web W&D Wer.
Seedsmen's synonyms.   Prussian Globe, G&T Lir.
Early Scarlet Globe Short Top. Hrs. For similar names see Early Scarlet Globe.
Early Scarlet Globe White-Tipped.  Fmr Vau.
Similar names. See Early Scarlet Globe.
Early Scarlet Olive-Shaped. Anb Brt Bld Brs Buc C&J CE Cox Dlw DD Eic
 RE For Ggy Kt Lb Mgd PM Mck Min NK Pks Put Ptt Ree Ree Ree SC
Similar names. See Scarlet Olive-Shaped.
Early Scarlet Olive-Shaped Short-Leaved.  Rs.

**S**imilar **N**ames.  See Scarlet Olive-Shaped.

**Early Scarlet Olive-Shaped White-Tipped.**  SC Sim.

**S**imilar **N**ames.  See Scarlet Olive-Shaped.

**S**eedmen's Synonyms.  Early French Breakfast, Ken Int Sim.  Early French Breakfast, SC.

**Early Scarlet Prussian Globe.**  Lan Mnd Thr Thr.  For similar names see Prussian Globe.

**Early Scarlet Short Top.**  Kei Sie.  For similar names see Scarlet Turnip.


**S**imilar **N**ames.  See Scarlet Turnip.


**Early Scarlet Turnip Forcing.**  Ber Cur DD H&C Mzy Hrs HP Pir Tem Thr.

**S**imilar **N**ames.  See Scarlet Turnip.

**S**eedmen's Synonyms.  Dark Red Bull, Hrs.

**Early Scarlet Turnip Short Top.**  H&P.  For similar names see Scarlet Turnip.

**Early Scarlet Turnip White-Tipped.**  Agn Anh Ar Bak Brd Btl Bow Bsg Brk Bui C&j CE CF Cox Crs Dlw DD Ebe RE Evr Ewg Fqr Fer Fle Frd Gls Gry G&T Grw TG Hns Haw Hen Hse Kei K&W Ken Lam Lnr LB Loh Mck Ms MV Mzy Nef NK Pg Pks Pir Pnt Put Pir Qkr Raw Ree Rs RP S&C S&S Shw Sim SB Stw Thm Thr Thb Til VL Wea W&D Wtr Wd WS Wyg Y&H.

**S**imilar **N**ames.  See Scarlet Turnip White-Tipped.

**S**eedmen's Synonyms.  Rapid Forcing, Fer.  Rosy Gem, Fer.

**Early Scarlet Turnip White-Tipped Forcing.**  Bak Fer Hrs Lnr Loh Mzy Nol S&O Til Thr.

**S**imilar **N**ames.  See Scarlet Turnip White-Tipped.

**Early Short Top.**  Sim.

**S**eedmen's Synonyms.  Long Scarlet, Sim.

**Early Short White Forcing.**  Bui.  For similar names see Earliest White.

**Early Snow White.**  GN.

**S**imilar **N**ames.  Belgiano's Snow White Turnip, Salzer's Snow White Ice, Snow White Turnip, Snow White Ice.

**Early Summer Turnip.**  Nef.

**S**eedmen's Synonyms.  Early White Turnip, Nef.

**Early Triumph.**  M&J Thr W&b.  For similar names see Triumph.

**Early White Box.**  Bri Bui Del Ebe NK Sor.  For similar names see White Box.

**S**eedmen's Synonyms.  Early White Turnip, Ebe Ebr Fqr Thr.

**Early White Delicacy.**  M&S.  For similar names see Delicacy.

**Early White Italian Summer.**  Bui.  For similar names see White Summer.

**Early White Olive-Shaped.**  Bt Bdg Buc Bnr CE Crs D&H RE Evr Fqr GII Grw Hns Hrn J&S Koe Lnr Mgd Nef Pks Ree Roe RP Sal Stw S&H Web Y&H.

**S**imilar **N**ames.  See White Olive-Shaped.

**Early White Olive-Shaped Forcing.**  Bgs Pnt.

**S**imilar **N**ames.  See White Olive-Shaped.

**Early White Stuttgart.**  Van.  For similar names see White Stuttgart.

**Early White Surprise.**  Shw.  For similar names see Surprise.

Similar names. See White Turnip.

Seedsman's synonyms. Early Summer Turnip, Nef. Early White Box, Ebr Ebr Fgr Thr.

Early White Turnip Forcing. Myl Y&ll. For similar names see White Turnip.

Early White Turnip Short Top. Rak Lan Van.

Similar names. See White Turnip.

Seedsman's synonyms. Philadelphia White Box, Van.

Early Yellow Ball. Brn.

Early Yellow Olive-Shaped. Y&ll.

Similar names. See Golden Olive-Shaped.

Early Yellow Summer Turnip. CE Evr GH TG Min NK Tem.

Similar names. See Golden Summer Turnip.

Early Yellow Turnip. Brd Crg Fgr Grw Pnt SC.

Similar names. See Golden Summer Turnip.

Early Yellow Turnip Forcing. Y&ll.

Similar names. See Golden Summer Turnip.

Eighteen Day Forcing. Sal. For similar names see Twenty Day.

Eighteen Hundred and Thirty-Four. Man.

Erfurt Dark Red. Pnt Sal. For similar names see Earliest Erfurt.

Evans' Scarlet Globe Forcing. Entered as Scarlet Globe Forcing.

Extra Early Carmine Globe. LB Shm. For similar names see Earliest Carmine.

Extra Early Carmine Olive-Shaped. Koe May JCM OV Tpk WS.

Similar names. See Scarlet Olive-Shaped.

Extra Early Deep Scarlet Turnip. Bug C&J Gra Ken Pri W&D.

Similar names. See Scarlet Turnip.


Extra Early Deep Scarlet Turnip White-Tipped Forcing. Hrm Lan Mel Y&H.

Similar names. See Scarlet Turnip White-Tipped.

Extra Early Erfurt. CA TG Yng. For similar names see Earliest Erfurt.


Extra Early Red Forcing. Pri. For similar names see Red Turnip.

Extra Early Rosy Gem. Gra Wdr. For similar names see Rosy Gem.

Extra Early Round Red. Brr. For similar names see Round Dark Red.

Extra Early Ruby Pearl. Shw. For similar names see Pearl.

Extra Early Scarlet Globe. Bng Hlm Shw 17 Wd WS Yng.

Similar names. See Early Scarlet Globe.

Seedsman's synonyms. Cardinal Globe, Wd.


Similar names. See Early Scarlet Globe.

Extra Early Scarlet Olive-Shaped. Wd.

Similar names. See Scarlet Olive-Shaped.

Extra Early Scarlet Prussian Globe. Koe HP.

Similar names. See Prussian Globe.

Seedsman's synonyms. Turk's Globe, HP.


Similar names. See Scarlet Turnip.
Extra Early Scarlet Turnip Forcing.  CE Gra Hrm Ptt Ree Sie Y&H.
Similar names.  See Scarlet Turnip.

Extra Early Scarlet Turnip White-Tipped.  HP.
Similar names.  See Scarlet Turnip White-Tipped.

Seedsmen’s synonyms.  Gem, Put.

Extra Early Scarlet Turnip White-Tipped Forcing.  CE Y&H.
Similar names.  See Scarlet Turnip White-Tipped.

Similar names.  See White Olive-Shaped.

Extra Early White-Tipped.  WS.  For similar names see White-Tipped.

Extra Early White Turnip.  Ewg Pri.
Similar names.  See White Turnip.

Faust’s Champion.  Entered as Champion.

Faust’s Favorite.  Fst.
Similar names.  Tait’s Favorite Forcing.

Felton’s Improved White Box.  Felton’s Model White Box.  Felton’s White Box.
Entered as White Box and Model White Box.

Fire Ball.  Bri J&S Mhl Til.
Similar names.  Early Fire Ball, Early Scarlet Ball, Scarlet Ball White-Tipped, Dark Red Ball, Scarlet Ball.

Seedsmen’s synonyms.  Early Bird, Ham.  Early Carmine Erfurt, Ham.  Early
Day, Ham.

First and Best.  CA.
Similar names.  Arrington’s First and Best.

First Crop.  Gry.

First Number.  Mhl.

Fourteen Day.  Alr.  For similar names see Twenty Day.

French Breakfast.  Alx Alr Anb Ar Bai Bak Brd Brt Btl Bkt Bel Ber Big Bou
Bow Bdg Bgs Bri Btk Brn Brn Bug Bue Brr Brr Brr Brr C&J Cam CE Chl Cle
C&B CF Crg Crs Cnr CA D&H Del DP D&C Drr Drw Drn Ebe Eic Elt Emr
RE Ewg Ffr Fst Fax Fer Fth Fll Flr Gfr Gls Glm Glh Gra Gry Gif G&
Grw Hns Ham Hde Hrm Hrn Hrs Hrv Hst Haw Hen H&C Hly Hlm Hop Hse
Hnt H&P Hnl Hrd Hsp Hsm Htt Hr D&H J&M J&S Jns Koi K&W Ken K&F Kg Koe
Kos Lan Lan Lea Lnr LB Liv JL Loh Lon Mdg Mdl Man PM Mns Mas Man
May JCM JMM McM Mel Mls Min MV Mrs Mzy Nef Nol XI XK OV Old
Pac Pg Pks HP JMF Pir Ptn Ptn Ptt Ptt Pto Pfr Pfr Pfr Pfr Pfr Pfr
Ren Ree Ree Rs RP Sal S&R Shw S&O Slm Sie Sim Sox Spi SB Stw S&H S&W
Tat Ten Thm Thr AgT Til Tpk Trm T&B Vl Vau Vn Wt Wht Wtl Wt Wdd
W&D Wer Wll Wll Wld Wdr WS Wyg Yng Y&H.
Similar names.  Bright Breakfast.  Early French Breakfast, Improved French
Breakfast, Improved Breakfast.  Old’s Improved French Breakfast, Breakfast.

Seedsmen’s synonyms.  Early Scarlet Olive-Shaped White-Tipped, Ken Put Sim.
Improved Bright Breakfast, Ham.  Half Long White-Tipped, Bow.  Scarlet Olive-
Shaped, Alx.  Scarlet Olive-Shaped White-Tipped, SB Stk Vl.  White-Tipped Red
Olive-Shaped, Bdg.

French Café.  Lan Thm.

French Forcing.  Rs.
Similar names.  French Forcing Deep Scarlet, French Forcing Early Deep
Scarlet.

Seedsmen’s synonyms.  Non Plus Ultra, Rs.

French Forcing Deep Scarlet.  Ebr.  For similar names see French Forcing.

French Forcing Early Deep Scarlet.  CF Mnd Thr.
Similar names.  See French Forcing.

French White Tail.  Ebr.
AMERICAN VARIETIES OF VEGETABLES.

**Giant White Strasburg.** Cle. For similar names see *White Strasburg*.


**Similar names.** See *White Stuttgart*.

**Glass.** Btl Bg Bri CE Frd GH Istd Hse Iml Ken Lnr NK Por Rec S&R Til Trm VI Wil.

**Similar names.** Barteldes' Glass, Colorado Glass, Denver Glass.

**Seedsman's synonyms.** *Cincinnati Market*, Bur NK Wil. *Non Plus Ultra*, VI.

**Golden Ball.** Bri. For similar names see *Golden Globe*.

**Golden Dresden.** Buc Bar Col Cox CA Dlw Drr Iow Liv Man JCM JMM Mhl Ren Roc.

**Similar names.** Early Golden Dresden, Improved Golden Dresden, White Dresden.

**Golden Globe.** Alx Alr Anb Ar Bkt Blq Bow Bdg Bgs Bur CE Cle Col Crs Cur DD Ebe Eic Fst Fer Frd GH Gg G&T TG Hrv H&C Hlm H&P Iml Koe Lan LB Liv Loh Mns May JCM JMM McM Mhl Min Xeb JMP Pir Por Pri Roe Sal S&R SC Shm Sic Sjk Stw TB Til Tpk Trm VI Wd WS Y&H.

**Similar names.** Shumway's Golden Globe, Yellow Globe, Improved Golden Ball. See also *Golden Summer Turnip*, *Golden Olive-Shaped*.

**Seedsman's synonyms.** *Golden Summer*, Bon S&R. *Yellow Summer*, Anb SC.

**Golden Olive-Shaped.** Bdq Mau S&F.

**Similar names.** Golden Yellow Olive-Shaped, Dallwig's Golden Yellow Oval-Shaped, Early Golden Yellow Oval-Shaped, Yellow Olive-Shaped, Yellow Oval-Shaped, Early Yellow Olive-Shaped. See also *Golden Globe*, *Golden Summer Turnip*.

**Seedsman's synonyms.** *Yellow Olive-Shaped*, Wdr.

**Golden Perfection.** Bn Gdn.

**Seedsman's synonyms.** Buist's *Yellow Summer Turnip*, Bui.

**Golden Summer Turnip.** Brk Bri Buc CE C&B Ebr Ewg Gls Gra Ggy RHJ Lnr Mnd Man MV Rec Rec Tat Thr Wer.

**Similar names.** Yellow Summer Turnip, Buist's *Yellow Summer Turnip*, Large Yellow Summer Turnip, Improved Large Yellow Summer Turnip, Golden Yellow Summer, Early Yellow Turnip, Early Yellow Turnip Forcing, Early Yellow Summer Turnip. See also *Golden Globe*, *Golden Olive-Shaped*.

**Golden Yellow Oval-Shaped.** Dlw. For similar names see *Golden Olive-Shaped*.

**Seedsman's synonyms.** *Yellow Summer Turnip*, C&B Ebr.

**Golden Yellow Olive-Shaped.** Bgs CE Drr J&S JMM M&S Nol Rec Thr Vl Wea W&D.

**Seedsman's synonyms.** *Surprise*, J&S.

**Golden Yellow Summer.** C&B Ggy Hrs Hp S&W Van Yng.

**Similar names.** See *Golden Summer Turnip*.

**Gray Summer Turnip.** Bkt Bri Buc Cle Cur Frd GH Hrv Koe Kos Lnr Liv MV Nef HP Ptt Rec Roe Scf S&F Sox S&W Til W&D Wer Yng.

**Griffing's Early Long Scarlet.** Entered as *Early Long Scarlet*.

**Half Long.** Mrs.

**Seedsman's synonyms.** *Olive-Shaped*, Mrs.

**Similar names.** Half Long White-Tipped, Half Long Olive-Shaped.

**Half Long Black Autumn.** Brg Nol W&D.

**Similar names.** See *Long Black Spanish*.

**Half Long Black Spanish.** Brn C&B Fer Gls Hen Iml J&S MWJ Lnr Nol Raw S&W Thr Y&H.

**Similar names.** See *Long Black Spanish*. 
Half Long Black Winter.  Dlw For Mhl Pri Vac.
  Similar names.  See Long Black Spanish.

Half Long Brightest Scarlet.  Cle Mhl Thom.
  Similar names.  See Long Scarlet.

  Similar names.  See Half Long Scarlet.

  Similar names.  See Half Long Scarlet.

Half Long Olive-Shaped.  Pg.  For similar names see Half Long.

Half Long Red.  Stw Vin.  For similar names see Half Long Scarlet.

Half Long Scarlet.  Sie.
  Seedsmen's synonyms.  Early Olive-Shaped, Bow.

Half Long White Strasburg.  Gll.  For similar names see White Strasburg.

Half Long White Summer.  SC.
  Seedsmen's synonyms.  Delicacy, SC.

Half Long White-Tipped.  Bow.  For similar names see Half Long.
  Seedsmen's synonyms.  French Breakfast, Bow.

Hamburg Forcing.  Dlw.


Henderson's Rose Turnip.  Entered as Rose Turnip.

Holmes' Dainty Forcing, Holmes' Royal Red Forcing.  Entered as Dainty Forcing and Royal Red Forcing.

Hospital.  Col Crs Cur Ebe Hrn Lan RP Stw Vk.
  Seedsmen's synonyms.  Long White Strasburg, Kna.  White Naples, RP.  White Strasburg, Col Crs Ebe Lan Stw, etc.

  Similar names.  White Icicle, Long White Icicle.

Improved Breakfast, Improved Chartier, Improved Early Long Scarlet Short Top, Improved Early Scarlet Globe, Improved Early Scarlet Turnip, Improved French Breakfast, Improved Golden Ball, Improved Golden Dresden, Improved Half Long Black Spanish, Improved Large Yellow Summer Turnip, Improved Long Scarlet Short Top, Improved Scarlet Button, Improved Shepherd, Improved White Strasburg.  Entered as Breakfast, Chartier, Early Long Scarlet Short Top, etc.

In and Out.  Bptl.
  Similar names.  Bruce's In and Out.

Indianapolis White Globe.  H&P.  For similar names see White Globe.

  Similar names.  Japanese Scarlet, Japanese Winter.  See also Long White.

Japanese Scarlet.  JMM.  For similar names see Japanese Long White.


Johnson and Stokes' Scarlet Olive-Shaped.  Entered as Scarlet Olive-Shaped.

Jones' Scarlet Conical.  Entered as Scarlet Conical.

Just So.  Mal.

  Similar names.  See Long Black Spanish.


Seedsmen's synonyms. Early Long White Vienna, Neb. Long White Vienna, Alx Bui Bur Fer Hen Thr, etc. Vienna, Sox. White Vienna, Bgs Ebe RE G&T Lan McK, etc.

Landreth's Earliest.  Lan.  For similar names see Earliest Forcing.

Landreth's White Lady Finger.  Entered as White Lady Finger.

Large White.  Big.

Large White Baltimore.  Ree.  For similar names see Long White.

Large White Globe.  Bar CE Cle d&C Evr Est Hlm Vl.

Similar names.  See White Globe.

Seedsmen's synonyms. Large White Summer Turnip, J&S.

Large White Russian.  Ggy.  For similar names see White Russian.

Seedsmen's synonyms. California Winter, Ggy.

Large White Spanish.  Big Elt Fer G&T Iml J&S Lnr Mnd Min MV Nol Sox Thr Vl.

Similar names.  See White Spanish.

Large White Summer.  Brn CE Drr G&T PM S&W.

Similar names.  See White Summer.

Large White Summer Turnip.  Brk Drr Elt Emr Fer GIH J&S Ken Lnr Liv Mns Mhl Ree Thr Tlt Y&H.

Similar names.  See White Summer.

Seedsmen's synonyms. Large White Globe, J&S.

Large Yellow Summer Turnip.  Drr Elt J&S Lnr Mhl.

Similar names.  See Golden Summer Turnip.

Late Deep Scarlet Turnip.  GH.  For similar names see Scarlet Turnip.

Leafless.  Bri Buc Bur Drrm Evr GN Ggy Ham Liv JL Mns Mau Ms NK WS.

Similar names.  Leafless Forcing, Leafless Scarlet Forcing, Leafless Bright Red Forcing.

Leafless Bright Red Forcing.  Lnr.  For similar names see Leafless.

Leafless Forcing.  Vau.  For similar names see Leafless.

Leafless Scarlet Forcing.  Bui.  For similar names see Leafless.

Leonard's Three Leaf.  Entered as Three Leaf.

Leavings' Improved Shepherd.  Entered as Shepherd.

Lightning Scarlet Turnip Forcing.  Bui.

Similar names.  See Scarlet Turnip.

Lily White.  Bru.

Livingston's Pearl, Livingston's Pearl Forcing.  Entered as Pearl and Pearl Forcing.

Long Black Corsican.  Mnd.  For similar names see Long Black Spanish.


Similar names.  Long Black Corsican, Long Black Summer, Long Black


**Long Black Summer.** Fer Gill Hrn LB YcH.

**Similar Names.** See *Long Black Spanish*.

**Long Black Winter.** Fgr S&E. For similar names see *Long Black Spanish*.

**SEEDSMEN’S SYNONYMS.** *Long Black Spanish*, Fgr.


**Similar Names.** See *Long Scarlet*.


**Long Brightest Scarlet White-Tipped.** Ar Bow JD RE Exr Fgr Fgr Fgr Fle Hrn J&S Jos Lnr LB JL Loh Mns May Neb Nol Pg Pri Shw Thr W&d Wdr.

**Similar Names.** See *Long Scarlet*.

**SEEDSMEN’S SYNONYMS.** *Long Cardinal*, J&S.

**Long Cardinal.** Bak Bar D&c Grw Hm Hbt Hse Mau Ree Wat.

**Similar Names.** Cardinal, Cardinal Globe, Shumway’s Cardinal.


**Long Chartier.** Brk CE D&H Ebe Hly Ren Sck Tat.

**Similar Names.** See *Chartier*.

**Long Chinese Rose Winter.** Sim. For similar names see *Chinese Rose Winter*.

**Long Gray Laon.** Loh. For similar names see *Long Gray Winter*.

**Long Gray Winter.** Cur Ebe Kei.

**Similar Names.** Long Gray Laon.

**Long Purple Rose.** Mnd. For similar names see *Long Rose*.

**Long Red.** Bra. For similar names see *Half Long Scarlet*.

**Long Red White Longfellow.** Sal.

**Long Rose.** Lnh.

**Similar Names.** Long Rose White-Tipped, Long Purple Rose.

**SEEDSMEN’S SYNONYMS.** Chartier, Bak Lan.

**Long Rose White-Tipped.** Neb SC. For similar names see *Long Rose*.

**SEEDSMEN’S SYNONYMS.** Chartier, Hde Neb Put SC.

**Long Salmon.** Kei Pri. For similar names see *Salmon*.

**Long Scarlet.** Ens RE Eng Fax Fer Gls Gra Ggy G&T Hrn Hw Hbt MWJ Lan Man PM Mns Mau Mrs May Puc Puc Rtk Ren Sal Sim T&B.


SEEDSMEN’S SYNONYMS. Early Short Top, Sim. Monthly, RE.

Long Scarlet Chartier. RHJ Wd WS. For similar names see Chartier, Long Scarlet.

Long Scarlet Chartier White-Tipped. MV Nol Sor Thr. Similar names. See Chartier, Long Scarlet.

Long Scarlet Short Top. Air Anb Ar Bai Bak Bdt Bht Bkt Bel Bou Brk Bdg Bri Brn Bng Brb Cam Cle C&B Crg Crs Cur Dlw Drr Dun Enr RE Frd Gls Gng Ggy Gry Hns Hrn Hrs Hrv Hwv Hen Illy Hop H&P Jns K&W Ken Kg Koe Kos Lan Lea JL Mas May JMM McM Mic Mhj Mls Min MV Nol NI NK Ov Prn PUT Poo Pot Pri Pug Ree S&O Shm Sic Sor SB S&W Tat Tex Thr Thb Tlk Tpk Vk W&D Wer Wll Wlt Wt Wng Yng Y&H. Similar names. See Long Scarlet.

SEEDSMEN’S SYNONYMS. Corect Garden, Ggy. Salmon, Mhl.

Long Scarlet White-Tipped. Fmr RHJ. For similar names see Long Scarlet.


Long White Chartier. Liv. For similar names see Chartier.

SEEDSMEN’S SYNONYMS. Nonpareil, Liv.

Long White Lady Finger. CE Eic Ken Mhl Ree Shw TB. Similar names. See Lady Finger.

Long White Icicle. Bdg MJW Lajun Lar Sim Thr. For similar names see Icicle.


Long White Russian. Cle Koe Lan. For similar names see White Russian.


SEEDSMEN’S SYNONYMS. Long White Fall, Ken SC.

Long White Strasburg. DKH Dell Koe Lan RP Shw Shm Vn Wd. Similar names. See White Strasburg.

SEEDSMEN’S SYNONYMS. Hospital, Kra.

Long White Summer. SC. For similar names see Long White.


SEEDSMEN’S SYNONYMS. Lady Finger, Bui Bur For Hen Thr Vl, etc. White Lady Finger, DD Liv Mau SC.
Long White Winter. S&F. For similar names see Long White.
McMillan's Early Scarlet Turnip, McMillan's Extra Early Scarlet Turnip. Entered as Early Scarlet Turnip and Extra Early Scarlet Turnip.
Mammoth White Russian Winter. C&J HP.
Similar names. See White Russian.
Seedsmen's synonyms. California Mammoth White, HP.
Mammoth White Winter. JMM Shm.
Similar names. See California Mammoth White Winter.
Market. Alr.
Seedsmen's synonyms. Shepherd, Alr.
Similar names. See Long Scarlet.
Market Gardener's Early Long Scarlet Short Top. HP Pnt.
Similar names. See Long Scarlet.
Market Gardener's Extra Long Scarlet. Bri. For similar names see Long Scarlet.
Market Gardener's Ideal Long Scarlet. Evr Rob.
Similar names. See Long Scarlet.
Market Gardener's Long Scarlet. Bgs K&F Put Spf VI.
Similar names. See Long Scarlet.
Mills' Earliest. Ms. For similar names see Earliest Forcing.
Model White Box. Alr Cur DD low J&J Mars Wll. For similar names see White Box.
Seedsmen's synonyms. Crystal Forcing, Alr.
Monthly. RE.
Seedsmen's synonyms. Long Scarlet, RE.
Moore's Carmine Forcing, Moore's Quick Selling. Entered as Carmine Forcing and Quick Selling.
Moore and Simon's California Cherry, Moore & Simon's Early White Delicacy, Moore & Simon's Improved White Lady Finger, Moore & Simon's Pink Lady Finger, Moore & Simon's Red Strawberry. Entered as California Cherry, Early White Delicacy, White Lady Finger, Pink Lady Finger, and Red Strawberry.
Newcome. Ebe Evr Hst H&P J&S VI.
Seedsmen's synonyms. White Olive-Shaped, Ebe.
Nonpareil. Bkt Bri.
Seedsmen's synonyms. White Chartier, Bkt Bri. Long White Chartier, Liv.


Norwood Long White. JMM.

Olds' Improved French Breakfast. Entered as French Breakfast.

Olive Gem. McK Ren. For similar names see Rosy Gem.

Olive Rose. JMP. For similar names see Rosy Gem.

Olive-Shaped. Hnt Mrs.

Osaka. Big Bur D&H J&S.


Parisian Black Spanish. M&S. For similar names see Long Black Spanish.

Paris Red Beauty. M&S. For similar names see Paris Beauty.

Pearl. Bri JL.

Perpetual White Summer. Iowa. For similar names see White Summer.

Philadelphia Gardener's Long Scarlet. J&S. For similar names see Long Scarlet.

Philadelphia Gardener's Long Scarlet Short Top. M&S.


Perfection Chinese Rose Winter. M&S.

Phineas' Dom Pedro. Entered as Dom Pedro.

Pink Lady Finger. M&S Nol. For similar names see Lady Finger.

Price & Reed's Forcer. Pri.

Prussian Globe. Bri Hlm MWJ Lnr.

Purple Summer Turnip. Bdg. For similar names see Early Purple Turnip.

Quaker City Early White Box. Qkr. For similar names see White Box.

Quick Selling. M&S.

Raphanus Caudatus. Big Thr.


**Similar names.** Buckbee’s Rapid Forcing.


**Rawson’s Scarlet Conical.** Entered as Scarlet Conical.

**Red Forcing Turnip.** C&B Hen. For similar names see Red Turnip.

**Red Rocket.** Bgs Bui Bar D&H Frd Hrs Hen Tha Wyg.

**Similar names.** White Tipped Rocket, White Rocket.


**Red Strasbourg.** Min M&S. For similar names see White Strasbourg.

**Red Strawberry.** M&S.

**Similar names.** Moore & Simon’s Red Strawberry.

**Red Turnip.** Ggy Hen Vin.


**Seedsmen’s synonyms.** *Cherry*, Bdg. *Early Scarlet Turnip*, Bdg.

**Rennie’s White-Tipped.** Ren. For similar names see White-Tipped.

**Rettig.** J&S.

**Seedsmen’s synonyms.** *Round Black Spanish*, J&S.

**Rockford Beauty.** Buc.

**Rockford Market.** Buc GN Roe.

**Similar names.** Buckbee’s Rockford Market.

**Rose Gem Forcing.** Evr VI. For similar names see Rosy Gem.

**Rose Olive-Shaped.** Brd Bkt Bel Bgs Hrs Ms Vin.

**Similar names.** See Scarlet Olive-Shaped.

**Rose Queen.** Cox. For similar names see Rosy Gem.

**Rose Turnip.** CE C&B Hen Roe.

**Similar names.** Henderson’s Rose Turnip, Early Rose Turnip.

**Rosy Gem.** Alr Ar Brd Btl Bkt Bel Bgs Bri Buc Bur Brw CE Cle Cak D&H Del Prun Ebe RE Fmr Fie Frd GH Gng GN Grw Tg Ham Hrs Hst Haw Hub Hop Hse low J&S Kg Lur LB Liv Mgd Man JMM MeK Mt Mrs Neb NK Pir Pnt Pri Ren Roe Rs RP Shr &O Shm Sg Sim SB Tem Tex Th Til Trm T&B Wec Web Y&H.

**Similar names.** Olive Gem, Sutton’s Rosy Gem, Rosy Gem White-Tipped, Extra Early Rosy Gem, Rosy Queen, Rose Queen, Cox’s Rose Queen, Early Rose Gem, Rose Gem Forcing, Scarlet Gem White-Tipped, Round Rose White-Tipped, Round Rose, Olive Rose.


**Rosy Gem White-Tipped.** Crs. For similar names see Rosy Gem.

**Rosy Queen.** May Th Tpk. For similar names see Rosy Gem.

**Round Black Spanish.** Alx Air Bai Brd Btl Bkt Bdg Brg Brk Bdg Bgs Bri Bru Bng Buc Bar C&J CE Cle C&B Cox Crs Cur DD Drr EIt Emr Evr Fnr Eqr
Round Black Winter. Fgr S&F. For similar names see Long Black Spanish.


Round Dark Red. Col Frd.

Round Deep Scarlet. Clc. For similar names see Scarlet Turnip.

Round Red. Fld Hrs. For similar names see Round Dark Red.

Round Red Forcing. Drr Mhl. For similar names see Round Dark Red.

Round Rose. Thm. For similar names see Rosy Gem.

Round Rose White-Tipped. Thm. For similar names see Rosy Gem.

Round Scarlet China. Bur Col Drr low Lan J&S Mns Roe Tex Thr WS.

Round Scarlet Pamir. HP.

Round Scarlet White-Tipped. Pot.

Round White. Fld. For similar names see White Globe.

Round White Forcing. Drr Mhl.

Round White Munich. Mnd Pnt SC.

Round White Spanish. Big Bgs G&T Mus. For similar names see White Spanish.

Round White Stuttgart. Lan. For similar names see White Stuttgart.

Round White Turnip. Hrs. For similar names see White Turnip.

Royal Red Forcing. Hlm Vl.

Ruby Pearl. Bur Ham Mus Man Rec. For similar names see Pearl.

St. Louis White Summer. CE DD K&F Pnt SC Spi Trm.

Sakurajima Mammoth. Chl Thr.

Salmon. J&S Mhl.

Salzer's Every Day.  Sal.
Sandwich.  D&H Hen W&D.
Scarlet Ball.  JL.

SIMILAR NAMES.  See Fire Ball.

SEEDSMEN'S SYNONYMS.  Pamir, JL.


SIMILAR NAMES.  See Fire Ball.

SEEDSMEN'S SYNONYMS.  Rosy Gem, Ham Rs Tem.  Ruby Pearl, Ham.  Scarlet Turnip White-Tipped, Ham.

Scarlet Beauty.  D&H.  For similar names see Paris Beauty.

Scarlet Button.  Bui Bur CE D&H 1st Hbt Hlm Mgd Mh Ree Sicc.

SIMILAR NAMES.  Improved Scarlet Button, Early Scarlet Button, Burpee's Earliest Scarlet Button.


Scarlet Conical.  D&H Jns Raw.

SIMILAR NAMES.  Jones' Scarlet Conical, Rawson's Scarlet Conical.

Scarlet Frame.  Drr.  For similar names see Wood's Early Frame.

Scarlet Gem White-Tipped.  Drr Ebr Ging.  For similar names see Rosy Gem.


SIMILAR NAMES.  See Early Scarlet Globe.


Scarlet Globe Forcing.  RE Tat.  For similar names see Early Scarlet Globe.

Scarlet Globe White-Tipped.  Pne Wd.

SIMILAR NAMES.  See Early Scarlet Globe.

SEEDSMEN'S SYNONYMS.  Rosy Gem, Wdr.


SIMILAR NAMES.  See Scarlet Olive-Shaped.

SEEDSMEN'S SYNONYMS.  French Breakfast, SB Stk Vkl.

Scarlet Turnip.  Bui Bel Bn Cam Cur Del Emr RE Fer Ger Gra Hrs 11rv Man Mrs Pri Pot Pug Ren Sal Thn Vin Wrl Wl Wl Wdl Wdr Wl.

SIMILAR NAMES.  Early Scarlet Turnip, Early Scarlet Turnip Short Top, Early Scarlet Turnip Forcing, Extra Early Scarlet Turnip, Extra Early Scarlet Turnip Forcing, Buist's Early Scarlet Turnip, McMillan's Early Scarlet Turnip, McMillan's Extra Early Scarlet Turnip, Improved Early Scarlet Turnip, Scarlet Turnip

SEEDSMEN'S SYNONYMS. Round Red, Hrs.

Scarlet Turnip Forcing. Mgd S&W, Tat. For similar names see Scarlet Turnip.


SEEDSMEN'S SYNONYMS. Rosy Gem, Bur Cur Ham Vk. Ruby Pearl, Ham. White-Tipped Scarlet Ball, Ham.


Similar names. See Scarlet Turnip White-Tipped.

Scarlet Twenty Day Forcing. S&F. For similar names see Twenty Day.

Scarlet White-Tipped. Gh Gra Gng Hde Shn S&W Thm.

Similar names. See Scarlet Turnip White-Tipped.

Scarlet Winter. Bur J&S.

SEEDSMEN'S SYNONYMS. Chinese Rose Winter, Bur.

Shepherd. Alr Ar Bgs Bai Bar CE Col Crs D&H Dsc D&C Eyr Fst Fer Fle GN TG Ham Hls Hen H&C Hlm Jac J&S Lea Mls NK OV Pir Qkr Raw Rec Rs Sal Sie Vi Vl Wg.

Similar names. Improved Shepherd, Leavings' Improved Shepherd, Shepherd's Charter.


Shepherd's Charter. Entered as Charter.


Shumway's Market. Shn. For similar names see Market.

Simon's Solid Ivory Forcing. Entered as Solid Ivory Forcing.

Small White Summer. CE Rec. For similar names see White Summer.

Snowball. Brw Ham Liv.

Similar names. Hammond's Snowball.

Snow White Ice. Sal. For similar names see Early Snow White.

Snow White Turnip. Big. For similar names see Early Snow White.


Similar names. Simon's Solid Ivory Forcing.

South Jersey. Lan.
RADISH. 329

Startle. Frd Hrs J&S.


Striped. Ham Shm.

SEEDSMEN'S SYNONYMS. Triumph, Ham.

Surprise. Bkt Bri Bur Frd Hlm Ken Ree Til Wll.

SIMILAR NAMES. Burpee's Surprise, Early White Surprise.

SEEDSMEN'S SYNONYMS. Golden Yellow Olive-Shaped, J&S.


Tait's Favorite Forcing. Tat. For similar names see Furst's Favorite.


Three Leaf. Lmr.

SIMILAR NAMES. Leonard's Three Leaf.


SIMILAR NAMES. Early Triumph, Cox's Triumph.

SEEDSMEN'S SYNONYMS. Striped, Ham.

Twenty Day. Hw Old Van.


Twenty Day Express. Chl. For similar names see Twenty Day.

Twenty Day Forcing. Evr Frd Hrs J&S Lmr Raw VI.

SIMILAR NAMES. See Twenty Day.


Twenty Day Forcing White-Tipped. Lmr. For similar names see Twenty Day.

Vail's Dainty Forcing, Vail's Early Scarlet Button. Entered as Dainty Forcing and Early Scarlet Button.


Vaughan's Market. Vau. For similar names see Market.

Vick's All Seasons, Vick's Improved Long Scarlet Short Top. Entered as All Seasons and Long Scarlet Short Top.

Vick's Early Scarlet Globe. Btr Bkt Bel Bri Evr Hrv Hlm Rs Vk.

SIMILAR NAMES. See Early Scarlet Globe.

Vick's Scarlet Globe. Big Brn CE Jns Ken Man Man Py HP Ree S&O Shm Sie Tfl VI Wyg.

SIMILAR NAMES. See Early Scarlet Globe.

SEEDSMEN'S SYNONYMS. Extra Early Scarlet Prussian. HP.

Vick's Scarlet Globe Forcing. Y&II. For similar names see Early Scarlet Globe.

Wernich's Erfurt Early. Entered as Erfurt Early.

White Box. Bkt Bkel Cle CkB Evr Fgr Frd GgG G&T Grw Hrs Hrv Hlm H&P Imm Mnl Man JMM Mhl Ms MV Nl Pri Roe Shm Box 17 Wat WS Yng.

SIMILAR NAMES. Philadelphia White Box, Quaker City Early White Box,
Early White Box, Felton’s White Box, Felton’s Improved White Box, Felton’s Model White Box, Dickmann’s Model White Box, Model White Box.

**White Button.**  Bur.

**White Chartier.**  Bkt Bri Brr Drr Ht J&S Jau.

**White Chinese.**  Bkt Bkt Blg Bow Bgs Bng Bui Bar CE Cle Crs D&H RE Evr Fmr Fst g&T Hen Hlm H&P J&S K& Ltr Liv Mgd Mto Mck Mfn Mrs Pace Ren Ree Rim Sal Sfe Sim SB Vl Wd.

**White Delicacy.**  Bkt Bui D&H Drr G&T Mhl Shw.

**White Dresden.**  Buc Roc.  For similar names see *Golden Dresden.*

**White English Summer.**  M&S.  For similar names see *White Summer.*

**White Giant Spanish.**  Ebe.  For similar names see *White Spanish.*

**White Globe.**  Fmr S&O Thm.

**White Globe Forcing.**  Bkt.  For similar names see *White Globe.*

**White Hot House.**  M&S.

**White Icicle.**  *Ar Bt Brr Bar Col Dilw Ebr JMM M&S Wat JF.

**White Italian Gem.**  M&S.


**White Naples.**  RE Mck RP.


**White Pearl.**  *Ar Br Br Dun H&C.*  For similar names see *Pearl.*

**White Rocket.**  D&H Hen J&S Mgd.  For similar names see *Red Rocket.*

**White Russian.**  Bkt Brr Ebe RE HP Kei Lan Tat TB.

**White Spanish.**  *Ar Blg Gra Hrv Hst Man Pri.*  For similar names see *White Spanish.*

**White Strasbourg.**  *Ar Anb Ar Bai Bbk Brd Brl Bkt Bk El Brr Blg Bow Bgs Brn Buc Bui Br Brr Brr CE C&B Col CF Cok Cox Crs Cur DD Drr Ebe Ebr Eic Evr Fmr Fst Fer Fld Frl Ger Gls Gdn Ggy Gry G&T Grw TG Hns Ham Hrm Hrs Hrv Hst Hm Hbt H&C Hly Hlm H&P Inl Iow Jae J&M J&S Ken Kg Kos
RADISH.

331


See also White Turnip.


Similar names. See. White. Summer.

White-Tipped. Drw. Hly. MWJ.


White-Tipped Chartier. TB. For. similar. names. see. Chartier.


See also White. Summer.


Wonderful. Ggf. JMW.


AMERICAN VARIETIES OF VEGETABLES.

Wood's Frame. 
For similar names see Wood's Early Frame.

Wood's Long Early Frame. 
MV Nol Rec Sox Thr.

Similar names. See Wood's Early Frame.

Yellow Globe. 
Brr CE Web. For similar names see Golden Globe.

Yellow May Duke. 
M&S.

Yellow Olive-Shaped. 
Bkt Wd WS.

Similar names. See Golden Olive-Shaped.


Yellow Oval-Shaped. 
Hen. For similar names see Golden Olive-Shaped.

Yellow Summer Turnip. 

Similar names. See Golden Summer Turnip.


RAMPION.

Rampion. 
Sim S&W Thr.

RHUBARB. 
(Also known as PIE PLANT.)

Rhubarb. 
Alx Ar Bkt Bow Bdg Bru Bur Cox Crs Dtr Drn Eic Elt Evr Fqr Fst Fax Fer Fie Frd G&T Grw Hde Hrn Hrn Hrs Hst Hly MWJ K&F Koe Kos Lam Lan Lar LB Liv JL Mil Mig Mls May JMM Mck M&M Mel Mhl Min MV Mzy Nef Nol XI Pir Ptt Pot Pri Rt SC Shw Shm SB Stw S&H S&W Tat Tem Thm Thr Tmn W&D Wd WS.

American Undulated-Leaved. 
RHH.

Australian Crimson Winter. 
Pnt. For similar names see Crimson Winter.

Champagne. 
Gr.

Crimson Winter. 
LBk.

Similar names. Australian Crimson Winter.

Early Linnaeus. 
Pnt. For similar names see Linnaeus.

Early Raspberry. 
Gra Pks.

Early Tender Linnaeus. 
TB. For similar names see Linnaeus.

Extra Early. 
J&S M&S.

Extra Early Paragon. 
Gra.

Giant. 
1D Fer Ger Kei Lam LB SB Tpk.

Similar names. Salzer's Giant, Myatt's Linnaeus Giant, Giant Victoria, Moore & Simon's Giant Paragon, Giant Paragon.

Giant Paragon. 
M&S. For similar names see Giant.

Giant Victoria. 
Bow Trm. For similar names see Giant, Victoria.

Ideal Mammoth. 
Iow. For similar names see Mammoth.

Johnston's St. Martin. 
D&H Kei Mck Pks Ren Sim SB.

Similar names. St. Martin.

Large Victoria. 
Bel Grw TG Ham Hde Hrv J&S Mls Pac Web Y&H.

Similar names. See Victoria.

Linnaeus. 

Similar names. Early Linnaeus, Early Tender Linnaeus, Myatt's Linnaeus, Myatt's Linnaeus Giant, Victoria Linnaeus.
Lorenzo.  Vin.

Mammoth.  *Row Bai Cok GIn Ggy Jac Kg MV Sav Vau.*

  **Similar names.** Ideal Mammoth, Mammoth Monarch, Mammoth Victoria, Mammoth Red.

Mammoth Monarch.  Bai Pug.

  **Similar names.** Monarch.

Mammoth Red.  *Cur Evr Koe.*  For similar names see Mammoth.

Mammoth Victoria.  *Ar HP.*  For similar names see Mammoth, Victoria.

Monarch.  *Del For Ger GIJ J&M LB May NK Ov Wh.*

  **Similar names.** Mammoth Monarch.

**Moore & Simon’s Giant Paragon.**  Entered as Giant Paragon.

Myatt.  Hop.

  **Similar names.** Myatt’s Victoria, Myatt’s Linnaeus, Myatt’s Linnaeus Giant.

Myatt’s Linnaeus.  *Brn Frd Hrs McK Ren Rec Sim SB.*

  **Similar names.** See Myatt, Linnaeus.

Myatt’s Linnaeus Giant.  *CF Hrm Rec.*

  **Similar names.** See Myatt, Linnaeus Giant.

Myatt’s Victoria.  *Ar Bdg Bgs Bar CE CF Cox DI Gis Hrm Mgd Pnt Rec Rec Rv SC Tat Vk.*

  **Similar names.** See Myatt, Victoria.

St. Martin.  *Bui C&B Ewg Gra Hen Raw Vw W&D.*

  **Similar names.** Johnston’s St. Martin.

Salzer’s Giant.  *Slt.*  For similar names see Giant.

Strawberry.  *J&S.*

  **Similar names.** Strawberry Red.

Strawberry Red.  *M&S.*

  **Similar names.** Strawberry.


  **Similar names.** Large Victoria, Giant Victoria, Mammoth Victoria, Myatt’s Victoria, Victoria Linnaeus.

Victoria Linnaeus.  *Nef.*  For similar names see Victoria, Linnaeus.

**Western Market.**  *Roc.*

Wine.  *Bgg.*

**ROQUETTE.**

Roquette.  *Eic Stk Thr.*

**SALSIFY.**  *(Also called OYSTER PLANT.)*

**All America.**  *Roc.*

American Long White.  *Bui.*  For similar names see Long White.


Blue-Flowered French.  *Bgg Wyg.*  For similar names see White French.

Breck’s Improved Long White.  Entered as Long White.

Buist’s Mammoth.  *Bui.*  For similar names see Mammoth.


  **Similar names.** Common White.

Common White.  *GIH.*  For similar names see Common.

French.  *Ebr NK.*  For similar names see White French.

Giant White Russian.  *M&S.*
Golden. JL. For similar names see Wisconsin Golden.


Large White. Bow Chi Cur Ebe Fer G&T Kos Lwr LB Loh PM Ms Pk Pks Roe Wer.

Similar names. See Long White.

Long French. Lan. For similar names see White French.

Long Smooth White. Bgy Wll. For similar names see Long White.


Similar names. Breck's Improved Long White, American Long White, Long Smooth White, Large White.

Long White French. Alr Brm CA DD Ewg Fqr GH Gra Gry Hrm H&P K&W Lea Mnd JCM JMM MV Mzy Ptt Ree RP Sxe Thr 17 Wea Web W&D.

Similar names. See White French.

McMillan's Mammoth White. MCM. For similar names see Mammoth.

Mammoth. Anb Cok Drm Gdn GN Liv.


Seedsmen's synonyms. Sandwich Island, Liv.


Similar names. See Sandwich Island.

Mammoth White. Cam CF Hst Shw. For similar names see Mammoth.

Moore's Giant White Russian. Entered as Giant White Russian.

Ordinary French. Lan Stw. For similar names see White French.

Salzer's Early. Sal.

Salzer's Giant. Sal.


Similar names. Improved Sandwich Island, Mammoth Sandwich Island, Improved Mammoth Sandwich Island, Sandwich Mammoth White.

Seedsmen's synonyms. Mammoth, Liv.

Sandwich Mammoth White. Blg. For similar names see Sandwich Island.

Spanish Salsify. See Scoumas, p. 335.

Thick-Rooted. Shw.

Similar names. Thorburn's Improved Thick-Rooted.

Thorburn. Ebr.

Similar names. Improved Thorburn.

Thorburn's Improved Thick-Rooted. Entered as Thorburn's Thick-Rooted.

Thorburn's Thick-Rooted. Thr. For similar names see Thick-Rooted.
SALSIFY—SPINACH.

**White French.** Bai Bel Brn CE Emr Gls Hen Hly Jns Lnr JMP Ree S&F Tat TB Vk.

SIMILAR NAMES. Long White French, Improved White French, Improved French, Ordinary French, Long French, Blue-Flowered French, French.

**Wisconsin Golden.** Col Ggy Iow Liv Man NK Tem.

SIMILAR NAMES. Golden.

**SCOLYMUS.** (Also known as SPANISH SALSIFY.)

Scolymus. Bdg Mnd Thr.

**SCORZONERA.** (Also called BLACK SALSIFY.)


**SKIRRET.**

Skirret. Bdg Kei Mnd Thr

**SORREL.**


Broad-Leaved French Belleville. Mnd.

French. Col Emr Lan Vlk.

Garden. MV HP Pnt Sor S&W.

Garden Patience Dock. Bdg.


Large-Leaved French. Crs Ebe Elt Fer Ger Lnr M&S Nol Thr Vin W&D.

Mammoth Lyons. Thr.

**SPINACH.**

All Seasons. GN.

American Curled Savoy Leaved. Btl Bui GH.

SIMILAR NAMES. See American Savoy Leaved.


SIMILAR NAMES. See American Savoy Leaved.

SEEDSMEN’S SYNONYMS. Bloomsdale, J&S M&S Nol.

American Savoy Leaved. Cld Fst Haw.

SIMILAR NAMES. American Curled Savoy Leaved, American Round-Seeded Savoy Leaved.

SEEDSMEN’S SYNONYMS. Norfolk Savoy Leaved, Fst.

Aragon. Hst.

Arlington Pointed-Leaved. Raw S&F.

Beckert’s Hardy Winter. Entered as Hardy Winter.

Belgium Evergreen. M&S Nol. For similar names see Evergreen.

SEEDSMEN’S SYNONYMS. Virgina Long-Standing, M&S.

American Varieties of Vegetables.

NK Pac Poor For Pot Reu Rim S&R S&O Sax Spf Stw Tex Thr Thh T'Ve Van Vr Vin Wca Web Wer Wll Wd Ws.

Similar names. Faust's Bloomsdale, Hammond's Improved Bloomsdale, Bloomsdale Savoy, Improved Bloomsdale Savoy, Bloomsdale Curled Savoy, Bloomsdale Large Curled Savoy, Bloomsdale Round-Seeded Savoy, Bloomsdale Curled, Bloomsdale Extra Curled.


Bloomsdale Curled. May OV Tpk Vl. For similar names see Bloomsdale.


Bloomsdale Extra Curled. Cam Gng Rt. For similar names see Bloomsdale.

Bloomsdale Large Curled Savoy. Sim. For similar names see Bloomsdale.

Bloomsdale Round-Seeded Savoy. Mhd. For similar names see Bloomsdale.

Bloomsdale Savoy. Aix Alr Ar Brt bbl Bbg Brr CE Cle Cox Crg Cur Clt Ebr Eic Elt RE Emr Gll Hrv H&C H&P J&M Kg Koe Koe Lea Man PM JCM JMM Mrs HP Vt Rce Roc Smn Snc Sn S&W Thm Trm Yl Wt W&D. Similar names. See Bloomsdale.

Broad-Leaved. RP Web.

Broad-Leaved Batavian. Lamb.

Broad-Leaved Flanders. Aix Bui CE Cle Eic Fer Gdn Gll Hst Jac Kei Lar Neb Rce Sck Vnr.

Similar names. See Flanders.

Broad Round-Leaved Summer. Bae Fer Imi Lam Pq Roc. Similar names. See Round-Leaved, Summer.

Buckbee's Long-Standing. Entered as Long-Standing.

Buist's Perfection Curled Savoy. Bui. For similar names see Perfection Curled.


Catillon Long-Standing. Bru D&H. For similar names see Long-Standing.

Curled Prickly-Seeded. Lan Stw. For similar names see Prickly-Seeded.

Curled Savoy Leaved. Aum C&B DD Ebe Emr G&T Gw Mg Liv Mck MV HP Shw Nce Thal Thr Vin Vnr. Similar names. See Savoy Leaved.

Seedsman's synonyms. Bloomsdale, DD Emr Liv Mck MV HP Vin, etc. Norfolk, Liv HP.

Dreer's Round-Seeded Savoy Leaved. Drr. For similar names see Savoy Leaved.

Dutch Round-Leaved. Brr. For similar names see Round-Leaved.

Early Giant Crumpled Leaf. Gra TG Roc. Similar names. See Giant Crumpled Leaf.

Early Giant Round-Leaved. Brt. For similar names see Round-Leaved.


Enkhuizen Long-Standing. Buif Fst Gll J&S S&K.

Similar names. See Long-Standing.

Evergreen. C&J.

Similar names. Long-Standing Evergreen, Belgium Evergreen.

Seedsman's synonyms. Long-Standing, C&J.

Everlasting. Man.


Extra Curled Savoy Leaved. Cam G&T. For similar names see Savoy Leaved.
SPINACH.

Extra Large-Leaved. Sim.
  Seedsmen's synonyms. Giant Flanders, Sim.

  Similar names. See Round-Leaved.

Extra Large Round Thick-Leaved. Ken Luf HP.
  Similar names. See Thick-Leaved.

Extra Large Savoy Leaved. Eic Stk. For similar names see Savoy Leaved.

Fall. Bel Bru Elt Ger H&P Iml K&W Lea JMM Mhl Xeb Ptt Ptt Por Raw S&R Sim SB 17 Vkl
  Seedsmen's synonyms. Prickly-Seeded, Bru Mhl Ptt Por S&R, etc.

Faust's Bloomsdale. Entered as Bloomsdale.

Flanders. Ren SB.
  Similar names. Long-Standing Flanders, Broad-Leaved Flanders, Round-Leaved Flanders, Large-Leaved Flanders, Giant Flanders.
  Seedsmen's synonyms. Long-Standing, Ptt.

Giant. Cts Wdr. For similar names see Giant Crumpled Leaf.

Giant Crumpled Leaf. Y&H.
  Similar names. Early Giant Crumpled Leaf, Mette's Crumpled Leaf, Giant.

Giant Flanders. Sim. For similar names see Flanders.
  Seedsmen's synonyms. Extra Large-Leaved, Sim.

Giant Norfolk Thick Savoy Leaved. M&S.
  Similar names. See Norfolk Savoy Leaved.

Giant Thick-Leaved. Brr D&H Ggy Ptt. For similar names see Thick-Leaved.
  Seedsmen's synonyms. Round Viroflay, Ptt.

Giant Viroflay. Dlw. For similar names see Viroflay.
  Seedsmen's synonyms. Monstrous Viroflay, Wdr.

Goliath. Gra.


Hammond's Improved Bloomsdale. Entered as Bloomsdale.

Hardy Winter. Bkt Bri Hen. For similar names see Winter.

Hastings' Aragon. Entered as Aragon.


Holland. Bdg.

Improved Bloomsdale Savoy, Improved Large Round-Leaved, Improved Long-Standing Curled, Improved Thick-Leaved, Improved Victoria Round-Leaved. Entered as Bloomsdale Savoy, Large Round-Leaved, etc.

Italian Mammoth. Nol.

Landreth. Dd.

Large-Leaved Flanders. Dlw Lan Min Stw. For similar names see Flanders.

Large-Leaved Viroflay. Bdg CF Frl G11 Lnr Mzy Ree Sox Tat AGT.
  Similar names. See Viroflay.

Large Prickly-Seeded. Bow Pac. For similar names see Prickly-Seeded.

Large Round-Leaved. Ptt. For similar names see Round-Leaved.

  Similar names. See Viroflay.

Large Round Thick-Leaved. Bri. For similar names see Thick-Leaved.
  Seedsmen's synonyms. Large Viroflay, Bdg.

Large Savoy Leaved. Bng. For similar names see Savoy Leaved.
  Seedsmen's synonyms. Bloomsdale, Bng.

1329—No. 21—02——22
Large Thick-Leaved.  GH H&C Mgd S&W W&D.  
Similar names.  See Thick-Leaved.

Large Thick-Leaved Viroflay.  TG Hrs W&D.  For similar names see Viroflay.

Large Viroflay.  Bdg CE Tat.  For similar names see Viroflay.

Seedsmen’s synonyms.  Improved Thick-Leaved, Frdl.  Large Thick-Leaved Round, Bdg.

Lettuce-Leaved.  Ewg Mnd MV Rec Sor Thr.


Long-Standing Evergreen.  Brr Cur VI.  For similar names see Evergreen.

Long-Standing Flanders.  Pnt.  For similar names see Flanders.

Long-Standing Round-Leaved.  Mzy.  For similar names see Long-Standing.

Long-Standing Round-Seeded.  Der Lam Mhl.  
Similar names.  See Long-Standing.

Long-Standing Round Thick-Leaved.  Hop MV Sor.

Similar names.  See Thick-Leaved.

Long-Standing Summer.  Pac.  For similar names see Long-Standing, Summer.

Long-Standing Thick-Leaved.  Bt Bkt Bel Bri CE Loh JCM Rec Rec S&O Sie Sox.  
Similar names.  See Thick-Leaved.

Long-Standing Viroflay.  M&S.  For similar names see Viroflay.

Seedsmen’s synonyms.  Belgium Evergreen, M&S.

May’s Perfection Curled.  May.  For similar names see Perfection Curled.

Mette’s Crumpled Leaf.  Brr.  For similar names see Giant Crumpled Leaf.

Monstrous Round-Leaved Viroflay.  RE SE.  For similar names see Viroflay.

Monstrous Viroflay.  Bgs Brn Bn RE Hns RIJ Min Por Qkr Ren Roe S&R Sim Til Van Wdr.  
Similar names.  See Viroflay.


Seedsmen’s synonyms.  Orach, RJIH.  Tetragonia, Frd.

Norfolk Curled Savoy Leaved.  Hst.  For similar names see Norfolk Savoy Leaved.

Norfolk Savoy Leaved.  Bkt Bldg Bri Bn Bar Cam Cox Fst Hrs Hen J/MM M&S Nef Nef JMP Ptt T&B Van Wd Wdr WS.  
Similar names.  Henderson’s Norfolk Savoy Leaved, Norfolk Curled Savoy Leaved, Giant Norfolk Thick Savoy Leaved.

Seedsmen’s synonyms.  American Savoy Leaved, Fst.  Bloomsdale, Bar Hrs Nef JMP Ptt Wd.
Parisian Long-Standing. J&S M&S Nil. For similar names see Long-Standing.

Perennial. Sim.

Perfection Curled. Cam Gln Jec.

Similar names. May's Perfection Curled, Baist's Perfection Curled Savoy, Shumway's Perfection.

Philadelphia. Nil.


Seedmen's synonyms. Fall, Brn H&P Put Ptt Raw Sim, etc. Winter, Brk Brr Cox Low Trm Thr, etc.

Prickly-Seeded Long-Standing. Btl Bkt Bur Cur For GIH Iam Lam Lnr LB Lsh Neb Nks Rec Roe Stw VI.

Similard names. See Prickly-Seeded, Long-Standing.

Prickly-Seeded Viroflay. Wea. For similar names see Prickly-Seeded, Viroflay.


Similar names. See Prickly-Seeded, Winter.

Rawson's Round Thick-Leaved. Raw. For similar names see Thick-Leaved.


Seedmen's synonyms. Summer, Cle Crs Gey Hrs Hrv Vk, etc.

Round-Leaved Flanders. Mzy Tat Thr. For similar names see Flanders.


Similar names. See Summer.

Round-Leaved Viroflay. Brk Cur Ebe Mnd Ptt Thr.

Similar names. See Viroflay.

Seedmen's synonyms. Giant Thick-Leaved, Pt.


Similar names. See Thick-Leaved.

Seedmen's synonyms. Long-Standing, Thr.

Round Thick-Leaved Summer. RE Fdr Gng J&M S&F SB.

Similar names. See Thick-Leaved, Summer.

Round Thick-Leaved Viroflay. Thr. For similar names see Viroflay.

Salzer's Savoy Leaved. Sal. For similar names see Savoy Leaved.


Similar names. Curled Savoy Leaved, Tait's Improved Curled Savoy Leaved, Griffith & Turner Co.'s Extra Curled Savoy Leaved, Large Savoy Leaved, Extra
AMERICAN VARIETIES OF VEGETABLES.

Large Savoy Leaved, Salzer’s Savoy Leaved, Draper’s Round-Seeded Savoy Leaved, Extra Curled Savoy Leaved.

Seedsmen’s synonyms. Bloomsdale, Brk Bkd Eqr Hrm JL Mgd, etc. Norfolk, Bdg JL Vk.


Similar names. See Round-Leaved.

Seedsmen’s synonyms. Bloomsdale, Lam.

Shumway’s Perfection. Shm. For similar names see Perfection Curled.

Summer. Bel Brr Cle Crs Ger Hrs Hrv Kei Man McK Ren Sm Vk.


Seedsmen’s synonyms. Round-Leaved, Cle Crs Ger Hrv Kei Vk, etc.

Tait’s Improved Curled Savoy Leaved. Entered as Curled Savoy Leaved.

Tetragonia. Frd.

Seedsmen’s synonyms. New Zealand, Frd.


Thick-Leaved Summer. Bel Brn. For similar names see Summer.

Thick-Leaved Viroflay. Brr C&J Crs Elt Pir Mr.

Similar names. See Viroflay.

Thick Round-Leaved Summer. Frd Gng SC Sb.

Similar names. See Round-Leaved, Summer.

Vaughan’s Norfolk Savoy. Entered as Norfolk Savoy.


Victoria Long-Standing. Brn Crs Mhl M&S. For similar names see Victoria.

Victoria Round-Leaved. Gra. For similar names see Victoria.

Victoria Round-Leaved Long-Standing. Ham. For similar names see Victoria.


Winter. Brt Brr Bgs Bar Brr CE Cle Cox Crs Ebe RE Fmr Fst GH TG Hrm Hrs Hly Low Kei Kg Man Nef Ren Ree Roc Thr Trm T&B Vin Y&H.

Similar names. Hardy Winter, Beckert’s Hardy Winter, Prickly Winter.

Seedsmen’s synonyms. Prickly-Seeded, Brt Bar Cox Hrm Hrs low, etc.
SQUASH.

Acorn.  

American Turban.  

Arlington Summer Crookneck.  

Arlington White Bush Scalloped.  

Autumnal Boston Marrow.  

Autumnal Marrow.  

Ohio.  

Bay State.  

Boston Marrow.  

Black Michigan.  

Blue Hubbard.  

Boston Market.  

Brazil Sugar.  

Buckbee’s Giant Summer Crookneck.  

Buist’s Improved Marrow.  

Buist’s Marrow.  

Burpee’s Bush Fordhook.  

Bush Fordhook.  

Butman  

SQUASH.
California Field.  *Puc T&B.*

**Similar names.** California Field Marrow.

California Field Marrow.  *Bai.* For similar names see California Field.

Canada Winter Crookneck.  *Brg Brk Brgs Cle DD Dbe Emr Frm Frq Frq GH Ggy Gty Liv May MV Mzy Nk OV Qkr Rec Rob S&F See Tat Thr Tpk.

**Similar names.** See Summer Crookneck.

Chicago Orange Marrow.  *Gh Old Van.* For similar names see Orange Marrow.

Seedsman’s synonyms.  *Early Marrow, Frd. Early Prolific Marrow, Frd.*

**Extra Early Marrow, Frd.** Dunlap’s Early Prolific Marrow, Frd.


**Similar names.** See Hubbard.

Chile.  *Sal.* For similar names see Chile.

Chilean Giant.  *Buc Roc.* For similar names see Mammoth Chile.

Chinese.  *M&S.*

**Similar names.** Red China.

Cocoanut.  *Brg Brc Brc Cn Cle Emr Ggy Ptt Roc Rob Tem Thr Vin.*

**Similar names.** Small Cocoanut, French Cocoanut.

Seedsman’s synonyms.  *Pineapple, Vin.*

Cocozelle.  *Brg Bnc Brt Est Koe Mau Ptt Roc Thr W&D.*

Seedsman’s synonyms.  *Long Snow White Summer, Koe.*

Columbian.  *Vin.*

Colvin’s Autumnal Marrow.  *Shm.* For similar names see Autumnal Marrow.

Colvin’s Orange Marrow.  *CE Lnr Liv Roc Tem.*

**Similar names.** See Orange Marrow.

Cream-Colored Summer Crookneck.  *Jer.*

**Similar names.** See Summer Crookneck.

Cream Vegetable Marrow.  *Ket Pri.* For similar names see Vegetable Marrow.


**Similar names.** Livingston’s Cushaw, Improved Cushaw, Livingston’s Improved Cushaw.

Seedsman’s synonyms.  *Large Winter Crookneck, Pnt. Crookneck, JL.*

Delicata.  *Bgi Brg Buc Sbr Cm Cx Cr Frjl Frld GH Gry Hlln I/M/I Kg Lnr May M&S Nf NK Pnc Ptt Raw Roc Roc Roc S&F Shw Shw Shw Sim Thr Van Vn Vh Vn W&D Wr.*

**Similar names.** Henderson’s Delicata.

Der Wing.  *Buc Brt Hpn Mau Roc Thrm.*

Dow’s Extra Early Pattypan, Dow’s Extra Early White Bush Scallopéd. Entered as *Extra Early Pattypan and Extra Early White Bush Scallopéd.*

Dunlap’s Early Marrow.  *Pnt.* For similar names see *Prolific Marrow.*

Dunlap’s Early Prolific Marrow.  *Ggy M&S Sal.*

**Similar names.** See *Prolific Marrow.*

Seedsman’s synonyms.  *Chicago Orange Marrow, Frd. Early Marrow, Frd.*

**Early Prolific Marrow, Frd.** Early Marrow, Frd.

Dunlap’s Prolific Marrow.  *Brg CE Grw Tg Roc.*

**Similar names.** See Prolific Marrow.

Earliest Prolific.  *Wd Ws.* For similar names see Prolific Marrow.

Early Bush Scallopéd.  *Ahn Chl Cx Cie Hns Hrs NI JMP Stk.*

**Similar names.** See Yellow Bush Scallopéd.

Seedsman’s synonyms.  *Pattypsn, JMP Stk Thrm.*

Early Fordhook.  *Brg Brgs.* For similar names see Fordhook.


**Similar names.** See Yellow Bush Scallopéd.

Seedsman’s synonyms.  *Early Yellow Bush, J&N Nol.*
Early Golden Custard.  Fqr.  For similar names see Golden Custard.

Early Mammoth Summer Crookneck.  For S&R Tat.

Similar names.  See Summer Crookneck.


Early Orange Marrow.  Bel Bur Cle CF Del Elt Emr Fmr Frd GH TG Hrs Hbt H&P JS&K Lea McK MV NK Qkr Ren Sox Tat Thr Vf Y&H.

Similar names.  See Orange Marrow.


Early Pineapple.  NK.  For similar names see Pineapple.


Similar names.  See Prolific Marrow.


Early Prolific Orange Marrow.  Big Bow Buc C&J DD Dtt Fqr Fer Fle J&S Pnc Vk Wea.

Similar names.  See Orange Marrow, Prolific Marrow.

Early Striped Bush.  Bigg.

Similar names.  Green-Striped Bush.


Similar names.  See Summer Crookneck.

Seedsman's synonyms.  Early Summer Warted, For S&F.

Early Warted Summer Crookneck.  Fqr Rs S&F.

Similar names.  See Summer Crookneck.

Seedsman's synonyms.  Early Summer Crookneck, Fqr S&F.


Early White Summer Crookneck.  Raw.  For similar names see Summer Crookneck.

Early Yellow Bush Scalloped.  Alx Bgs Brn Bui Bur C& J CE Cox Crs DD Emt Fst Fqr Gs GH Gm Gry Gm Gry Gm Gry Gm Grw Hde Hst Hse J&S K&W Ky Law Lb Loh Man JCM JMM McK Xnb Nol NK NV Pac Pnt Put Rec Ren Rec Vac ROC RP S&R S&W Thb Tpk Trm Vl Vnk Vin Yng Y&H.

Similar names.  See Yellow Bush Scalloped.


Early Yellow Summer Crookneck.  Buc C&J Crs Hrs Mas Sox Vin.

Similar names.  See Summer Crookneck.

Seedsman's synonyms.  Golden Crookneck, Buc.

Eggplant Bush.  CE Lea MV M&S Rec Sox Thr.

Similar names.  Henderson's Eggplant.
English Vegetable Marrow.  Bdg Bai RE Fie Gng low Lnr McK Pks Por Ren S&H Sim SB Thr.

Similar names.  See Vegetable Marrow.

Essex Hard Shell Turban.  Fgr.  For similar names see Essex Hybrid, Turban.

Seedsman's synonyms.  Essex Hybrid, Fgr.


Similar names.  Essex Hybrid Turban, Essex Hard Shell Turban.

Seedsman's synonyms.  American Turban, Bow Drr Lam Por RP S&R, etc.


Essex Hybrid Turban.  GH S&F.  For similar names see Essex Hybrid, Turban.

Eureka.  Anb Liv Ms.

Everbearing.  Wd.

Similar names.  Wood's Everbearing.


Similar names.  See Yellow Bush Scalloped.

Extra Early Jersey White Bush Scalloped.  Bui Drr J&S.

Extra Early Orange Marrow.  CE D&H Grw Ree.

Similar names.  See Orange Marrow.

Extra Early Pattypan.  M&S.  For similar names see Pattypan.

Extra Early Prolific Marrow.  Bgg.  For similar names see Prolific Marrow.

Extra Early Prolific Orange Marrow.  Pri.

Similar names.  See Prolific Marrow, Orange Marrow.

Extra Early White Bush Scalloped.  Air Ggk H'm M&S.

Similar names.  See White Bush Scalloped.


Similar names.  Yellow Bush Scalloped.

Extra Large Golden Custard.  HP.  For similar names see Golden Custard.

Fall Crookneck.  C&J CF TG.  For similar names see Summer Crookneck.

Seedsman's synonyms.  Winter Crookneck, C&J.


Faxon's Brazilian.  Bue Lur Vau.  For similar names see Brazil Sug.,
SQUASH. 345

Hrn Hrs Hst Hbt Hlm Hse J&S Jns Kg Lnr J&L Mnd Mcl Nol Old HP Ptt Poo Pot Pri Rec Roc Rt Shw Shm Sip SP S&S Hem Thr Til Van Vln Wt Wea W&D Wer Wd Wdr Yng Y&H.

**Similar names.** See Summer Crookneck.

**Seedmen's synonyms.** Mammoth Summer Crookneck, J&S Nol Shw.

**Giant White Bush Scalloped.** C&B. For similar names see White Bush Scalloped.

**Seedmen's synonyms.** Long Island, C&B.

**Giant White Summer Crookneck.** Buc Hrs Kna Vau.

**Similar names.** See Summer Crookneck.

**Giant Yellow Summer Crookneck.** Air Bui Cam Gnl Jac Liv Nol.

**Similar names.** See Summer Crookneck.

**Giant Yellow Summer Straightneck.** Buc Bur Frd Hrn Lnr Poo Thr Thr.

**Similar names.** See Summer Crookneck.

**Golden Bronze.** Brk Bur Col D&H Drr Efl Fip Ggjy Hrm H&P Liv Man May Pne Ptt Raw Thr Thr Vau V.&.


**Similar names.** See Yellow Bush Scalloped.

**Golden Custard.** Brd Bkt Brk Bri Bnu Buc Bui Bur Cam CE Cle C&B CF Cur D&H Drr Efl RE Ext Fst Frd GH Gry Hst Men Hlm J&S Kg Lnr Mnd Mgl Ns Man Mnd M&S NK Rce-Sal Shw Shm S&H S&W Tat Tem Thr Vk Wer Wll.

**Similar names.** Early Golden Custard, Extra Large Golden Custard, Mammoth Golden Custard, Silver Custard.

**Seedmen's synonyms.** Buckle's Mammoth Yellow Bush, Buc. Mammoth Yellow Bush, Frd Hlm J&S Man Mnd Tem, etc.

**Golden Hubbard.** Air Brd Bst Bth Bkt Bow Brk Bnu Bnu Buc Bui Bur Brw CE Col Cur D&H Drr Efl Ese RE Fnr Fer Frd Ggjy Gw Tg Hns Ham Hrv Hlm Ind Low J&M Ken Kra Lam Lnr LB Liv Mnd Man May McK Mss MV Xeb Old Pg JMP Pne Ptt Ptt Por Raw Rec Rob Rec Re S&R Shw Shm Sim Sox S&H Tem Thr At&T Til Tpk Vau V.& Web Wdr Yng Y&H.

**Similar names.** See Hubbard.

**Seedmen's synonyms.** Red Hubbard, Brk Bur Cur Lnr Mgd Ren, etc.

**Golden Summer Crookneck.** Entered as Yellow Summer Crookneck.

**Green Mountain.** Btu Frd Gls Ind Lam Rs Vk.

**Similar names.** Ferry's Green Mountain, Rocky Mountain.

**Green-Striped Bush.** Mzy. For similar names see Early Striped Bush.

**Green Summer Crookneck.** Bur Ggjy M&S Nol Pri Wd.

**Similar names.** See Summer Crookneck.

**Green Winter Crookneck.** Mld. For similar names see Summer Crookneck.

**Gregory's Butman.** Entered as Butman.

**Gregory's Golden Bronze.** Entered as Golden Bronze.


**Hard Shell Marrow.** D&H Fip Ham Vau.

**Similar names.** Hammond's Hard Shell Marrow.

**Hard Shell Turban.** Cox D&H Hrm Ind Pri Rec Vk.

**Similar names.** See Turban.

**Seedmen's synonyms.** Essex Hybird, Cox D&H Hrm Ind Pri S&O Vk.

**Heart O' Gold.** Far Hen Liv Vau.

**Similar names.** Henderson's Heart O' Gold.

Hester. low.

Holmes' Boston Marrow. Entered as Boston Marrow.


SIMILAR NAMES. Lohrman's Hubbard, Improved Hubbard, Manie's Improved Hubbard, Salzer's Improved Hubbard, Mammoth Hubbard, Hammond's Mammoth Hubbard, Blue Hubbard, Golden Hubbard, Red Hubbard, White Hubbard, Warred Hubbard, Leonard's Warted Hubbard, Chicago Warted Hubbard, Improved Warted Hubbard, Large Warted Hubbard, Mammoth Warted Hubbard, Toledo Warted Hubbard.

SEEDSMEN'S SYNONYMS. Winter, Bdg.

Improved American Turban, Improved Boston Marrow, Improved Cushaw, Improved Extra Early White Bush Scalloped, Improved Hubbard, Improved Long Marrow, Improved Large Summer Crookneck, Improved Marblehead, Improved Orange Marrow, Improved Pattypan, Improved Summer Crookneck, Improved Warted Hubbard, Improved White Bush Scalloped, Improved Yellow Summer Crookneck. Entered as American Turban, Boston Marrow, Cushaw, etc.

Italian Striped Vegetable Marrow. Fie SB.

SIMILAR NAMES. See Vegetable Marrow.

Italian Vegetable Marrow. Fier Thr. For similar names see Vegetable Marrow.

SEEDSMEN'S SYNONYMS. Corozelle di Napoli, Thr.

Japanese Alphabet. Chl. For similar names see Japanese Pie.


SIMILAR NAMES. Japanese Alphabet.

Jumbo. Pq.

Large Boston Marrow. Lan. For similar names see Boston Marrow.

Large Cream Vegetable Marrow. Kri. For similar names see Vegetable Marrow.

Large Mammoth Chile. Pks Sim. For similar names see Mammoth Chile.

Large Marrow. Gdn Jac.

SIMILAR NAMES. Improved Large Marrow.

Large Summer Crookneck. Ebr. For similar names see Summer Crookneck.

Large Warted Hubbard. Hen. For similar names see Hubbard.

Large Winter Crookneck. Elt Ggy Ken Put Rs SC S&F TB.

SIMILAR NAMES. See Summer Crookneck.

SEEDSMEN'S SYNONYMS. Cushaw, Put.

Leonard's Giant Yellow Summer Straightneck, Leonard's Warted Hubbard. Entered as Giant Yellow Summer Straightneck and Warted Hubbard.

Livingston's Cushaw, Livingston's Improved Cushaw. Entered as Cushaw.

Livingston's Pie. Bel Ewg Frd MWJ Liv Rob S&B.

SIMILAR NAMES. See Pie.

Lohrman's Hubbard. Entered as Hubbard.
Long Cream Vegetable Marrow.  D&H.  For similar names see Vegetable Marrow.


SEEDSMEN'S SYNONYMS.  Black Michigan, Brw.  Summer Crookneck, Stk.


SIMilar NAMES.  See Summer Crookneck.

Long Island Mammoth White Bush Scalloped.  M&S.

Long Island White Bush Scalloped.  C&B D&H Fnr Hen Hlm Neb Sim Thr.

SEEDSMEN'S SYNONYMS.  Giant White Bush, C&B.

Long Snow White Summer.  Kee.

SEEDSMEN'S SYNONYMS.  Coravelle, Kee.

Long Summer Crookneck.  Pac.  For similar names see Summer Crookneck.

Long White Bush Vegetable Marrow.  Brw D&H RE Ewg Fie Frd Gra Kei McK Pks Ren Rob SB W&D.

SIMilar NAMES.  See Vegetable Marrow.

Long White English Vegetable Marrow.  Brw.

SIMilar NAMES.  See Vegetable Marrow.

Long White Vegetable Marrow.  Brw Ger Kei Sim W&D.

SIMilar NAMES.  See Vegetable Marrow.

Low's Bay State.  Entered as Bay State.

Mammoth.  Brw Ewg Gra Kei Pac Sal.  For similar names see Mammoth Whale.

Mammoth Chile.  Atr Ab Ar Bai Bk Br Bk Br Ber Bw Edg Bgs Bui Bur Btr C&JCIE Chl Cle C&B Col CF Cox Crs Cur D&H Del Dd Dtr Else Ett Enr RE Eft Fmr Frd Ger Gdn Ggy Grw Tg Ham Hlm Hrn Hrv Hst Hen Hbt Hlm Hop Hse H&FLow J&S K&W Ken Kg Kra Lam Lan LB Lar Liv Loh Mgd Man Mas Man May JMM Mel Mls MV M&8 Mzy Neb Nol N&K Old Pac HP JMP Pnt Pr Ftr Pot Pri Raw Rec Rec Rs RP S&K SC S&O Sim Sox Spf \nS&W Tat Temp Tex TB Thr Trn VI Van Vkn Vkn Web W&D Wer Y&H.

SIMilar NAMES.  Large Mammoth Chile, Salzer's Chile, Chilean Giant, Chile.

SEEDSMEN'S SYNONYMS.  Mammoth King, D&H.  Mammoth Yellow, Ggy.

Mammoth Cream-Colored Summer Crookneck.  Hen.

SIMilar NAMES.  See Summer Crookneck.


SIMilar NAMES.  See Yellow Bush Scalloped.

Mammoth Golden Custard.  Lan Qkr.  For similar names see Golden Custard.

Mammoth Hubbard.  Del Ewtr Ewg Ham Mls Sie Tat.

SIMilar NAMES.  See Hubbard.

Mammoth King.  D&H.  For similar names see Mammoth Whale.

SEEDSMEN'S SYNONYMS.  Mammoth Chile, D&H.

Mammoth Prize.  GN.  For similar names see Mammoth Whale.


SIMilar NAMES.  See Summer Crookneck.

SEEDSMEN'S SYNONYMS.  Giant Summer Crookneck, J&S Nol Shw.

Mammoth Valparaiso.  Shm.  For similar names see Valparaiso.


SIMilar NAMES.  See Hubbard.


SIMilar NAMES.  Mammoth Prize, Mammoth King, Mammoth Yellow, Ren- nie's Green Mammoth, Mammoth.

Mammoth White Bush Scalloped.  Bt Bk Brk Brg Brg Bui Bui Cam C'E Cle Col CF Cox Crs Cur Brn Ewtr Frd Gdn GH GY Ggy Gig Huns Ham Hde Hrn Hst Hbt Hlm Iml JAC J&M J&S Jas Kg Kra Lam LB Liv JL Loh Mgd
AMERICAN VARIETIES OF VEGETABLES.

Man JMM McIb Neb Xk Old HP Pnc Put Poo Pri Ree Roc Shw Shm Sic Thr Thm VI Van Vk Wlat Weal Wll Wd WS Yng.

Seedsmen's synonyms. Improved Pattypan, Buc Ham. Large Pattypan, Buc. Silver Custard, Vk.

Mammoth Yellow. Fqr Fax Ggy Ren Thm.

Similar names. See Mammoth White.

Seedsmen's synonyms. Mammoth Chile, Ggy.


Similar names. See Yellow Bush Scalloped.

Seedsmen's synonyms. Golden Custard, Buc Frd Hlm J&S Man Mgd Tem, etc.

Mammoth Yellow Summer Crookneck. Rgy Crs Tat.

Similar names. See Summer Crookneck.


Similar names. Improved Marblehead.

Seedsmen's synonyms. Blue Hubbard, Iow.

Maule's Improved Hubbard. Entered as Hubbard.

May's Warted Hubbard. Entered as Warted Hubbard.

Mediterranean. Rgy Bgs.

Metcalf. Chl Eas.

Mexican Banana. Bur DD Shm.

Moore's Cream Vegetable Marrow. Entered as Cream Vegetable Marrow.


Similar names. Improved Orange Marrow, Chicago Orange Marrow, Colvin's Orange Marrow, Early Orange Marrow, Extra Early Orange Marrow, Prolific Orange Marrow, Early Prolific Orange Marrow, Extra Early Prolific Orange Marrow.

Seedsmen's synonyms. Early Prolific Marrow, Brk Gry. Prolific Marrow, Wdr.

Patagonia. Bdg.

Seedsmen's synonyms. Seven Years Custard, Bdg. Butter, Bdg.

Pattypan. Ar Buc Cam Eie Gigg Hen Jac McIb Mf Frr Stk Wd WS.

Similar names. Improved Patty Pan, White Patty Pan, Yellow Patty Pan, Dow's Extra Early Patty Pan, Extra Early Patty Pan.


Pen-y-Byd Marrow. Gra.

Seedsmen's synonyms. Best in the World, Gra.

Peruvian. Shm.

Similar names. Shumway's Peruvian.


Similar names. Livingston's Pie.

Seedmen's synonyms. Winter Luxury Pumpkin, Bur.


Seedmen's synonyms. Sibley, Buc Bur Col Cox Fqr Iow, etc.

Pineapple. Amb Brg Buc Bur Emr GX J&M Kri Kg Lnr Mnd Mau May JMM MV Mzy Nol Pac Ptt Ren Roc Sal Sor S&W Thr VI Vc Vn W&D Wer Yng.

Similar names. White Pineapple, Early Pineapple.

Seedmen's synonyms. Cocanut, Vi.

Prolific Marrow. Btl Bkt Brg Bri Bur Hrs Ken Mau Rob Rs S&O Wer Wdr.

Similar names. Dunlap's Prolific Marrow, Dunlap's Early Prolific Marrow, Dunlap's Early Marrow, Early Prolific Marrow, Extra Early Prolific Marrow, Earliest Prolific, Wood's Earliest Prolific, Prolific Orange Marrow, Early Prolific Orange Marrow, Extra Early Prolific Orange Marrow.

Seedmen's synonyms. Early Orange Marrow, Hrs Ren. Orange Marrow, Wdr.

Prolific Orange Marrow. Air Buc Bui Evr Roc Shm Vl.

Similar names. See Prolific Marrow, Orange Marrow.

Red China. Bel Brg Fst. For similar names see China.

Red Hubbard. Brk Brn Bng Bur Cur Iow J&S Krs Lnr Mgd MV Nol Ptt Pri Ren Sor Spf SB Vau WII Yng.

Similar names. See Hubbard.

Seedmen's synonyms. Golden Hubbard, Brk Bur Cur Low Mgd Vau, etc.

Rennie's Green Mammoth. Ren. For similar names see Mammoth Whole.

Rocky Mountain. WII. For similar names see Green Mountain.

Salzer's Chile, Salzer's Improved Hubbard. Entered as Chile and Hubbard.

Shumway's Mexican Banana, Shumway's Peruvian. Entered as Mexican Banana and Peruvian.


Similar names. Yellow Sibley.

Seedmen's synonyms. Pike's Peak, Buc Bur Drr Fqr Iow Lam Liv, etc.

Silver Custard. Brl Bly Hcn J&S Man Ree Tat Thr Vn.

Similar names. See Golden Custard.

Seedmen's synonyms. Mammoth White Bush Sculpaped, Vc.

Small Cocoanut. Fst. For similar names see Cocoanut.


Similar names. See Summer Crookneck.

Strickler's Green Summer Crookneck. M&S.

Similar names. See Summer Crookneck.

Strickler's Summer Crookneck. Fqr Ggy.

Similar names. See Summer Crookneck.

Summer Crookneck. Amb Bai Bow Bdg Brn Brb Cle C&B Cur Drl Drm Dum Eic Ewg Fax Fer Ger Gra Ggy TG Hns Hrm Hrv H&C Hlm Jns Kri K&W K&F
American Varieties of Vegetables.

Kg Kos Kra LB Lnr Mnd Man PM Mns May JMM McK Mzy Nef Pov Pg Pir Prn Pug Roc Rs S&B Sim Sox Sth SB Tem Thr Thb Tpk T&B Van Web W&D Wll Wlt Wlr Wyz.

Similar Names: Fall Crookneck, Winter Crookneck, White Winter Crookneck, Large Winter Crookneck, Canada Winter Crookneck, Arlington Summer Crookneck, Vaughan’s Summer Crookneck, Long Summer Crookneck, Improved Summer Crookneck, Improved Large Summer Crookneck, Giant Summer Crookneck, Backbee’s Giant Summer Crookneck, Strickler’s Summer Crookneck, Strickler’s Giant Summer Crookneck, Mammoth Summer Crookneck, Early Mammoth Summer Crookneck, Warted Summer Crookneck, Early Warted Summer Crookneck, Early Summer Crookneck, Yellow Summer Crookneck, Giant Yellow Summer Crookneck, Large Summer Crookneck, Mammoth Yellow Summer Crookneck, Improved Yellow Summer Crookneck, Early Yellow Summer Crookneck, Cream-Colored Summer Crookneck, Mammoth Cream-Colored Summer Crookneck, White Summer Crookneck, Early White Summer Crookneck, Giant White Summer Crookneck, Green Summer Crookneck, Strickler’s Green Summer Crookneck, Long Green Summer Crookneck, Yellow Summer Straightneck, Leonard’s Giant Summer Straightneck, Giant Yellow Summer Straightneck.

Seedmen’s Synonyms: Early Warted, Rs. Long Green, Stk.

Sutton’s Long White Vegetable Marrow. M&S.

Similar Names. See Vegetable Marrow.


Toledo Warted Hubbard. HP. For similar names see Hubbard.

Turban. Bgs Brn Bu C F Crs Cur Dan Evw Gra Hrv K&W Lnr Mnd Mhl MV Mzy Pfr Pri Ren Roc Sm Nc S&T TB Thr.


Seedmen’s Synonyms: Essex Hybrid, Brw Roc. Turk’s Cap, Bgs Crs Cur Hrv Pri.

Turk’s Cap. Bgs Crs Cur Hrv Pri.

Seedmen’s Synonyms: American Turban, Raw. Turban, Bgs Cur Crs Hrv Pri.

Valparaiso. Vin.

Similar Names. Mammoth Valparaiso.

Vaughan’s Summer Crookneck, Vaughan’s Giant Summer Crookneck. Entered as Summer Crookneck and Giant Summer Crookneck.

Vegetable Marrow. Ar Bcr Bw Dr C F Crs Cn Dan Evw Gra Hrv K&W Lnr Mnd Mhl MV Mzy Pfr Pri Ren Roc Sm Nc S&T TB Thr.

Similar Names: Italian Vegetable Marrow, Italian Striped Vegetable Marrow, English Vegetable Marrow, Long White English Vegetable Marrow, Long White Vegetable Marrow, Sutton’s Long White Vegetable Marrow, Long White Bush Vegetable Marrow, White Bush Vegetable Marrow, Cream Vegetable Marrow, Moore’s Cream Vegetable Marrow, Long Cream Vegetable Marrow, Large Cream Vegetable Marrow.

Seedmen’s Synonyms: Boston Marrow, Bow. Long White Marrow, Bur. Moore’s Cream, Brw.

Victor. Ggy.


**Warted Hubbard.** Brd Btl Bkt Brb CE Col Crs Der Dnm Enr RE Flt GH Gry Gry Hns Hrs H&C Iow Kos Lan Lnr LB JL May JFM JMM MV NK Pae Puc Ptt Pri Raw Rec S&O Sox Spf SB Stw Thh Til.

**Similar names.** See Hubbard.

**Warted Summer Crookneck.** Fqr S&F. For similar names see Summer Crookneck.


**White Bush Vegetable Marrow.** Gng. For similar names see Vegetable Marrow.

**White Chestnut.** Bkt Ggy Hrn Iow J&S '17.

**Seedsmen's synonyms.** White Hubbard, Iow.

**White Hubbard.** Iow Lnr. For similar names see Hubbard.

**White Pattypan.** Bg Bg Bn Bui D&C Eic Gdn Hrn Hen Lan PM McM Mel Mhl Min JMA Qkr Itm SC Shw Spf.

**Similar names.** See Pattypan.


**White Pineapple.** Alr Btl Bui CE DD DE Fst Frd Hns J&S Min Pw JMP Rec SC S&O Shm T&B '17 Wat.

**Similar names.** See Pineapple.

**Seedsmen's synonyms.** White Turban, Rec.

**White Summer Crookneck.** Bel Bgg Brn Brx Fcr Frd Hrs Kra Lam LB Lnr Liv Mgd Mm Pq S&H Vl Wk Wdr.

**Similar names.** See Summer Crookneck.

**White Winter Crookneck.** Hly. For similar names see Summer Crookneck.

**Winter.** Bdg.

**Seedsmen's synonyms.** Hubbard, Bdg.


**Similar names.** See Summer Crookneck.

**Seedsmen's synonyms.** Canada Crookneck, Bdg. Fall Crookneck, C&J.

**Winter Luxury Pumpkin.** Bcl Btr.

**Seedsmen's synonyms.** Pie Squash, Btr.

**Wood's Earliest Prolific, Wood's Everbearing.** Entered as Earliest Prolific and Everbearing.

**Yellow Bush Scalloped.** Alx Alr Bld Bgg Bdr Bng Cum Cle C&B C&F Ewr Fmr Haw Hen Hlm Hrn J&S Jns Lam LB Man May Nef Nol Ptt Poo Pot Pri Raw Sal SC S&O Tat Van Wav W&D.

**Similar names.** Early Yellow Bush Scalloped, Mammoth Yellow Bush
American Varieties of Vegetables.


Seedsmen's Synonyms. Pattypan, Low SC. Cymbling Hlm.

Yellow Pattypan. SC. For similar names see Pattypan.

Seedsmen's Synonyms. Early Yellow Bush Scalloped, Bur Pt Trm.

Yellow Sibley. JL. For similar names see Sibley.


Similar Names. See Summer Crookneck.

Yellow Summer Straightneck. JMM Tat Vau.

Similar Names. See Summer Crookneck.


Black Giant. Bon Man Mls.
Black Seed. Gls.
Chinese Giant. M&S.

GIANT RUSSIAN. Ar RE Ewg Mck Ren.
Large Russian. Anb Brk Cam Cle C&B Cur Dun Eic Elt Fer Fic Hde Hrm Hen RHJ Lam Loh Mzy Nc Pz Pks Raw Til Tpk Wer.

Mammoth. Jer.


Prize Mammoth. Alr.


Tall Russian. Kei.

White Beauty. Bur Col CA Fnr Frd Kos Tem Vr Wer.

White Russian. Gls.

Swiss Chard.

(Also called Sea Kale Beet, Spinach Beet, Leaf Beet, Chard, Summer Spinach, and sometimes Silver Beet.)

Asparagus.  Chl.
Beck's Improved.  Bru Vk.
Brazilian.  Srm.
Crimson-Veined Brazilian.  Thr.
Draeana Leaved.  Thr.
Golden.  Gra.
Golden-Veined Brazilian.  Thr.
Large Scarlet Brazilian.  Vk.
Large Silver.  Vk.
Large White.  Brw.
Large White Silver.  Eic M&S.
Large Yellow Brazilian.  Vk.
Ornamental.  Ggy Shm.
Red.  Gra.
Scarlet-Ribbed Chilean.  Thr.
Scarlet-Veined Brazilian.  Thr.
White.  Gra J&M May Sie Thm.
White Silver.  RHJ.
Yellow Cutting.  Mnd.
Yellow-Ribbed Chilean.  Thr.

TOMATO.


Admiral Dewey.  Pne.
Advance.  Brb Fnr Frd Liv Lon S&O.
Similar names.  Early Advance, Extra Early Advance, Purple Advance, Extra Early Purple Advance, Early Purple Advance, Cleveland's Advance.


Alnearer's Dwarf Champion.  Entered as Dwarf Champion.

American Purple.  Tem.  For similar names see Cincinnati Purple.

Americus Hybrid.  Fst.
Similar names.  Faust's Americus Hybrid.

Aristobright.  Lie.
Similar names.  Dwarf Aristocrat, Livingston's Dwarf Aristocrat.

Arrington's Earliest.  CA.  For similar names see Earliest of All.

1329—No. 21—02—23
Atlantic.  Ewg Gra McK &F.  For similar names see Atlantic Prize.

Atlantic Prize.  Alr Ar Bak Brd Brt Btl Bel Big Bow Bgg Bgs Bri Bra Brn Buc Blr Bur Brr Brw C&J Cam CE Cle C&£ Col CF Cox Crq Crs Cur CA Dlw D&H Del DD Drr Dwn Ebe Ebr Eie RE Fqr Fer Fle Frd Gls Gng Gry G&T TG Hns Ham Hrv H&C Hlm Hop H&P Iml Iow Jac RIJ J&M &S Jns Ken K&F Kg Kos Kra Lam Lan Lnr LB Liv LL Moh Mnd Mgd Man Mns Mas May JCM JMM Mhl Ms MV M&S Neb Nol NK OVOld Pac Prn Pnt Ptt Poo Por Pot Pri Pug Qkr Raw Ree Roc Re Rs Sal &R SC Sow &O Shn Scie Sim Simo Spf SB &H &W Tat Tom Tex Thom Thr Til Trm VI Van Vl Van Vl Wnt Wnt Wf Wd Vrk W&Y Y&H.

SIMILAR NAMES.  Early Atlantic Prize, Extra Atlantic, Improved Atlantic Prize, Atlantic.

Autocrat.  Brk J&S Thr.

Baltimore Prize Taker.  Lam McM Mel.  For similar names see Prize Taker.

Barbados Gooseberry.  Sim SB.  For similar names see Cape Gooseberry.


Bedell’s Long Island.  Entered as Long Island.

Beefsteak.  Van.

Bell’s Enormous, Bell’s Satisfaction.  Entered as Enormous and Satisfaction.

Bell’s Extra Early.  Bel.  For similar names see Extra Early.

BELMONT.  Brk Ggy Raw &F.

SIMILAR NAMES.  Breck’s Belmont.

Best of All.  Brk Big Bur Drr Fqr Mhl S&F Thr Vn W&D Wf.

SIMILAR NAMES.  Sutton’s Best of All, Sutton’s Best of All Forcing, Best of All Forcing, Great B. B., Brinton’s Best.

Best of All Forcing.  Wat W&D.  For similar names see Best of All.

Big Four Hundred.  PM.  For similar names see Number Four Hundred.

SEEDSMEN’S SYNONYMS.  Powdercoat, PM.

Bolgiano’s Prize Taker.  Entered as Prize Taker.

Bolgiano’s Queen.  Blg.  For similar names see Golden Queen.

BOND’S American Purple, Bond’s Early Minnesota.  Entered as American Purple and Early Minnesota.

Boston Market.  Fqr Raw &F.

Brandywine.  Bgs Fqr J&S Lan M&S.

Breek’s Belmont.  Entered as Belmont.

Bright and Early.  Del Eas HWJ Mhl Ren Vk.


SIMILAR NAMES.  See Best of All.
Bruce's Dominion Day. Entered as Dominion Day.

Buckbee's Beefsteak. Buc.

Similar names. Moore & Simon's Early Beefsteak.

Buckbee's County Fair, Buckbee's Earliest Market, Buckbee's Golden Prize, Buckbee's Snowball, Buckbee's Spot Cash, Buckbee's State Fair. Entered as County Fair, Earliest Market, Golden Prize, Snowball, Spot Cash, and State Fair.

Buckbee's Tree. Buc. For similar names see Tree.

Seedsmen's synonyms. Station, Buc.

Buckbee's World's Fair. Buc. For similar names see World's Fair.

Buckeye. Lan. For similar names see Buckeye State.

Buckeye State. Aix Anbh Ar Brk Bkt Bel Brn Buc Bar Cam CE CF Crs Cur CA DD Drr Ebr Ebr Fkr Fcr Gffy Tkt Hrn Hst Hly Hlm H&P Jnl Jer MWJ J&M J&S Jns Ken K&F Kg Kos Lnr Liv Lm Lm MGD Nrs Mst Man May JCM JJM M&S Mzy Nbr Nbr OV Old Hl Pnt Ptt Pri Rce Rce Rte SC Shw Sim Sim Spf SB S&H Tlp Tpk Vi Van Vk Wee WS.

Similar names. Livingston's Buckeye State, Buckeye.

Buist's Beauty, Buist's Prize Belle, Buist's Trophy. Entered as Beauty, Prize Belle, and Trophy.


Burpee's Climax, Burpee's Combination, Burpee's Early Fordhook Fancy, Burpee's Matchless, Burpee's Noble, Burpee's Success, Burpee's Large Early, Burpee's Quarter Century. Entered as Climax, Combination, Early Fordhook Fancy, Matchless, Noble, Success, Large Early, and Quarter Century.

Canada. McK Ren. For similar names see Canada Victor.


Similar names. Early Canada Victor, Canada, Yellow Victor.

Cape Gooseberry. Aix.

Similar names. Barbados Gooseberry.

Seedsmen's synonyms. Strawberry, RE.


Century. Lnr Sim. For similar names see Twentieth Century.

Chalk's Early Jewel. Entered as Early Jewel.

Challenge. Mls.

Similar names. Mills' Challenge.

Chemin. M&S Ren.

Similar names. Early Chemin, Chemin Market.

Chemin Market. J&S. For similar names see Chemin.


Similar names. See Red Cherry, Yellow Cherry.

Cherry Currant. Brt.

Similar names. See Red Cherry, Yellow Cherry, Red Currant.

Seedsmen's synonyms. Goose, Brt.

Childs' Diadem, Childs' Golden Jubilee, Childs' Picture Rock, Childs' Ruby Queen. Entered as Diadem, Golden Jubilee, Picture Rock, and Ruby Queen.

Cincinnati Purple. Liv JCM JMM.

Similar names. Bond's American Purple, American Purple.

Cleveland's Advance. Entered as Advance.

Climax. Big Brk.

Similar names. Burpee's Climax.

Climbing. Bel Chl.

Similar names. Giant Climbing, Climbing Orange.

Seedsmen's synonyms. Mansfield Tree, Bel.
Climbing Orange.  Sal.  For similar names see Climbing.
Cluster.  Lan.

Clusterosa Yellow Egg.  J&S.  For similar names see Cluster.
Columbian Prize.  Crs.  For similar names see Golden Prize.
Combination.  Bkt Buc Bur Col Ham Hlm MWJ May Old Sal Tem Thr.

Similar names.  Burpee's Combination.
Comrade.  Ggy S&F.
Conference.  Fgr Ggy.
Conqueror.  Bgs Crs Emr Hry MV Pac Ren Sal Shm Sow SB T&B.

Similar names.  Early Conqueror.
Cook's Favorite.  Entered as Favorite.
County Fair.  Buc.  For similar names see World's Fair.
Cox's Trophy.  Entered as Trophy.
Cream City.  Cfr Van.
Creekside Glory.  Sim.

Crimson Currant.  Iow.  For similar names see Red Currant.

Similar names.  Henderson's Crimson Cushion, Henderson's Perfected Crimson Cushion, Crimson Robe, Early Crimson, Tait's Early Crimson.

Crimson Robe.  Sal.  For similar names see Crimson Cushion.
Crimson Whirlwind.  Sal.
Cumberland Early Red.  Lan.  For similar names see Cumberland Red.
Cumberland New Jersey Red.  Lan.

Similar names.  See Cumberland Red, New Jersey Red.

Similar names.  Cumberland Early Red, Cumberland New Jersey Red.
Currant, Bt Buc Fgr Ggy Lan Pri Stw.  For similar names see Red Currant.

Seedsmen's Synonyms.  Grape, Fgr.

Democrat.  Thr.
Diadem.  Chl Ggy.

Similar names.  Childs Diadem.
Dickmann's New Jersey.  DD.  For similar names see New Jersey Red.
Dominion Day.  Bru RE.

Similar names.  Bruce's Dominion Day.
Dr eer's Earliest of All.  Der.  For similar names see Earliest of All.
Duke of York.  M&S.


Similar names.  Livingston's Dwarf Aristocrat.

Dwarf Champion.  Alx Alr Anb Ar Bg Bk Br Bt Bw C&J Bdg Bgs Bri Brn Bru Bng Buc Bui Bur Brr Bw C&J Cam CE CLE Cle C&B Col CF Cox Cgy Crs Cur CA Dwh D&H Del DD D&C Drr Drw Drm Dun Eas Ebe Ebr Eic Elt Emr RE Exp Ewg Fmr Fgr Fst For Frd Gfr Gdr Gra Gng Ggy Gry Gyt G&T Hlm Hns Hde Hrn Hrs Hvy Hst Hen Hbt H&C Hly Hlm Hpy H&P Hm Hm Iow Jac MWJ J&S Jns Koi K&W Ken K&F Kg Koc Kos Kra Lam Lam Lnr LB Liv Lj Loh Mnd Mgd Man PM Mus Mas Mas May JCM JMM Mic Mbi Ms MV M&S May Neb Nol N1 NK Pbc Pks HP JMP Pir Prn Pne Pnt Ptt Por Pot Pug Qkr Rtk Raw Rec Rco Rr Rs RP Sal S&R SC S&F She
S&O Sic Sim Sox Spf Stk SB Stw S&H S&W Tat Tex Thm Thr Til Trm T&B Vi 
Vau Vk Wea Web W&D Wer Wl Wd Wdr WS Wyg Y&H.

SIMILAR NAMES. Purple Champion, Red Champion, Dwarf Scarlet Champion,
Early Dwarf Champion, Alnico's Dwarf Champion, Livingston's Dwarf Cham-
pion, Shumway's Large Champion, Dwarf Champion Cluster, Dwarf Golden
Champion, Market Champion, Early Market Champion.

SEEDSMEN'S SYNONYMS. Tree, Bow For H&P RP.

Dwarf Champion Cluster. Pri. For similar names see Dwarf Champion.

Dwarf Cluster. M&S.

Dwarf Dandy. Liv.


SIMILAR NAMES. See Dwarf Champion.

SEEDSMEN'S SYNONYMS. Yellow Prince, Bur.

Dwarf Scarlet Champion. Else May NK Thr Vau.

SIMILAR NAMES. See Dwarf Champion.

Dwarf Tree. Gdn. For similar names see Tree.

Dwarf Yellow Prince. Liv. For similar names see Yellow Prince.

Earliana. CE D&H GN Ggy Mrs Mas Ren Red Sim SB Th Vk Vau.

SIMILAR NAMES. Sparks' Earliana.

Earliest in the World. Gin Illy Rt. For similar names see Earliest of All.

Earliest Large. Wer. For similar names see Large Early.

Earliest Market. Buc Roc. For similar names see Earliest of All.

Earliest of All. D&C Drg Ebe Ewg Fic Gra GN Lon Mck Ren Sal SB.

SIMILAR NAMES. Earliest Market, Buckbee's Earliest Market, Manlee's Earliest,
Landreth's Earliest, Arrington's Earliest, Earliest in the World, Mills' Earliest
in the World, Leonard's Earliest in the World, Hammond's Earliest on Earth,
Vaughn's Earliest of All, Dreer's Earliest of All, Salzer's Earliest of All, Salzer's
Fifty Days the Earliest, Fifty Days the Earliest.

SEEDSMEN'S SYNONYMS. Early Ruby, Gra Mck Ren. Extra Early Atlantic,
Mck Ren. Atlantic, Ewg Gra.

Early Abundance. M&S.

EARLY ACME. Afx Amb Ar Bgg Brn Buc Brw C&J CE Crg CA Drm Eic TG Hde

SIMILAR NAMES. See Acme.

Early Advance. Ber Him Mau MV Neb Roc Sox Y&H.

SIMILAR NAMES. See Advance.

Early Atlantic Prize. Crs. For similar names see Atlantic Prize.

Early Bermuda. Lan.

Early Bird. Bri Ggy J&S Rs.

SIMILAR NAMES. Red Bird.

Early Canada Victor. Shm. For similar names see Canada Victor.

Early Chemin. Bur. For similar names see Chemin.

Early Conqueror. Brn Gng Liv Pks Sim Tpk. For similar names see Conqueror.

Early Crimson. Tat. For similar names see Crimson Cushion.

Early Dwarf Champion. Grw Vau. For similar names see Dwarf Champion.

SEEDSMEN'S SYNONYMS. Tree, Grw Shw Vau.

Early Eureka. Hlm.

SIMILAR NAMES. Holmes' Early Eureka.

Early Essex Hybrid. CE Evr For Hrm Inl LB Loh Pri Raw Roc Ree Y&H.

SIMILAR NAMES. See Essex Hybrid.

Early Favorite. HP. For similar names see Favorite.

Early Fordhook Fancy. Bur. For similar names see Fordhook.


SIMILAR NAMES. See Freedom.
Early Gold Mine. M&S.

Similar names. Sutton’s Early Gold Mine.

Early Hathaway Excelsior. Alx. For similar names see Excelsior.

Early Imperial. JMP. For similar names see Imperial.

Early Jersey. Lan. For similar names see New Jersey Red.


Similar names. Chalk’s Early Jewel.

Early July. Btt.

Early Large Smooth Red. Alx Net Stk. For similar names see Large Smooth Red.

Early Leader. Amb Vg.

Similar names. Vick’s Leader.

Early Market. Lan.

Early Market Champion. J&S M&S. For similar names see Dwarf Champion.

Early Mayflower. Bgs D&H Fst TG Sal Sim Wat.

Similar names. See Mayflower.

Early Melrose. Hlm.


Seedsman’s synonyms. Red Apple, J&S.

Early Minnesota. Btt Buc Col Cur Dl Fnr Flr Gls Gra Gry Hum Hrs Low Kos May JMM NK Rec Sie St&H Tom Wer Wil.

Similar names. Bond’s Early Minnesota.

Early Optimus. Tg. For similar names see Optimus.

Early Paragon. Hlm J&S M&S Pae Sim TaB. For similar names see Paragon.

Early Perfection. Alr Hde Liv Rs. For similar names see Perfection.

Early Picton. Gng.

Early Purple Advance. Btt Cle. For similar names see Advance.

Early Red. Gra Hns. For similar names see Extra Early.

Early Richmond. Ger Lan TB.

Similar names. Extra Early Richmond.


Similar names. Ruby, Henderson’s Ruby, Childs’ Ruby Queen, Shumway’s Ruby Queen, Ruby Queen.

Seedsman’s synonyms. Atlantic, Gra. Atlantic Prize, C&J Drr H&C SC Sim Vg, etc. Earliest of All, Gra McK Ren. Extra Early Atlantic, McK Ren.

Early Smooth Red. Btt Cle JMP. For similar names see Large Smooth Red.

Early Stone. Byg.

Early Tree. CyG GN. For similar names see Tree.

Eclipse. Mbl S&F Thr Wat.

Similar names. Eclipse Forcing, Sutton’s Eclipse.

Eclipse Forcing. W&D. For similar names see Eclipse.

Eichling’s Excelsior. Eic. For similar names see Excelsior.


Enormous. Amb Bel Bur Col CF Frd Gry TG Ham Hrs Hse Hstl M/W J&S Liv Liv Mgl Man May JMM Pg Rec Rim Sal Shw Sim Tem Van Wat WS.

Similar names. Maule’s Enormous.

Essex Early Smooth. Fqr. For similar names see Essex Hybrid.


Similar names. Early Essex Hybrid, Essex Early Smooth.

Everbearing. Ewg Kei.
**TOMATO.**

359

Excelsior.  Shw.


Extra Early.  Lan.


Extra Early Advance.  Bur &C Fst Gthn Hbt J&S Mas Rec Sox Web Y&H.

Similar names. See Advance.

Extra Early Atlantic.  McK Ren.  For similar names see Atlantic Prize.


Extra Early Cluster.  Min.  For similar names see Cluster.

Extra Early Dwarf.  Stk.  For similar names see Extra Early.

Extra Early Gem.  M&S.  For similar names see Gem.

Extra Early Market.  MWJ.  For similar names see Extra Early.

Extra Early Peerless.  M&S.

Extra Early Purple Advance.  Bt/ DD Hts Man.  For similar names see Advance.

Extra Early Red.  Gthn Hts.  For similar names see Extra Early.

Extra Early Richmond.  J&M Lan Min.  For similar names see Early Richmond.

Extra Early Ruby.  Gls.

Extra Early Tree.  May Mls OV JtP Tpk.  For similar names see Tree.

Extra Early Trophy.  GH M&S.  For similar names see Trophy.

Farquhar's Faultless Early.  Entered as Faultless Early.

Faultless Early.  Fqr.  For similar names see Extra Early.

Faust's Americus Hybrid.  Entered as Americus Hybrid.


Similar names. May's Favorite, Livingston's Favorite, Cook's Favorite, Sacramento Favorite, Trucker's Favorite, Early Favorite.

Ferris Wheel.  Sal.

Similar names. Salzer's Ferris Wheel.

Ferry's Optimus.  Entered as Optimus.

Fifty Days the Earliest.  Sal.  For similar names see Earliest of All.

Fig.  Bdg Fqr Raw S&F.

Similar names. Golden Fig, Yellow Fig, Sumatra Fig, Zealand Fig.

Seedmen's synonyms. Pear, Fqr Raw S&F.  Red Pear, Bdg.

Fiji Island.  Min Nef Vin.

Similar names. Fiji Island Improved.

Fiji Island Improved.  Entered as Fiji Island.

First Choice.  Wdr.

Seedmen's synonyms. Fordhook First, Wdr.

First Early.  WS.

Similar names. First of All, Hargest's First of All, May's First of All, Wood's First Early.

First of All.  May Tpk.  For similar names see First Early.
Fleming's Mammoth King. Fle. For similar names see King.


Similar names. Fordhook Fancy, Fordhook First, Fordhook Early, Burpee's Early Fordhook Fancy, Early Fordhook Fancy.

Fordhook Early. Bkt T# Lom NK. For similar names see Fordhook.

Fordhook Fancy. Bkt Bri Buc Brn Col Frd J&S Mus May M-K Old Ren Sim Tat Thr Tfh.

Similar names. See Fordhook.

Fordhook First. Brd Bkt Bri Bng Buc Brb Bar Brm CE Cle Col Crs D&H Frl Gra Ham Hrm Hlm H&P Jer Jns McM Old Por Ree Rt Rs Sl S&R S&F Sim S&H Tat Thr Tfh Van Vl Wm Wdr Y&H.

Similar names. See Fordhook.

Seedsmen's synonyms. First Choice, Wdr.

Fortune. Bgs J&S.

Four Hundred Mammoth. Fst. For similar names see Number Four Hundred.

Seedsmen's synonyms. Ponderosa, Fst.


Similar names. Henderson's Early Freedom, Early Freedom.

French Marvel. J&S.

Frogmore Forcing. Van Wat W&D.

Futurity. GN.

Garden King. Shm. For similar names see King.

Gem. Bdg.


Seedsmen's synonyms. Red Cherry, Bdg.

General Grant. Bgs CE Crs Emr Gra Gry Ree Sl.

German Market. Wcr.

Giant Climbing. Evr Vl. For similar names see Climbing.

Giant Everbearing. GN.

Giant Prize. Mls.

Giant Scarlet Ground Cherry. Iow.

Giant Seedling. CCo Frd Ree.

Similar names. Logan's Giant Seedling.

Giant Tree. Ale May.

Golden Ball. Anb CE TG Liv JL Ree.

Similar names. Livingston's Gold Ball, Ivory Ball.

Golden Beauty. Fld McM. For similar names see Beauty.

Golden Dome. Sal.

Golden Fig. Chl. For similar names see Fig.

Golden Gage. Mks. For similar names see Green Gage.

Golden Husk. GN Liv Shm. For similar names see Husk.

Golden Jubilee. Chl.

Similar names. Childs' Golden Jubilee.

Golden Nugget. Iow.

Golden Prize. Buc Ree.

Similar names. Mammoth Prize, Buckbee's Golden Prize, Columbian Prize.

Golden Queen. Alx Ar Bak Brd Bfr Btl Bkt Bel Ber Bow Brk Bgs Brn Brw Bng Bar Brn Brw C&J CE Col CF Cok Crs CA D&C Drr Elt Evr Fmr Fmr Fst Fst Fer Frd Gyn Gry Grw TG Ham Hrs Hst Htm Hse Iml Iow Jer MWJ J&M Jns Ken Kg Kra Lnr Ltr LB Liv JL Loh Man Mas Man May JCM JMM McM Mls MV Neb NK Pac Pg HP Ptt Poo Por Pot Raw Ree Ren Ree Rt RP S&R SC S&F
Shw Shm Sim Sim Sox Spf SR Stw S&H S&H Thr Tilh Tpk T&B Vl Vau Vl Vg Wb Wbl Vl Wd Wd Wd WS.

**Similar Names.** Table Queen, Livingston’s Golden Queen, Queen, Red Queen, Bolgiano’s Queen, Childs’ Ruby Queen, Shumway’s Ruby Queen, Minnesota Queen, Red Table Queen.

**Seedsmen’s Synonyms.** *Large Round Yellow, SC. Large Smooth Yellow, Sim. Queen of All the Yellows, CA Liv Rs. Queen of the Yellows, Vl. Sunrise, Bur Crs G&T Ren. Yellow Trophy, Wd WS.*

**Golden Strawberry.** Frl M&S. For similar names see Strawberry.

**Seedsmen’s Synonyms.** *Ground Cherry, Frl. Husk, Frl. Winter Cherry, Frl.*

**Golden Sunrise.** C&B Hen. For similar names see Sunrise.

**Golden Trophy.** Jr Bel Bui Cle Crs Crw Dlw Ebe Gry TG Ham Lan Jel MV Nef Jmp Prn Ree Sox S&W TB Tpk Trm Wer.

**Similar Names.** See Trophy.

**Seedsmen’s Synonyms.** *Large Round Yellow, Pnt.*

**Gold Mine.** Nol.

**Grape.** Brt Fqr Lan Stw.

**Seedsmen’s Synonyms.** *Cherry Current, Brt. Current, Fqr.*

**Great B. B.** Blg J&S. For similar names see Best of All.

**Great Mississippi.** Chl.

**Green Gage.** Lan.

**Seedsmen’s Synonyms.** *Golden Gage.*

**Seedsmen’s Synonyms.** *Ivory Bull, Lan.*

**Griffith & Turner Co.’s World’s Fair.** G&T.

**Similar Names.** See World’s Fair.


**Similar Names.** See Red Cherry, Yellow Cherry.

**Seedsmen’s Synonyms.** *Barbados Gooseberry, Ren Sim. Golden Strawberry, Frd. Husk, Bkt Buc Fer Frd Hrs JL, etc. Mexican Tomato, Sim. Strawberry, Brt Bkt Buc Ewg Fqr Raw, etc. Winter Cherry, Brt Bkt Buc Frd Hrs Sim.*

**Hammond’s Dwarf Tree.** Ham. For similar names see Tree.

**Hammond’s Earliest on Earth.** Ham. For similar names see Earliest of All.

**Hammond’s Golden Beauty.** Ham. For similar names see Beauty.

**Hammond’s Mammoth.** Ham.

**Hammond’s Prolific Bush.** Entered as Prolific Bush.

**Hammond’s Tall Tree.** Ham. For similar names see Tree.

**Hargest’s First of All.** Hlm. For similar names see First Early.

**Hathaway’s Excelsius.** Bgs Liv Min Tpk Vl. For similar names see Excelsius.

**Hawkeye.** JL

**Similar Names.** Livingston’s Hawkeye.

**Hawkins’ Early Large Smooth Red.** Hw.

**Similar Names.** See Large Smooth Red.


**Holmes’ Early Eureka.** Holmes’ Early Melrose, Holmes’ Royal Red, Holmes’ Supreme Forcing. Entered as Early Eureka, Early Melrose, Royal Red, and Supreme Forcing.

**Honor Bright.** Axl Air Ar Bak Btl Bkt Bgt Blg Brk Brn Bru Buc Bar Col CF Crs Crw CA Dlw Del Drr Drw Ebr Eie RE Ewg Fer Frd Gls Gra Ggy Gry G&T Grw TG Ham Hrs Ren Hlm H&P MJ&W J&M J&S Jet Kra Lar LB Liv JL
American Varieties of Vegetables.

Mns Man May JMM M&S Mzy Pac Pg Pnt Ptt Raw Ren Ree Roe Sal Shw Shm Sim Spf SB S&H S&W Thm Thr Tlh Til '77 Vau Vk Wea Wl.

Similar Names. Livingston's Honor Bright, Improved Honor Bright, Honor Bright Purple Fruit, Honor Bright Dwarf Aristocrat, Honor Bright Purple Potato Leaf, Honor Bright Red Potato Leaf, Honor Bright Purple Dwarf Potato Leaf, Honor Bright Red Dwarf Potato Leaf.

Honour Bright Dwarf Aristocrat. Liv. For similar names see Honour Bright.

Honour Bright Purple Dwarf Potato Leaf. Liv.

Similar Names. See Honour Bright.

Honour Bright Purple Fruit. Liv. For similar names see Honour Bright.

Honour Bright Purple Potato Leaf. Liv. For similar names see Honour Bright.

Honour Bright Red Dwarf Potato Leaf. Liv. For similar names see Honour Bright.

Honour Bright Red Potato Leaf. Liv. For similar names see Honour Bright.

Horsford's Prelude. Entered as Prelude.

Hubbard's Curled Leaf. Crs.

Hundred Day. Sal Tpk.


Similar Names. Purple Husk, Yellow Husk, Golden Husk, Winter Husk.

Seedsmen's Synonyms. Golden Strawberry, Frd. Ground Cherry, Buc Bkt Fer Frd Hrs JL Lam, etc. Strawberry, Bkt Buc Buc C&J Emr Hrv, etc. Winter Cherry, Bkt Buc Buc Frd Liv Thr, etc.

Ignotum. Mr Bw Bgs Brn Brn Buc Brc Brr Brw C&J CE Chl Cle C&B CF Cok Crs Drw Ebe Eic Fr Bk Pe Bk Gifts Grn Gng Ggy Gt Ham Hrs Hlm Infl J&M J&S Lam Lan Liv Mnd Mau May JCM McK MV Mzy Nbl OV Old Pac Prn Por Pri Raw Ree Ren Ree Roe Rt S&R S&O Shm Sim Sox SB Stk Thr Tlh Tpk Vau Vk.

Similar Names. Shumway's Ignotum.

Imperial. Air Bt Bt Brn Buc Brc Brr Brw C&J CF Crs Cur D&H Drr Eic Elt Re Fld Frd Frd Frd Frd Gns Gng Ggy G&T TG Ham Hrs Hbt Hse J&M J&S Kg Lar Liv Man May JCM JMM McK Mhl Mls M&S Mzy Neb Nol NK OV Old Pne Poo Por Raw Ren Ree Roe Rs S&R Shw S&O Shm Sim Spf SB Thr Tlh Tpk Vau Vk Web Wd WS.

Similar Names. Early Imperial, Maule's Imperial.

Improved Acme, Improved Atlantic Prize, Improved Beauty, Improved Extra Early Tree, Improved Ground Cherry, Improved Honor Bright, Improved Large Red Trophy, Improved Large Trophy, Improved Large Yellow, Improved Lorillard Forcing, Improved Mayflower, Improved Peach, Improved Red Trophy, Improved Tree, Improved Trophy, Improved Yellow Ground Cherry. Entered as Acme, Atlantic Prize, Beauty, Extra Early Tree, Ground Cherry, Honor Bright, etc.

Ivory Ball. Lam. For similar names see Golden Ball.

Seedsmen's Synonyms. Green Gage, Lam.

Japanese Tree. M&S. For similar names see Tree.

Kansas Standard. Anh Bt Brc Crs.

Key's Early. Pac. For similar names see Extra Early.

King. Kg.

Similar Names. Fleming's Mammoth King, Shumway's Garden King, King of the Earlies, Garden King.

King Humbert. Drr Koe.

King of the Earlies. Eic Haw Stk. For similar names see King.

Klondike. Ms.
Kuttawa Dwarf Tree.  CC Evr.  For similar names see Tree.
La Crosse Seedling.  Sal.
  Similar names.  Salzer’s La Crosse Seedling.
Landreth’s Earliest.  Lan.  For similar names see Earliest of All.
Large Champion.  Slm.  For similar names see Dwarf Champion.
Large Early.  Bur.
  Similar names.  Burpee’s Large Early, Earliest Large.
Large Golden Yellow.  Bdg.  For similar names see Large Yellow.
Large Red California.  Vin.
  Seedsmen’s synonyms.  Fiji, Vin.
Large Red Trophy.  Buc Mns.  For similar names see Trophy.
Large Rose Peach.  Alx Liv.  For similar names see Peach.
Large Round Yellow.  DD Put SC.  For similar names see Large Yellow.
  Seedsmen’s synonyms.  Golden Queen, SC.  Golden Trophy, Put.
Large Smooth Red.  Crg Min Pac.
Large Smooth Yellow.  Ebe Reo Sim.  For similar names see Large Yellow.
  Seedsmen’s synonyms.  Golden Queen, Sim.
Large Trophy.  CF Mv Roa Slm.  For similar names see Trophy.
Large Yellow.  Brn Bql Eic RE Bvg Gra TG Kei Mzy Pri Reo Stk S&W Tat W&D.
  Similar names.  Large Smooth Yellow, Improved Large Yellow, Large Round Yellow, Large Golden Yellow.
  Similar names.  Thorburn’s Lemon Blush.
Leonard’s Earliest in the World.  Hly.  For similar names see Earliest of All.
Logan’s Giant Seedling.  Entered as Giant Seedling.
Lohrman’s Acme.  Entered as Acme.
Long Island.  Fmr Iod MfJ WD.
  Similar names.  Bedell’s Long Island.
Long Keeper.  Bai Buc Bur CE Crs DeI DD Ebr Evr Hst MfJ J&S Kg Kra Liv Man Mhl Ms Nol Ree Reo S&S Slm Thr Vk Vin.
  Similar names.  Thorburn’s Long Keeper.
Longstreth’s Golden Glory.  Lon.  For similar names see Salzer’s Golden Glory.
  Similar names.  Lorillard Forcing, Improved Lorillard Forcing.
Lorillard Forcing.  Wat W&D.  For similar names see Lorillard.
McMillan’s Royal Red.  Entered as Royal Red.
AMERICAN VARIETIES OF VEGETABLES.


Similar names. Livingston's Magnu.

Majestic. Bui.

Mammoth Crimson. Ky.

Mammoth Peach. Ar. For similar names see Peach.

Mammoth Prize. Buc Mls. For similar names see Golden Prize.

Seedsmen's synonyms. Mansfield Tree, Buc.

Mammoth Tree. Ar. For similar names see Trec.

Mammoth Yellow Ground Cherry. low.

Mansfield Mammoth Tree. Ar May HP. For similar names see Trec.

Mansfield Tree. Bel Bue CE DD Hst Man Pnt Rec S&O.

Similar names. See Trec.

Seedsmen's synonyms. Climbing, Bel. Mammoth Prize, Buc.

Mansfield Wonderful Tree. She. For similar names see Trec.

Market Champion. S&O. For similar names see Dwarf Champion.

Marvel. Drr.

Maryland Pride. Mns.

Matchless. Alx Bai Bil Bkt Bel Ber Big Brn Bru Bng Buc Bui Bur Brw CE Col CF Del DD Drr Ebr Evt Fmr Fst Fer Fld Frd Gls Gfg Grw Ham Hrn Hw Hbt Hlm Hop Hnt Ist Ow MWJ J&M JAS Jns K&F Kg Kra Lam Lnr Liv Mns Man May MeK McM Mhl Mls MV M&S NK OV Pg Pnt Qkr Ren Rec Rim Roc Sal Shw S&O Shm Sox Spf SB Thr Thb Til Tpk Trn VI Web W&D Wfr Wtt Wd WS Wyg.

Similar names. Burpee's Matchless.

Maule's Earliest. Fld Ham Han. For similar names see Earliest of All.

Maule's Enormous, Maule's Imperial. Entered as Enormous and Imperial.

May's Favorite. Entered as Favorite.

May's First of All. May. For similar names see First Early.

Mayflower. Bel Bui Bar Cox Crs D&H Drr Gry Liv Mhl Pot Ren Rec S&F SB.

Similar names. Improved Mayflower, Early Mayflower, Pearce's Mayflower, Mayflower Forcing.

Mayflower Forcing. Wat. For similar names see Mayflower.

Meteor. Koe.

Mexican. Sim.


Michell. RE.


Similar names. Red Mikado, Pink Mikado.

Seedsmen's synonyms. Maule's Sixteen Hundred Dollar, Buc. Potato, Buc.

Turner's Hybrid, Bar C&J Cox Fer Ggy J&S, etc.

Mills' Challenge. Entered as Challenge.

Mills' Earliest in the World. Mls. For similar names see Earliest of All.

Minnesota Queen. May OV Tpk. For similar names see Golden Queen.

Monarch. Vin.

Money Maker. Bri Ggy J&S Lan McM.

Monster. LB.
**TOMATO.**

365

Monstrous Number Four Hundred. Bur Vin.

**SEEDSMEN'S SYNONYMS.** Ponderosa, Bur.

Moore's Mammoth Tree. Ax. For similar names see Tree.

Moore's Tree. McM. For similar names see Tree.

Moore's Triumph. Entered as Triumph.

Moore & Simon's Early Beefsteak. M&S.

**SIMILAR NAMES.** See Buckbee's Beefsteak.

Moore & Simon's Extra Early Gem. M&S. For similar names see Gem.

Morning Star. Sal.

Multicolor. Lie.

New Century. Big Fair May. For similar names see Twentieth Century.

New Jersey Red. Bai.

**SIMILAR NAMES.** Thorburn's New Jersey, Dickmann's New Jersey, Cumberland New Jersey Red, Red Early Jersey, Early Jersey.

New York. Ebr Tat.

**SIMILAR NAMES.** Thorburn's New York.

Niagara. Brn.


Nineteen Hundred and Two. Frd.


**SIMILAR NAMES.** Burpee's Noble.

Nolte's Earliest. Fer.


Northern Light. GN.

Number Fifty-One. G.N.

Number Four Hundred. Alr Brd Buc Bur Ham J&M Neb Roe WS.

**SIMILAR NAMES.** Four Hundred Mammoth, Big Four Hundred.

**SEEDSMEN'S SYNONYMS.** Henderson's Ponderosa, Buc Neb. Ponderosa, Air Brd Ham J&M WS Wd.


**SIMILAR NAMES.** Early Optimus, Ferry's Optimus.


**SIMILAR NAMES.** Early Paragon, Livingston's Early Paragon, Livingston's Paragon.

**SEEDSMEN'S SYNONYMS.** Queen, Bui.

Paramount. D&H.

**PEACH.**


**SIMILAR NAMES.** Livingston's Peach, Improved Peach, Mammoth Peach, Purple Peach, Red Peach, Yellow Peach, Rose Peach, Large Rose Peach, Livingston's Large Rose Peach, Sutton's Peachblow, Peachblow.

**PEACHBLOW.** Fqr. For similar names see Peach.

**PEAR.**

Bak Bd Bk Bng Buc Bur Dlw Ebr RE Ewg Fqr Gyr Tt J Ken Liv Min Pac Pue Raw Rk S&F Shm Sox Tat Wil WS.

**SIMILAR NAMES.** See Red Pear.

**SEEDSMEN'S SYNONYMS.** Fig, Fqr Raw S&F.
Pearce's Princess, Pearce's Mayflower. Entered as Princess and Mayflower.

Pepper's Prolific Forcing. Entered as Prolific Forcing.

Perfect Gem. Sal. For similar names see Gem.


Pink Mikado. Drr. For similar names see Mikado.


Plum. Brg Buc Bni Brr Fqr Liv M&S. For similar names see Yellow Plum.

Ponderosa. Alx Ar Ar Bgl Bld Bk D Brr Brl Bw C&J Cam CE Chl Cle Cx&B Col CF CxO Crg Crs Cur Del DD D&CC Drr Drw Eas Ehe Ebr Eic Emr RE Ewg Fnr Fqr Fst Flv Frl Ger Gls Gra Gng Ggy G&T Gwr Hf Hm Hvn Hrt Hst Htn H&C Hly Hlnm Hop Hst H&P Hw Jac MWJ J&M J&S Kei Ken K&F Kg Kra Lam Lnr Liv Lnd Mnd Man PM Ms Msm May JCM JMM Mcm Mcl Mdl Mls MV Mzy Neb Ne1 No1 NO Old Pac Pg HP JMP Frr Pue Pnt Ptt Poo Por Pot Pri Pug Qkr Rtk Raw Ren Ree Roc Rs RP Sal S&F Shw S&O Shm Sim Sox Spc Skk Stb Stw S&H S&W Tat Tex Thm Thr T&B VI Van Vka Web W&D Wer Wd Wdr WS Wyg Y&H.

Similar names. Henderson's Ponderosa.

Seedsmen's synonyms. Turners Hybrid, Drr.

Plum. Brg Buc Bni Brr Fqr Liv M&S. For similar names see Yellow Plum.

Ponderosa. Alx Ar Ar Bgl Bld Bk Brl Ber Big Bgg Brk Bdg Bri Brn Buc Bni Brr Bbr Brw C&J Cam CE Chl Cle Cx&B Col CF CxO Crg Crs Cur Del DD D&CC Drr Drw Eas Ehe Ebr Eic Emr RE Ewg Fnr Fqr Fst Flv Frl Ger Gls Gra Gng Ggy G&T Gwr Hf Hm Hvn Hrt Hst Htn H&C Hly Hlnm Hop Hst H&P Hw Jac MWJ J&M J&S Kei Ken K&F Kg Kra Lam Lnr Liv Lnd Mnd Man PM Ms Msm May JCM JMM Mcm Mcl Mdl Mls MV Mzy Neb Ne1 No1 NO Old Pac Pg HP JMP Frr Pue Pnt Ptt Poo Por Pot Pri Pug Qkr Rtk Raw Ren Ree Roc Rs RP Sal S&F Shw S&O Shm Sim Sox Spc Skk Stb Stw S&H S&W Tat Tex Thm Thr T&B VI Van Vka Web W&D Wer Wd Wdr WS Wyg Y&H.

Similar names. Henderson's Ponderosa.

Seedsmen's synonyms. Number Four Hundred, Buc Neb Brl Arh Ham J&M, etc. Big Four Hundred, PM. Mammoth Four Hundred, Fst. Monstrous Number Four Hundred, Brg.


President Cleveland. Fqr S&F.


Princess of Wales. S&F.


Prize Winner. G&T. For similar names see Prize Taker.

**TOMATO.**

**Prolific Forcing.**  Wat.  
**Similar names.**  Pepper's Prolific Forcing.

**Purple.**  Ggy Raw S&F.  
**Similar names.**  Rawson's Purple.

**Purple Advance.**  Hlm.  For similar names see Advance.

**Purple Champion.**  D&H.  For similar names see Dwarf Champion.

**Purple Cluster.**  Sf.  

**Purple Excelsior.**  Trm.  For similar names see Excelsior.

**Purple Gem.**  Nol.  

**Purple Husk.**  Anb CE Ebe Furr Low Liv Jl Ree Shn.  
**Similar names.**  See Husk.

**Purple Peach.**  Buc D&H Frd Liv Roc Spf SB.  For similar names see Peach.

**Purple Strawberry.**  Frd.  For similar names see Strawberry.

**Quarter Century.**  Bar Col Hm Hm J&W J&S Liv Ms Mav Roc Thr Wat.  
**Similar names.**  See Twentieth Century.

**Queen.**  Bui G&T J&S PM Ms M&S.  For similar names see Golden Queen.

**Seedsmen's synonyms.**  Paragon, Bui.

**Queen City.**  JCM.

**Quick Sure.**  Bar Der Frd J&S Wm.

**Rawson's Puritan.**  Entered as Puritan.

**Red Apple.**  J&S.  
**Similar names.**  White Apple.

**Seedsmen's synonyms.**  Early Michigan, J&S.

**Red Bird.**  Cok.  For similar names see Early Bird.

**Red Champion.**  D&H.  For similar names see Dwarf Champion.

**Red Cherry.**  Bui Brd Brd Brd Bow Brk Bdg. Brn Brn Buc Cie Cie C&G Crs Cur Ew Dd Elt Emr RE Evr Fnr Fmr Fmr Gls Gry Grw Tg Hrn H&H H&H H&J &S Jns Kei K&W Ken Lam Liv Mnd May JCM JMM McK Mhl MV M&S Neb Nef Xi OV Pac Pks Put Pt Poo Pot Raw Ree Ren Ree Sc S&F Sox Spf SB Tat Tex Thr Trm T&B Vl Vau Vn Vin Vw Wer Wll Wdr.  
**Similar names.**  Cherry, Winter Cherry, Ground Cherry, Improved Ground Cherry, Small Red Cherry.

**Seedsmen's synonyms.**  Gem, Bdg.

**Red Cross.**  Hrm K&W S&F.

**Red Currant.**  Brd Buc Cle Crs DD Liv Mzy Ree Sal Spf SB Thr Vau.  
**Similar names.**  Small Red Currant, Currant, Crimson Currant.

**Red Early Jersey.**  Stw.  For similar names see New Jersey Red.

**Redfield Beauty.**  Cam Hst.  For similar names see Beauty.

**Red Granite.**  Sal.

**Red Mikado.**  Dtr Mhl.  For similar names see Mikado.

**Red Peach.**  Brk Hst H&P Ren Sox Thr Vl Wm.  For similar names see Peach.

**Similar names.**  Yellow Pear, Pear.

**Seedsmen's synonyms.**  Fig, Bdg.  Red Plum, M&S.

**Red Plum.**  Brd Brd Buc Cle Crs Gng Kei Mgy Mzy Roc S&S Sic Thr Trm Wdr.  
**Similar names.**  See Yellow Plum.

**Seedsmen's synonyms.**  Red Pear, M&S.

**Red Queen.**  Cle Liv.  For similar names see Golden Queen.

**Red Table Queen.**  Tg.  For similar names see Golden Queen.

**Red Trophy.**  Ar Bgs Cle Ham Man Web.  For similar names see Trophy.
AMERICAN VARIETIES OF VEGETABLES.

Rosalind.  Ebr Thr Vau.
  Similar names.  Thorburn's Rosalind.

Rose Peach.  Buc D&H Roc.  For similar names see Peach.

Royal Colors.  Liv.

Royal Red.  Air Ar Brd Btt Brk Bru Buc Bur Brw CE Cie Col Cox Crs Cur DD
  Drt RE Ewg Fmr Fer Frd Ger Gra G&T TG Hus Ham Hed Hlm Hop J&M J&S K&W Kg
  Lan Lnr LB Liv LL Lon Mgd Man Man May JMM MeM Mhd MV XK Pg HP Pir Por Pri
  Raw Ren Rcc Roc Sal S&R S&B Sim Sox Spf SB Tm Thm Thr Trm Van Vk Wca Wng.

Ruby.  Del TG Jns Pri AGT.  For similar names see Early Ruby.

Ruby Queen.  Chi Shm.  For similar names see Early Ruby.

Sacramento Favorite.  Pac.  For similar names see Favorite.

Salzer's Crimson Robe, Salzer's Earliest of All, Salzer's Ferris Wheel, Salzer's Fifty
  Days the Earliest, Salzer's La Crosse Seedling, Salzer's Shipper's Delight.
  Entered as Crimson Robe, Earliest of All, Ferris Wheel, Fifty Days the Earliest, La
  Crosse Seedling, and Shipper's Delight.

Salzer's Giant Tree.  Sal.  For similar names see Tree.

Salzer's Golden Glory.  Sal.
  Similar names.  Longstreth's Golden Glory.

Satisfaction.  Bel.

Scarlet Stone.  Bdg Ebe.  For similar names see Stone.

Scovill's Hybrid.  Brn Crs Ebe Lnr Roc.

Shah.  J&S.

Shamander.  Koe.

Shenandoah.  Tpk.

Shipper's and Canner's Choice.  Ham.

Shipper's Delight.  Sal.
  Similar names.  Salzer's Shipper's Delight.

Shumway's Garden King.  Shumway's Ignotum, Shumway's Large Champion,
  Shumway's Ruby Queen.  Entered as Garden King, Ignotum, Large Champion,
  and Ruby Queen.

Silver Egg.  Man.

Simmers' Stone.  Entered as Stone.

Small Red Cherry.  Hlm Sim.  For similar names see Red Cherry.

Small Red Currant.  Sim.  For similar names see Red Currant.

Smooth Red.  May Trm.  For similar names see Large Smooth Red.

Snowball.  Buc Roc.
  Similar names.  Buckbee's Snowball.

Sparks' Earliana.  Buc Bur Far J&S McK M&S Shw Tat Van Vk Wat.
  Similar names.  See Earliana.

Spot Cash.  Buc Roc.
  Similar names.  Buckbee's Spot Cash.

State Fair.  Buc.  For similar names see World's Fair.

Station.  Buc Chi Crs May Shm Sox Thr.
  Similar names.  Station Tree, Upright Station Tree.
  Seedsmen's synonyms.  Buckbee's Tree, Buc.  Tree, Sox.

Sterling.  Wat.

Sterling Castle.  Elt.

Stone.  Alx Alr Anb Ar Btt Btt Btt Btt Btl Bkr Bel Ber Big Bow Brk Bdg Bgs Bri
  Brn Buc Bur Brf Buc Bui Brb Bur Brr Brw C&J Cam CE Cle C&B Col CF Cox
Crys Crs Cur CA Dlw Del DD Drr Drw Drm Dun Ebe Ebr Eic Elt RE Eyr Err Ewg Efr Fst Fer Fld Frl Ger Gls Gra Gng Ggy Gry Gg G&T Grw TG Hns Ham Hde Hrm Hrn Hrs Hrv Hst Hen Hbt H&C Hly Hlm Hop Hse Hnt H&P Iow ImI Jac MwJ RHJ J&M J&S Jns K&W Ken Kg Kos Kra Lam Lan Lar Liv JL Loh Mgd Man PM Mns Mas Mau May JCM JMM McK Mcm Mel Mhl MV M&S MwS Mrs Mye Nol NO OV Old Pac Pg PH JMP Pir Pnn Pue Put Ptt Por Pot Pri Qkr Rtk Raw Ree Ren Rim Roe Rt Rs S&R SC S&T Shw S&O Shm Sc Sim Sox Spf STr SB Stw S&H S&W Tex TB Thm Thr Thl Til Tjk Trn T&B Vl Van Vr Wat Wea Wb W&D Wer Wd WS Wyg Yng Y&H.

Similar names. Scarlet Stone, Alexander's Stone, Simmers' Stone, Livingston's Stone.


Similar names. Strawberry, Purple Strawberry, Golden Strawberry.

Seedsmen's synonyms. Barbados Gooseberry, Ren Sim. Cape Gooseberry, RE. Ground Cherry, Bt Buc Ewg Efr Nk Ptt, etc. Husk, Bkt Buc Bar C&J Emr Hrs, etc. Improved Ground Cherry, Col. Mexican Tomato, Sim. Winter, Bdg. Winter Cherry, Bkt Bar Hn J&S Thr Vr, etc.

Success. AbB Bra Bnr RE Fhl Liv Mos Mau Rim Thb Wt Wd.

Sumatra Fig. Sal. For similar names see Fig.

Sunrise. Bar Crs G&T SB.

Similar names. Golden Sunrise.

Seedsmen's synonyms. Golden Queen, Bar Crs G&T Ren.

Superb. 16w.

Supreme Forcing. Wat.

Similar names. Holmes' Supreme Forcing.

Sutton's Best of All, Sutton's Best of All Forcing, Sutton's Early Gold Mine, Sutton's Eclipse, Sutton's Peachblow. Entered as Best of All, Best of All Forcing, Early Gold Mine, Eclipse, and Peachblow.

Table Queen. Bkt Bdg C&J Crs Der Hrn Hen Hly K&W May S&O Sim Thb Thr W&D.

Similar names. See Golden Queen.

Tait's Early Crimson. Entered as Early Crimson.


Seedsmen's synonyms. T. T. T., Dlw Koe Stw.

Terra Cotta. Mzy Thb.

Similar names. Thorburn's Terra Cotta.

Thorburn Century. Thb Vun. For similar names see Twentieth Century.

Thorburn Novelty. Thb.

Thorburn's Earliest. Thb.


Thorburn's New Jersey. Bai Thb. For similar names see New Jersey Red.

Thorburn's 1902. Thb.

Tilden. Min.


Similar names. Early Tree, Extra Early Tree, Improved Extra Early Tree, Salzer's Giant Tree, Mansfield Mammoth Tree, Moore's Mammoth Tree, Mammoth Tree, Hammond's Tall Tree, Hammond's Dwarf Tree, Kuttawa Dwarf.

1329—No. 21—02——24
American Varieties of Vegetables.

Tree, Dwarf Tree, Improved Tree, Mansfield Wonderful Tree, Mansfield Tree, Moore's Tree, Buckeye's Tree, Japanese Tree, Station Tree.


Triumph. Man M&S Nov.

Similar names. Moore's Triumph.

Trophy. Afx Alr Anb Ar Bai Btl Bel Ber Bow Brk Bdg Brn Bru Bui Bur Brn Cam CE C&B Cox Crg Crs Cur Dlw Del Dl Derrick Bdx Dun Ebe Ele Elt Emr RE Etr Ewg Fig Fst Fer Flc Gey Gls Gdn Gra Ggy Gry Grw TG Hns Hde Hrm Hrs Hry Haw Hen Hly Hlm Hnt Iml Tov Jac RHJ J&M J&S Kei K&W Kg Lam Lea Lnr LB Liv Loh Mnd PM Mau May JCM JMM Mic Mhl Min M&S Mzy Mzr Neb Nef Noi XI OV Old Pac Pg Pir Pnr Pnt Pot Pri Png Raw Rec Ren Reel Rt RP Sal SC S&F Shw S&O Sim Sox Spf Stk SB S&W Tex Thm Thr Tpk T&V VI Van Vk Vin Wat Wea W&D Wlt Wd Wdr WS.

Similar names. Extra Early Trophy, Improved Trophy, Improved Red Trophy, Improved Large Red Trophy, Improved Large Trophy, Cox's Trophy, Buist's Trophy, Livingston's Trophy, Golden Trophy, Large Trophy, Red Trophy, Yellow Trophy, Large Red Trophy.


Similar names. See Favorite.


Seedsmen's synonyms. Made's Sixteen Hundred Dollar, Buc. Mikado, Bur Buc Cox Cur Evg Ggy, etc. Potato Leaf, Buc.

Twentieth Century. TG.

Similar names. New Century, Quarter Century, Burpee's Quarter Century, Thorburn Century, Century.

Upright. RE Fst Man Pac T&B.

Seedsmen's synonyms. Tree, Fst Man RE T&B.

Upright Station Tree. MV Sox Thr. For similar names see Tree, Station.

Vaughan's Earliest of All. Ggy Van. For similar names see Earliest of All.

Vick's Leader. Crs. For similar names see Early Leader.

Victoria. S&O.

Virginia Czech. Lam.


Waldf. Him May Mzy Thr.

White Apple. Frd. For similar names see Red Apple.

White's Excelsior. Col DD Frd Gdn Hns Low Mau Neb S&O.

Similar names. See Excelsior.

White's Excelsior Purple. Btl Col. For similar names see Excelsior.

Winter. Bdg VI.

Seedsmen's synonyms. Strawberry, Bdg.


Similar names. See Red Cherry.

Seedsmen's synonyms. Golden Strawberry, Frd. Ground Cherry, Brr Bkt Buc Frd Hrs Sim. Husk, Bkt Buc Emr J&S Liv Thr, etc. Strawberry, Bur Bkt Buc Cur Hen J&S, etc.

Winter Husk. Hbt. For similar names see Husk.

Wonderful. Nov.
Wonder of Italy. Jes.

Wood's First Early. Wd. For similar names see First Early.

World's Fair. Big.

Similar names. Buckbee's World's Fair, Buckbee's County Fair, Buckbee's State Fair, Griffith & Turner Co.'s World's Fair, County Fair, State Fair.

Yellow Cherry. Bai Bt! Bkt Brk Brn Buc Bur Cle Dl Elt Evr Fer TG Hrm K&W Lam LB Liv May JCM MV Mzy Neb Ov Pac Pks Pnt Rec Rec SC Sim Sgf SB S&H S&W Thr Vl Vkg Wdr.

Similar names. Improved Yellow Ground Cherry, Cherry, Improved Ground Cherry, Ground Cherry.

Yellow Fig. Col Ggy NK. For similar names see Fig.

Seedsmen's synonyms. Yellow Plum, Col NK.

Yellow Ground Cherry. Bur Fnr Iow Kos.

Similar names. See Yellow Cherry, Red Cherry.

Yellow Husk. Web. For similar names see Husk.

Yellow Peach. Bsc D&H Elt RE Kra Lar Liv MV Ren Rec Roc Sim Sor SB Thr.

Similar names. See Peach.

Yellow Pear. Alr Bt Big Bnt Buc Bur CE Cle CF Cox Crs Dlw Drm Elt Fnr Fer Gdn G&T Grw Ham Hde Hrm Hst Hst Hyl Iml Iow JWJ J&M Kra Lan Liv Mgd Msp Mau JCM JMM Mel Mic Mhl Min M&S Neb Nef Xi HP Pir Pnt Ptt Rec Rec Sal Sc Shw S&O Spf SB Stw S&H Tex TB Thr Trm Vl Van Vkg Wd Wd.

Similar names. See Red Pear.

Seedsmen's synonyms. Yellow Plum, Bak Ber HP M&S.


Similar names. Red Plum, Plum.

Seedsmen's synonyms. Yellow Fig, Col NK. Yellow Pear, Bak Ber HP M&S.


Similar names. Livingston's Yellow Prince, Dwarf Yellow Prince, Livingston's Dwarf Yellow Prince.

Seedsmen's synonyms. Golden Dwarf Champion, But.

Yellow Trophy. Gdn Jac Wd WS. For similar names see Trophy.

Seedsmen's synonyms. Golden Queen, Wd WS.

Yellow Victor. Ggy. For similar names see Canada Victor.

Young's Excelsior. Yng. For similar names see Excelsior.

Zealand Fig. Ms. For similar names see Fig.

TURNIP (GARDEN TURNIP).


Seedsmen's synonyms. Large Yellow Globe, Bar Fst Tex Pcc Vkg Ws. Yellow Globe, DD Hst May SC S&R Spf, etc. Yellow Stone, Hst.


Similar names. See Purple Top Strap Leaf.
AMERICAN VARIETIES OF VEGETABLES.

Berlin.    May.

Similar names: Small Berlin.

Seedsman's synonyms: Yellow, May.

Big White Georgia.  Hly.

Black Stone.  Thr.  For similar names see Yellow Stone.

Bruce's Golden Ball.  Entered as Golden Ball.

Buckbee's Cardinal.  Buc.  For similar names see Cardinal.

Seedsman's synonyms: Scarlet Kushmg, Buc.


Budlong's Improved White French.  Entered as Budlong's White French.

Budlong's White French.  C&J.  For similar names see White French.

Buist's Large Globe.  Jac.

Bullock Green Top.  SB.

Seedsman's synonyms: Yellow Aberdeen, SB.

California Navet.  Vin.  For similar names see Jersey Navet.

Callaway.  Alx.

Seedsman's synonyms: Georgia Winter, Alx.


Similar names: Buckbee's Cardinal, Carter's Cardinal.

Seedsman's synonyms: Scarlet Kushmg, Alx Bur J&S JL.

Carter's Cardinal.  Evr VI.  For similar names see Cardinal.

Clyde Purple Top Mammoth.  For similar names see Purple Top Globe.


Similar names: Large Cow Horn, Long Cow Horn, Long White Cow Horn.

Seedsman's synonyms: Large Cropper, G&T.  Long White, Alx Bur Drr Fqr Fer Hen, etc.  Long White Men.  RHJ.  White Tankard, D&H.

Cox's Extra Early Snowball.  Entered as Extra Early Snowball.

Crystal White.  Fmr May.

Devonshire Graystone.  D&H RE Fnr SB.  For similar names see Graystone.

Dixie Land.  Gdn Jac MWJ Lan McM.

Seedsman's synonyms: Southern Prize, Gdn Jac.

Early American Red Top.  RHJ.  For similar names see Red Top Strap Leaf.

Early Bay City.  Hm.

Similar names: Hammond's Early Bay City.

Early Dutch.  Elr Emr Lan Mnd MV OV Pri Sxo Thr Tpk.

Similar names: See White Dutch.


Similar names: White Flat Dutch, White Flat Dutch Strap Leaf, Early White Flat Dutch, Improved Early White Flat Dutch, Early White Flat Dutch Strap Leaf, Early Large Flat Dutch, Early Purple Top Flat Dutch.


Early Flat Purple Top.  A&n CA Dlw Ggy MWJ Lan Mhl HP Rs Stw.

Similar names: See Purple Top Strap Leaf.

Seedsman's synonyms: Early Red Flat Top, Ar Ggy HP May.
Early Flat Purple Top Strap Leaf. Ar Bgs May.

**Similar names.** See Purple Top Strap Leaf.

**Early Flat Red Top.** At Com CA Dw G&T Lan Mbl HP Stw.

**Similar names.** See Red Top Strap Leaf.

**Seedsman’s synonyms.** Purple Top Strap Leaf, Lan Stw. Purple Top, Ar.

**Early Purple Flat Top, Ggy HP.**

**Early Flat White Top.** Ggy. For similar names see White Top Strap Leaf.

**Early Golden Ball.** Sim. For similar names see Golden Ball.

**Seedsman’s synonyms.** Orange Jelly, Sim.

**Early Golden Stone.** Cle. For similar names see Yellow Stone.

**Early Ivory.** Chl GN.

**Similar names.** Ivory Ball.

**Early La Crosse.** Sal.

**Early Large Flat Dutch.** Shm. For similar names see Early Flat Dutch.

**Early Large Purple Top Globe.** HP. For similar names see Purple Top Globe.

**Early Large Red Top Globe.** Ar Btl Bkt CA G&T MWJ Lan Min Rim Stw Wlt.

**Similar names.** See Red Top White Globe.

**Early Large Red Top White Globe.** Bgs.

**Similar names.** See Red Top White Globe.

**Early Nimble Dick.** Brn. For similar names see Nimble Dick.

**Early Pure White Milan.** Thb. For similar names see Purple Top Milan.

**Early Purple Top.** Eic K&F McM Min Rs Stk Th Van Wd WS Wgy.

**Similar names.** See Purple Top Strap Leaf.

**Seedsman’s synonyms.** Early Red Top, Eic.

**Early Purple Top Flat Dutch.** Crg.

**Similar names.** See Early Flat Dutch.

**Early Purple Top Milan.** Brr C&B Crg GH Gra Hrs Hn H&C MV Rs Sal S&W Thb Web Yng.

**Similar names.** See Purple Top Milan.


**Similar names.** See Purple Top Munich.

**Early Purple Top Strap Leaf.** Bow Brn Bng Bur C&J D&C Fm Fst Fer Frd Ham Hrm Hst Hly Him H&P JA&M Lam Lea LB NK Pg Sk S&H Tex Thm Til Van Wlt.

**Similar names.** See Purple Top Strap Leaf.

**Early Purple Top Strap Leaf Milan.** Bgs.

**Similar names.** See Purple Top Milan.

**Early Purple Top White Globe.** Alx H&P Rs.

**Similar names.** See Purple Top White Globe.

**Early Red Purple Top.** Pne. For similar names see Purple Top Strap Leaf.

**Early Red Top.** Eic Kra McM Pug Stk Wd WS.

**Similar names.** See Red Top Strap Leaf.

**Seedsman’s synonyms.** Early Purple Top, Eic.

**Early Red Top Globe.** Brr Com Frd Lan.

**Similar names.** See Red Top White Globe.

**Early Red Top Munich.** Pac. For similar names see Purple Top Munich.

**Early Red Top Strap Leaf.** Alx Bur D&C RE Fm Frd Ham Hst Hlm NK Ptt For S&R Tex Thb Wdr Y&H.

**Similar names.** See Red Top Strap Leaf.


**Similar names.** See Red Top White Globe.

**Early Scuppernong.** J&S.
Early Six Weeks. Buc Crs Evr Hrm Ren Roc Sal Vl Vk.
SIMILAR NAMES. See Six Weeks.
SEEDSMEN'S SYNONYMS. Early White Snowball, Vk. Nimble Dick, D&H Ren, Snowball, Buc Roc Crs Evr.

Early Snowball. Alx Bk. Bgs CE C&B Cur Elt Evr Flk GH Gra Hen Hop low J&S Ken Kg Lan Lar Mnd Man McK Mel Mls Vl Pac Pks Poo Pot Raw Ree Ren Roe Roc Rs Sim Sim SB S&H S&W Thr Thb Thb Til T&B Wat Wea W&D.
SIMILAR NAMES. See Snowball.
SEEDSMEN'S SYNONYMS. Early White Stone, Bdg. Six Weeks, Bdg. White Stone, Flk Ren Sim SB.

Early Snow White Globe. Bui. For similar names see White Globe.

Early White Dutch. Brg Brr Ggy Poo S&O Thb Vl.
SIMILAR NAMES. See White Dutch.
SEEDSMEN'S SYNONYMS. Early Flat Dutch, Ggy.

Early White Dutch Strap Leaf. D&C. For similar names see White Dutch.

SIMILAR NAMES. See White Egg.

Early White Flat Dutch. Alx Bk. Bno Brd Bui C b Bw Bgs Bri Brn Brn Buc Bui Btr CE Cle Col Cox Crs Crs CA Dlw Del DD Drr Evr Fmr Fer Ger Gdn GH Gry Tg Hns Ham Hry Hrm 1uml MWJ RHJ J&M J&S Kg Kus Lam Lea Lar Mgd Mns Mau JMM McM Mic Mhl Mls M&S Myz Nef Nl NK Pir Ptt For Png Ree Rge Roc Sal S&R Sie Sox Stk S&H Tat TB Thm Til Tpk Vl Vau Vin Wca Wer Wlt Wdr Wyg Yng Y&II.
SIMILAR NAMES. See Early Flat Dutch.

Early White Flat Dutch Strap Leaf. Btk Bur Frd Gig Hst Hly LB Loh Pac Pg Pks SB Tex Vk.
SIMILAR NAMES. See Early Flat Dutch.

Early White Flat Strap Leaf. C&J. For similar names see White Top Strap Leaf.

Early White Globe. J&M McK Ren. For similar names see White Globe.

Early White Milan. Brg Bt Bk Bw C&B Drr Gls Hns Hen Hrm 1uml MXJ MYJ RHJ J&M Mnd McM Rec Rs RP S&W Thr Yng Y&II.
SIMILAR NAMES. See Purple Top Milan.

Early White Model. Del NK. For similar names see White Model.

Early White Six Weeks. Kei K&W. For similar names see Six Weeks.

Early White Snowball. Vk Wlt. For similar names see Snowball.
SEEDSMEN'S SYNONYMS. Early White Snowball.

Early White Stone. Bdg Bgs Brn Brn Cle CF Cox Crs Ebe RE Gls Gra Gng Hrm RHJ Jns Kei Ken.
SIMILAR NAMES. See Yellow Stone.
SEEDSMEN'S SYNONYMS. Early Snowball, Bdg. Six Weeks, Bdg Hrm. Snowball, Gng.

Early White Top. Pug. For similar names see White Top Strap Leaf.

Early White Top Strap Leaf. Bgs C&B Cur Elt Fmr GH Hen Neb Ptt Tem Thm W&D Wdr Y&II.
SIMILAR NAMES. See White Top Strap Leaf.
SEEDSMEN'S SYNONYMS. Early Flat Dutch, Fnr.

Early Yellow Finland. RHJ. For similar names see Yellow Finland.

Early Yellow Globe. GH. For similar names see Yellow Globe.

Early Yellow Purple Top. Bow. For similar names see Purple Top Strap Leaf.

Early Yellow Stone. Brn Cle GII Hrs. For similar names see Yellow Stone.
SEEDSMEN'S SYNONYMS. Golden Stone, Cle.

Early Yellow Teltow. Bdg. For similar names see Teltow.
SEEDSMEN'S SYNONYMS. Arrow, Bdg. Small Berlin, Bdg.
Empress. Ren.

**Similar names.** Rennie's Empress.

Eureka. Pri.

**Similar names.** Price & Reed's Eureka.

**Seedsman's synonyms.** Egyptian, Pri.

**Extra Early Cames.** Buc.

**Similar names.** Buckbee's Extra Early Cames.

**Extra Early Dutch.** HP. For similar names see White Dutch.


**Similar names.** See Purple Top Milan.

**Extra Early Purple Top Munich.** Bgs Eic Fst Gry Grw Tg Ji JL May Mhl OV Roc S&O Stk Tpk VI Wat Will.

**Similar names.** See Purple Top Munich.

**Extra Early Purple Top Strap Leaf.** Sic.

**Similar names.** See Purple Top Strap Leaf.

**Extra Early Purple Top Strap Leaf Milan.** Diw Fst Grw Ham M&S Tat Tex Y&H.

**Similar names.** See Purple Top Milan.

**Extra Early Red Top Globe.** Sic. For similar names see Red Top White Globe.

**Extra Early Red Top Milan.** Ar Eic Frd Hrn Kra Lnr OV Old Til Van WS.

**Similar names.** See Purple Top Milan.

**Extra Early Snowball.** Cox. For similar names see Snowball.

**Extra Early Summer Purple Top.** Bigg.

**Similar names.** See Purple Top Strap Leaf.

**Extra Early White Egg.** Eic Hst HP Shw Stk. For similar names see White Egg.

**Extra Early White French.** Stk. For similar names see White French.

**Seedsman's synonyms.** White Egg, Stk.


**Similar names.** See Purple Top Milan.

**Extra Early Yellow Finland.** R11.

**Flat Purple Top.** TG J&S M&S Nol Sox.

**Similar names.** See Purple Top Strap Leaf.

**Flat Purple Top Strap Leaf.** Bgg CF Elt K&F May JCM OV S&F.

**Similar names.** See Purple Top Strap Leaf.

**Flat Red Top.** EBC Lan. For similar names see Red Top Strap Leaf.

**Flat Red Top Strap Leaf.** Bai. For similar names see Red Top Strap Leaf.

**Forester.** Evr Hrn Trm VI.

**Seedsman's synonyms.** Sena Top, Evr Hrn Trm VI. Turnip Winter Greens, Trm.

**Frost King.** CA Thm.

**Similar names.** Georgia Frost King.

**Fulton Mammoth.** Hst MWJ.

**Georgia Frost King.** Wth.

**Similar names.** Frost King.

**German Teltow.** Ebr Mzy Thr. For similar names see Teltow.

**Golden Ball.** Alx Bai Bak Btl Bkt Bel Big Bon Brk Bri Brn Bng Bov Brv Brv Brw C&J CE C&B CF Cur CA Drr Drw Drm Ebe Eic Elt Emr RE Evr Fnr Fst
AMERICAN VARIETIES OF VEGETABLES.


**Similar names.** Early Golden Ball, Bruce's Golden Ball, Griffing's Golden Ball, Robertson's Golden Ball, Improved Golden Ball, Rice's Improved Golden Ball, Yellow Ball.

**Seedsman's synonyms.** Orange Jelly, Ebe Ebr Frd Hen Ken J&H, etc. Snowball, VI. Yellow Globe, Gls.

Golden Globe. Air Buc Roe Spf. For similar names see Yellow Globe.

Golden Stone. Ggy. For similar names see Yellow Stone.

**Seedsman's synonyms.** Early Yellow Stone, Cle.

Golden Teltow. M&S. For similar names see Teltow.

Graystone. Brn RE Ewg Fle Kei McH PKs Ren Sim SB Thr.

**Similar names.** Improved Graystone, Devonshire Graystone.

**Seedsman's synonyms.** Purple Top Mammoth, Ren. Mammoth Graystone, SB.

Green-Crowned Amber Globe. Lan Stw. For similar names see Amber Globe.

Green Globe. Thr.

Green Top Amber Globe. Y&H. For similar names see Amber Globe.

Green Top Bullock. SB.

Green Top Scotch. D&H Frm. For similar names see Yellow Scotch.

Green Top Yellow Aberdeen. Bgs Brn Brn D&H Eas Ewg GH Ggy Kei McH M&S.

**Similar names.** See Yellow Aberdeen.

Griffing's Golden Ball. Entered as Golden Ball.

Half Long Red Top. Bnr Hbt. For similar names see Red Top Strap Leaf.

Half Long White Jersey. SB. For similar names see Jersey Navel.

Hammond's Early Bay City. Entered as Early Bay City.

Hammond's Milk White. Ham. For similar names see Salzer's Milk.

Hanover. McM Stk Tat.

**Similar names.** Large White Hanover.

**Seedsman's synonyms.** Russian, Bdg. Sweet German, Bdg Stk. White French, Bdg. White Rock, Bdg.

Improved Early White Flat Dutch, Improved Flat Purple Top, Improved Golden Ball, Improved Graystone, Improved Purple Top Mammoth, Improved Red Top Mammoth, Improved Sweet German, Improved White Sweet German, Improved Yellow Aberdeen, Improved Yellow Globe. Entered as Early White Flat Dutch, Flat Purple Top, Golden Ball, etc.

Ivory Ball. McM. For similar names see Early Ivory.

Jersey Lily. Bkt Bri For Lan Mt Pri Shm. For similar names see Jersey Navel.

Jersey Lily White Globe. Kow. For similar names see Jersey Navel.

Jersey Navel. Bar Cle Eps Pri Tat.

**Similar names.** White Jersey Navel, California Navel, Jersey Lily, Jersey Lily White Globe, White Lily, Half Long White Jersey.

Laing's Purple Top Strap Leaf. SB Vk.

**Similar names.** See Purple Top Strap Leaf.

Landreth's Southern Snow White Globe. Entered as Southern Snow White Globe.

Large Amber Globe. Cur Fer GaT Lam Lnr LB J.L. Loh Shw SB Til Wer WS.

**Similar names.** See Amber Globe.

**Seedsman's synonyms.** Yellow Globe, Wd.

Large Cow Horn. May Wlt. For similar names see Cow Horn.

Large Late Flat Purple Top. TB. For similar names see Purple Top Strap Leaf.

Large Norfolk. Lam. For similar names see White Norfolk.
Large Purple Top White Globe. Bui Pnt.
SIMILAR NAMES. See Purple Top White Globe.

Large Red Top Globe. TG 111m 17. For similar names see Red Top White Globe.

Large Red Top Norfolk. Loh. For similar names see White Norfolk.

Large Red Top White Globe. SC. For similar names see Red Top White Globe.

Large Snow White Globe. MWJ. For similar names see White Globe.

Large Sweet German. Del May Ov. For similar names see Sweet German.

SIMILAR NAMES. See Long White.


Large White Flat Norfolk. Pks Tpk. For similar names see White Norfolk.

Large White French. C&B DD Drr Ett Evr Ggy Hen Lnr Man Prn Pnt Raw Vl Y&II.
SIMILAR NAMES. See White French.

SEEDSMEN'S SYNONYMS. Sweet German, Prn. White Sweede, Ggy.

Large White Globe. Buc Bui Can Col CF Crg DD Eic Evr Gdn Jasc Ken Liv JL
JMM Neb Pnt Ree Sal SC Shw Spf Stk Thr Vl Wlt Wdr.
SIMILAR NAMES. See White Globe.

SEEDSMEN'S SYNONYMS. Pomcranian White Globe, Wdr.

Large White Globe Strap Leaf. CE Hsc JMM Ree SB.
SIMILAR NAMES. See White Globe.

Large White Hanover. Eic Wd. For similar names see Hanover.

Large White Norfolk. Bow Brn Bui CE Cle Crs Cur Drr Fmr Fer Gls Gdn Hly
H&P Jns Ken Kg Lawn Lnr LB Man May Mzy Neb Pri Ree Shw Shm Sox
Spf Tat Til Vc Wlt Wd WS.
SIMILAR NAMES. See White Norfolk.

Large Yellow. Bur Pac Tex Vc.

Large Yellow Aberdeen. Shm. For similar names see Yellow Aberdeen.

Large Yellow Globe. Bui Can Chl CF Cox CA Fst Gdn Liv Man JMP Pnt Raw
Shw WS.
SIMILAR NAMES. See Yellow Globe.

SEEDSMEN'S SYNONYMS. Amber, Bur Est Pac Tex Vc WS. Yellow Show, Raw.


Long Cow Horn. TG J&S May Nol S&OSTk Tat Vl. For similar names see Cow Horn.

SEEDSMEN'S SYNONYMS. Long White French, Nol. White French, J&S.

Long White. Bow Brk Bdg Bur C&J EBC C&B CE Cox Cur DDr Ett Fmr Fmr
Fqr Est Fer Gry Grw 1St Hen Hlm H&P Kes LR Liv Loh JCM JMM Mzy Neb
Nol Ptt Poo For Pug Qkr S&R SC S&F Shw Shm Sox Spf S&W Tex Vau Wea
W&D Wer Wdr Wyg Y&H.
SIMILAR NAMES. Large White.

SEEDSMEN'S SYNONYMS. Cow Horn, Alx Bur Drr Fqr Fer Hen, etc.

Long White Cow Horn. Bel Bgs Brn Bng Bui Brw CE Cle Crs Evr Gdn Gld Ggy
Hrn J&S Pnt Ree T&B Vc Wd WS.
SIMILAR NAMES. See Cow Horn.

Long White French. Bur Ett Lnr Mzy Pnt S&W W&J.
SIMILAR NAMES. See White French.

SEEDSMEN'S SYNONYMS. Long Cow Horn, Nol. Sweet German, Bur Pac.

Long White Meaux. RHJ.

SEEDSMEN'S SYNONYMS. Cow Horn, RHJ.

Long White Norfolk. Fst G&H. For similar names see White Norfolk.


Maltese. Sim.

SIMILAR NAMES. Yellow Malta.
AMERICAN VARIETIES OF VEGETABLES.

Mammoth Graystone. SB. For similar names see Graystone.

Seedsmen’s synonyms. Improved Graystone, SB.


Similar names. See Purple Top Globe.


Similar names. See Red Top White Globe.

Milan Strap Leaf. Cle. For similar names see Purple Top Milan.


Native Georgia Turnip. Wlt.

Nimble Dick. RE SB.

Similar names. Early Nimble Dick, White Nimble Dick.

Seedsmen’s synonyms. Early Six Weeks, D&H Ren. White Six Weeks, SB.


Northrup, King & Co.’s Early White Model. Entered as Early White Model.


Similar names. Orange Sweet.

Seedsmen’s synonyms. Early Golden Ball, Sim. Golden Ball, Ebe Evr Frd Hen Iow Liv, etc. Robertson’s Golden Ball, Bow Bur Cox Fer Lam Loh, etc.

Orange Sweet. Sal. For similar names see Orange Jelly.


Similar names. See Red Top White Globe.

Perfection White. May.

Pomeranian Globe. Stk. For similar names see Pomeranian White Globe.

Pomeranian Large White Globe. Crs Hse Ree.

Similar names. See Pomeranian White Globe.


Similar names. Pomeranian Large White Globe, Pomeranian Globe.

Seedsmen’s synonyms. Large White Globe, Wlr.

Price & Reed’s Eureka. Entered as Eureka.

Prize Purple Top. Ren. For similar names see Purple Top Strap Leaf.

Prize Purple Top Strap Leaf. Brd. For similar names see Purple Top Strap Leaf.


Similar names. Purple Top Globe Strap Leaf, Mammoth Purple Top Globe, Early Large Purple Top Globe, Purple Top Mammoth Improved Purple Top Mammoth, Clyde Purple Top Mammoth.

Seedsmen’s synonyms. Red Top Globe, Alx Evr.

Purple Top Globe Munich. Bai. For similar names see Purple Top Munich.

Purple Top Globe Strap Leaf. Pir. For similar names see Purple Top Globe.

Purple Top Mammoth. Alx CA D&H Ewg Grg Kei Ren.

Similar names. See Purple Top Globe.


Purple Top Munich. Brk Brh Cle Elt Emr Evr Fmr Fqr Ggy Jns Lar Mnd Man MV Mzy Sox Spf S&W Thr Van Vin.

SIMILAR NAMES. Early Purple Top Munich, Extra Early Purple Top Munich, Purple Top Globe Munich, Early Red Top Munich.

Purple Top Scotch. Crs. For similar names see Yellow Scotch.

SEEDSMEN'S SYNONYMS. Aberdeen, Crs.

Purple Top Strap Leaf. Alx Amb Bak Brt Btl Bkt Bel Ber Bon Bow Brk Brk Bru Buc Bui Brw CE Cle Cox Crs Del DD Drr Drm Dum Eas Ebe Ebr Evr Fax Fid Ger Gls Gdn GH GN Gry Gig Grw Hns Hde Hrn Hrs Hrv Haw Hbt H&C Hly Hop Hse Hnt Iml Tow Jae Jns K&W Kg Kos Lor Liv JL Loh Mgd Man Mns JMM Mel Mic Mls MV Neb Xef Xi Old Puc JMP Prn Pnt Poo Raw Ree Roc RP Sal SC Shw S&O Sim Sox Spf Tem AGT Tlb Tpk T&B Vl Vk Wat Wea Web Wd WII Yng.

SIMILAR NAMES. Purple Top White Strap Leaf, Buckbee's Purple Top Strap Leaf, Laing's Purple Top Strap Leaf, Prize Purple Top Strap Leaf, Early Purple Top Strap Leaf, Extra Early Purple Top Strap Leaf, Flat Purple Top Strap Leaf, White Flat Purple Top Strap Leaf, Early Flat Purple Top Strap Leaf, Early Flat Purple Top, White Flat Purple Top, Large Late Flat Purple Top, Improved Flat Purple Top, Rennie's Prize Purple Top, Early Purple Top, American Purple Top, Extra Early Summer Purple Top, Early Red Purple Top, Early Yellow Purple Top, Prize Purple Top.


SIMILAR NAMES. Early Purple Top White Globe, Large Purple Top White Globe. See also White Globe, Red Top White Globe.

SEEDSMEN'S SYNONYMS. Red Top White Globe, Hst.

Purple Top White Strap Leaf. Brh.

SIMILAR NAMES. See Purple Top Strap Leaf.

Purple Top Yellow Aberdeen. Alx Brd Bow Bgs Bru Bui EBC C&B Crs CA D&H Drr Ewg Efr Gnd GH Hde Hen RIIJ Jns Kei Lam LB Loh JMM Mk Nol Pg Put Raw Ren Shw S&O Sim Srf SB S&W W&D Wd WS.

SIMILAR NAMES. See Yellow Aberdeen.

Red-Crowned Amber Globe. Lan. For similar names see Amber Globe.

Red Globe. McK Ren Wdr. For similar names see Red Top White Globe.

SEEDSMEN'S SYNONYMS. Norfolk, Ren.

Red Globe Norfolk. Sim SB. For similar names see White Norfolk.

Red Lily. Sal.


SIMILAR NAMES. See Red Top Strap Leaf.

Red Top Globe. Alx CE EBC Ehr Eic Evr Hns Ken McM Mel Nl Pri Ree S&W Thr Wd WS.

SIMILAR NAMES. See Red Top White Globe.

SEEDSMEN'S SYNONYMS. Norfolk, Ren.

Red Top Strap Leaf. Brl Ber Brk Brd Bru Buc CE C&B Col Cur Emr Evr Ewg Gra GN Hen H&C Hop Hse Hnt Iml Kei Ken Kg Lar Loh Msd Man JMM MV Mzy Neb Xef Nol Pnt Poi Ree Ren Ree SC Shw Sim Sox SB S&W Tat Thr Vin Wat W&D.

SIMILAR NAMES. Buckbee's Red Top Strap Leaf, Early Red Top Strap Leaf.
American Varieties of Vegetables.


Seedsman's synonyms. *Purple Top Strap Leaf*, Buc Bui Bur Drr Evr Frd Hlm, etc.

**Red Top White Globe**. Bdg Bdg Bur Brw CF Dw Dk Hst Grw Hrs Hst H&C Imi Kos Man Mzy Pac Ptt Ree Shw Sox Tex Tif Wdr.


Rennie's Empress. Rennie's Prize Purple Top. Entered as *Empress* and *Prize Purple Top*.

**Rhode Island Rock**. J&S Tll Van.

**Rice's Improved Golden Ball**. Entered as *Golden Ball*.

**Robertson's Golden Ball**. Bow Egg Edg Bgs Brn Bur Cle Col Cox Crs Fer Gra RHJ Jns Lam LB JL Loh Min Nef Pnt Pri Raw Stk Tat Tk Vin Wyg Y&H.

*Similar names.* See *Golden Ball*.

Seedsman's synonyms. *Orange Jelly*, Bur Cox Fer JL Nef Vl, etc.

**Rock**. Alx.

Seedsman's synonyms. *Sweet German*, Alx.

**Royal Purple Top Norfolk**. Brk RE Sim. For similar names see *White Norfolk*.

**St. Andrews**. Brk Fqr Gry Raw S&F.

**Salzer's Milk**. Sal.

*Similar names.* Hammond's Milk White.

**Scarlet Kashmir**. Btl Brn Bac Bur Chl C&B Col Drr Fmr Fer Frd Gra Ggy Gry Ham Hrs Hen Hbt Hse low J&S Kra Lam Liv JL Mgd Mau JMM Pac Ptt Ree Shw Shm Nc S&H Thr Vl W&D.


**Seven Top**. Alx Ar Bak Btl Bow Bur C&B Crs CA CD Dp Ebr Evr Frt Fer Gig G&T Grw Hde Hrn Hst Hly Jie JMW J&S Kr Lam Lan Lea Lcr May SCM JMM McM Pnt Ree Sc Sp Tat Thm Thr Try Trn VI Van Wlt Wt Ws.

Similar names. Southern Seven Top.


**Sharpe's Snowball**. Entered as *Snowball*.

**Six Weeks**. May Mls Smu.

Similar names. Early Six Weeks, White Six Weeks, Early White Six Weeks.


**Small Berlin**. Bgs Bur Fmr Wer. For similar names see *Berlin*.


**Snowball**. Brd Brn Brs Brw Cfs Drr Ebr Gsg Ggy Hst MWJ Kei May JMM McM Mdl Pri S&O VI Wer.

Similar names. Early Snowball, Early White Snowball, Cox's Extra Early Snowball, Sharpe's Snowball, Extra Early Snowball.

Snow White Globe. | Ar Mls. | For similar names see White Globe.
Southern Prize. | Bui Gdn G&T | Hly Jac | MWJ Kg Lan McM M&S | Nef | Wd | WS.
| SEEDSMEN'S SYNONYMS. | *Dixie Land*, Gdn Jac.
Southern Seven Top. | Bld Bui Gdn | Man | Shw. | For similar names see Seven Top.
Southern Snow White Globe. | Hst Lan McM Wd WS.
| SIMILAR NAMES. | See White Globe.
Stubble. | Brn.
| SEEDSMEN'S SYNONYMS. | *White Stone*, Brn.
| SIMILAR NAMES. | Improved Sweet German, Large Sweet German.
Sweet Russian. | Bdg Ggy.
Sweet Yellow Globe. | Brr C&J. | For similar names see Yellow Globe.
Teltow. | Bgs Bar Dlw Fmr May Wer.
| SIMILAR NAMES. | German Teltow, Early Yellow Teltow, Moore & Simon's Golden Teltow, Golden Teltow.
Tennoji. | Chl Thr.
Thorburn's Yellow Stone. | Entered as Yellow Stone.
White American. | Brn.
White Dutch. | Bri Ebe Gra Hut May.
| SIMILAR NAMES. | Early White Dutch, Early White Dutch Strap Leaf, Early Dutch, Extra Early Dutch.
| SIMILAR NAMES. | Early White Egg, Extra Early White Egg.
| SEEDSMEN'S SYNONYMS. | *Extra Early White French*, Stk.
White Flat. | Bdg EBC Emr Frq G&T | Lan Shm.
| SIMILAR NAMES. | See White Top Strap Leaf.
| SEEDSMEN'S SYNONYMS. | White Globe, Emtr.
White Flat Dutch. | Bui Drw Hole Hrn Hrs H&C Hly Jns Kei | Kra Man Old JMP Ren RP SC Sim | Spf | Trm Wd WS.
| SIMILAR NAMES. | See Early Flat Dutch.
| SEEDSMEN'S SYNONYMS. | White Top Strap Leaf, RP SC.
White Flat Dutch Strap Leaf. | RE Fst May Wd.
| SIMILAR NAMES. | See Early Flat Dutch.
White Flat Norfolk. | Brd. | For similar names see White Norfolk.
White Flat Purple Top.  Big PM.

Similar names.  See Purple Top Strap Leaf.

Seedsman’s synonyms.  Red Top White Flat, Big.

White Flat Purple Top Strap Leaf.  Fqr.

Similar names.  See Purple Top Strap Leaf.

White Flat Red Top.  Big.  For similar names see Red Top Strap Leaf.

Seedsman’s synonyms.  White Flat Purple Top, Big.

White Flat Strap Leaf.  CF Emr RE grw TG JCM MV Sox Tat Thr.

Similar names.  See White Top Strap Leaf.


Similar names.  Budlong’s Improved White French, Extra Early White French, Large White French, Long White French, Budlong’s White French.

Seedsman’s synonyms.  Hanover, Bdg.  Long Corn Horn, J&S.  Russian, Bdg.

Sweet German, Bdg Grw.  White Rock, Bdg Bai Ptt Por Rec.  White Sweet, Hrs.


Seedsman’s synonyms.  Snowball, Alr.  White Flat, Emr.

White Globe Norfolk.  M&S.  For similar names see White Norfolk.

White Globe Strap Leaf.  Bng Bur Fst Hlm Hop Wat Wd.

Similar names.  See White Globe.


White Jersey Navet.  Wd.  For similar names see Jersey Navet.

White Lemon.  M&S.

White Lily.  Sal.  For similar names see Jersey Navet.


Similar names.  See Purple Top Milan.

White Model.  D&H Fqr May Thr.

Similar names.  Early White Model, Northrup, King & Co.’s Early White Model.

White Nimble Dick.  Sim.  For similar names see Nimble Dick.

White Norfolk.  Alx Bel Brk Cox Ebe Emr Ewg Gls Kf Min MV OV Pg Por S&R Sox Thm Thr Tpk Vin.

Similar names.  White Flat Norfolk, Long White Norfolk, Large Norfolk, Large White Norfolk, Large White Flat Norfolk, White Globe Norfolk, Red Globe Norfolk, Large Red Top Norfolk, Royal Purple Top Norfolk.

White Six Weeks.  Brd Cle Emr Man -B Wer.  For similar names see Six Weeks.

Seedsman’s synonyms.  Nimble Dick, SB.  Snowball, Brd Wer.

White Spring.  Stk.

White Stone.  Brn Cam Fle Ggy May Pri Rec Sal Sim SB.

Similar names.  See Yellow Stone.

Seedsman’s synonyms.  Early Snowball, Fle Ren Sim SB.  Snowball, Ggy.

Stubble, Brul.

White Stubble.  Brul.

Seedsman’s synonyms.  White Stone, Emr.

White Sweet.  Bel Crs Gls Hrs Loh Til Vk.

White Sweet German.  Alr Cle Ebe Gls Haw Hse Iow Kos JCM Nol Rec RP Sox Wd.

Similar names.  Improved White Sweet German.

Seedsman’s synonyms.  White Sweet Waldo, Ebe.
White Sweet Waldo.  Ebe.  
SEEDSMEN'S SYNONYMS.  White Sweet German, Ebe.

White Tankard.  D&H.  
SEEDSMEN'S SYNONYMS.  Cor Horn, D&H.

White Top Flat Strap Leaf.  Eqr S&F.  For similar names see White Top Strap Leaf.

SIMILAR NAMES.  White Top Flat Strap Leaf, Early White Top Strap Leaf, Early White Top, Early Flat White Top, White Flat, White Flat Strap Leaf, Early White Flat Strap Leaf.  
SEEDSMEN'S SYNONYMS.  Early Flat Dutch, Drm Liv JL Pri Shw.  White Flat Dutch, RP SC.


Yellow Aberdeen.  Bai Bak Brt Btl Bkt Big Brk Bdg Bri Bar Brr Gme CE Cle Col CF Cox Crg Cur Ebe Eic Ett Emr Fmr Fqr Fst Frd Gry G&T Grw TG Hns Hrm Hrs Hst Haw Hyi Hlm Ha&P Iow MWJ J&S Jns K&W Ken Kg Kos Kra Lan Lnr PM Mas Mau May McM Mic Mhl Min MV Mzy Neb Nol OV Pac JMP Pir Ptt Poo Por Pot Pri Qkr Ren Ree Rl Rs Sl&R S&F Sox S&H Stw S&I S&W Tat TB Thm Thr AGT Tpk Vla Van Vl Vin Wat Wea Wll Wlt Wdr Wyg.  
SIMILAR NAMES.  Improved Yellow Aberdeen, Large Yellow Aberdeen, Green Top Yellow Aberdeen, Purple Top Yellow Aberdeen.  
SEEDSMEN'S SYNONYMS.  Purple Top Yellow, Drr.  Scotch Yellow, Btl Cox Lan Hl JMP Stw, etc.  Bullock Green Top, SB.

Yellow Ball.  Hnt.  For similar names see Golden Ball.

Yellow Finland.  Ggy M&S Thr.  
SIMILAR NAMES.  Early Yellow Finland.

SIMILAR NAMES.  Improved Yellow Globe, Large Yellow Globe, Scotch Yellow, Sweet Yellow Globe, Early Yellow Globe, Golden Globe.  

Yellow Malta.  Thr W&D.  For similar names see Maltese.

Yellow Montagny.  W&D.

Yellow Scotch.  Btl Cle Cox G&T Kg Lan Nef JMP Stw.  
SIMILAR NAMES.  Green Top Scotch, Purple Top Scotch.  
SEEDSMEN'S SYNONYMS.  Yellow Aberdeen, Bdg Btl Cox Lan JMP Stw, etc.

SIMILAR NAMES.  Early Yellow Stone, Thorburn's Yellow Stone, Golden Stone, Early Golden Stone, Black Stone, White Stone, Early White Stone.  

TURNIP (RUTA-BAGA).

All Gold.  GN Sal.

SIMILAR NAMES.  Improved American, American Yellow, Improved American
Purple Top. Wood's Improved American Purple Top, Wood-Stubb's Improved American Purple Top, American Imperial Purple Top, American Purple Top Yellow, Improved American Purple Top Yellow, American Purple Top.

**American Breadstone.** Sim. For similar names see Breadstone.

**American Imperial Purple Top.** Gil.

**Similar names.** See American, Imperial Purple Top.

**American Purple Top.** Brd Bng C&J Cam CE Cle C&B Drr Elt Emr Fer Frd Hrn Hen Liv PM Mns Mas JCM JMM MLS MV Mzy Neb Nef HP Por Raw Rce RP S&R S&G Sox Vin Wd WS Y&H.

**Similar names.** See Purple Top, American.

**American Purple Top Yellow.** Air Ar Bui Cm Gill TG JL Loh Pnt SC Vi.

**Similar names.** See American, Purple Top Yellow.

**American Yellow.** Fir AGT. For similar names see American.

**Arctic.** D&H.

**Aroostook.** Jer.

**Aroostook Improved.** Entered as Aroostook.

**Ashcroft.** Pri.

**Similar names.** Ashcroft's Improved Purple Top, Ashcroft's Purple Top.

**Ashcroft's Improved Purple Top.** Entered as Ashcroft's Purple Top.

**Ashcroft's Purple Top.** Sim. For similar names see Ashcroft.

**Bangholm.** Bow Fer Lnr McK.

**Similar names.** Bangholm Purple Top, Bangholm Improved Purple Top.

**Bangholm Improved Purple Top.** Entered as Bangholm Purple Top.

**Bangholm Purple Top.** Brn RE Eig Gra Kei Ren Sim.

**Similar names.** See Bangholm.

**Bell's World's Fair.** Entered as World's Fair.

**Bloomsdale.** Dlw Gif MWJ Koc Lan Mic Stw Tem Wer.

**Bon Air.** Alx.

**Similar names.** Improved Bon Air.

**Brandon.** McK.

**Breadstone.** Bkt Bel Bur Brr Cam Chl Cle Col D&H Frd Gls TG Hrs Hst Hbt MWJ J&S Jns Ky MLS Pac Raw Ren Rce Rt Rs Shm Sie Tem Thb Vi Vau Wd Wdr.

**Similar names.** Burpee's Breadstone, American Breadstone.


**Bronze Top.** Kei.

**Similar names.** Halewood Bronze Top, Hartley's Improved Bronze Top, Hazard Bronze Top.

**Bruce's New Century.** Entered as New Century.

**Bruce's Purple Top.** Bru. For similar names see Purple Top.

**Buckbee's Giant.** Buc. For similar names see Giant.

**Buckbee's Mammoth White Russian.** Entered as Mammoth White Russian.

**Budlong.** Brk Brr Cle CF Drr Fmr Ggy Gry TG J&S JMM Rs Shm Thm Wea Wd Wdr Y&H.

**Similar names.** Improved Budlong, Budlong White, Budlong White Rock, Budlong Improved White Rock.

**Seedsmen's synonyms.** Breadstone, Cle TG J&S Raw Wd Wdr.

**Budlong Improved White Rock.** Entered as Budlong White Rock.

**Budlong White.** Fqr. For similar names see Budlong.

**Budlong White Rock.** Brt Brw CE Fer Frd Hse Lnr Pot Rce.

**Similar names.** See White Rock, Budlong.
Buist's Improved Purple Top Yellow. Entered as *Buist's Purple Top Yellow.*

Buist's Purple Top Yellow. Bui. For similar names see *Purple Top Yellow.*

Burpee's Breadstone, Burpee's Improved Purple Top Yellow. Entered as Breadstone and *Burpee's Purple Top Yellow.*

Burpee's Purple Top Yellow. Bur. For similar names see *Purple Top Yellow.*

Burrr's Improved Purple Top. Entered as *Burrr's Purple Top.*

Burr's Purple Top. Brr. For similar names see *Purple Top.*

Canadian Gem. D&H.

Carter's Elephant, Carter's Imperial, Carter's Imperial Hardy, Carter's Imperial Hardy Purple Top, Carter's Imperial Hardy Purple Top Yellow, Carter's Improved Purple Top, Carter's Improved Purple Top Yellow. Entered as Elephant, Imperial, Imperial Hardy, Imperial Hardy Purple Top, Imperial Hardy Purple Top Yellow, Imperial Purple Top, Imperial Purple Top Yellow, and Carter's Yellow.

Carter's Model Purple Top Yellow. M&S. For similar names see *Green Top.*

Carter's Purple Top. Cle Eas TG. For similar names see *Purple Top.*

Carter's Yellow. Ebe. For similar names see *Yellow Seedle.*

Champion. Bru Bug Fer Kei Lan Man McK Nol IIP Pri W&D.


Seedsmen's Synonyms. Yellow, Lan IIP.

Champion Purple Top. Bow CE D&H Ewg GH Gra Hse RIJ Rec Ren Rec Sim SB Thr Y&H.

Similar names. See *Champion.*

Cox's Improved Yellow. Entered as *Cox's Yellow.*

Cox's Yellow. Cox. For similar names see *Yellow Seedle.*

Cross. Kei.

Cross' Improved. Entered as *Cross.*

Currie's Improved Purple Top. Entered as *Currie's Purple Top.*

Currie's Purple Top. Cur. For similar names see *Purple Top.*

Defiance. Sim.

Dreer's Improved Purple Top. Entered as *Dreer's Purple Top.*

Dreer's Purple Top. Dreer. For similar names see *Purple Top.*

Drummond. Lan McK SR.

Drummond's Purple Top. Bru Ewg Fer Gra Ren Sim.

Similar names. See *Purple Top.*

Early Melting. Sim.

Similar names. Simmers' Early Melting.

East Lothian Purple Top. Bru D&H Kei Ren Sim SB.

Similar names. Improved East Lothian Purple Top.


Evans' Ontario Purple Top. Entered as *Ontario Purple Top.*

Early Extra Champion. May. For similar names see *Champion.*

Faust's Improved Purple Top Yellow. Entered as *Faust's Purple Top Yellow.*

Faust's Purple Top Yellow. Fst. For similar names see *Purple Top Yellow.*

Ferry's Improved Purple Top, Ferry's Improved Purple Top Yellow. Entered as Ferry's Purple Top and Ferry's Purple Top Yellow.

Ferry's Purple Top. Tpk. For similar names see *Purple Top.*

1829—No. 21—02—25
Ferry's Purple Top Yellow. Fer. For similar names see Purple Top Yellow.
Fettercairn Green Top. Bru Sim. For similar names see Green Top.
French Improved Purple Top. Entered as French Purple Top.
French Purple Top. Vin. For similar names see Purple Top.
French Yellow. Pitt Wdr. For similar names see Yellow Swede.
Fry's Purple Top. Mhl. For similar names see Purple Top.

Hartley. Roc.


Gloucester. SB.
Golden Heart. Hen.

Similar names. Henderson's Golden Heart.

Green Top. Ewg Gra Kei McK Ren.


Green Top White. Bgs. For similar names see Green Top.

Green Top Yellow. Rec. For similar names see Yellow Swede.

Griffing's Family. Gff. For similar names see Thorburn's Family.

Griffith & Turner's Improved Purple Top. Entered as Griffith & Turner's Purple Top.

Griffith & Turner's Purple Top. G&T. For similar names see Purple Top.

Halewood Bronze Top. RE McK Ren SB. For similar names see Bronze Top.

Hall's Westbury, Hall's Westbury Purple Top. Entered as Westbury and Westbury Purple Top.

Hammond's Improved Purple Top, Hammond's Improved Yellow Mammoth.

Entered as Hammond's Purple Top and Hammond's Yellow Mammoth.

Hammond's Purple Top. Ham. For similar names see Purple Top.

Seedsmen's synonyms. Long Island, Ham.

Hammond's Yellow Mammoth. Ham. For similar names see Yellow Swede.

Harris' White Purple Top. Hrs. For similar names see Purple Top.

Hartley. Ggy.

Similar names. Hartley Bronze Top, Hartley Improved Bronze Top.

Hartley Bronze Top. Bru Dk&H RE Gra McK Ren Sim SB.

Similar names. See Hartley, Bronze Top.

Hartley Improved Bronze Top. Entered as Hartley Bronze Top.

Hazard. SB.

Similar names. Hazard Bronze Top, Hazard Green Top.

Hazard Bronze Top. Ren. For similar names see Hazard, Bronze Top.

Hazard Green Top. Sim. For similar names see Hazard, Green Top.

Heavy Cropping. Mis.

Similar names. Maule's Heavy Cropping.


Highland Prize. Sim SB.

Similar names. Steele-Briggs' Highland Prize.

Hurst's Monarch. Entered as Monarch.


Imperial Hardy. Bgg Bui Brr CE Col Cox Elt RE Fgr Fst Fax Gll Hrm Hst Hbt K&W Kos Lnr Man Mis MV Mzy Nee Qkr Rec Shm Sox S'f Vi Web.

Similar names. See Imperial Purple Top.

Imperial Hardy Purple Top. GerSB. For similar names see Imperial Purple Top.

Imperial Hardy Purple Top Yellow. Wll.

Similar names. See Imperial Purple Top Yellow.
Imperial Purple Top. Bel Bgs Brn Brn Crs Cur Ewg Fer Fle Gls Gra Hrs H&P Lea Ren.

Similar names. Carter's Imperial Purple Top, Carter's Imperial, American Imperial Purple Top, Imperial Hardy, Carter's Imperial Hardy, Imperial Hardy Purple Top, Carter's Imperial Hardy Purple Top, Vieck's Imperial Purple Top Yellow, Carter's Imperial Purple Top Yellow, Imperial Hardy Purple Top Yellow, Imperial Purple Top Yellow.

Imperial Purple Top Yellow. Vk. For similar names see Purple Top Yellow.

Improved American, Improved American Purple Top, Improved American Purple Top Yellow, Improved Bon Air, Improved Bronze Top, Improved Buddlong, Improved East Lothian Purple Top, Improved Graystone, Improved Hall's Westbury, Improved Hazard, Improved Laing, Improved London, Improved Long Island, Improved Long Island Purple Top, Improved Long Island Yellow, Improved Monarch, Improved Purple Top, Improved Purple Top Yellow, Improved White Rock, Improved Yellow Swede. Entered as American, American Purple Top, American Purple Top Yellow, Bon Air, Bronze Top, etc.

Jumbo. McK SB.

Similar names. Steele-Briggs' Jumbo.

Seedsmen's synonyms. Elephant, McK. Monarch King, McK.

Kangaroo. Ren Sim.

Similar names. Rennie's Kangaroo.

Keith's Green Top. Kei. For similar names see Green Top.

Keith's Improved Green Top, Keith's Scottish Champion. Entered as Keith's Green Top and Scottish Champion.

Kelway. Sic.

Kelway's Longport Mammoth. Entered as Longport Mammoth.

King of Sweden. RHJ Kei McK Ren Sim.

Similar names. See Webb's Giant King.

Knowfield Purple Top. Ren Sim. For similar names see Purple Top.


Similar names. See Laing's Purple Top.

Laing's Early. Enr S&F. For similar names see Laing's Purple Top.

Laing's Improved Purple Top, Laing's Improved Purple Top Strap Leaf, Laing's Improved Strap Leaf, Laing's Improved Yellow. Entered as Laing's Purple Top, Laing's Purple Top Strap Leaf, Laing's Strap Leaf, and Laing's Yellow.

Laing's Purple Top. Brd Bow Bgs Brn Brn Cle CF Ewg Fer tier Girw Hrv May Pks Pue Ren Sal Sim Spf Tpk.

Similar names. Laing's Improved Purple Top, Laing's Improved Purple Top Strap Leaf, Laing's Purple Top Yellow, Laing's Yellow, Laing's Improved Yellow, Laing's Early, Improved Laing, Laing, Laing's Improved Strap Leaf, Laing's Strap Leaf.

Laing's Purple Top Strap Leaf. Crs Vk.

Similar names. See Laing's Purple Top.

Laing's Purple Top Yellow. TG. For similar names see Laing's Purple Top.

Laing's Strap Leaf. Cox. For similar names see Laing's Purple Top.

Laing's Yellow. Bgg Gng. For similar names see Laing's Purple Top.

Landreth's Improved Purple Top Yellow, Landreth's Market Garden. Entered as Purple Top Yellow and Market Garden.

Landreth's Purple Top Yellow. Lan. For similar names see Purple Top Yellow.

Large Russian. Wd. For similar names see White Russian.

Large Sweet German. Tpk.

Large White. Bar Cam J&S Liv May Mi Shw Spf Wd.

Similar names. See White Swede.
Large White Purple Top. SC.

Similar names. See White Sweed, Purple Top.

Large White Rock. Brt. For similar names see White Rock.

London. For S&F.


London Purple Top. Ggy. For similar names see London, Purple Top.

Long Island. Erb Elt Fer Ham Hen Jer Lam Loh Man Nol Poo Rs S&W Wea W&D Wdr Yng Y&H.


Seedsmen’s synonyms. American Purple Top, Fer Lam Gls. Hammond’s Improved Purple Top, Ham.


Similar names. See Long Island.

Long Island Smooth Yellow. Ptt. For similar names see Long Island.

Long Island Yellow. Brw. For similar names see Long Island.

McKenzie’s Northwestern Purple Top. Entered as Northwestern Purple Top.

McMillan’s Improved Purple Top. Entered as McMillan’s Purple Top.

McMillan’s Purple Top. McM. For similar names see Purple Top.

Mammoth Clyde Purple Top. Ewg. For similar names see Purple Top.

Mammoth Russian. Lam. For similar names see White Russian.

Seedsmen’s synonyms. White, Lam.

Mammoth White Russian. Buc Kg Roc. For similar names see White Russian.

Market Garden. Lam.

Similar names. Landreth’s Market Garden.

Marquis of Lorne. RE.

Similar names. Marquis of Lorne Purple Top.

Marquis of Lorne Purple Top. Bru. For similar names see Marquis of Lorne.

Marshall’s Purple Top. Ren Sim. For similar names see Purple Top.

Maule’s Heavy Cropping. Mau. For similar names see Heavy Cropping.

May’s Elephant, May’s Improved Purple Top. Entered as Elephant and May’s Purple Top.

May’s Purple Pop. May OV. For similar names see Purple Top.

Meyer’s Purple Top Beauty. Bri J&S. For similar names see Purple Top Beauty.


Similar names. Improved Monarch, Monarch Purple Top, Hurst’s Monarch, Monarch King.

Seedsmen’s synonyms. Carter’s Elephant, Fer Kei. Tankard, Fer Lam Por S&R LB Loh, etc. Elephant, Ber Bru Bui Bur J&S Pac, etc. Hurst’s Monarch, Fer.

Monarch King. McK. For similar names see Monarch.

Seedsmen’s synonyms. Elephant, McK. Jumbo, McK.

Monarch Purple Top. Gls. For similar names see Monarch.

Monarch Tankard. Lur Pg.

Seedsmen’s synonyms. Elephant, Pg.


Northwestern Purple Top. Mr-K.

Ontario Purple Top. RE. For similar names see Purple Top.

Prize Winner. CE D&H LB TB Til.

Similar names.  Bruce’s Purple Top, Carter’s Purple Top, Drummond’s Purple Top, Fry’s Purple Top, Knowfield Purple Top, London Purple Top, Mammoth Clyde Purple Top, Marshall’s Purple Top, Steele-Briggs’ Purple Top, Evans’ Ontario Purple Top, Ontario Purple Top, Improved Purple Top, Burr’s Improved Purple Top, Burr’s Purple Top, Carter’s Improved Purple Top, Currie’s Improved Purple Top, Currie’s Purple Top, Deere’s Improved Purple Top, Deere’s Purple Top, Ferry’s Improved Purple Top, Ferry’s Purple Top, Griffith & Turner’s Improved Purple Top, Griffith & Turner’s Purple Top, Hammond’s Improved Purple Top, Hammond’s Purple Top, May’s Improved Purple Top, May’s Purple Top, McMillan’s Improved Purple Top, McMillan’s Purple Top, Sharpe’s Improved Purple Top, Sharpe’s Purple Top, Thorburn’s Improved Purple Top, Thorburn’s Purple Top, Wernich’s Improved Purple Top, Wernich’s Purple Top, Wood’s Improved American Purple Top, Wood-Stubb’s Improved American Purple Top, Improved American Purple Top, French Improved Purple Top, French Purple Top, Harris’ White Purple Top, Purple Top Mammoth, Large White Purple Top.  See also Purple Top Yellow.

Purple Top Beauty.  M&S.

Purple Top Mammoth.  Ren SB.  For similar names see Purple Top.

Seedsman’s synonyms.  Improved Graystone, Ren.

Purple Top Yellow.  Btl Ber Buc Bar CF Cok CA D&U Gdn TG Hns Hde Haw Hbt Hlm J&S Lam Lan LB Loh Mel Mhl Min M&S Nol Pac Pug Qkr RoC Shw Tat Tex Til Wol Wd Y&M.

Similar names.  Baist’s Improved Purple Top Yellow, Baist’s Purple Top Yellow, Burpee’s Improved Purple Top Yellow, Burpee’s Purple Top Yellow, Faust’s Improved Purple Top Yellow, Faust’s Purple Top Yellow, Ferry’s Improved Purple Top Yellow, Ferry’s Purple Top Yellow, Landreth’s Improved Purple Top Yellow, Landreth’s Purple Top Yellow, American Purple Top Yellow, Improved American Purple Top Yellow, Improved Purple Top Yellow.

Rennie’s Kangaroo.  Entered as Kangaroo.

Scotch Yellow.  Stw.  For similar names see Yellow Svede.

Scottish Champion.  Kei Sim.  For similar names see Champion.

Shamrock.  Bgg Brk C&J CE Cle Emr Fqr Ggy Gry Kei Ken Man Mck Mzy Neb Rec Rs S&F Wll WS.

Similar names.  Shamrock Purple Top, Shamrock Improved Purple Top, Shamrock Purple Top Yellow.

Shamrock Improved Purple Top.  Entered as Shamrock Purple Top.

Shamrock Purple Top.  Bru CF D&H Ewg Gra Grw Ren Sim SB.

Similar names.  See Shamrock.

Shamrock Purple Top Yellow.  TG.  For similar names see Shamrock.

Sharpe’s Improved Purple Top.  Entered as Sharpe’s Purple Top.

Sharpe’s Purple Top.  Bru Ren Sim SB.  For similar names see Purple Top.

Shepherd’s Golden Globe.  Fer Lam.

Simmers’ Champion Purple Top, Simmers’ Defiance, Simmers’ Early Melting.  Entered as Champion Purple Top, Defiance, and Early Melting.

Skirving.  Bg Btt Eas Fle Ky Lam Mck Mzy Mum Pri Vau Vin W&D.

Similar names.  See Skirving’s Purple Top.

Skirving’s Improved, Skirving’s Improved Liverpool Purple Top, Skirving’s Improved Purple Top.  Entered as Skirving, Skirving’s Liverpool Purple Top, and Skirving’s Purple Top.

Skirving’s Liverpool.  Bru Sal.  For similar names see Skirving’s Purple Top.

Skirving’s Liverpool Purple Top.  Bgs.

Similar names.  See Skirving’s Purple Top.
**AMERICAN VARIETIES OF VEGETABLES.**

Skirving's **Purple Top.** Anb Brd Bow Brk Brn Brb CE Cle CF Cox Crs Cur Del DD Dtt Dnm Ewq Fmr Fst GIH Grq Gwy Gry Hrm Hrn Hrv RHJ Kei K&W Kos Lnr Man Mas May JMM Msb Ov Pnc Por Ren Rec RP S&R S&O Shm Sim Spf SB AT Tpk Trm Vl Wea Web W&D Wyg Y&H.

**SIMILAR NAMES.** Skirving, Skirving’s Improved Purple Top, Skirving’s Purple Top Yellow, Skirving’s Improved, Skirving’s Improved Liverpool Purple Top, Skirving’s Liverpool, Skirving’s Liverpool Purple Top.

Skirving’s **Purple Top Yellow.** Grw Tg Plr SC.

**SIMILAR NAMES.** See Skirving’s Purple Top.

**Steele-Briggs’** Highland Prize, Steele-Briggs’ Jumbo, Steele-Briggs’ Westbury.

Entered as **Highland Prize, Jumbo, and Westbury.**

**Steele-Briggs’** Perfection. SB.

**Steele-Briggs’ Purple Top.** SB. For similar names see Purple Top.

Sutton’s Champion, Sutton’s Champion Purple Top, Sutton’s Improved Champion.

Entered as **Champion, Champion Purple Top, and Champion.**

**Sweet Rock.** Ak. For similar names see White Rock.

**Sweet Russian.** Bow Fer Hrv LB Loh Old Pg Til Vin.

**SIMILAR NAMES.** See White Russian.

**SEEDSMEN’S SYNONYMS.** White, Bow Fer LB Loh Old Pg Vin. Large White. S&H.

**Sweet White Russian.** Brd Brn RHJ Jns Sal Shm.

**SIMILAR NAMES.** See White Russian.

**Thorburn Family.** Ebr Thr.

**SIMILAR NAMES.** Grifling’s Family.

**Thorburn’s Improved Purple Top.** Entered as Thorburn’s Purple Top.

**Thorburn’s Purple Top.** Thr. For similar names see Purple Top.

**Twentieth Century.** Bai.

**Twentieth Century Rock.** Brt. For similar names see White Rock.

**Universal Purple Top.** Sim.

**Vaughan’s Improved.** Van.

**Vick’s Imperial Purple Top Yellow.** Entered as Imperial Purple Top Yellow.

**Wait’s Improved.** Y&H.

**Wait’s Improved Purple Top Yellow.** Entered as **Purple Top Yellow.**

**Webb’s Giant King.** D&H.

**SIMILAR NAMES.** King of Swedes, Giant, Buckbee’s Giant.

**Wernich’s Improved Purple Top.** Entered as Wernich’s Purple Top.

**Wernich’s Purple Top.** Wer. For similar names see Purple Top.

**Westbury.** Brn Bru CF RE Kei M&K Pri Sim SB Vk.

**SIMILAR NAMES.** Hall’s Westbury, Improved Hall’s Westbury, Hall’s Westbury Purple Top, Westbury Improved Purple Top, Steele-Briggs’ Westbury, Westbury Purple Top.

**Westbury Improved Purple Top.** Entered as Westbury Purple Top.

**Westbury Purple Top.** D&H Ren. For similar names see Westbury.

**West Norfolk.** Fer RHJ Pg.

**White-Fleshed.** Thr.

**White-Fleshed Purple Top.** Diw Min. For similar names see White Swede.

**White Hanover.** Eir.

**White Rock.** Bai Bdg Brt C&J CE Cle CF Gmr Gis Gty Hrm Hnn Pot Rec Rs Tat Thr.

**SIMILAR NAMES.** Improved White Rock, Budlong’s Improved White Rock, Budlong’s White Rock, Large White Rock, Sweet Rock, Twentieth Century Rock.

**SEEDSMEN’S SYNONYMS.** Breadstone, Gis.

    Similar names.  Sweet White Russian, Sweet Russian, Large Russian, Mammoth Russian, Mammoth White Russian, Buckbee's Mammoth White Russian.

    Seedsmen's synonyms.  Large White, Anb Bni Liv.  White Speede, Bdg Frd Reie Sic Sox MV.  White Sweet, Crs.  White Sweet Green Top, Bgs.

White Short Top.  Hrs.  For similar names see White Speede.

White Swede.  Alx Bai Bon Bow Bgg Bdg Bru Can CRCA D&H Fer Ft Frd Gdh Ggy Kei Lam Lnr LB McK MV Old Pg Pks Pri Rdh Reie Sic Sox Tat Thr Trln Vin Web.

    Similar names.  White-Fleshed Purple Top, White Short Top, Large White, Large White Purple Top.


White Sweet.  Crs Hrs.

    Seedsmen's synonyms.  White French, Hrs.  White Russian, Crs.

White Sweet Green Top.  Bgs.

    Seedsmen's synonyms.  White Russian, Bgs.

White Tankard.  D&H Ggy Kei.

Wood-Stubbs' Improved American Purple Top.  Entered as American Purple Top.

Wood's Improved American Purple Top.  Entered as American Purple Top.

World's Fair.  Bel.

    Similar names.  Bell's World's Fair.

Yellow Globe.  May OV Thm Tpk.  For similar names see Yellow Swede.

Yellow Swede.  Bon Bow Fer G&T Lam Lan LB Loh Mr-K XI HP Tpk Wer.

    Similar names.  Yellow Globe, Improved Yellow, French Yellow, Carter's Improved Yellow, Carter's Yellow, Cox's Improved Yellow, Cox's Yellow, Green Top Yellow, Purple Top Yellow, Scotch Yellow, Hammond's Improved Yellow Mammoth, Hammond's Yellow Mammoth.


Yellow Tankard.  Fer Frd Hop Lam LB Loh Pg For &R Thr.


WATERMELON.


    Similar names.  Pride of Alabama, Eichling's Alabama Sweet.

American Champion.  Ber Bru Hlm Raw Shm Tat.


American Queen.  Ar H&P Lan.  For similar names see Cuban Queen.

Apple Pie.  Bow D&H Fpr Iow Kei M&S Old Rtk &R Thr Vin.

    Seedsmen's synonyms.  Colorado Citron, Bow Fpr Thr.

Archias' Arkansas Beauty, Archias' Improved Dark Icing.  Entered as Arkansas Beauty and Dark Icing.

Arkansas Beauty.  Ar.  For similar names see Arkansas Traveler.

Arkansas Traveler.  Gig Hst MWJ Koe Lam Ree Rim Shw Shw.

    Similar names.  Archias' Arkansas Beauty, Arkansas Beauty.

Arrington's Early Market.  CA.  For similar names see Early Market.

Arrington's Sweets.  CA.  For similar names see Kleckley Sweets.

Augusta Early Round White.  Alx.  For similar names see Augusta Round White.
Augusta Extra Early.  MWJ.  For similar names see Augusta Round White.

   Similar names.  See Rattlesnake.
   Seedsmen’s synonyms.  Striped Gypsy, Bui.

   Similar names.  Augusta Early Round White, Augusta Extra Early, Augusta Sugar Loaf.

Augusta Sugar Loaf.  Alx Wlt.
   Similar names.  See Augusta Round White, Sugar Loaf.

Benjestown.  Shw.


Black Diamond.  Alr Ar Brd Btl Bkt Ber Buc CA D&H Eic Fur Fls Frd Hns Hde Hst Hly J&S Kg Lnr May Mel Mic MV NK Pac Rik Ree Rob Roe Shw Shm Sox Spf Tat Tex TB Thr Tpk Van Vk.
   Similar names.  Vaughan’s Black Diamond, Tait’s Improved Black Diamond.

Black-Eyed Susan.  Frd J&S Kg Lam Rob Shw.

   Similar names.  Round Black Spanish.

Blue Gem.  Alx Bg Bui Cle CA Ecr Gdn Gtg G&T Hst Hly MWJ J&M J&S Kg Mgd Pt Rob Shw Shm Spf Tat Tex Thr Wt Wd WS.
   Similar names.  See Kolb’s Gem.
   Seedsmen’s synonyms.  Georgia Blues, CA.  Gloussier, Wlt.

   Similar names.  Landreth’s Boss.

   Similar names.  Carolina Bradford.

Branch’s Superb Rattlesnake.  Entered as Rattlesnake.

Briggs’ Early.  Bgs.  For similar names see Extra Early.

Buckbee’s Ice Cream, Buckbee’s Perfected Kolb’s Gem.  Entered as Ice Cream and Kolb’s Gem.

Bunker Hill.  J&S.

Burpee’s Culan Queen, Burpee’s Delaware, Burpee’s Halbert Honey, Burpee’s Hungarian Honey, Burpee’s Mammoth Ironclad, Burpee’s White Gem.  Entered as Culan Queen, Delaware, Halbert Honey, Hungarian Honey, Mammoth Ironclad, and White Gem.

California.  W&D.
   Seedsmen’s synonyms.  Improved Odella, W&D.

California Jumbo.  Vin.  For similar names see Jumbo, California.

California Lodi.  Vin.  For similar names see Lodi, California.

Carolina Bradford.  Alx Mm Wlt Wd.  For similar names see Bradford.

Children’s Ruby Gold.  Entered as Ruby Gold.

Chilean.  J&M.
   Similar names.  Mammoth Chilean.
**WATERMELON.**

393.

**Christmas.** Bel Bgg Cox Cur Gll Kos May Shm.

**SIMILAR NAMES.** See Johnson Christmas.

**Citron.** Alr BBl Btl Bow Brk Bdg Brn Brb Brn CE C&b CF Cur Dlw Del Dl Dn Eas Elt Ew Fqr Fdr Frl Ftr Gls Gra G&T Grw Hns Hnr Hrs Hrv Hwn Hm Hop Hse Iow MWJ RHJ Jns Kii K&W Ken Ky Kos LB Loh Mas JCM Mck Mhl Ms MV Myz Nol N1 NK Pg HP Pnn Ptt Poo P'or Pot Pri Rrk Raw Ren Rcc Roc Rs RP Sal SC S&F Shw S&O Shm SrSb Stw S&H S&W Thr Tlp Tpk Trm Vl Wea Web W&D Wll Wd Wdr Ws.


**Citron Green-Seed.** Gll Rob. For similar names see Citron.

**Citron Red-Seed.** Brt Bkt Cle D&H GH TG Iow Kg Lnr Png Rob S&R Tat Van.

**SIMILAR NAMES.** See Citron.

**City of Mexico.** Sal.

**Cole's Early.** Brd Brt Btl Bkt Bel Ber Bgg Bdg Bgs Brt Buc Bar CE Cle Col CF Cox Cro Cur Dlv Dtt Eas Elt RE Eer Fqr Frd Frd GH Gra Ggy Tg Hrn Hsw Hw Hw J&J Jns Kii Kg Kra Lnr Ltv JI Man Man May MV Nol Nk Ov Old Ptt Por Pot Pri QKr Rrk Ren Ree Rob Roc RP S&R S&O Shm Slc Sim S&R Spf Sb S&H S&W Thr Tbl Tpk Trm Vl Wna Vn Web Wer Yng.

**SIMILAR NAMES.** Cole's Extra Early.

**Cole's Extra Early.** Ptt. For similar names see Cole's Extra Early.

**Colorado Citron.** Bow D&H Fqr Gra H&P RHJ Kra Tat Thr Van Vin Yng.

**SIMILAR NAMES.** See Citron.

**SEEDSMEN'S SYNONYMS.** Apple Pie, Fqr Bow Thr. Colorado Preserving, SC.

**Colorado Mammoth Citron.** RE SB. For similar names see Citron.

**COLORADO CITRON.** Bkt Brl Bru Bur CE Col CF Cox Cur Drr Evr Fnr Fst Gry Tg Hlm Hsw Iow J&J Jns Kii Kg Kra Lnr Ltv JI Man Man May MV Mck Nol Nit Ov Old Ptt Por Pot Pri QKt Rrk Ren Ree Rob Roc RP S&R S&O Shm Slc Sim S&R Spf Sb S&H S&W Thr Tbl Tpk Trm Vl Wna Vn Web Wer Yng.

**SIMILAR NAMES.** Colorado Citron, SC.

**Colorado Preserving Citron.** Bkt Brw Brn Bur CE Col CF Cox Cur Evr Fnr Fst Gry Tg Hlm Hsw Iow J&M J&S Kii Kg Kra Lnr Ltv JI Man Man May JCM JMM Mic Mld Ms Min MV M&b Myz Nol Nit Ov Ov Pad Pz HMP P'Hr P'nt Ptt Poo Por Pot Raw Ren Ree Roc RoC S&F S&O Shm Sim Sox Spf Sb S&W Thr Tbl Tpk Trm Vl Wna Vn Vin Wea Web W&D Wer Wll Wng Yng.

**SIMILAR NAMES.** See Colorado Citron.

**Coloradan Queen.** Air, Air

**SEEDSMEN'S SYNONYMS.** Dixie, Air.

**Cuban Queen.** Alr Anb Ar BAI Bak Brd Btl Bkt Ber Big Bow Bgg Brk Brn Bnu Bui Bar Brz C&J CE Clt Cle Col CF Crs Cre Cur Dlw Del Dl D&c Fdr Fie Elt Elm Ew Fqr Ftr Fst Fst Frl Gfr Grw Gyr Gry Hwr Hsp Hst Hr Hw Hm Hnt H&P Hss J&M J&S Kii Kg Kos Lan Lan Lea Ler LB Lmr LL Loh Mgd Man Mn Mns Man May JCM JMM Mic Mld Ms Min MV M&b Myz Nol Nit Ov Ov Pad Pz HMP P'Hr P'nt Ptt Poo Por Pot Raw Ren Ree Roc RoC S&F S&O Shm Sim Sox Spf Sb S&W Thr Tbl Tpk Trm Vl Wna Vn Vin Wea Web W&D Wer Wll Wng Yng.

**SIMILAR NAMES.** Burpee's Cuban Queen, American Queen, Market Queen, Gypsy Queen, Georgia Queen, Everitt's White Queen, White Queen.

**Dallas Market.** Hde Tex.

**Dark Green Icing.** Lan Stw TB. For similar names see Dark Icing.

**Dark Icing.** Alr BBl Btl Bkt Ber Bow Bgs Brn Bnu Bui Bur C&J CE Cle C&b CF Crs Cur Drr Evr Fqr Fdr Gyr Gry Hwr Hsp Iod Jl J&M J&S Jns Kg Kra Lnr Ltv JI Loh Mgd Mgd PM Man May JCM JMM Mld Min MV
AMERICAN VARIETIES OF VEGETABLES.

Nol XI NK Pac Pir Put Pug Rec Rob RP S&R SC Sie Sox Spf Tat Thm Thr Tpk Trm Van Wea Web Wd Y&H.
Similar names. Archias’ Improved Dark Icing, Dark Green Icing, Round Dark Icing, Green Icing.
Seedsmen’s synonyms. Green Mountain, Ber. Ice Rind, Bar Bkt Bow Ger PM Sie, etc. Peerless, MWJ.

Delaware. Air Bur Col Del D&C Frd Gll Hst Hlm J&S Lnr Ree Rob Roe Shm Ten.

Similar names. Improved Dixie, Long Dixie, Improved Long Dixie, Johnson’s Dixie, White Dixie.
Seedsmen’s synonyms. Columbia, Alr.

Similar names. See Jones.

Earliest. Koe.
Similar names. Mills’ Earliest, Salzer’s Earliest.

Early California. Drn Tg. For similar names see California.
Early Canada. Ren.
Early Corona. J&S.
Early Dark Icing. Stk.
Early Market. MWJ.
Similar names. Arrington’s Early Market.

Early Mountain Sprout. Emer. For similar names see Mountain Sweet.
Early Mountain Sweet. Big Hrs. For similar names see Mountain Sweet.
Early Peerless. Cok Shw. For similar names see Peerless.
Early Triumph. Pg Stk. For similar names see Triumph.

Eden. Alx Wlt Wd.
Egyptian Red. Sal.

Eichling’s Alabama Sweets. Entered as Alabama Sweets.

Empire State. Hst.
Everbearing. Bac.
Everitt’s White Queen. Entered as White Queen.
Excelsior. Tpk.
Similar names. Haskell’s Excelsior.

Expansion. Sal.

Extra Early. Diw Koe Lan Pac Stw T&B.
Similar names. Extra Early Sugar, Harris’ Early, Briggs’ Early.
Extra Early Sugar. Cok. For similar names see Extra Early.
Favorite. Ms Tat. For similar names see Florida Favorite.

Ferry’s Peerless, Ferry’s Sweet Heart, Ferry Iceberg. Entered as Peerless, Sweet Heart, and Iceberg.

Similar Names. Improved Florida Favorite, Favorite, Girardeau's Favorite.

Seedsmen's Synonyms. Fierson, CA.

Florida Gem. M&S. For similar names see Kolbi's Gem.

Florida Ivy. Cam. For similar names see Ivy.

Fordhook. Shw. For similar names see Fordhook Early.

Fordhook Early. Ar Bkt Ber Buc Bar Col CF Cox Del Fgr Fld GY Gif G&T Hrs Hbt H&C HHm Hse Imi Iow J&M J&S Kg Koe Lam Lnr Liv JL Man May Mis M'l Neb NK Pg HP Pnt Qkr Ree Roe Rob Roe RP S&B S&O Shm Sox SB S&H Trm Van Vk Web Y&H.

Similar Names. Fordhook.


French Preserving Citron. M&S. For similar names see Citron.

Frontenac. J&S.

Gem. Hnt Lam Stw. For similar names see Kolbi's Gem.

Georgia. Lam.

Similar Names. Georgia Blues, Pride of Georgia, Georgia Rattlesnake.

Georgia Blues. CA. For similar names see Georgia.

Seedsmen's Synonyms. Blue Gem, CA.

Georgia Queen. Hrn. For similar names see Cuban Queen.


Similar Names. See Rattlesnake, Georgia.


Giant Sweet. Sal.

Similar Names. Salzer's Giant Sweet.

Girardeau's Favorite. Buc Bar Cle Crs Del Gig TG MWJ Lnr PM Pac Ree Vin Wd WS.

Similar Names. See Florida Favorite.

Girardeau's Triumph. Entered as Triumph.

Glory of Asia. Sal.

Similar Names. Salzer's Glory of Asia.

Gloussier. Hst Wlt.

Seedsmen's Synonyms. Blue Gem, Wlt.


Similar Names. See Hungarian Honey.

Golden Rind. Alex Sal.

Similar Names. Salzer's Golden Rind.

Golden Sugar. Kg.

Goodwin Imperial. Shm Thr.

Gragg. Ggy.

Gray Monarch. Alex Alr Bai Bak Btl Blg Bow Blg Bgs Bui Bur C&J CE Cle C&B CF Cox Crg Cts DD Der Drw Ebr Elt Frd Gdn GIH Gif G&T Hde Hst Hen HHm
AMERICAN VARIETIES OF VEGETABLES.

H&P Jac J&S Kg Lan Liv Mgd Man May JMM MV M&S Pac Pnt Ptt Por Rec Rob Rec S&R Shw S&O Shm Sox Spf S&W Tat Tex Thm Thr Trm Vk Web W&D Wd.


Great and Good. Kg.

Similar names. King’s Great and Good.


Similar names. Henderson’s Green and Gold.

Green Citron. Bow Bri C&J Ebe Hde Hrs J&S. For similar names see Citron.

Green Icing. Ber. For similar names see Dark Icing.

Green Mountain. Ber.

Seedsmen’s synonyms. Dark Icing, Ber.

Green Preserving Citron. Pac Y&H. For similar names see Citron.

Grist. Shw.


Similar names. Striped Gypsy, Long Striped Gypsy, Round Striped Gypsy.


Gypsy Queen. Wat Yng. For similar names see Cuban Queen.

Seedsmen’s synonyms. Rattlesnake, Yng.


Halbert’s Prize. Shw.

Hammond’s Pickaninny’s Delight. Entered as Pickaninny’s Delight.

Harris’ Earliest. Mau Mls. For similar names see Extra Early.

Haskill’s Excelsior. Entered as Excelsior.

Hastings’ Florida Favorite. Entered as Florida Favorite.

Hastings’ Tinker. Hst.

Hendersons’ Green and Gold. Entered as Green and Gold.

Honey. Ggy.


Similar names. Market King, Ice King, May’s Ice King.

Hungarian Honey. Brd Btl Bel Ber Bgg Bdg Bri Buc Bur Brr Chl Cle Col CF Cox Crs Cur Emr RE Fqr Frd Ger Grs GH Gra Grw Hrs Hst Hse H&P Jus Lnr Mnd Man May MV Pac HP Prr Ptt Por Pri Raw Rec Rcn Rec Rob Roc Sal S&R Shm Sie Sox Sb S&W Tem Thr Thm Trm T&B Vau Vk W&D Wdr Y&H.

Similar names. Burpee’s Hungarian Honey, Golden Honey.

Iceberg. Fer.

S&O Shm Sax Spf Stk S&H Stk Tat Tex Thr Til Tpk Trm T&B VL Van VK Vin Wca Web W&D Wl Wd Wdr Wyg Yng.

**Similar names.** Ice Rind, Buckbee's Ice Cream, Improved Ice Cream, Peerless Ice Cream.


**Ice King.** Ber May OV. For similar names see *Hoosier King*.

**Ice Rind.** Ar Btl Bkt Bow Edg Bai Bur Brw CE CE Fst Frd Ger Hms Jml J&S Lf JMM Mhl M&S Pac Pir Ree S&O Sil Tat.

**Similar names.** See *Ice Cream*.

**Seedsmen’s synonyms.** *Dark Icing*, Bkt Bow Bur Frd Ger PM, etc. *Ice Cream*, Bdg. *Icing*, Ar Btl Fst Hms Pir Ree, etc. *Light Icing*, Bai Brw J&S Mhl M&S Pac, etc. *Round Light Icing*, CE. *Strawberry*, Bdg.

**Icing.** Bld Bdg Ebe Fst Hms Pir Ree S&O Shm.

**Similar names.** See *Round Light Icing*.


**Immense.** Kg.

**Improved Dixie.** Improved Florida Favorite, Improved Georgia Rattlesnake, Improved Ice Cream, Improved Gypsy, improved Ironclad, Improved Jones, Improved Kolb's Gem, Improved Long Dixie, improved Mountain Sprout, Improved Mountain Sweet, Improved Odella, Improved Phinney, Improved Phinney's Early. Entered as *Dixie, Florida Favorite, Georgia Rattlesnake, Ice Cream*, etc.

**Indiana Sweet Heart.** Cam Evr Haw H&P Kg Lan Mie Stw VL.

**Similar names.** See *Sweet Heart*.

**Ironclad.** C&J CF Crs Der Gdn Gil Hns MWJ JMM Mhl Sal Shm Tpk Wyg.

**Similar names.** Improved Ironclad, Burpee's Mammoth Ironclad, Mammoth Ironclad.

**Ivy.** Bon Cam CA.

**Similar names.** Florida Ivy.

**Jackson.** Kg Lan Wd WS.


**James River.** Lan.

**Japanese Pie Citron.** Shm. For similar names see *Citron*.

**Joe Johnson.** Kg Wd. For similar names see *Johnson Christmas*.

**Johnson Christmas.** DD Roc Sal Wdr.

**Similar names.** Christmas, Salzer's Johnson Christmas, Joe Johnson.

**Johnson’s Dixie.** TG J&S Tex. For similar names see *Dixie*.

**Jones.** Bur C&J Cam Crs Frd Hst Hcn Hse Jae MWJ Liv PM Mns Man Neb Ree SC Shw S&O Spf Tat Vk Wlt Wd WS.

**Similar names.** Jones' Jumbo, Primus Jones, Duke Jones.

**Seedsmen’s synonyms.** *Lord Bacon*, MWJ. *Jumbo*, Crs Frd S&O. *Prize Jumbo*, Frd.

**Jones' Jumbo**, Jones' Pride of Georgia. Entered as *Jumbo and Pride of Georgia*.

**Jordan.** Ree.

**Similar names.** Jordan's Gray Monarch.

**Jordan's Gray Monarch.** Entered as *Gray Monarch*.

**Jumbo.** Ar 4 Ar Bak Btl Buc Cle Crs CA Del DD Drm Ebr Frd Gdn Gil Hld Hlm Hse H&P Jae MWJ J&S Kg Lnr Liv May MV M&S No Old Fnt Ree Rob Roc RP SC Shw S&O Shm Spf Tat Tex Trm Van Web Wyg Yng.

**Similar names.** Prize Jumbo, California Jumbo, Jones' Jumbo.

Kansas Stock. Btl Hls Pir Trm.
Similar names. Nebraska Stock.


King's Great and Good. Kentucky's Immense. Entered as Great and Good and Immense.


Similar names. Arrington's Sweets.


Klondike. Fnr LB NK.

Kolb's Gem. Axl Air Anb Ar Bk Bk Bk Bk Bk Bk Bk C&B Col CF Cox Crs Drr CA Dtw Del DD Drr Dwn Ebe Ebr Eic Eit Emr RE Evr Fmr Fst Fre Frd Ger Gs Gdn Gw GN Gg Gx Ggy Gry Gg Gk&Gw Tg Hns Ham Hrn Hrs Hvr Hst Hen H&C Hly Hm Hop H&P Hmp Iow Jac MWJ RJH J&M J&S Jns Kg Kos Kra Lam Lea Lnr LB Lw Lnd Mng Man Mns May JCM JMM Mic Ml Ml Min MV M&S My Mzr Nol N1 NV Ov Old Pac Pks JMP Pir Pnt Ptt Ptn Pot Ptt Rtk Raw Rec Ren Rec Rob Roc Rs RP Sal &R SC S&B Shw S&O Shm Sx Spf Stk S&H S&W Tat Ten Tex TB Thm Thr Tpk Tm T&B VL Van Vk Vin Wat Wca Web We D Wd Wtr Wtr WS Wyg.


Lagonda. Hst.


Light Icing. Ar Brd Ber Bly Bow Bui Bw CE CF Cox Evr Gdn Gw Gw Tg Jac J&M J&S Jns Kg Lnr May JCM Mlh Min MV M&S Pac Por Rtk Rec Rob RP S&R SC Sx Spf TB Thm Thr Trm.

Similar names. See Round Light Icing.


Livingston's Nabob. Entered as "Nabob.


Similar names. California Lodi, White Lodi.


Lone Star. Eic Sk Tat Tex.

Long Dixie. Ar Hst Lm Hl Pnt SG Sim Spf Thm.

Similar names. See Dixie.

Long Icing. Roc. For similar names see Long Light Icing.

Long Island. Ewg Gw Tg Kei Tpk.

Long Light Icing. Axl CE Cle Drr Fer Ger H&J C&L Lnr Lnr Ltr MV Rce Rm TB Wca.


Long Striped Gypsy. Shm. For similar names see Gypsy.


Similar names. See Long Light Icing.

Lord Bacon.  MWJ McM.
SEEDSMEN'S SYNONYMS.  Improved Jowis, MWJ.

Lord Baltimore.  G&T.

Louisiana Melting Sugar.  M&S.  For similar names see McIver's Sugar.

McIver's Sugar.  Bkt Bur Col Cox D&H Drr G&T MWJ Kg Mc MV Pn Qkr Ren Sox NB Thm Web Yng.

SEEDSMEN'S SYNONYMS.  McIver's Wonderful Sugar, Will's Sugar, Louisiana Melting Sugar, Wonderful Sugar, Maul's Wonderful Sugar, Wonderful Sugar, Rob S&H.

McIver's Wonderful Sugar.  Alr Ber Cle Evr Fld Frd Tg Ham Hrn Hst Hlm Iow J&S Kg Kra Lnr Liv JL Mgd M&S Neb Pnt Shw Shm Sim Sox Sk S&H Tth Van Vn II.

SEEDSMEN'S SYNONYMS.  See McIver's Sugar.

Majestic.  MC.

Mammoth Chilean.  Thm.  For similar names see Chilean.


SEEDSMEN'S SYNONYMS.  See Ironclad.

Mammoth Santiago.  Bar J&S Shw.  For similar names see Santiago.

Mammoth White Icing.  Bak.  For similar names see Round Light Icing.

SEEDSMEN'S SYNONYMS.  Gray Monarch, Bak Bac.

Market King.  M&S.  For similar names see Hoosier King.

Market Queen.  M&S.  For similar names see Cuban Queen.

Maul's Wonderful Sugar.  Entered as Wonderful Sugar.

May's Ice King.  May's Ice Cream.  Entered as Ice King and Ice Cream.

Melon Peach.  NK Van.

SEEDSMEN'S SYNONYMS.  See Vine Peach.

Memphis.  Hen Shm.

Mills' Earliest.  Mls.  For similar names see Earliest.

Miracle.  Tth.

Monarch.  Gw.  For similar names see Gray Monarch.

SEEDSMEN'S SYNONYMS.  Light Icing, Gw.

Monte Cristo.  Buc CE Cok Ebr Fer Fld Gd In H& C Jow Jns Kg Lnr Mic Old Ree Roc Shw Shm TB.

SEEDSMEN'S SYNONYMS.  Kleckley Sweets, Iow Pnt.

Moore's Majestic.  Entered as Majestic.

Mountain Sprout.  Abn Bt Dl Brn Brx C&J CE Cle Cox Crs Ew Wt GIH Gry Tg Hrn Ktn Lea Man May Min Ni Ree Rob Roe Shw Shm Sox Tex Thm Tpk Trm Vin W&O Wet.

SEEDSMEN'S SYNONYMS.  See Mountain Sweet.

AMERICAN VARIETIES OF VEGETABLES.

S&F Shw S&O Shm Sim Sox Spf SB S&H S&H Tat Tem Tex Thm Thr Thb Til Tpk Trm Van Vk Vin Wei Web W&D Wei Wll Wd Wdr Wyg Yng Yt'H.

SIMILAR NAMES. Improved Mountain Sweet, Early Mountain Sweet, Mountain Sprout, Improved Mountain Sprout, Early Mountain Sprout.

SEEDSMEN'S SYNONYMS. Ice Cream, Bai Pri Vin.

Muskile. Tat.

SIMILAR NAMES. Livingston's Nabob.

National. Mal.
Nebraska Stock. Neb. For similar names see Kansas Stock.

New Century. Tilh.

Nigger Head. Tat.
Odella. TG SqL W&D.

SIMILAR NAMES. Improved Odella.

SEEDSMEN'S SYNONYMS. California, W&D.

Oh My. Sal.

Orange. Btl Bgg Bdg C&J CE Crs Fst Frl Ger Hns H&P Iow Min Ren Rec SC Shw shm Tat Tpk.

Paule's Bonny Best. J&S.


SIMILAR NAMES. Early Peerless, Ferry's Peerless, Peerless Ice Cream.

SEEDSMEN'S SYNONYMS. Ice Cream, Btd Btl Bow Bur J&S Vk, etc. Buckbee's Ice Cream, Buc. Dark Icing, MWJ.

Peerless Ice Cream. Haw. For similar names see Ice Cream.


Perfection. Pg.

Phinney. Chi Kei Kg Kra Ren Sim Thm Thr Van Vn.


SIMILAR NAMES. Improved Early Phinney, Phinney's Extra Early, Phinney's Early Oval, Phinney's Improved, Phinney.

Phinney's Early Oval. Mas. For similar names see Phinney's Early.


SIMILAR NAMES. See Phinney's Early.

Pickaninny's Delight. Ham.

SIMILAR NAMES. Hammond's Pickaninny's Delight.

Pierson. CA.

SEEDSMEN'S SYNONYMS. Florida Favorite, CA.

Premium Triumph. Bai. For similar names see Triumph.


SIMILAR NAMES. See Citron.

Pride of Alabama. Cam. For similar names see Eichling's Alabama Sweet.

Primus Jones. MWJ. For similar names see Jones.

Prize Jumbo. Vl. For similar names see Jumbo.


Rattlesnake. And Blt CF Dlw DD Drr Ebr Eic Eif Fst Frd Gig G&T Hlm H&P J&W Lan Lea JMM Mhl Min Mzy Shw Stk Sw Tat Thm Tpk Van W&D Wer Yng.


Rocky Ford. Blt Hns Pir Trm.

Similar names. Rocky Ford Long Green.

Rocky Ford Long Green. Sal. For similar names see Rocky Ford.

Round Black Spanish. Rec. For similar names see Black Spanish.

Round Dark Icing. H&C Wat. For similar names see Dark Icing.

Round Light Icing. Brn Fer H&C Hmn Inl Lam Lap LB.


Seedsmen's synonyms. Ice Rind, CE.

Round Striped Gypsy. CE Rec Rob. For similar names see Gypsy.

Round White Icing. Rec. For similar names see Round Light Icing.

Ruby Gold. Air Bai Blt Bld Bgy Bri Day Buc Bar CE Chl Del Eif RE Eifr Frd GH Hns Liv Man PM Mzy Rec Rec Shw W&D.

Similar names. Child's Ruby Gold.

Safeguard. May.

Salzer's Earliest. Sal. For similar names see Earliest.


San Joaquin. Bai Bow.

Seedsmen's synonyms. Loed, Bow.

Santiago. Tg Pg.


Similar names. Seminole Early, Seminole Extra Early.

Seminole Early. Bow. For similar names see Seminole.

Seminole Extra Early. Cox. For similar names see Seminole.


Southern Rattlesnake. Bai Blt Bow Cox Grw TG K&F Pnt SC Thr.

Similar names. See Rattlesnake.

Seedsmen's synonyms. Gypsy, Bow Cox Grw K&F Pnt. Striped Gypsy, SC.

Southern Sugar Loaf. Shw. For similar names see Sugar Loaf.

Southern Triumph. Tat. For similar names see Triumph.
Stokes' Early.  D&H.  For similar names see Stokes' Extra Early.


Similar names.  Stokes' Early.

Striped Gypsy.  Belg Bui BUR CF Crs Drr H&C Hlm PM Msl M&S Pri Qkr SC.

Similar names.  See Gypsy.

Southern Rattlesnake, SC.

Sugar Loaf.  MWJ.

Similar names.  Southern Sugar Loaf, Augusta Sugar Loaf.

Sweet Heart.  Alr Aub Ar Bak Brk Brt Btt Btk Ber Btg Bow Bgg Bri Brn Buc
Bui Bur Brr CE Cle C&B Col CF Cox Crs Cur Del DD Drr Dww Eeb Ebr Eml ER
Frm Frd Frd Ger Gls Ghm GJ Gjy Gg G&T Grw Ham Hlr Hen H&C
Hop Hse 1ml Low Jac MWJ J&M J&S Jns Ken Kg Kos Kra Lmr Lnr LB Liv JL
Loh Ltr Mgd Man PM Mns Mas Mau May JCM JMM Mic Mls Mv Neb
Nol XJ XK OY Old Pkg HP Pir Prn Pnc Ptt Prf Pri Qkr Rtk Rex Rec Rob
Roc Rt RP Sal S&R SC Shw S&O Shw Sox Spf SB S&H S&W Tat Tem TB Thr
Thb Til Tpk Trm T&B 17 Van Vk Wvd Wdr WS Yng.

Similar names.  Ferry's Sweet Heart, Indiana Sweet Heart.

Sweet Siberian.  Hen.

Tait's Improved Black Diamond.  Entered as Black Diamond.

Triumph.  Alx Alr Aub Ar Bak Brk Brt Btt Btk Ber Btg Bow Bgg Bri Brn Buc
Bui Bur Brr CE Cle C&B Col CF Cox Crs Cur Del DD Drr Dww Eeb Ebr Eml ER
Frm Frd Frd Ger Gls Ghm GJ Gjy Gg G&T Grw Ham Hlr Hen H&C
Hop Hse 1ml Low Jac MWJ J&M J&S Jns Ken Kg Kos Kra Lmr Lnr LB Liv JL
Loh Ltr Mgd Man PM Mns Mas Mau May JCM JMM Mic Mls Mv Neb
Nol XJ XK OY Old Pkg HP Pir Prn Pnc Ptt Prf Pri Qkr Rtk Rex Rec Rob
Roc Rt RP Sal S&R SC Shw S&O Shw Sox Spf SB S&H S&W Tat Tem TB Thr
Thb Til Tpk Trm T&B 17 Van Vk Wvd Wdr WS Yng.

Similar names.  Early Triumph, Girardeau's Triumph, Premium Triumph.

Southern Triumph.

Utah.  Wll.

Vaucluse.  Bur Rec Rob Shm Tem.

Similar names.  Vaucluse Red-Seeded.

Vaucluse Red-Seeded.  J&S PM.  For similar names see Vaucluse.

Vaughan's Black Diamond.  Entered as Black Diamond.

Vick's Early.  Bel Ber Brk Bdg Brn Brb Bur CF Cox Dun Eas Emr Evr Fmr Frd
Gry TG H&P Kg Lea Lmr Lnr Man PM Mns May Mic Neb XJ Prn Pnc Ptt Raw Rec Rob
Roc RP Shw Shm Spf Tex TB Thm VI Vn Wdt Wvd WS Yng.

Similar names.  Vick's Extra Early.

Vick's Extra Early.  CE Del GH Hop Rec Shm Tem.

Similar names.  See Vick's Early.

Vine Peach.  MWJ.  For similar names see Melon Peach.

Volga.  Bkt Bgg Bdg CE Crs Ger Hrs J&M Loh MV Mzy Rec Rob Swi Vn Wd.

White Dixie.  M&S.  For similar names see Dixie.


Similar names.  See Kohl's Gem.

White Lodii.  Pac T&B.  For similar names see Lodii.

White Queen.  Evr.  For similar names see Cuban Queen.

Will's Sugar.  Wll.  For similar names see McIver's Sugar.

Wonderful.  Drr JMM.  For similar names see McIver's Sugar.

Seedsmen's synonyms.  McIver's Sugar, Drr.

Wonderful Japanese Pie Citron.  Air.  For similar names see Citron.

Wonderful Sugar.  Buc CE GN Man Mls Odl Pac Rob Rec Sal Spf Tat Tem Thr.

Similar names.  See McIver's Sugar.

Seedsmen's synonyms.  McIver's Sugar, Rob S&H.
INJURIOUS EFFECTS
OF
PREMATURE POLLINATION;
WITH
GENERAL NOTES ON ARTIFICIAL POLLINATION AND
THE SETTING OF FRUIT WITHOUT
POLLINATION.

BY
CHARLES P. HARTLEY,
Assistant in Physiology. Plant-Breeding Laboratory.

VEGETABLE PATHOLOGICAL AND PHYSIOLOGICAL
INVESTIGATIONS.

Issued October 4, 1902.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,

Sir: I have the honor to transmit herewith a paper on the Injurious Effects of Premature Pollination, with General Notes on Artificial Pollination and the Setting of Fruit without Pollination, and respectfully recommend that it be published as No. 22 of the Bureau series of bulletins. The paper was prepared by Mr. Charles P. Hartley, assistant in physiology in the Plant-Breeding Laboratory, Vegetable Pathological and Physiological Investigations, and was submitted by the Pathologist and Physiologist.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.
PREFACE.

The importance which plant breeding has assumed in the improvement of varieties of cultivated plants makes it desirable that careful attention be given to every detail involved in the production of hybrids. The accompanying paper, by Mr. Charles P. Hartley, assistant in physiology in the Plant-Breeding Laboratory, Vegetable Pathological and Physiological Investigations, is the result of a study of the effects of premature pollination in its relation to the setting of fruit. The investigation has demonstrated the decidedly injurious effect of premature pollination in several cases, and the fact is emphasized that in order to secure successful results in the production of hybrids and the setting of fruit, careful consideration must be given to the time when pollen should be applied to the stigma. It is believed that the results here presented will be of service to investigators and to workers in plant breeding.

ALBERT F. WOODS,
Pathologist and Physiologist.

Office of the Pathologist and Physiologist,
Washington, D. C., May 21, 1902.
CONTENTS.

Introduction ........................................................................................................ 9
Experiments with tobacco blossoms ..................................................................... 10
   Microscopic study of tobacco pistils and ovaries ........................................ 16
   Table of tobacco experiments ....................................................................... 17
Experiments with blossoms of Datura tatula ...................................................... 19
Experiments with cotton blossoms .................................................................... 19
   Table of cotton experiments ....................................................................... 22
Experiments with orange blossoms ................................................................... 23
   Table of orange experiments ....................................................................... 25
Experiments with tomato blossoms ................................................................... 26
   Table of tomato experiments ...................................................................... 35
Conclusion .......................................................................................................... 36
Explanation of plates ........................................................................................ 41
ILLUSTRATIONS.

PLATES.

Plate I. Fig. 1.—Growing tobacco blossoms at time of emasculation. Fig. 2.—Same blossoms as in fig. 1, two days later. 42

II. Fig. 1.—Same blossoms as in Pl. I, fig. 1, eight days later. Figs. 2, 3, 4, 5.—Photomicrographs of tobacco pollen tubes. 44

III. Tobacco blossoms and seed pods. 46

IV. Methods of emasculation; also a grape cluster showing difference in size between seedless and seeded berries. 48

TEXT FIGURE.

Fig. 1. Flowers of Sabbatia angularis: (a) Appearance while pollen is being shed; (b) Stigma and anthers avoiding each other; (c) Receptive stigma and deciduous anthers. 37
INJURIOUS EFFECTS OF PREMATURE POLLINATION;
WITH GENERAL NOTES ON ARTIFICIAL POLLINATION AND THE SETTING OF FRUIT WITHOUT POLLINATION.

INTRODUCTION.

It is quite generally taken for granted that if pollen is placed on the stigmas of flowers some time before they are receptive it will simply remain there until the stigmas become mature, and then germinate and fertilize the flowers. Darwin,\(^a\) in speaking of the various kinds of flowers with which he experimented in order to show the devitalizing effect of self-fertilization, says:

As the flowers which were crossed were never castrated, it is probable or even almost certain that I sometimes failed to cross-fertilize them effectually, and that they were afterwards spontaneously self-fertilized. This would have been most likely to occur with dichogamous species, for without much care it is not easy to perceive whether their stigmas are ready to be fertilized when the anthers open. But in all cases, as the flowers were protected from wind, rain, and the access of insects, any pollen placed by me on the stigmatic surface while it was immature would generally have remained there until the stigma was mature, and the flowers would then have been crossed as was intended.

Such would perhaps have been the case with some flowers, but the experiments herein described show that it is not true of all. On the contrary, they furnish proof for a statement to the effect that a premature pollination is destructive to the flowers of some plants, preventing them from forming seeds. The experiments and microscopic examinations show that with tobacco at least premature pollination not only results in a failure of the flower to set seeds, but that the growth of the pollen tubes into ovaries before the ovules are mature enough for fertilization results in an injury which causes the flowers to immediately fall.

The facts that tobacco flowers fall in about thirty-six hours after pollen is applied to the immature pistils, whether the flowers be previously emasculated or not, and that they do not fall if emasculated and not pollinated, nor if pollinated with other pollen than tobacco

---

\(^a\)Cross and Self-Fertilization in the Vegetable Kingdom, p. 23.
pollen, and further, that pollen tubes are found penetrating the styles and ovaries of the fallen flowers, give good reasons for the statement that the application of pollen to the pistils of some flowers before the pistils are mature enough to receive the pollen produces an injury which results in the death of the flowers.

In working with the different kinds of flowers herein mentioned, except \textit{Datura tatula}, the following method was employed: Ten similar flower buds were selected and treated in exactly the same manner and labeled by means of numbers, the ten flowers of each experiment bearing the same number. When the results were to show the effects of the different methods of treatment, the experiments were performed at the same time and on similar flowers equally distributed on the same plants. This made all conditions alike for the experiments to be compared, except the treatment of the blossoms.

At the end of the remarks regarding each kind of flower, a table is given describing all the experiments with that flower. In these tables, as elsewhere, the experiments are designated by the original numbers attached to the flowers when the work was begun.

\textbf{Experiments with Tobacco Blossoms.}

The conclusions in regard to the work with tobacco blossoms are drawn from the behavior of 670 hand-pollinated flowers of Cuban tobacco (\textit{Nicotiana tabacum}). The different questions or phases of the work were tested by experiments consisting in every instance of 10 similar flowers, making in all 67 experiments. Quite often several of these numbered experiments were exact repetitions and as such their results compare favorably. By combining these like experiments we get results based upon work with larger numbers of flowers. Thirty-two of the 67 experiments, while throwing light on the questions here considered, were made primarily for the purpose of settling other questions and to test the longevity of tobacco pollen, and so will not be referred to in this article. This will explain why the experiments with tobacco blossoms given in Table I are not numbered consecutively.

It may be mentioned here that pollen that had been kept in tinfoil for three months, while still capable of producing germinative seeds, was not so destructive to immature pistils as was fresh pollen, perhaps because the old dry pollen germinated less readily on the young stigmas before the exudation of stigmatic fluid which indicates the receptive period. At one time it was thought that this explanation was corroborated by the fact that no seed pods resulted from pollen two months old when used on mature flowers in the field, while pollen three months old gave good results on similar flowers in the greenhouse. It was thought that perhaps the dry pollen germinated with greater ease in the moist greenhouse. Such may have been the case, but it is now thought that the hot summer weather affected the pollen.
used in the field, though only two months old, was exposed to, and perhaps injured by, the hot weather of July and August, while that used in the greenhouse experienced the cooler weather of April, May, and June. When fresh pollen was used the destructive effect of premature pollination was as pronounced on the flowers in open air as on those in the greenhouse. That a saturated atmosphere is sufficient to start the growth of tobacco pollen was shown by placing some on the under surface of a cover glass over a drop of water in the well of a microscopic slide. The next day pollen tubes were found growing from many of the grains.

The seeds resulting from these experiments were not all planted to test their germination, but seeds from several of the tobacco experiments were tested and the large plump ones (Pl. III, fig. 6), which, when crushed, showed that they contained oil, germinated well, while the smaller, light, chaffy ones failed to germinate. It was therefore thought unnecessary to test the germination of all the seed, and good ones were distinguished for the most part by their appearance.

When the first flowers were operated upon—i.e., those of experiments 1, 2, and 3—very little attention was paid to the age of the flowers chosen, other than to see that they had not yet opened. This is now known to account for the great variation in the number of pods obtained. (See Table I.) As the work proceeded, however, it was found that the age of the flower at the time of pollination was of the utmost importance in order to obtain results of value, and the time was recorded in hours in performing all experiments after the first six. Finding that the age of the flower operated upon was the most vital condition entering into the experiments, a very careful study of the growth of the flowers was made. A number of young flower buds of various ages were labeled with tags upon which were placed the date and size of the bud, and each day thereafter the size and condition of these buds and the resulting flowers and seed pods were written on the respective labels. This was repeated several times. The weather conditions were found to exert a marked effect on the rapidity of development, but it was noticed that the size and appearance of the corollas were good indications of the advancement of the inclosed anthers and stigmas, so that consequently the corollas were used in the experiments as a means of designating the age of the flower buds operated upon. The 35 experiments performed with tobacco to settle the destructive influence of premature pollination are outlined and their results given in Table I (p. 17). Tobacco being a self-fertilizing flower, the stigma is receptive at the time the anthers open, and the anthers usually begin to shed pollen when the flower begins to open.

Comparing the length of the corolla with the length of time before the corolla is fully open and the stigma receptive, we find the following conditions to exist when the plants are thrifty and the weather fairly favorable:
INJURIOUS EFFECTS OF PREMATURE POLLINATION.

Four days before the stigma is receptive the corolla does not extend beyond the calyx lobes, which are one-half inch long. The flower labeled c, in Pl. I, fig. 1, is in this stage of development and is the same as those which were chosen for experiments 22 and 35. (See Table I.) The growth of an unmoled bud of this age can be studied by comparing the small unmoled bud on the right in Pl. I, fig. 1, with resulting flower and seed pod in Pl. I, fig. 2, and Pl. II, fig. 1, respectively.

Three days before the stigma is receptive the corolla is one-fourth to one-half inch longer than the calyx (flowers d and 6, Pl. I, fig. 1). Flowers of this age were chosen for 10 of the experiments given in the table.

Two days before opening, the corolla is three-fourths to 1 inch longer than the calyx, as shown by flowers 1 and 2 in Pl. I, fig. 1. Flowers of this age, as well as younger ones, were found to be killed by pollination. (Compare figs. 1 and 2, Pl. I.)

One day before opening, the corolla is 1½ to 1¾ inches longer than the calyx, the terminal one-fourth inch being of a red color. Flowers 3, 4, 5, and a, Pl. I, fig. 1, are of this age and can be pollinated with fair success (experiments 4, 6, etc.), but the results will be much better if the work is done twelve hours later (as in experiments 16 and 36), or if the flowers are emasculated at this age, or younger, and pollinated when the pistils become receptive (experiment 7 or 20).

The next day the corolla and anthers open at the same time and the receptive pistil is of proper length and maturity to receive the pollen directly from the opening anthers. One month after pollination the seed pod is ripe.

Having obtained this data in regard to the manner of growth, the flowers were designated in the notes made at the time the experiments were performed as "three days before pistils would have been receptive," "one day before pistils would have been receptive," etc.

By the time the results of the first 10 experiments were obtained it was definitely known that an abundance of fresh pollen applied to tobacco flowers two or three days before the pistils become receptive results in the falling of the flowers without setting fruit, while flowers operated upon one day before becoming fully open and receptive give fair percentages of fruits, as shown by experiments such as Nos. 7 or 8. But it was necessary to find out why the former failed while the latter gave fair percentages. It might be supposed that the younger flowers were more injured by emasculation, but several experiments soon proved that this is not the case. In experiment 20 the flowers were emasculated three days before becoming receptive and pollinated when receptive, resulting in 100 per cent of fruits, while in experiment 21 they were emasculated and pollinated three days before becoming receptive, resulting in no fruit whatever. The only difference in experiments 20 and 21 is in the time of pollination. Other
experiments, for example Nos. 18 and 19, which are described in Table I (p. 17), prove that the falling of the young flowers is not in any way caused by the early emasculation, while in experiments 35, 38, and 40 they fell soon after being prematurely pollinated, although they had not been emasculated.

A study of figs. 1 and 2, Pl. 1, will also show that the falling of the flowers is not associated with the emasculation. For fig. 1 the photograph was taken immediately after emasculating and pollinating the flowers, and for fig. 2 the photograph was taken forty-eight hours later. The lettered flowers on the right-hand stem of the plant were simply emasculated at the same time the numbered flowers on the left-hand stem were emasculated and pollinated. The prematurely pollinated flowers, 1, 2, and 6, shown in these illustrations, had all fallen within forty or less hours of the time they were pollinated, while those of the same age, a, c, and d, that were emasculated and not pollinated, continued to grow. These flowers were found fallen at 9 o'clock in the morning, the exact time of their falling not being known; but three other tests made at different times showed that in good growing weather such prematurely pollinated blossoms fall in about thirty or thirty-six hours after being pollinated. Flowers 3, 4, and 5 were treated exactly as were flowers 1, 2, and 6, but set seed instead of falling, because they were almost mature when pollinated. Fig. 1, Pl. II, is from a photograph of the same plant as shown in Pl. I, taken eight days later than fig. 1, and shows the seed pods which grew from flowers 3, 4, and 5, while the lettered ones that were emasculated but not pollinated are just fallen, making a difference of six days between the falling of those prematurely pollinated and those not pollinated.

There was always a great difference noticeable in the manner of falling of the prematurely pollinated blossoms and those that fell from other causes, such as non-pollination. When the fall was the effect of premature pollination, the separation of the flower from the plant was rapid and complete and not accompanied by any previous wilting of the flower, but invariably occurred at a joint situated at the base of the peduncle shown at a, Pl. III, fig. 3. Flowers 1 and 2, Pl. III, fell within some time less than thirty-nine hours after being pollinated, while flowers 3 and 4, which were emasculated at 12 m., February 27, and not pollinated, had not yet fallen at 9 a. m., March 5, when they were cut and photographed.

While comparing blossoms that had been emasculated and prematurely pollinated with similar ones that had been emasculated and bagged but not pollinated, the persistence with which the pistils retained their fresh receptive appearance was very noticeable and led to a few slight tests of the length of time the pistils could remain receptive and still result in the production of seed when pollinated. By referring to experiment 18 in Table 1, it will be noticed that the 10 flowers emasculated June 7 and found receptive June 9 were not
pollinated till June 14, at which time the corollas of the flowers were dead or badly withered, while the pistils were still fresh and receptive. On June 20 five pods were found growing, but they did not appear as thrifty as those of experiment 16 in which the pistils were pollinated at the proper time. In experiment 9 the pistils became receptive May 13, but were not pollinated until the next day, when pollen that had been left in the laboratory for three days was applied. The stigmas at the time of pollination were covered with a large drop of stigmatic fluid, in which the pollen seemed to dissolve and disappear from view. The experiment resulted in the setting of but three pods. It is thought that the reason for so poor a percentage of seed pods is the placing of the dry pollen in so large a drop of stigmatic fluid, perhaps causing the pollen grains to swell and burst; but this is only conjecture, for no attempt was made to ascertain the true behavior of the pollen grains.

In experiment 37 the pollen was placed on about one-fourth the entire surface of receptive stigmas and on only one side of the small suture that divides the stigma into equal parts. While the pods were still green four or five showed a marked one-sidedness, but when they had ripened and were cut for examination they all seemed as symmetrical as the general crop of pods. On cutting them, however, the good plump seeds were almost altogether in one-half of the ovary, the other half containing light, chaffy, undeveloped seeds.

It being fully determined that pollen applied to the entire stigmatic surface of premature pistils results in the falling of the flowers, some tests were made to determine the effects of smaller quantities of pollen. In experiment 41 fresh pollen was applied to one-fourth of the stigmatic surfaces of pistils that would have been receptive in three days, and the flowers were bagged without emasculation. Four days later but one flower had fallen, while it is safe to say that had the stigmas been entirely covered with pollen 90 per cent would have fallen. They were naturally self-pollinated and set pods. No explanation is known why an occasional prematurely pollinated flower failed to fall (experiments 39 and 40) unless it be that accidentally a portion of the stigmatic surface escaped pollination and the flowers continued to grow because there was still a chance for them to set some seeds. Experiments 44 and 46 (see table) were treated as was experiment 41, except that the flowers were emasculated. But two pods set in experiment 44 and four in experiment 46; the other flowers withered and fell, not because a small quantity of pollen was applied prematurely, but because of a lack of pollination after becoming receptive. In experiment 37 the pollen was placed on only one side of the medial suture and seeds were found mostly in one-half of the pods, while in experiments 44 and 46 it was placed across the stigma in a line at right angles to the suture, and the well-developed seeds were found scattered among the undeveloped ones in both halves of the seed pod. From the partition which divides the ovary (Pl. III, fig. 7) a sharp line can be traced up
both sides of the pistil and be seen to terminate in the suture just mentioned. That there is a close relation between the pollination of one-half of the stigma and the setting of seeds in the corresponding half of the ovary is certain, but no attempt was made to ascertain whether pollen grains placed on one-half of the stigma are ever able to fertilize ovules in the opposite half of the ovary. The fact that pollen tubes all descend in the delicate conductive tissue occupying the center of the pistil might indicate that the tubes are free to grow to any portion of the ovary, but stained sections show that they grow parallel with one another and seem to follow the long, thin-walled cells of the conductive tissue (Pl. II, fig. 3). In the ovary the tubes make many short turns in various directions (Pl. II, fig. 5).

While flowers two days before opening fall as completely as any, when their stigmas are entirely covered with pollen, they nevertheless recover from a slight premature pollination better than younger flowers. This can be noticed by contrasting experiments 44 and 46 with experiment 47.

As will be noticed in the tables, several substances were substituted for pollen. This was done in an effort to find if other substances could injure the stigmas and cause the flowers to fall as in the case of premature pollination. Nothing besides pollen was found to have this effect. Its damage goes deeper than the stigma.

As a mere irritation of the stigma is thought to have a tendency to cause some flowers to set fruit, it may not be amiss to view these experiments with this in mind. Of 60 emasculated flowers that had their stigmas covered with substances other than pollen, 14 set fruits, while of the 20 that were emasculated but never pollinated 2 set fruits. As a general thing the capsules resulting from the flowers that were not pollinated, and likewise those resulting from flowers whose stigmas were covered with some substance other than pollen, contained only small compressed undeveloped seeds, but the two pods obtained in experiment 52 by treating the fully receptive stigmas with magnesium sulphate contained some spherical seeds of almost full size which looked like good seeds, but when cut into proved to be hollow spheres.

By combining like experiments in which flowers of various ages were plentifully pollinated with fresh pollen, we get the following percentages of seed pods, of which it can be said that none resulting from the pollination of flowers earlier than one day before opening contained germinative seeds:

| From 20 flowers pollinated four days before opening, 1 seed pod set. | 5 |
| From 40 flowers pollinated three days before opening, 2 seed pods set. | 5 |
| From 20 flowers pollinated two days before opening, 0 seed pods set. | 0 |
| From 40 flowers pollinated one day before opening, 31 seed pods set. | 77 |
| From 20 flowers pollinated one-half day before opening, 19 seed pods set. | 95 |
| From 20 flowers pollinated when fully receptive, 19 seed pods set... | 95 |
Dividing these into two groups, namely, those pollinated more than one day before opening and those pollinated one day or less than one day before opening, they show that the former set 4 per cent of seed pods which contained no germinative seeds, while the latter set 86 per cent of seed pods which contained germinative seeds.

**MICROSCOPIC STUDY OF TOBACCO PISTILS AND OVARIES.**

Soon after becoming detached from the plant some of the prematurely pollinated blossoms were carried to the laboratory and the stigmas and pistils examined. That the pollen grains had germinated and penetrated the stigma could be seen, but the growth of the pollen tubes down the style could not be followed in the fresh material. This led to the premature pollinating of one series of blossoms and the mature pollinating of another series for microscopic study. The flowers of both these series were emasculated and kept bagged so that no pollen reached their stigmas except that purposely placed there. By this means the rapidity of growth of the pollen tubes was to some extent determined. At various intervals some flowers of each series, as well as some of various ages that had never received pollen, were cut and killed in Flemming’s chromic-aceto-osmic acid solution and carried through alcohols and imbedded, sectioned, mounted, and stained with the safranin-gentian-violet triple stain. By this means the pollen tubes could be found penetrating the stigmas (Pl. II, fig. 2), in the styles (fig. 3), entering the ovary and dispersing among the ovules of the prematurely pollinated flowers (figs. 4 and 5).

Flowers collected twenty-two hours after being prematurely pollinated showed pollen tubes on and penetrating the stigma and some a short distance into the style but none in the ovaries, while in ovaries of flowers that had fallen because of being prematurely pollinated pollen tubes were abundant. Figs. 4 and 5 show pollen tubes in the ovaries of such flowers. In the sections that have been photographed pollen tubes are more abundant than they appear in the photomicrographs, but do not show because they are not in the same focusing plane.

Although the ovaries of the prematurely pollinated flowers contain many pollen tubes, none has been found entering the micropyle of an ovule, and in just what way the flower is destroyed has not been determined; but the kindness of Dr. Webber in examining the sections enables the writer to state definitely that the ovules, though encompassed with pollen tubes, are much too immature for fertilization, the embryo sacks being in the one and the two celled stages. The study of an abnormal condition of this kind may help to explain the attractive force which enables pollen tubes to find and enter ovules at the proper time.
TABLE 1.—Experiments with tobacco blossoms.

[Each experiment performed upon 10 similar flower buds.]

<table>
<thead>
<tr>
<th>No.</th>
<th>Days</th>
<th>Experiment No. of Days</th>
<th>When emasculated</th>
<th>When pollinated</th>
<th>Remarks regarding pollen and pollination</th>
<th>When examined, with remarks on condition</th>
<th>Number of fruits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-3</td>
<td>Apr. 26</td>
<td>Apr. 26</td>
<td></td>
<td>Fresh pollen applied abundantly</td>
<td>May 10 and May 21; pods were ripe May 21.</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>2</td>
<td>1-3</td>
<td>Apr. 26</td>
<td>Apr. 26</td>
<td></td>
<td>do</td>
<td>May 10; pod was ripe May 21</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>3</td>
<td>1-3</td>
<td>Apr. 30</td>
<td>Apr. 30</td>
<td></td>
<td>do</td>
<td>May 10; May 21, large and green June 8, ripe.</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>4</td>
<td>May 1</td>
<td>May 11</td>
<td>May 11</td>
<td></td>
<td>Only a few grains of fresh pollen applied to each pistil.</td>
<td>May 21; June 8; pods were ripe</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>5</td>
<td>May 1</td>
<td>May 11</td>
<td>May 11</td>
<td></td>
<td>do</td>
<td>May 21; June 8, pods were ripe</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>3 p.m., May 11</td>
<td>11 a.m., May 12</td>
<td>May 12</td>
<td>Fresh pollen applied abundantly</td>
<td>May 21; pistils dead but not fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>10 a.m., May 12</td>
<td>10 a.m., May 12</td>
<td>May 12</td>
<td>Pollen 1 day old applied abundantly</td>
<td>May 21; pistils dead but not fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>11 a.m., May 12</td>
<td>11 a.m., May 14</td>
<td>May 14</td>
<td>Pollen 3 days old applied abundantly</td>
<td>May 21; pistils dead but not fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>1 p.m., May 12</td>
<td>4 p.m., May 12</td>
<td>May 12</td>
<td>Pollen 1 day old applied abundantly</td>
<td>May 21; all found fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>10 a.m., May 12</td>
<td>10 a.m., May 22</td>
<td>May 22</td>
<td>Pollen fresh applied abundantly</td>
<td>June 4; all found fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>2 p.m., June 1</td>
<td>2 p.m., June 1</td>
<td>June 1</td>
<td>do</td>
<td>June 14; 10 good growing pods</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>12 a.m., June 7</td>
<td>12 a.m., June 11</td>
<td>June 11</td>
<td>do</td>
<td>June 9; full size and receptive</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>13</td>
<td>2</td>
<td>10:30 a.m., June 7</td>
<td>2 p.m., June 1</td>
<td>June 1</td>
<td>do</td>
<td>June 26; 9 thrifty seed pods</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>14</td>
<td>3</td>
<td>3 p.m., June 9</td>
<td>11 a.m., June 12</td>
<td>June 12</td>
<td>do</td>
<td>June 26; 10 thrifty growing pods</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>1 p.m., June 9</td>
<td>1 p.m., June 9</td>
<td>June 9</td>
<td>do</td>
<td>June 12; 11 a.m., all 10 found fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>16</td>
<td>4</td>
<td>11 a.m., June 28</td>
<td>11 a.m., June 28</td>
<td>June 28</td>
<td>do</td>
<td>July 11, only 1 grew after pollination</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>17</td>
<td>4</td>
<td>11 a.m., Oct. 30</td>
<td>11 a.m., Oct. 30</td>
<td>Oct. 30</td>
<td>do</td>
<td>Nov. 1, 10 a.m., 4 had fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>19</td>
<td>2</td>
<td>2 p.m., Oct. 39</td>
<td>2 p.m., Oct. 39</td>
<td>Oct. 39</td>
<td>Pollen fresh applied abundantly</td>
<td>Nov. 14, 19 small pods, 4 were onedish</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>11 a.m., Oct. 30</td>
<td>11 a.m., Oct. 30</td>
<td>Oct. 30</td>
<td>Pollen fresh applied abundantly</td>
<td>Nov. 1, 10 a.m., all 10 found fallen</td>
<td>6</td>
<td>Flowers varied in age.</td>
</tr>
</tbody>
</table>

Remarks:

1. Quite young flowers used.
2. October flowers were pollinated.
3. Large drop of stigma fluid on stigma when pollinated.
4. Pods lack vigor.
5. Tenth one died before pollinated.
6. Were receptive when pollinated.
7. Fallen flowers fixed for study. (See PI. II, figs. 1 and 8.)
8. Very small pod, no seeds.
9. Seed but little after pollination.
10. Many good seeds. (See PI. III, figs. 6 and 7.)
11. A few good seeds.
12. Compare with experiment 35.
Table I.—Experiments with tobacco blossoms—Continued.

<table>
<thead>
<tr>
<th>Experiments No.</th>
<th>Days</th>
<th>Experiment No.</th>
<th>When emasculated</th>
<th>When pollinated</th>
<th>Remarks regarding pollen and pollination</th>
<th>When examined, with remarks on condition</th>
<th>Number of fruits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>3</td>
<td>18</td>
<td>11 a.m., Jan. 5</td>
<td>11 a.m., Jan. 5</td>
<td>Fresh pollen applied abundantly</td>
<td>Jan. 19, 9 fallen; Jan. 29, 1 pod still growing, Jan. 16, 8 fallen; Jan. 29, 1 pod growing, Jan. 14, 1 fallen; Jan. 29, 8 growing, Jan. 29, 8 fallen; Feb. 9, 2 growing pods, Feb. 9, 9 a.m., none fallen, still receptive, Feb. 9, 5 fallen; Mar. 13, 4 ripe pods, Feb. 8, 8 still growing; Mar. 8, 8 ripe pods.</td>
<td>1 9 grew but little after pollination, 1 Pod small.</td>
<td>8 Self-pollinated Jan. 13.</td>
</tr>
<tr>
<td>40</td>
<td>3</td>
<td>Never</td>
<td>11.30 a.m., Jan. 5</td>
<td>11 a.m., Jan. 5</td>
<td>Fresh pollen applied to one-fourth surface of stigma</td>
<td>Jan. 19, 9 fallen; Jan. 29, 1 pod still growing, Jan. 16, 8 fallen; Jan. 29, 1 pod growing, Jan. 14, 1 fallen; Jan. 29, 8 growing, Jan. 29, 8 fallen; Feb. 9, 2 growing pods, Feb. 9, 9 a.m., none fallen, still receptive, Feb. 9, 5 fallen; Mar. 13, 4 ripe pods, Feb. 8, 8 still growing; Mar. 8, 8 ripe pods.</td>
<td>2 Pods contained a few good seeds.</td>
<td>3 Pods small, seeds poor. (See Pl. III, figs. 9 and 10.)</td>
</tr>
<tr>
<td>41</td>
<td>3</td>
<td>do</td>
<td>11 a.m., Jan. 10</td>
<td>11 a.m., Jan. 10</td>
<td>Fresh pollen applied to one-fourth surface of stigma</td>
<td>Jan. 19, 9 fallen; Jan. 29, 1 pod still growing, Jan. 16, 8 fallen; Jan. 29, 1 pod growing, Jan. 14, 1 fallen; Jan. 29, 8 growing, Jan. 29, 8 fallen; Feb. 9, 2 growing pods, Feb. 9, 9 a.m., none fallen, still receptive, Feb. 9, 5 fallen; Mar. 13, 4 ripe pods, Feb. 8, 8 still growing; Mar. 8, 8 ripe pods.</td>
<td>4 Pods contained a few good seeds.</td>
<td>8 Do.</td>
</tr>
<tr>
<td>44</td>
<td>3</td>
<td>2 p.m., Jan. 19</td>
<td>2 p.m., Jan. 19</td>
<td>2 p.m., Jan. 19</td>
<td>Corn flower substituted for pollen</td>
<td>Feb. 9, 9 still fresh; Feb. 28, 6 fallen</td>
<td>4 Pods photographed. (See Pl. I II, fig. 8.)</td>
<td>1 Pod small and seeds chaffy.</td>
</tr>
<tr>
<td>45</td>
<td>2</td>
<td>11.30 a.m., Jan. 29</td>
<td>11.30 a.m., Jan. 29</td>
<td>11.30 a.m., Jan. 29</td>
<td>Fresh pollen applied to one-fourth surface of stigma</td>
<td>Feb. 9, 9 still fresh and receptive Feb. 9, 9 still fresh and receptive Apr. 8, 1 ripe Feb. 28, 4 fallen; Apr. 8, 4 ripe pods, Apr. 8, 2 ripe pods, others withered. Apr. 8, 2 ripe pods (half size), others withered. Apr. 23, all found dead.</td>
<td>4 Pods small and seeds chaffy.</td>
<td>4 Pods small, seeds chaffy.</td>
</tr>
<tr>
<td>46</td>
<td>3</td>
<td>10 a.m., Jan. 31</td>
<td>10 a.m., Jan. 31</td>
<td>10 a.m., Jan. 31</td>
<td>Fresh pollen applied to one-fourth surface of stigma</td>
<td>Feb. 9, 9 still fresh and receptive Feb. 9, 9 still fresh and receptive Apr. 8, 1 ripe Feb. 28, 4 fallen; Apr. 8, 4 ripe pods, Apr. 8, 2 ripe pods, others withered. Apr. 8, 2 ripe pods (half size), others withered. Apr. 23, all found dead.</td>
<td>2 Pods one-half size, seeds chaffy.</td>
<td>4 Pods half size, seeds chaffy.</td>
</tr>
<tr>
<td>47</td>
<td>2</td>
<td>12 a.m., Jan. 31</td>
<td>12 a.m., Jan. 31</td>
<td>12 a.m., Jan. 31</td>
<td>do</td>
<td>Apr. 8, 2 ripe pods, others withered. Apr. 8, 2 ripe pods (half size), others withered. Apr. 23, all found dead.</td>
<td>2 Seeds spherical, but hollow.</td>
<td>2 Seeds spherical, but hollow.</td>
</tr>
<tr>
<td>48</td>
<td>2</td>
<td>11 a.m., Feb. 1</td>
<td>11 a.m., Feb. 4</td>
<td>11 a.m., Feb. 4</td>
<td>Air-slackened lime substituted for pollen</td>
<td>Feb. 9, 9 still fresh; Feb. 28, 6 fallen</td>
<td>4 Pods photographed. (See Pl. I II, fig. 8.)</td>
<td>1 Pod small and seeds chaffy.</td>
</tr>
<tr>
<td>49</td>
<td>2</td>
<td>10.30 a.m., Feb. 5</td>
<td>10.30 a.m., Feb. 5</td>
<td>10.30 a.m., Feb. 5</td>
<td>Air-slackened lime substituted for tobacco pollen</td>
<td>Feb. 9, 9 still fresh and receptive Feb. 9, 9 still fresh and receptive Apr. 8, 1 ripe Feb. 28, 4 fallen; Apr. 8, 4 ripe pods, Apr. 8, 2 ripe pods, others withered. Apr. 8, 2 ripe pods (half size), others withered. Apr. 23, all found dead.</td>
<td>4 Pods small and seeds chaffy.</td>
<td>4 Pods small and seeds chaffy.</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>9 a.m., Feb. 15</td>
<td>9 a.m., Feb. 15</td>
<td>9 a.m., Feb. 15</td>
<td>Corn flower substituted for pollen</td>
<td>Feb. 28, 4 fallen; Apr. 8, 4 ripe pods, Apr. 8, 2 ripe pods, others withered. Apr. 8, 2 ripe pods (half size), others withered. Apr. 23, all found dead.</td>
<td>2 Pods one-half size, seeds chaffy.</td>
<td>2 Seeds spherical, but hollow.</td>
</tr>
<tr>
<td>51</td>
<td>3</td>
<td>Mar. 12</td>
<td>Never</td>
<td>Never</td>
<td>Emasculated and bagged, but never pollinated.</td>
<td>Apr. 23, all found dead.</td>
<td>0 Ovaries did not enlarge.</td>
<td>0 Do.</td>
</tr>
<tr>
<td>52</td>
<td>1</td>
<td>do</td>
<td>Mar. 12</td>
<td>Mar. 12</td>
<td>Magnesium sulphate substituted for pollen</td>
<td>Apr. 23, all found dead.</td>
<td>0 Ovaries did not enlarge.</td>
<td>0 Do.</td>
</tr>
<tr>
<td>53</td>
<td>1</td>
<td>11.30 p.m., Apr. 8</td>
<td>Never</td>
<td>Never</td>
<td>Magnesium sulphate substituted for pollen</td>
<td>Apr. 23, all found dead.</td>
<td>0 Ovaries did not enlarge.</td>
<td>0 Do.</td>
</tr>
<tr>
<td>54</td>
<td>1</td>
<td>9 a.m., Apr. 25</td>
<td>9 a.m., Apr. 26</td>
<td>9 a.m., Apr. 26</td>
<td>Magnesium sulphate substituted for pollen</td>
<td>Apr. 23, all found dead.</td>
<td>0 Ovaries did not enlarge.</td>
<td>0 Do.</td>
</tr>
</tbody>
</table>

*Experiments 42 and 43 were not recorded until the day after the work was performed; so results are not considered reliable.*
EXPERIMENTS WITH BLOSSOMS OF DATURA TATULA.

The destructive effect of a premature pollination having been found to be so pronounced in the case of tobacco flowers suggested a trial of its effect on a related plant. Some young jimson weeds (Datula tatula) were placed in pots and kept in a greenhouse, where they soon came into flower, but unfortunately did not bloom profusely enough to furnish similar flowers in sufficient quantity to admit of experiments such as were performed with tobacco flowers. The following method was therefore adopted: From day to day these plants were examined and flowers in various stages of advancement were operated upon and the records made on labels attached to the plants at the petiole of each flower. As the seed pods resulting from the labeled flowers ripened or dried up they were cut and a record made of the size of the capsule, the number and condition of the seeds, etc. On the completion of the work an examination and classification of these labels showed results similar to those obtained in the case of tobacco flowers, with the one exception that the capsules of the prematurely pollinated flowers did not fall loose from the plants, but hung on for several weeks, although the ovaries did not grow any after pollination and contained no seeds. Pods resulting from flowers to whose stigmas pollen had been applied at the proper time were of normal size—1½ inches in diameter—and full of good, plump seeds; while pods from prematurely pollinated flowers were scarcely larger than they were when the flowers were pollinated, usually one-eighth to one-fourth of an inch in diameter, and contained no seeds. The only instances in which good seeds were found in pods from prematurely pollinated flowers were those in which the stigmas had been pollinated when exceedingly young and the flowers not emasculated. In some cases of this kind, and the same is true of tobacco flowers, the very young stigmas overcame the results of the early pollination and the flowers were later self-pollinated and produced seed. Indeed, the work with Datura blossoms indicates fully as strongly as does that with tobacco flowers that there may be a stage a certain time before maturity when the flowers suffer more from premature pollination than they would suffer from an earlier pollination. It may be necessary for the pistils or stigmas to reach a certain stage of development before pollen tubes can penetrate them.

EXPERIMENTS WITH COTTON BLOSSOMS.

While hand pollinations were being made in order to obtain hybrids between Sea Island and upland cottons, the question arose as to whether the pollen could be applied at the time of emasculation with as good results as if applied to perfectly mature pistils. If such could be done much labor would be saved. Accordingly the work was arranged
in experiments of 10 flowers each in order to compare the results of the two methods. The pollinating was done on Sea Island cotton with pollen of the Mit Aifii variety. With the exception of experiments 5 and 6 the cotton experiments were with flower buds that would have opened naturally the day after they were emasculated. Such a bud is shown by PI. IV, fig. 13. Figs. 14 and 15 show how emasculation was performed. Experiments 5 and 6 were with very young buds that would have opened in four or five days. The flowers of experiment 5 were pollinated when emasculated and those of experiment 6 two days later. No fruits set in either experiment. The flowers of experiment 1 were pollinated when emasculated, one day before the flowers would naturally have opened, and produced but one small boll; while the flowers of experiment 2, as near like the others as could be chosen on the same plants and emasculated at the same time, were not pollinated until the next day, and produced seven good bolls. In order to obtain Mit Aifii pollen that was pure and that had not been mixed with other kinds of pollen by the visits of insects, the flowers were collected before opening, and in each case just one day before the pollen was applied to the flowers. Experiment 3 was an exact repetition of experiment 1 and produced no bolls; while experiment 4, an exact repetition of experiment 2, produced ten good bolls. These results are decidedly in favor of waiting until the pistils are fully mature before applying the pollen, but work similar to the above, performed in 1901 on two different varieties of upland cotton, has given results so different from those obtained with Sea Island cotton that further study of the cotton flower is necessary before its reaction to premature pollination is understood. Although differing from the results obtained with Sea Island, the work with upland varieties still speaks in favor of waiting until the pistils are mature before applying the pollen, not so much, however, in order to obtain a greater percentage of bolls as to obtain bolls of larger size and more symmetrical shape, many bolls from the prematurely pollinated blossoms being small and one-sided.

The work with the upland varieties was conducted in the same manner as that with the Sea Island, pollen of Sea Island being used in experiments 7, 8, and 9. The flowers of experiment 7 on the Braddy variety were pollinated when receptive and produced 10 good bolls. Those of experiment 8 were pollinated when emasculated and again the next day, and produced 5 bolls, 3 of which were larger on one side than on the other and hardly as large as the bolls of experiment 7. The flowers of experiment 9 were pollinated when emasculated and produced 9 small bolls, 4 of which were decidedly larger on one side than on the other.

Experiments 10, 11, and 12 were upon the King variety of upland cotton, and pollen of the same variety was used. The flowers of
EXPERIMENTS WITH COTTON BLOSSOMS.

Experiments 10 were pollinated when receptive and produced 6 good bolls. Those of experiment 11 were pollinated when emasculated and again the next day and produced 10 small bolls, 5 of which were decidedly one-sided. The flowers of experiment 12 were pollinated when emasculated and produced 7 rather good bolls.

In making the second pollination of experiment 8 it was noticed that the pistils of the flowers in experiment 7 which had not been prematurely pollinated were longer than those of experiment 8, but they were not measured because it was then too late to determine whether they had been precisely of the same length when emasculated. To determine whether premature pollination checks the growth of young pistils, the pistils of experiments 10 and 11 were accurately measured at the time of emasculation. 8 of each experiment being each five-eighths of an inch and 2 three-fourths of an inch in length, so that the aggregate length of the pistils was 6\(\frac{1}{2}\) inches. The flowers of experiment 11 were pollinated twenty-one hours before they were fully open and again twenty-one hours later, when the pistils were again carefully measured and found to give an aggregate length of 8\(\frac{1}{2}\) inches, an increase of 1\(\frac{1}{2}\) inches since emasculation, during which time the pistils of experiment 10, which were not prematurely pollinated, had made an aggregate increase of 2\(\frac{1}{2}\) inches. This is to say that the application of pollen to 10 immature pistils reduced their growth during twenty-one hours by five-eighths of an inch.

The conclusion to be drawn from the cotton experiments is in favor of making an extra visit to the emasculated flowers to apply the pollen rather than to apply it when the flowers are emasculated. This is not only because larger percentages of fruits will result, but more especially because better fruits are obtained.

It is the opinion of the writer that the variation in the results obtained with Sea Island and upland cotton flowers similarly treated is largely due to the fact that the pistils were closely approaching a receptive condition. Of course this would cause no variation in the results, providing the size of the flowers and length of time before opening indicate the same stage in the development of the ovules of both kinds of cotton, but this may not be the case. The one-sidedness of many of the bolls resulting from early pollination indicates that only a portion of the ovules were mature enough for fertilization. Perhaps pollination a few hours earlier would have resulted in the falling of all the flowers. Tobacco flowers pollinated one day before opening give fair results, while those pollinated two days before opening are killed. It is thought that the same will be found true of cotton flowers, as indicated by the results of experiments 5 and 6, but more work with cotton blossoms is necessary before their behavior will be well understood.
**Table II. Experiments with cotton blossoms.**

<table>
<thead>
<tr>
<th>Number of days</th>
<th>Variety of cotton and kind of pollen used</th>
<th>When pollinated</th>
<th>When emasculated</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sea Island, dried pollen, 1 day old</td>
<td>4 p.m., Sept. 12</td>
<td>4 p.m., Sept. 12</td>
<td>8 hours</td>
</tr>
<tr>
<td>2</td>
<td>Sea Island, fresh pollen, 1 day old</td>
<td>11 a.m., Sept. 13</td>
<td>11 a.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>3</td>
<td>Sea Island, dried pollen, 2 day old</td>
<td>1:30 p.m., Sept. 13</td>
<td>1:30 p.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>4</td>
<td>Sea Island, fresh pollen, 2 day old</td>
<td>2 p.m., Sept. 13</td>
<td>2 p.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>5</td>
<td>Sea Island, dried pollen, 3 day old</td>
<td>2:30 p.m., Sept. 13</td>
<td>2:30 p.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>6</td>
<td>Sea Island, fresh pollen, 3 day old</td>
<td>3 p.m., Sept. 13</td>
<td>3 p.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>7</td>
<td>Sea Island, dried pollen, 4 day old</td>
<td>3:30 m., Sept. 13</td>
<td>3:30 p.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>8</td>
<td>Sea Island, fresh pollen, 4 day old</td>
<td>4 p.m., Sept. 13</td>
<td>4 p.m., Sept. 13</td>
<td>8 hours</td>
</tr>
<tr>
<td>9</td>
<td>Sea Island, dried pollen, 5 day old</td>
<td>10 a.m., Sept. 14</td>
<td>10 a.m., Sept. 14</td>
<td>8 hours</td>
</tr>
<tr>
<td>10</td>
<td>Sea Island, fresh pollen, 5 day old</td>
<td>11 a.m., Sept. 14</td>
<td>11 a.m., Sept. 14</td>
<td>8 hours</td>
</tr>
<tr>
<td>11</td>
<td>Sea Island, dried pollen, 6 day old</td>
<td>10 a.m., Sept. 15</td>
<td>10 a.m., Sept. 15</td>
<td>8 hours</td>
</tr>
<tr>
<td>12</td>
<td>Sea Island, fresh pollen, 6 day old</td>
<td>11 a.m., Sept. 15</td>
<td>11 a.m., Sept. 15</td>
<td>8 hours</td>
</tr>
</tbody>
</table>

**Remarks:**

- 1: all flowers except 1 small ball.
- 7: all flowers except 1 small ball.
- 11: 7 flowers growing; 2 started but afterwards fell.
- 13: 1 flowered and fell.
- 16: 1 flowered and fell.
- 19: 1 flowered and fell.
- 22: 1 flowered and fell.
- 25: 1 flowered and fell.
- 28: 1 flowered and fell.
- 31: 1 flowered and fell.
- 34: 1 flowered and fell.
- 37: 1 flowered and fell.
- 40: 1 flowered and fell.
- 43: 1 flowered and fell.
- 46: 1 flowered and fell.
- 49: 1 flowered and fell.
- 52: 1 flowered and fell.
- 55: 1 flowered and fell.
- 58: 1 flowered and fell.
- 61: 1 flowered and fell.
- 64: 1 flowered and fell.
- 67: 1 flowered and fell.
- 70: 1 flowered and fell.
- 73: 1 flowered and fell.
- 76: 1 flowered and fell.
- 79: 1 flowered and fell.
- 82: 1 flowered and fell.
- 85: 1 flowered and fell.
- 88: 1 flowered and fell.
- 91: 1 flowered and fell.
- 94: 1 flowered and fell.
- 97: 1 flowered and fell.
- 100: 1 flowered and fell.
- 103: 1 flowered and fell.
- 106: 1 flowered and fell.
- 109: 1 flowered and fell.
- 112: 1 flowered and fell.
- 115: 1 flowered and fell.
- 118: 1 flowered and fell.
- 121: 1 flowered and fell.
- 124: 1 flowered and fell.
- 127: 1 flowered and fell.
- 130: 1 flowered and fell.
- 133: 1 flowered and fell.
- 136: 1 flowered and fell.
- 139: 1 flowered and fell.
- 142: 1 flowered and fell.
- 145: 1 flowered and fell.
- 148: 1 flowered and fell.
- 151: 1 flowered and fell.
- 154: 1 flowered and fell.
- 157: 1 flowered and fell.
- 160: 1 flowered and fell.
- 163: 1 flowered and fell.
- 166: 1 flowered and fell.
- 169: 1 flowered and fell.
- 172: 1 flowered and fell.
- 175: 1 flowered and fell.
- 178: 1 flowered and fell.
- 181: 1 flowered and fell.
- 184: 1 flowered and fell.
- 187: 1 flowered and fell.
- 190: 1 flowered and fell.
- 193: 1 flowered and fell.
- 196: 1 flowered and fell.
- 199: 1 flowered and fell.

**Injuries Effects of Premature Pollination.**
EXPERIMENTS WITH ORANGE BLOSSOMS.

Only 15 experiments of 10 flowers each were performed with orange blossoms and the results were rendered somewhat unsatisfactory for two reasons: (1) The trees blossomed profusely, but set only a small quantity of fruit. Although no actual calculation was made, it was evident when the trees were examined, September 27, that had the total number of blossoms put forth in the spring produced as good a percentage of fruits as those experimented with, the trees would have yielded a much heavier crop. (2) Some portions of the trees produced a greater percentage of fruits than other portions. This was especially true of the older limbs, while the younger wood in the tops of the trees produced almost no fruit. Luckily, the records made when the experiments were begun designated the portions of the trees which the blossoms of each experiment occupied, thus explaining some apparent contradictions in the results. For example, experiment 9 (see Table III) should have given results similar to those of experiment 8, but unfortunately the blossoms of experiment 9 were located in a nonproductive portion of the tree and on the same limb as those of experiment 6, which resulted in no fruits, although it should have produced results similar to those of experiment 7 had its blossoms been located in as productive a portion of the tree.

This work was undertaken for the purpose of determining the effect of pollinating orange blossoms before the pistils became receptive. But an examination of blossom buds of different ages showed that the stigmas were receptive (if the presence of stigmatic fluid is a sure indication of receptiveness) in buds that would not have been fully open for nine days. Such a bud is shown by Pl. IV, fig. 4, and an emasculated bud of the same age is shown by fig. 5. The stigmatic fluid can not be easily distinguished in the photograph, but when the emasculated bud is held in the hand a drop of light-colored fluid is seen in the center of the stigma. The fluid is viscid and pollen adheres readily and abundantly to the very young stigmas. While these young buds did not possess the conditions of nonreceptiveness, they were so young that it was thought better to test the effect of pollinating them at this age rather than work with younger buds. The detailed results of the experiments can be obtained from Table III, which follows. The first nine experiments were performed with flower buds nine days before they would have been open, like the one represented in Pl. IV, fig. 4, and the other six with flowers four days older, like the one shown in fig. 3. The records suggest that better success results from work with the buds last mentioned, but it was demonstrated that fruits containing good, well-developed seeds will result from flowers pollinated nine days before they would naturally have received pollen. This was demonstrated with flowers of both seedy and seedless varieties. That the pollen so prematurely applied fecundated the ovules is proved by
the fact that the resulting fruits of trees of seedless varieties contained good seed which germinated almost as well as seeds of fruits from the same tree the flowers of which were pollinated at the normal time. Indeed, the seeds resulting from these premature pollinations germinated to a greater per cent than seeds taken at random from fruits of a seedy orange.

One might expect the seedlings resulting from the pollination of such immature pistils to show feebleness, but such is not the case. They are now 6 inches tall and growing with as much vigor as any in the seed bed. They also show polyembryonic tendencies to as great a degree as the other seedlings, having from one to as many as four separate plants growing from a single seed.

Seven fruits resulting from prematurely pollinated flowers of a Melitensis navel were compared with six from the same tree which resulted from flowers emasculated nine days before opening and hand pollinated when the pistils were fully mature. The following are the averages:

<table>
<thead>
<tr>
<th>Number of fruits</th>
<th>Weight (grams)</th>
<th>Diameter (inches)</th>
<th>Number of seeds</th>
<th>Seeds that germinated (Per cent.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>183</td>
<td>2.91</td>
<td>5</td>
<td>73</td>
</tr>
<tr>
<td>6</td>
<td>242</td>
<td>3.10</td>
<td>8</td>
<td>87</td>
</tr>
</tbody>
</table>

The last four experiments were for the purpose of ascertaining whether seedy oranges are disposed to set fruit without pollination, as is customary with navel oranges. The 20 buds that were emasculated and bagged without pollination, as well as 20 that were emasculated and had their stigmas irritated by the application of magnesium sulphate, alike failed to set any fruits.
### Table III. — Experiments with orange blossoms.

*Each experiment performed upon 10 similar flower buds.*

<table>
<thead>
<tr>
<th>Experiment No.</th>
<th>Days</th>
<th>Flowers would have been fully open in—</th>
<th>When emasculated</th>
<th>When pollinated</th>
<th>Number pollenated, others having fallen before pollination</th>
<th>Remarks regarding pollen and pollination.</th>
<th>When examined, with remarks on condition</th>
<th>Number of ripe fruits.</th>
<th>Remarks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>10 a.m., Feb. 25, 11 a.m., Feb. 25</td>
<td>10 a.m., Feb. 25</td>
<td>10</td>
<td>St. Michael, a seedy orange, pollen from same tree.</td>
<td>May 21, 5 fruits were growing</td>
<td>2</td>
<td>Seeds germinated well.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>11:30 a.m., Feb. 25, 11:30 a.m., Feb. 25</td>
<td>3 p.m., Mar. 6</td>
<td>10</td>
<td>May 21, 4 fruits were growing</td>
<td>2</td>
<td>2</td>
<td>Do.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>10 a.m., Feb. 25, 3 p.m., Feb. 25</td>
<td>3 p.m., Feb. 25</td>
<td>10</td>
<td>May 24, 1 fruit was growing</td>
<td>1</td>
<td>1</td>
<td>Seeds germinated well.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>4 p.m., Feb. 25, 10 a.m., Feb. 25</td>
<td>10</td>
<td>10</td>
<td>Medicalia navel, St. Michael pollen</td>
<td>May 24, 4 fruits were growing</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>10 a.m., Feb. 26, 11 a.m., Feb. 26</td>
<td>11 a.m., Feb. 26</td>
<td>10</td>
<td>May 24, 2 fruits were growing</td>
<td>3</td>
<td>3</td>
<td>Limb bearing fruits died.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>11</td>
<td>4 p.m., Mar. 6</td>
<td>4 p.m., Mar. 6</td>
<td>9</td>
<td>May 25, 4 fruits were growing</td>
<td></td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>5</td>
<td>12:30 p.m., Feb. 26, 11 a.m., Mar. 6</td>
<td>2 p.m., Mar. 2</td>
<td>4</td>
<td>May 25, 1 fruit was growing</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>2 p.m., Mar. 2</td>
<td>2 p.m., Mar. 2</td>
<td>10</td>
<td>May 25, 5 fruits were growing</td>
<td></td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>3 p.m., Mar. 2</td>
<td>11 a.m., Mar. 7</td>
<td>10</td>
<td>May 25, 3 fruits were growing</td>
<td></td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>5</td>
<td>11 a.m., Mar. 9</td>
<td>11 a.m., Mar. 9</td>
<td>10</td>
<td>Magnesium sulphate substituted for pollen.</td>
<td>May 25, all 10 found fallen</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>12 a.m., Mar. 9</td>
<td>Never</td>
<td>10</td>
<td>Emasculated and bagged but never pollinated.</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>5</td>
<td>2 p.m., Mar. 9</td>
<td>2 p.m., Mar. 9</td>
<td>10</td>
<td>Magnesium sulphate substituted for pollen.</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>5</td>
<td>3 p.m., Mar. 9</td>
<td>Never</td>
<td>10</td>
<td>Emasculated and bagged but never pollinated.</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

---

a Experiments performed on tree of St. Michael, a seedy variety.
INJURIOUS EFFECTS OF PREMATURE POLLINATION.

EXPERIMENTS WITH TOMATO BLOSSOMS.

The work so far having been performed on flowers the pistils of which are naturally protected against a premature pollination, it was desired to try some flower the stigma of which is naturally exposed to pollination before it is receptive. It is to be supposed that flowers of the latter kind would not be killed by premature pollination as tobacco flowers are, for nature could not expose the young flowers to so imminent a danger of destruction without the plant becoming extinct or its manner of flowering changed by natural selection. The tomato blossom was found to present the conditions desired, for here the young stigma is exposed more or less for two or three days before it is receptive. (See Pl. IV, fig. 9.)

All of the work on tomato flowers was performed in the greenhouse, where there were grown eight different varieties. These vines grew very vigorously and were pruned and trained to vertical wires as the growth proceeded. Near the conclusion of the work the vines had reached a height of 8 or 9 feet and had such a mass of foliage that pruning was frequently necessary. The following notes of the 25 experiments performed with tomato blossoms are given in about the words written in the notebook as the work progressed. Some explanations and references to figures are inserted, and to avoid too many repetitions the wording has been changed in some places, and the description of the kind of blossom buds chosen is omitted except in experiments 1 and 5. Experiment 5 was performed on fully open flowers, as explained in the notes of that experiment. The kind of blossom buds chosen for all the other experiments is explained in the notes of experiment 1 and illustrated by Pl. IV, fig. 10. Fig. 11 of the same plate shows another of the same age which has been decapitated, and fig. 12 one of same age that has been emasculated. It will be noticed that decapitation prepares the flower for premature pollination just as well as emasculation, but this process of decapitation can not be used in hybridization work since there is danger of the flower becoming self-fertilized by the pollen remaining in the decapitated flower. The flowers were usually simply decapitated because decapitation was more quickly performed and perhaps of less injury to the flowers, although the experiments do not show any injurious effects from emasculation (decapitation employed in experiments 3 and 4, and emasculation in similar experiments 7 and 9). (See Table IV, p. 35.) However, in all experiments where it was necessary to remove all of the pollen the flowers were decapitated and then emasculated. In some cases one experiment is an exact repetition of another, while in other cases it is a repetition so far as practical results are concerned, but different in minor details, as, for example, in the variety of tomato from which the pollen was taken. In all these experiments, except experiment 5, the flowers and resulting fruits were kept covered with paper bags from the commencement of the work until the fruit was ripe.
**Experiment 1.**—March 1, 2 p. m. Ten young flowers of Lorillard variety were decapitated and pollinated at once with pollen from Atlantic Prize. Only young buds with a total length of one-half inch and with their sepal lobes still touching at their apexes were chosen. (Pl. IV, fig. 10, shows the size and appearance of the flower buds chosen for this and all following experiments except experiment 5.) The sepal lobes of these flowers were at this time one-eighth of an inch longer than the petals, stamens, and pistils, which were all of about equal length. In un molested flowers similar to these it was observed that from this age on the pistils grew more rapidly than the other parts, and usually protruded one-sixteenth to one-eighth of an inch beyond the mature stamens (Pl. IV, fig. 8).

March 19. A few of these flowers were to-day examined, and it was found that some had fallen from the plants, while others were ready to fall at a touch.

April 3. These 10 flowers were all found loose at the base of the stem, and the flowers black, dried, and shriveled.

Results of the experiment: No fruits set.

**Experiment 2.**—March 1, 2:30 p. m. This experiment is in every particular an exact repetition of experiment 1, and the 10 flowers examined March 19 and April 3 showed results exactly the same as those of experiment 1.

**Experiment 3.**—(Compare with experiment 4 and contrast with 1 and 2.) March 1, 3 p. m. These 10 flowers on the same plants as flowers of experiments 1 and 2 were decapitated and then bagged to be pollinated with Atlantic Prize pollen when the pistils have become mature, as shown by other blossoms of the same age to-day, labeled to determine the rapidity of growth of un molested flowers on these vines.

March 7. On this date the blossoms labeled to indicate the rapidity of growth showed reflex petals and receptive stigmas. An examination of the flowers of experiment 3 showed the decapitated sepal to be reflexed and the stigmas receptive as near as could be determined with a hand lens. These 10 flowers were accordingly pollinated with fresh pollen of Atlantic Prize.

April 3. These 10 flowers were to-day examined and 9 large green tomatoes found developing. One blossom had fallen without setting fruit, but 2 of the 9 large tomatoes were on this same stem, which might possibly be the cause of the falling of the other flower, as 2 tomatoes were enough for so small a stem to support. These fruits now range from 1 to 3 inches in diameter.

Results of the experiment: June 8. Nine large ripe tomatoes.

**Experiment 4.**—(Compare with experiment 3 and contrast with 1 and 2.) March 1, 4 p. m. This experiment is an exact repetition of experiment 3.

March 7. These 10 blossoms treated similarly to those of experiment 3.

April 3. Nine large green tomatoes found; 1 flower had fallen without setting fruit.

Results of the experiment: June 8. Nine large ripe tomatoes.

**Experiment 5.**—March 1. In order to ascertain the percentage of blossoms which would set fruit if pollinated in the manner usually employed in growing tomatoes under glass for commercial purposes, 10 fully opened blossoms were thus pollinated and labeled, but left unabaged. These 10 flowers were of the Lorillard variety and were pollinated in a hasty manner with pollen of Atlantic Prize by simply touching the protruding pistils with a watch glass into which pollen had been shaken from flowers of the latter variety.

April 3. These 10 flowers were examined and 8 large green tomatoes found developing, 1 flower having fallen without setting fruit, and another in the same fruit cluster was still attached and had a strong stem and large green calyx, but the ovary was exceedingly small and had not begun to develop. The last 2 mentioned are in the same fruit cluster with 2 of the 8 large green tomatoes, and this fact may be an explanation of their non development, since 2 large tomatoes are as many as so small a stem can well support.

Results of the experiment: Eight large well-formed tomatoes.
Experiment 6.—(Compare with experiments 1, 2, and 8 and contrast with 7.) March 11, 10 a.m. Ten flowers of the Lorillard variety were decapitated and the stamens entirely removed. The blossoms were then immediately pollinated with fresh pollen of Atlantic Prize.

April 3. Eight of these 10 flowers have fallen loose at the base of the stem, and the flowers are black and shriveled, while the other 2 are still attached by strong fleshy stems. The ovaries, though not enlarged, are plump and green, like tiny tomatoes.

June 10. Two small ripe tomatoes gathered and found to contain 8 seeds each.

Results of the experiment: Two small ripe tomatoes.

This experiment differs from experiments 1 and 2 only in that the flowers were emasculated rather than simply decapitated.

Experiment 7.—(Compare with experiments 3 and 4 and contrast with 6 and 8.) March 11, 11 a.m. Ten flowers of the same variety and in every particular similar to those of experiment 6 were decapitated and the stamens entirely removed and the flowers bagged to be pollinated when the pistils become receptive as indicated by other flowers of the same age to-day, labeled to show the rapidity of development.

March 16, 2 p.m. These 10 blossoms were pollinated with fresh pollen of Atlantic Prize.

April 3. The above 10 blossoms examined and 8 good green tomatoes found developing, 1 flower having fallen while the other was still attached by a strong fleshy stem, but the small green ovary was undevolved.

Results of the experiment: Eight good tomatoes.

Experiment 8.—(Compare with experiments 1, 2, and 6 and contrast with 3, 4, 7, and 9.) March 11, 12 m. Ten young blossom buds on Suttons Best of All were decapitated and the stamens entirely removed, and the stigmas covered immediately with fresh pollen of Atlantic Prize.

April 3. These 10 flowers examined and all found fallen loose at the base of the stem and black and shriveled.

Results of the experiment: No fruits.

Experiment 9.—(Contrast with experiment 8.) March 11, 12.30 p.m. Ten blossom buds of the same variety, and in all respects similar to those of experiment 8, were similarly treated in regard to emasculature and decapitation, but were bagged without pollination. These 10 flowers are to be pollinated with fresh pollen of Atlantic Prize when the pistils become receptive as indicated by other labeled blossoms of the same age.

March 16, 2.30 p.m. These 10 flowers were pollinated with fresh pollen of Atlantic Prize, the decapitated petal lobes being reflexed, showing that the flowers would have been fully opened had they been left unmoled.

April 3. Ten good large tomatoes found developing.

Results of the experiment: Ten large, well-formed tomatoes.

It will be seen by contrasting experiments 8 and 9 that they differ only in the time of the application of the pollen to the pistils. In experiment 8 the pollen was applied to the immature pistils, while in experiment 9 it was applied to mature pistils.

It being noticed that several of the varieties in the greenhouse were setting a few fruits, although there had been no opportunity for the blossoms to become pollinated, the question naturally arose as to whether tomatoes will set fruit if secluded from wind and insects, and experiments 10 and 11 were undertaken in order to throw some light on this point.

Experiment 10.—March 16, 3 p.m. This experiment consisted simply in bagging 10 young blossom buds on the variety Livingston's Beauty. The blossom buds were
unopened and in the same condition as those described in the preceding experiments. In bagging, two blossoms were placed in each bag.

May 9. An examination showed two small fruits, the other flowers having fallen without setting fruits.

Results of the experiment: Two small fruits.

As it was not known at this time that the tomato sometimes sets fruit without the flowers having received pollen, no further attention was given to these small fruits. As shown by later work, however, it is possible that these fruits set without receiving any pollen and, of course, if such was the case they were without seeds. No definite conclusions can be drawn from this experiment, since the two fruits may have set without their flowers having been pollinated at all, or by means of self-fertilization, or by one flower becoming pollinated with pollen from the other flower in the same bag.

*Experiment 11.*—This experiment was performed at the same time and is a repetition of experiment 10, except that it is on the variety Atlantic Prize. The experiment resulted in the falling of nine of the blossoms without setting fruit, while the tenth remained green, with a thick green stem and calyx, but failed to develop a fruit.

Results of the experiment: No fruits.

The results thus far having definitely shown that good results could not be obtained by the immediate pollination of the immature pistils, the question arose as to the cause of the failure—whether the pistils were injured by the premature application of pollen, or whether the pollen had lost its vitality before the pistils became mature. In order to test this point some further experiments were undertaken, beginning with experiment 12. If the pistils were uninjured by the application of pollen at the time the flowers were decapitated, it is evident that another pollination when the pistils became receptive would give as good results as in those experiments in which the flowers received but the one pollination—that at the time when the pistils were receptive.

*Experiment 12.*—(Compare with experiment 14 and contrast with 13.) March 19, 10 a. m. Ten flowers of Sutton's Best of All were decapitated and at once pollinated with fresh pollen of Lorillard. Other similar flower buds were labeled at the same time in order to show the time when the pistils became receptive.

March 27, 9 a. m. These 10 flowers were again pollinated with fresh pollen of Lorillard. The decapitated calyx lobes were reflexed and the pollen of the previous pollination could still be seen upon the stigmas.

April 3. An examination of several of these flowers showed that about half had fallen, while the others seemed to be setting fruit.

May 9. Seven fine fruits were found growing.

Results of the experiment: Seven good fruits.

This experiment indicates that the immature pistils were uninjured by the first pollination, and the failure to obtain fruits in the preceding experiments in which the pistils were prematurely pollinated must be accounted for in some other way, perhaps by the loss of vitality in the pollen.
Experiment 13.—(Compare with experiments 3, 4, and 7 and contrast with 6, 12, and 14.) March 19, 10:30 a. m. Ten flower buds on the same variety, and in all respects similar to those of experiment 12, were decapitated and bagged without pollination, to be pollinated with pollen of Lorillard when the stigmas become receptive.

March 27, 9:30 a. m. These 10 flowers were pollinated with fresh pollen of Lorillard. The stigmas appeared receptive when viewed through a hand lens and the pollen adhered readily to them.

April 3. An examination of a few of these flowers showed that some small tomatoes were forming, but their development was not sufficiently advanced to determine results.

May 9. Six good, large fruits were found growing.

Results of the experiment: Six good, large fruits.

Experiment 14.—(Compare with experiment 12 and contrast with 13.) March 19, 12 m. This experiment is a repetition of experiment 12, except that the pollen used was from different flowers of the same variety instead of from those of the Lorillard variety.

March 27, 11 a. m. The flowers were again pollinated with fresh pollen from different flowers of the the same variety. One of the 10 was found fallen and another, which was of a yellowish color, about ready to fall.

Results of the experiment: May 9, seven good fruits.

Experiment 15 was planned to be a repetition of experiments 7 and 9 and to contrast with experiment 14, in order to determine whether the flowers are injured by premature pollination. However, when these flowers were receptive and were being pollinated, it was discovered that some of them had become injured in some way after being emasculated, while others could not be found, thus making it necessary to give up experiment 15.

A comparison of experiment 14 with experiments 7 and 9 suggests that early pollination has no detrimental effect upon the pistils, but as experiments 7 and 9 were performed at a different time and pollen from a different variety was used, the conditions are not similar enough to warrant such a conclusion. In order to get more conclusive proof that premature pollination does not injure the young pistils and prevent them from performing their functions when they become mature, experiments 16 and 17 were performed.

Experiment 16.—(Compare with experiments 12 and 14 and contrast with 13.) April 3, 2 p. m. Ten young blossom buds of the Lorillard variety were decapitated and immediately pollinated with fresh pollen of Livingston Potato Leaf. When the pistils have become mature, as indicated by other flowers of the same age to-day, labeled to show the rapidity of development, these 10 flowers are to be again pollinated with fresh pollen of Livingston Potato Leaf.

April 11, 9 a. m. The 10 blossoms were again pollinated with fresh pollen of Livingston Potato Leaf. The flowers were fresh with decapitated calyx and corolla lobes reflexed and the pistils apparently receptive, although still bearing the pollen of the first pollination.

May 9. Nine good, large fruits were found developing.

Results of the experiment: Nine good, large fruits.

Experiment 17.—(Compare with experiments 7, 9, and 13 and contrast with 12, 14, and 16.) April 3, 3 p. m. Ten young flower buds on the same plants and in all
EXPERIMENTS WITH TOMATO BLOOMS.

respects similar to those of experiment 16 were decapitated and bagged without being pollinated, but are to be pollinated with fresh pollen of Livingston Potato Leaf when the pistils become mature.

April 11, 10 a. m. These 10 flowers were pollinated with fresh pollen of Livingston Potato Leaf. The flowers were fresh with decapitated calyx and corolla lobes reflexed and the pistils apparently receptive. No difference in appearance was noticed between these flowers and those of experiment 16.

May 9. Ten good, healthy green fruits found growing.

Results of the experiment: Ten good fruits.

On the same day, and of course before the results of experiments 16 and 17 were known, experiments 18 and 19 were commenced. It was thought likely that experiment 17 would give so much better results than experiment 16 that it would be necessary to explain in what way the first pollination in experiment 16 and similar experiments had injured the pistils. If the injury was due, as in the case of tobacco flowers, to the growth of pollen tubes down the immature pistils, substances other than pollen would not act in that way; while if the injury should prove to be due simply to the coating on the stigmas, some other substance might have the same injurious effect. Since quite a number of ripe tomatoes had been examined and found to contain no seeds, it was thought that this tendency to set fruit without pollination might be increased by the irritation of the stigmas by the application of some substance other than pollen. Consequently in some of the following experiments magnesium sulphate was employed in the place of pollen.

Experiment 18.—April 3, 4 p. m. This experiment is similar to experiment 16 in all respects except that magnesium sulphate was used in place of fresh pollen to coat over the surface of the stigmas immediately after decapitation. Ten flower buds of the same variety and in all respects similar to those of experiment 17 were decapitated and the pistils dipped at once into powdered magnesium sulphate, and the flowers bagged.

April 11, 10.30 a. m. The 10 flowers were pollinated with fresh pollen of Livingston Potato Leaf. The darkened appearance of the stigmas of the flowers when pollinated indicated some injury due to the magnesium sulphate.

May 9. Three good fruits found developing. Two of the blossoms were still fresh and green, with large stems and large green calyx lobes, but had failed to set fruit, while the rest of the 10 flowers had fallen without setting fruit.

Results of the experiment: Three good fruits.

Experiment 19.—April 3, 4.30 p. m. Ten blossom buds of the same variety and in all respects similar to those of experiment 18 were decapitated, and the pistils dipped at once into powdered magnesium sulphate and the flowers bagged.

April 11. The 10 flowers were examined and found in the same condition as those of experiment 18 at this time.

May 9. Two of the blossoms were found still fresh and green with large stems and large, green calyx lobes, but they had failed to set fruit, while the other 8 blossoms had fallen without setting fruit.

Results of the experiment: No fruits.

Experiment 20.—April 3, 5 p. m. Five blossom buds of Lorillard and 5 of Sutton's Best of All were emasculated and bagged.

April 11, 11.30 a. m. The stigmas of these blossoms were coated with magnesium
INJURIOUS EFFECTS OF PREMATURE POLLINATION.

sulphate. The 10 blossoms were in good, fresh condition, with reflexed calyx and corolla lobes and protruding pistils showing fresh receptive stigmas.

May 9. One small green tomato found developing. Three of the flowers were found with large green stems and calyces, but failed to set fruit. The other 6 were found fallen without having set fruit.

Results of the experiment: One ripe seedless tomato 1½ inches in diameter.

The results of this experiment gave additional proof that the seedless tomatoes previously found growing in the greenhouse had resulted from flowers that had never been pollinated. Experiment 22 was an exact repetition of experiment 20, but resulted in the falling of all the flowers without setting fruit.

It having been shown by experiments 12, 14, and 16 that the failure to obtain fruits in experiments 1, 2, and 8 was not caused by the presence of the pollen on the immature pistils, it would seem to be due to loss of vitality of the pollen before the pistils became receptive. To test this point experiments 21 and 22 were performed.

Experiment 21.—(Contrast with experiment 17.) May 9, 4 p. m. Ten blossom buds of Sutton's Best of All were emasculated and bagged to be pollinated when the pistils become mature with pollen of Lorillard collected to-day at 5:30 p. m.

May 14, 1:30 p. m. These 10 flowers were to-day pollinated with pollen of Lorillard collected May 9 and placed in a watch-glass closely covered and kept in the greenhouse near the tomato vines in order that it might be exposed to the same conditions of temperature, etc., as the pollen placed upon the immature pistils in the previous experiments. The decapitated sepals and petals of these flowers were reflexed and the pistils had a good healthy appearance when pollinated.

June 6. Eight of the flowers were found detached below the ovaries, which had not enlarged after pollination. One flower set a fruit which attained a size of 2½ inches in diameter and contained 22 seeds. The other flower could not be found.

Results of the experiment: One fruit.

The fact that experiments 6 and 21 produced 3 small fruits containing but few seeds shows that the pollen had not lost quite all its vitality during the five days from the time it was collected till the pistils on which it was placed became mature.

Experiment 22.—(Contrast with experiment 16.) May 9. Ten blossoms of Sutton's Best of All were emasculated and at once pollinated with fresh pollen of Lorillard. Some of the pollen was reserved for a second application to these flowers when the pistils become mature.

May 14, 2 p. m. The 10 flowers were pollinated with pollen of Lorillard collected May 9 and kept in the greenhouse since that time. When pollinated the second time all parts of the flowers were in a fresh, healthy condition, the stigmas showing white from the application of pollen May 9.

June 9. All of the flowers were found detached below their ovaries, which had not enlarged since pollination.

Results of the experiment: No fruits.

Experiment 23.—(Compare with experiment 25 and contrast with 20 and 22.) May 14, 3 p. m. Ten young blossom buds of Sutton's Best of All were emasculated and bagged. These blossoms are never to be pollinated.

June 6. All of the 10 blossoms were found fallen below the ovaries, which had not enlarged.

Results of the experiment: No fruits.
**Experiments with Tomato Blossoms.**

Experiment 25.—This experiment is an exact repetition of experiment 24, except that it was performed on the Lorillard variety.

Results of the experiment: No fruits.

While the work with tomato blossoms indicates no injurious effects from the growth of pollen tubes down the immature stigmas, it proves the fallacy of the commonly accepted opinion that when pollen is placed on young stigmas it will remain there and fertilize the flower when the stigmas finally become receptive. It is also shown that tomato blossoms will sometimes, though seldom, set fruit without pollination, and the number of fine, large, seedless, and almost seedless tomatoes that grew on the vines under glass without any attention having been paid to the pollination of the flowers shows that the absence or scarcity of pollen on the stigmas will sometimes result in the production of better, firmer, and less seedy tomatoes than those which result from a natural pollination. An examination of tomato flowers growing out of doors showed that the stigmas of the fully opened flowers were completely covered with pollen, and tomatoes on the same vines consequently were found to contain the usual large number of seeds. One of these of average size—3 inches in diameter and $2\frac{1}{2}$ inches thick—and not unusually seedy, contained 308 seeds; while some of the same variety and of the same size that were grown under glass contain no seeds, and others but a dozen or two. The fine tomatoes above mentioned, some of which contained no seeds and the others but few, grew on large thrifty vines which bore but a few fruits each, owing to the failure of their flowers to receive pollen. Had these vines borne at the time a crop of tomatoes containing the normal number of seeds it is likely that the ones without seeds, as well as those with but few seeds, would not have reached the size they did. As it was, however, the tomatoes without seeds reached a diameter of $2\frac{1}{2}$ and 3 inches and were firm and of excellent quality. If some of the fruits on a vine have set as a result of a liberal pollination, while others have set as a result of a slight pollination, or even without pollination, it is natural to suppose that the nourishment of the vine would go largely to the fruits containing an abundance of seeds, while seedless ones would be dwarfed. That such is the case has been shown by the experiments of Munson\(^a\) and Bailey\(^b\). The same effect is shown by Pl. IV, fig. 16, which is a photograph of a cluster of Wilmot Hamburg grapes grown under glass. The small berries are ripe and have the same color and flavor as the large ones, but are entirely seedless and doubtless set without pollination. The large berries contain several seeds each and likely resulted from blossoms that were naturally pollinated, perhaps by insects that found their way into the hothouse.

When there is competition on the same plant between seedless and seeded fruits the latter receive the most nourishment and become the


1810—No. 22—02—3
larger, but by careful breeding it is not unlikely that a tomato can be obtained that will produce seedless fruits as large as the seeded fruits we now have. The large size of seedless bananas and pineapples indicates that this is possible. But since the most convenient way of propagating the tomato at present is by means of seeds, it is not a tomato entirely seedless that is wanted, but a large, well-shaped, firm tomato with but few seeds.

While a comparison of the experiments in which the flowers were emasculated and never pollinated with the experiments in which the flowers were emasculated and magnesium sulphate substituted for pollen would seem to suggest that the irritation of the receptive stigmas may stimulate the setting of fruits, yet fruits set so rarely without flowers having received pollen that a very large number of flowers would have to be tested in order to determine whether the mere irritation of the stigmas by the application of substances other than pollen has any tendency to cause fruits to set.
<table>
<thead>
<tr>
<th>Experiment number</th>
<th>When emasculated or decapitated</th>
<th>When pollinated</th>
<th>Remarks regarding pollen and pollination</th>
<th>When examined, with remarks on condition</th>
<th>Number of ripe fruits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10 a.m., Mar. 11</td>
<td></td>
<td></td>
<td>Mar. 19, some fallen, others falling</td>
<td>0</td>
<td>Apr. 3, all fallen and dry.</td>
</tr>
<tr>
<td>2</td>
<td>10 a.m., Mar. 11</td>
<td></td>
<td></td>
<td>Mar. 19, some green tomatoes noticed</td>
<td>9</td>
<td>June 8, 9 large ripe tomatoes.</td>
</tr>
<tr>
<td>3</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>Apr. 3, 8 large green tomatoes</td>
<td>9</td>
<td>June 8, ripe and gathered. Polminated rapidly and not bagged.</td>
</tr>
<tr>
<td>4</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>Apr. 3, 8 found fallen, 1 very small</td>
<td>2</td>
<td>June 10, fruits very small, 8 seeds each.</td>
</tr>
<tr>
<td>5</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>Apr. 3, 8 green tomatoes</td>
<td>8</td>
<td>Two flowers to each bag. One large green calyx.</td>
</tr>
<tr>
<td>6</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>Apr. 3, 10 good tomatoes growing</td>
<td>10</td>
<td>May 9, 2 small fruits.</td>
</tr>
<tr>
<td>7</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 9 found fallen</td>
<td>2</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>8</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 6 good fruits growing.</td>
</tr>
<tr>
<td>9</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>10</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>11</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>12</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>13</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>14</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>15</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>16</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>17</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>18</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>19</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>20</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>21</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>22</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>23</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>24</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
<tr>
<td>25</td>
<td>12 a.m., Mar. 11</td>
<td>12 a.m., Mar. 11</td>
<td></td>
<td>May 9, 7 good fruits growing</td>
<td>7</td>
<td>May 9, 7 good fruits growing.</td>
</tr>
</tbody>
</table>
INJURIOUS EFFECTS OF PREMATURE POLLINATION.

CONCLUSION.

The following summary of results obtained with tobacco, cotton, orange, and tomato flowers contrasts the effects of immature and mature pollinations. The orange work does not lend itself well to this comparison, for it is unsafe to say that the young pistils were not receptive when pollinated:

<table>
<thead>
<tr>
<th>Prematurely pollinated</th>
<th>Resulting number of fruits</th>
<th>Maturely pollinated</th>
<th>Resulting number of fruits</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 tobacco blossoms</td>
<td>3</td>
<td>40 tobacco blossoms</td>
<td>38</td>
</tr>
<tr>
<td>60 cotton blossoms</td>
<td>32</td>
<td>40 cotton blossoms</td>
<td>33</td>
</tr>
<tr>
<td>60 orange blossoms, 6 experiments</td>
<td>15</td>
<td>42 orange blossoms, 5 experiments</td>
<td>9</td>
</tr>
<tr>
<td>30 tomato blossoms</td>
<td>2</td>
<td>70 tomato blossoms</td>
<td>60</td>
</tr>
</tbody>
</table>

To determine whether cotton bolls would set without pollination, or by the substitution of other substances for pollen was not attempted, but a summary of this work with the other three flowers is as follows:

<table>
<thead>
<tr>
<th>Emasculated and stigmas covered with substances other than pollen</th>
<th>Resulting number of fruits</th>
<th>Emasculated and bagged without pollination</th>
<th>Resulting number of fruits</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 tobacco blossoms</td>
<td>14</td>
<td>20 tobacco blossoms</td>
<td>2</td>
</tr>
<tr>
<td>20 orange blossoms, seedy variety</td>
<td>0</td>
<td>20 orange blossoms, seedy variety</td>
<td>0</td>
</tr>
<tr>
<td>30 tomato blossoms</td>
<td>1</td>
<td>20 tomato blossoms</td>
<td>0</td>
</tr>
</tbody>
</table>

Much has been said in apology for the lack of success of attempted hand pollinations, advocating perseverance, and regarding it as a great accomplishment if even 5 or 10 per cent of the flowers set seed. But this is erroneous, for if one is working with plants that naturally cross readily and is not trying to make a cross between two very different plants, the results should certainly not be considered successful unless a greater percentage of fruits is obtained than set on the same plants naturally without artificial pollination. We increase the production of fruits by giving attention to plants in other respects, and likewise by a careful study of the flowers upon which we work we can obtain greater percentages of fruits by hand pollination, including emasculaion, than set naturally. After the behavior of tobacco, cotton, and tomato flowers was quite well understood, and they were correctly operated upon for obtaining the best results, the following percentages of fruit were obtained:

<table>
<thead>
<tr>
<th>Flowers hand pollinated</th>
<th>Fruits obtained</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 tobacco (experiments 7, 16, 20, and 36)</td>
<td>38</td>
<td>95</td>
</tr>
<tr>
<td>40 cotton (experiments 2, 4, 7, and 10)</td>
<td>33</td>
<td>82</td>
</tr>
<tr>
<td>60 tomato (experiments 3, 4, 7, 9, 15, and 17)</td>
<td>52</td>
<td>86</td>
</tr>
</tbody>
</table>
CONCLUSION.

The writer is fully convinced that persons having hand-pollinations to make with unfamiliar flowers, or with flowers with which their previous work has been unsatisfactory, will find it profitable to make some small experiments in order to determine the method to which the flowers respond with a large percentage of fruits. These experiments can usually be made with the proper pollen and flowers so that the fruits will contain seed of the desired kind.

While attention is constantly being called to the many adaptations of flowers for accomplishing various purposes, such as cross-fertilization, it might be well to attempt to discover if some adaptations for preventing premature pollination have not been brought about by natural selection. That many flowers are admirably formed to successfully prevent premature pollination is certain, but that such devices have been brought about for this purpose will perhaps never be certain. Proterogogenous flowers that open or unfurl in blooming usually

![Fig. 1.—Flowers of *Sobratia angularis*](image)

Fig. 1.—Flowers of *Sobratia angularis*: (a) Appearance while pollen is being shed; (b) Stigma and anthers avoiding each other; (c) Receptive stigma and deciduous anthers. (From drawings by E. E. Lower.)

do so when their pistils have reached a receptive condition. The pistils of such flowers are perfectly protected from pollen from all sources until they are receptive. Pl. IV, fig. 6, shows a fully open, receptive begonia flower, while fig. 7 shows the two calyx lobes securely closed over the young pistil of a similar but younger flower. Proterogamous flowers open while the pistils are immature, but even here modifications are met with which insure the pistils against premature pollination. The stigmatic surfaces are often folded together, thus preventing pollination even though the immature pistil be exposed. Fig. 1 shows the interesting behavior of flowers of *Sobratia angularis*; a shows the condition of the flower when the anthers discharge their pollen, two petals and one stamen having been cut away in order to show the young pistil, which at this stage has no stigmatic surface exposed. Instead of growing straight out and thus coming in contact with the drying anthers, the pistil invariably grows out to one side, passing between the filaments of the stamens. The stamens at this stage begin to bend to the side of the flower opposite the one occupied
by the pistil, as shown by b, fig. 1, and by the time the pistil straightens and exposes its stigmatic surfaces the stamens have assumed a recumbent position and have drooped their anthers, as shown by c. The modifications of this proterandrous flower successfully prevent self-fertilization and premature pollination without interfering with the proper shedding of pollen.

The many adaptations of flowers to insure pollination at a certain time is interesting and suggestive of the importance to be attached to the time for applying pollen when hand-pollinating. Movements on the part of stamens so as to bring the pollen to the pistil at a certain stage in the growth of the flower, and especially movements on the parts of the pistils themselves which bring the stigmas into contact with the stamens, are admirable adaptations. With some flowers, such as those of corn, the pistils have no definite length, but continue to grow in search of pollen, as it were. If pollinated upon protruding from the husks, corn silks perform their functions, turn brown, and become dry without making a growth of more than 2 or 3 inches beyond the end of the ear, but if kept secluded from pollen they will continue to grow for a week and will attain a length greater by 14 or more inches than would otherwise have been the case.

During the work with the various flowers herein mentioned nothing has been more noticeable than the individuality possessed by flowers of different forms. It seems impossible to say that the flowers of one plant will respond in a given manner because those of another plant so respond. From these experiments it is evident that flowers of different genera of the same order, as the tomato and tobacco, respond differently to the effects of premature pollination, while the flowers of Datura tatula, of the same order, suffer as do those of tobacco, but do not fall.

Two of the five kinds of flowers experimented with mature their pistils before their stamens and were uninjured by premature pollination, while the three that mature their anthers and stigmas at the same time were injured. It is perhaps accidental that such is the case with these five flowers, but it is to be hoped that future work will reveal some means of distinguishing flowers that will, from those that will not produce seed when prematurely pollinated. For the plant breeder it is quite important to know with what flowers one can apply the pollen at the time of emasculation and thus avoid the extra labor of removing the bags, pollinating, and again bagging the flowers when the pistils have become receptive.

It is apparent that several of the phenomena suggested by the results of these experiments have not been sufficiently proven. However, concerning the following points the writer feels no doubt:

That the application of good tobacco pollen to immature tobacco pistils causes the flowers so treated to fall from the plant because of the growth of pollen tubes into their ovaries;
That tobacco and tomato plants sometimes set and ripen fruits without the flowers having received any pollen, and that such fruits contain no germinative seeds.

That but few fruits will be obtained by the pollination of immature cotton and tomato pistils, but that good percentages may be obtained if the pollination is performed when the pistils are receptive.

The lesson taught by these experiments is that some flowers can not be successfully pollinated when the work of emasculation is performed, while others can, and that no arbitrary mode of procedure can be given for all flowers. A study of the behavior of each kind of flower will reveal its peculiarities and its requirements, and, understanding these, hand-pollinations should be highly successful.
PLATE I.

Figs. 1 and 2.—The upper portions of the same two main stems of a growing tobacco plant.

The photograph for fig. 1 was taken 3 p.m., June 21, 1900, immediately after the numbered flowers had been emasculated and pollinated, and the lettered flowers had been emasculated but not pollinated.

The photograph for fig. 2 was taken 3 p.m., June 23, or just forty-eight hours later than that for fig. 1, and shows that premature pollination has caused flowers 1, 2, and 6 to fall, while the more mature flowers, 3, 4, and 5, show no injury from pollination, but, on the contrary, were fecundated and set seed pods, as shown in Pl. II, fig. 1.

Flowers 1 and 2, fig. 1, would not have been receptive for two days and flower 6 for three days, and according to results of experiments they were expected to fall about thirty-six hours after pollination.

Flowers 3, 4, and 5 would have been fully open and receptive in one day and were expected to give a fair percentage of seed pods.

If early emasculation had caused the falling, flowers c and d should have fallen also.

The advancement of an unmolested flower may be studied by observing the small bud on the right in fig. 1 and its growth as shown by fig. 2 and the forming seed pod in Pl. II, fig. 1.
FIG. 1.—The same portion of the same plant shown in Pl. I, photographed eight days later than fig. 1. The emasculated flowers b and c have not yet fallen, while the seed pods resulting from flowers 3 and 4 have attained considerable size.

Figs. 2, 3, 4, and 5.—Photomicrographs of pollen grains and pollen tubes in sections of flowers that fell because of premature pollination.

Fig. 2.—Section of a tobacco stigma showing pollen grains which have germinated and sent their tubes into the style. Flower from which this section was made was emasculated and pollinated May 25, 11 a.m., two days before it would have opened. May 27, 11 a.m., it was found fallen and was fixed for microscopic study. (X 250 diameters.)

Fig. 3.—Pollen tubes farther down the style. Figs. 2 and 3 are sections of the same pistils. (X 315 diameters.)

Fig. 4.—Mass of pollen tubes near the point where they enter the ovary from the style. The flower from which this section was made was one of experiment 21 (see Table I). (X 160 diameters.)

Fig. 5.—Pollen tubes in ovary on the placenta at attachment of ovules. Figs. 4 and 5 are from different sections of the same ovary. (X 75 diameters.)
Flowers 1 and 2 were pollinated March 3, two days before they would have been fully open, No. 2 being emasculated. Thirty-nine hours after being pollinated these flowers had fallen. No. 1 shows the anthers just opening.

Flowers 3, 4, and 5 were emasculated February 27. No. 3 was not pollinated, while Nos. 4 and 5 had their stigmas coated over with corn flour. March 5, Nos. 3 and 4 were still fresh, while the corolla of No. 5 had fallen and the ovary begun to enlarge.

No. 6.—A ripe pod torn open to show normal seeds for comparison with chaffy seeds that sometimes form in pods the flowers of which were not pollinated or had other substances substituted for pollen as in Nos. 9 and 10.

No. 7.—A normal ripe seed pod.

No. 8.—A green pod formed from a flower which was emasculated and had its stigma coated with air-slacked lime.

Nos. 9 and 10.—Ripe pods of experiment 45 in which the stigmas were coated with corn flour. After being photographed pod 9 was examined and found to contain only light, chaffy seed like those shown in the opened pod 10.
Fig. 1.—An orange forty-three days after pollen was applied to the stigma.

Figs. 2, 3, 4, and 5.—Flowers of a Melitensis navel orange, showing different stages in their development.

Fig. 2.—Fully open flower, showing abortive anthers characteristic of seedless varieties. Two petals were removed for convenience in photographing.

Fig. 3.—Flower five days younger than No. 2, and the kind used in experiments 10 to 15, inclusive. The stigma at this age bears a large drop of stigmatic fluid.

Fig. 4.—Flower nine days younger than No. 2, and the kind used in experiments 1 to 9, inclusive.

Fig. 5.—Flower same age as No. 4, showing appearance after emasculation. The stigmas at this early age show stigmatic fluid.

Fig. 6.—A fully opened pistillate begonia flower, showing receptive pistil.

Fig. 7.—A pistillate begonia flower slightly younger than No. 6 and showing the calyx lobes tightly closed, perhaps to protect the young pistil from premature pollination.

Fig. 8.—A fully opened tomato blossom of the Lorillard variety, showing receptive stigma extending a short distance beyond the surrounding stamens, which are about to open and shed their pollen.

Fig. 9.—A blossom of Lorillard three days younger than No. 8, showing the stigma already exposed.

Fig. 10.—A blossom of Lorillard that would have been fully open like No. 8 in about six days. This shows the kind of buds selected in all the tomato experiments to determine the effects of premature pollination.

Fig. 11.—A bud similar to No. 10, which has been decapitated to permit of a premature pollination of the pistil.

Fig. 12.—A blossom bud similar to No. 10, which has had its stamens entirely removed.

Figs. 13, 14, and 15.—Cotton flowers, showing method of emasculation. The flowers were gathered one day before they would normally have opened. Flower 14 has had the upper portion of corolla cut away ready for emasculation. Flower 15 shows emasculation completed.

Fig. 16.—A cluster of Wilmot Hamburg grapes, showing difference in size between normal and seedless berries.
BERSEEM:

THE GREAT FORAGE AND SOILING CROP OF THE NILE VALLEY.

BY

DAVID G. FAIRCHILD,

AGRICULTURAL EXPLORER FOR SEED AND PLANT INTRODUCTION.

Issued August 30, 1902.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief.
Washington, D. C., May 20, 1902.

Sir: I have the honor to transmit herewith a paper on Berseem: The Great Forage and Soiling Crop of the Nile Valley, and respectfully recommend that it be published as No. 23 of the Bureau series of bulletins. The paper was prepared by Mr. David G. Fairchild, agricultural explorer, Seed and Plant Introduction, and was submitted by the assistant in charge of Seed and Plant Introduction.

Respectfully,

B. T. Galloway.
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.
One of the most important duties of an agricultural explorer is the observation of methods of agriculture practiced in other countries, that show promise of having value if transferred to parts of the United States. Mr. David G. Fairchild has made some careful observations upon Egyptian agriculture with reference to its adaptability to parts of the irrigated Southwest, the accompanying article on berseem being one of the results of this study. It is not to be expected that every agricultural practice followed in Egypt can be bodily transferred to the United States, but it seems probable that at least for certain conditions this great Egyptian forage crop may prove of extreme value.

Ernst A. Bessey,
Assistant in Charge of Seed and Plant Introduction,
Office of Seed and Plant Introduction.
February 6, 1902.
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>9</td>
</tr>
<tr>
<td>General uses</td>
<td>11</td>
</tr>
<tr>
<td>Varieties</td>
<td>13</td>
</tr>
<tr>
<td>Muscowi</td>
<td>14</td>
</tr>
<tr>
<td>Fachl</td>
<td>16</td>
</tr>
<tr>
<td>Saida</td>
<td>16</td>
</tr>
<tr>
<td>Use as a green fodder</td>
<td>17</td>
</tr>
<tr>
<td>Berseem as a hay crop</td>
<td>18</td>
</tr>
<tr>
<td>Conclusion</td>
<td>18</td>
</tr>
<tr>
<td>Description of plates</td>
<td>19</td>
</tr>
</tbody>
</table>
ILLUSTRATIONS.

Plate I. Muscowi berseem.

I. Reclaiming salt lands with the assistance of berseem.......................... 20
II. Berseem used as a pasture and green fodder crop............................... 20
III. Bringing green berseem to market.................................................. 20
V. Fig. 1.—Taking green berseem to market. Figs. 2 and 3.—Taking berseem hay or "drees" to the barn.............................. 20
VI. Fig. 1.—Berseem in full flower. Fig. 2.—Camel grazing in field of berseem. Fig. 3.—A windrow of berseem hay or "drees"...... 20
VII. Fig. 1.—Field of berseem before flowering. Fig. 2.—Embankment dividing two irrigation basins. Fig. 3.—Flood gates for irrigation basins shown in fig. 2.................................................. 20
VIII. Fig. 1.—Roots of Muscowi berseem, showing tubercles on main and lateral roots. Fig. 2.—Roots of Muscowi berseem after first cutting. 20
IX. Fig. 1.—Young plant of Muscowi berseem shortly after first cutting. Fig. 2.—Roots of plants shown in fig. 1. Fig. 3.—Plant of Muscowi berseem, showing height it attains.......................... 20
X. Roots of ordinary alfalfa and Muscowi berseem................................. 20
XI. Fig. 1.—Cutting berseem by hand sickle and loading on cart for market. Fig. 2.—Cutting berseem with scythe. Fig. 3.—Cutting berseem with American mowing machine...................... 20
XII. Fig. 1.—Plant of Fachl berseem already gone to seed, May 1, 1901. Fig. 2.—Plant of Saida berseem in flower, May 1, 1901........ 20
XIII. American mowing machine and rake in a field of berseem on the estate of Mr. Beyerlé at Bordein, Egypt................................. 20
XIV. Loading trams with berseem hay on estate of Mr. Beyerlé at Bordein, Egypt............................................................. 20
BERSEEM: THE GREAT FORAGE AND SOILING CROP OF THE NILE VALLEY.

INTRODUCTION.

There are few countries in the world to-day where agriculture pays better than it does in Egypt. The methods of plowing and seeding have scarcely changed at all since the days of the ancient Egyptians, and yet without a single manufacturing industry worthy the name the valley of the Nile is entering upon an era of growth and prosperity which seems most remarkable even to an inhabitant of the Western Hemisphere.

While her great money-making crop is cotton, in the production and shipment of which she has much to teach her competitors, the foundation of her continued prosperity rests upon a leguminous fodder and soiling crop, about which the outside world has concerned itself very little.

Berseem, Alexandrian clover, or Egyptian clover (Pl. I), as it is variously called, is a species of Trifolium more or less closely related to the ordinary red clover. Its name, Trifolium alexandrinum L., probably has nothing to do with its origin; in fact there is good reason to believe that the plant came from some other part of the Mediterranean than that about Alexandria, and was introduced into Egypt in comparatively recent times. The total absence on the monuments of any bas relief which can be identified as this plant is remarkable if the species occupied in those days the important place it does now in the agriculture of the peasants or fellahin. There are few single species of plants which play in any country a more important rôle in its agriculture than is played by this Trifolium. It is the first crop planted after reclaiming the salt lands (Pl. II, figs. 1, 2, 3); it furnishes the green fodder for all work animals in the big towns (Pl. V, fig 1); on it graze all the beef and milk cattle (Pl. III, figs. 1, 2, 3); the camels are fed upon it (Pl. VI, fig. 2); the well-kept donkeys get their portion of it, and even the poor fellah carries a bunch of it in his hand and seems to enjoy its sharp clover taste. Nothing among the most varied agricultural sights which interest the tourist in Egypt in winter can be more conspicuous than the culture, harvest, and marketing of this essentially green-fodder crop. Every coachman has a bunch of
berseem or a bag full of it under his feet with which he feeds his horse at the cab stand; every drayman has on top of his load a few handfuls for his bullocks or horses, and the donkey boys carry a bag of the freshly cut clover for their much-abused beasts. In the early morning all the avenues leading to Cairo are lined with long files of camels and donkeys half hidden under loads of this green forage. (Pl. IV, figs. 1, 2, 3.) The fields on either side of the railway impress one as the greenest and cleanest meadows he ever saw. Scarcely a weed is in sight. (Pl. VII, fig. 1.) Planters say that the culture of berseem is very valuable for killing out many kinds of weeds. Not another fodder crop is conspicuous enough to attract one's attention as one gazes over the most beautiful agricultural checkerboard in the world. It is the one great fodder crop of Lower Egypt. and about it, as it were, all the other cultures are arranged. Over 940,000 acres of it were grown as far back as 1891. This amount has been probably considerably increased.

To an American farmer clover is only one of a number of fodder crops, but to the Egyptian fellah his berseem furnishes not only his principal fodder, but his principal manure as well.

The great fertility of the Nile silt and its manurial value has been so much written about that we have gotten accustomed to considering Egyptian agriculture as the tillage of a perpetually renewed alluvium. It will surprise some, especially farmers in the Mississippi Valley, to learn that this Nile soil is so lacking in nitrogen that in most places two good crops of Indian corn can not be raised in successive years off the same field, and the culture of sugar cane is considered much too exhausting for many Egyptian soils. This condition of affairs is not to be wondered at, considering that most of the manure has for centuries been collected by the "manure girls" and dried into cakes for fuel and only the liquid elements returned to the land, mixed with dry earth with which the stalls are strewn. This bad practice, carried on as it has been for thousands of years, would have, according to our present ideas, quite exhausted the fertility of the soil notwithstanding the yearly deposits of silt had it not been for the culture of leguminous crops. The action of soil bacteria is as yet too little understood to demand recognition in the above statement, although it is highly probable that bacteria play a most important part in the matter. The writer never saw a region where the opportunities for soil studies seemed so promising. According to Wilcox, in his Egyptian Irrigation of 1899, no important soil analyses of Nile silt have been made since 1875, and, so far as I know, no bacteriological examination has ever been made of it.

The ancient Egyptians doubtless cultivated several leguminous crops, although the museums of Egyptology do not exhibit their seeds because the plants seem in no way to have been connected with their
religious customs, and so far as discovered the bas reliefs of the tombs and monuments show no convincing evidences of their use. A bas relief in the tomb of Thy at Sakkara, of which a part is even illustrated in Baedeker's Egypt (p. 139), represents several calves tethered in a field of some forage plant or other in a manner quite resembling that of the present day. This bas-relief is about 4,500 years old. In the collection of seeds and dried plants in the Gizeh Museum which was made by Professor Schweinfurt is a small bowl of the seed of an unmistakable leguminous plant, probably a Medicago, from the temple of Isis at Dendera, which was, however, of comparatively recent times, being in the first Christian century.

Dr. Schweinfurt, who is an authority on the botany of Egypt and the ancient Egyptians, states that no picture, bas relief, name, or authentic seeds of berseem had ever been discovered in any of the tombs of Egypt. He discredited the correctness of certain finds made at Kahun by Flinders Petrie and identified by Percy Newberry as seeds of berseem, saying that there is in his mind a question as to whether these came from really ancient tombs. The name berseem bears a close resemblance to the Arabic name for lentil ("beslem" or "'berzem"), and Dr. Schweinfurt thinks it not unlikely that when the Arabs conquered Egypt they applied this to the clover then cultivated in the country. The plant has nowhere been discovered wild, but a Byzantine variety (Trifolium alexandrinum var. phleoides, Boiss.) exists at Kilsali, near Smyrna, and it is probable that the plant was introduced into Egypt about the sixth century.

GENERAL USES.

Berseem is not only an annual clover, but it is a winter clover for warm countries where irrigation is practiced. Where the conditions of mild winter and abundant water supply for irrigation exist it can scarcely fail to prove a most profitable introduction, for it starts into growth with remarkable rapidity, outgrows most kinds of weeds, and yields one of the most palatable and nutritious green fodders known. Anyone having once seen it in Egypt can not fail to be impressed with its great value. It resembles quite closely when young our common alfalfa, but its flowering heads, although white, are in form like a loose-headed variety of red clover. (Pl. I and Pl. VI, fig 1.) The hollow stems are exceedingly succulent; in fact the whole plant is in every way more delicate than either clover or alfalfa, and it is eaten not only by domestic animals, but even by the fellahin. a

The root system of the berseem is not a large one, but remarkable for its abundant and succulent tubercules. (Pl. VIII, figs. 1 and 2; Pl.

a The writer is aware that the fenugreek, which resembles berseem somewhat, is a common green food of the peasants.
IX. figs. 1 and 2.) Being an annual and grown in general on irrigated land, it has not the faculty of going far in search of water, hence is not suited to cultivation on dry, arid soils, even though possessing a deep underlying layer of moist soil. The distinct differences between berseem and lucern or alfalfa must be insisted upon if the crop is to be made a success. (Compare roots of alfalfa and berseem, Pl. X.)

In Egypt, where both plants are grown—the alfalfa, however, only experimentally—the distinctions are very evident. The berseem is an annual and never grown more than nine months, while alfalfa is a perennial, which gets its full growth only in the second year. Berseem is planted in the autumn as late as October and cut in the late winter or early spring, from December to June, while alfalfa is planted in the spring (March to May), and cuttings are made in the summer and winter, or from April to December. The former is a short-lived winter-fodder plant for soils on which other crops are grown in the summer, while the latter is a perennial summer-fodder crop for rotations extending over several years or for permanent meadows.

Doubtless much of the continued fertility of the Nile soils may be attributed to the culture of this single crop, and nothing can be more striking than the dependence placed in it not only by the fellahin, but by the keenest modern cultivators in Egypt. It seems to be a sort of cure-all for the land, and no such thing as clover sickness from its culture is known. Until the Khedivial Agricultural Society endeavored to introduce artificial manures last year, nothing but the stable manure was employed, dependence being placed in the nitrogen stored in the soil by these tubercules. Mr. Wilcox, who is an authority on irrigation matters in Egypt, said he had seen land steadily improve in fertility under a culture of half-year cotton and half-year berseem without the addition of any manures or fertilizers whatever. In his book on irrigation, p. 219, he remarks that—

Berseem eats down salts if they are present in small quantities and enriches the soil with nitrates. * * * Many think that while cotton in summer is followed by clover (berseem) in winter, and cereals in winter are rigidly excluded, the rotation of cotton and clover can be carried on unlimitedly without any appreciable deterioration of the soil.

The cotton is planted in March and harvested in October and is followed by berseem, which is planted in October and plowed under in March.

Mr. Lang Anderson, manager of the Aboukir Land Company, who is reclaiming in the Nile delta over 30,000 acres of alkali land, says he is dependent upon berseem to bring up his soil, after the salt has been washed out of it, to a state of fertility suitable for cotton growing. The writer visited these remarkable reclaiming basins and saw

*W. Wilcox, author of "Egyptian Irrigation," which has already gone through a second edition. Now managing director of the Dairu Sanieh Company in Cairo.
land on which cattle and horses were tethered and grazing in a luxuriant growth of berseem which two years before was as barren of vegetation as a bathing beach. (Pl. II. fig. 3.) The amount of nitrogen stored in the soil by the roots of this plant must have been considerable, for cotton was grown on it the third or fourth year.

Nothing could be more striking than the contrast between the roots of some alfalfa which I examined at several places in Egypt and those of this Egyptian clover. (Pl. X.) In the former the roots of both young and old plants were conspicuous for their freedom from tubercles, only an occasional almost microscopic one being observable, while the latter were often little less than a mass of these nitrogen-bearing bodies. (Pl. VIII. figs. 1 and 2; Pl. IX. figs. 1 and 2.) It is probable that the bacterium of the alfalfa nodule has not been introduced into Egypt and that it is distinct from the germ of the berseem tubercle. Possibly former trials with berseem in America have not succeeded well for a similar reason. It is expected that experiments which have been already started will solve this problem.

Too much stress can hardly be laid upon the necessity of a thorough study of the soil ing value of this Egyptian clover, for its application to irrigated orchard lands in California and Texas may prove of the greatest importance. The Colorado Desert region, with its abundance of water, mild climate, rich soil, and other conditions for irrigation, seems an ideal place for the trial of this Egyptian culture, and if the rotation of crops can be adapted to its employment it should prove a great success. If Egyptian cotton can be made to succeed in this region, as is now hoped, this soil ing crop will be of great value for a winter culture.

In the dry, irrigated regions of northern Africa, in Tunis and Algiers, this plant has already begun to attract the serious attention of the French experimenters. Mr. Gagey, of the Tunis Agricultural College, has tried it and is very enthusiastic over its quick growth and large production of green fodder. He was planning to secure seed for planting on a large scale. During the year in which the berseem was grown at the college in Tunis the thermometer sunk to nearly 2° below freezing, but the plant was not injured in the least. In the remarkable trial gardens of Dr. Trabut at Rouba, in Algiers, the fields of berseem were among his most promising experiments, and a temperature of 9° below freezing (23° F.) did not injure them.

**VARIETIES.**

There are three distinct varieties of berseem known in Egypt, and their characters must be understood if one wishes to make a success of their introduction.

---

*a* Boissier gives *Trifolium alexandrinum* var. *pleoides* Boiss. as a variety occurring in Kilsali, near Smyrna, but says nothing as to whether it is in cultivation or not.
Muscowi (Pl. 4), which is the variety commonly grown in the delta, where perennial irrigation is practiced and an abundance of water is always obtainable, is by far the most important of the three. It grows not uncommonly to a height of 5 feet and over (see Pl. IX, fig. 3), being the rankest grower of the three. It is broadcasted by the fellah or Egyptian peasant directly on the mud which is produced by flooding the land and allowing it to dry slightly. As much as a bushel of seed is sown per acre, but in the crude method of broadcasting a large amount of seed is wasted and a regular clover-seed sower could be used to advantage. In Egypt the seed is worth less than 5 cents a pound, or about the value of crimson clover, which it very closely resembles. Fully 10 per cent of Egyptian seed is, however, valueless, and it is, like all seeds in these warm climates, subject to weevils. The seed is raked in slightly to cover it and often in three days in Egypt the young plants are above ground. According to Mr. Lang Anderson as much as 10 per cent of the seed sometimes fails to germinate. The subsequent watering and attention depend somewhat on the condition of the land, but after each cutting a thorough irrigation is given, not immediately, but leaving sufficient time to elapse for the cut stubble to dry up and cure, otherwise the water will rot the newly cut stems and will often kill the plants. The sowing season varies from the 1st of September until the middle of January, according to location. If sown early in the autumn four cuttings can be secured, while only three are obtained when planted later; for although the plant may make but little growth above ground if sown in the cool autumn, it establishes itself and starts into a more vigorous growth in the early spring. A most important point in the culture of this crop is that it is injured by intense heat. Near Cairo, in early May, where the temperature had not gone above 92°, the berseem had begun to show signs of dying out, and by the 1st of June, the writer was informed, it would have almost entirely disappeared. A variety called Kadrawi is said to have a longer vegetative period, giving one more cutting than usual, but the writer has been unable to verify the statement. The Muscowi berseem, if planted in the early autumn, will give four cuttings. The first and second cuts will yield about 8 tons of green forage each, and the third and fourth only 6 tons apiece. When seed for next season's culture is required it is the practice to let the plants go to seed in June after the fourth cutting; otherwise often a fifth though inferior cutting is made. The yield of seed is much heavier than that of clover. When planted early the first cut may be taken in fifty days, but if the weather shortly after planting is cold, seventy days are required. The writer saw a field of late berseem planted January 5 which had been cut March 11, at which time it was 18 inches high. A second cutting was made April 7, and a third April 30, after which the roots were plowed under.
In some experiments carried on at the Algerian Experiment Station of Rouīha by Dr. Trabut, the seed was sown much earlier in the season and the yield was estimated as much higher. Sown on the 26th of July, the field was cut on the 12th of September, when it yielded at the rate of 28 metric tons to the hectare, equivalent to 14 tons per acre, while the second cutting of 13 tons, and the third of 15 tons, made the total of 42 tons of green fodder for three cuttings, as compared with 28 tons, the usual Egyptian yield for four cuttings. The better care given to the experimental plots and possibly a richer soil would account for the difference in yield in the two countries.

The profitability of the crop as grown in Egypt depends largely upon the proximity of a market for the green fodder. Egypt is not a beef-producing country; from 10,000 to 15,000 head of cattle were imported annually up to a few years ago. There are few large herds of cattle, and the dairy interests are in their infancy. Near Cairo, at Benisui, the berseem fields are let for grazing or cutting purposes (Pl. XI, figs. 1 and 2) for £8 a feddan, which would be equivalent to about $38 an acre. At Gizeh £10, or about $48 an acre, are paid for the four cuttings, while even as high as $19 an acre per cutting is sometimes paid for especially luxuriant fields of berseem. It was learned that there was government land on which the rents amounted to only $40 an acre, upon which the berseem alone had sold for $12.50, leaving the summer crop to pay for management and the profits.

In Egypt there is a tradition that berseem can not be profitably planted in spring or before the 1st of October, because of the hot, dry weather between these dates; some of the more venturesome English experimenters, however, declare this tradition to be founded on superstition rather than fact, and recommend planting it as late as the last of April. In Algiers, Dr. Trabut has planted it in midsummer (the 26th of July) with good results.

The temperature records of Egypt for the months of June, July, and October (of an average season, 1895) are appended for purposes of comparison with the arid regions of this country, and from them it is evident that if the traditions regarding the deleterious effects of the hot season in Egypt were true it would be impossible that the crop would succeed if started in the hot summer of the Colorado Desert, for example. However, a few experimental plantings will probably be of more value than any study of temperature charts.

<table>
<thead>
<tr>
<th>Month</th>
<th>Temperature</th>
<th>Relative humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Maximum</td>
</tr>
<tr>
<td>June</td>
<td>+78</td>
<td>+163</td>
</tr>
<tr>
<td>July</td>
<td>+82</td>
<td>+164</td>
</tr>
<tr>
<td>October</td>
<td>+70</td>
<td>+90</td>
</tr>
</tbody>
</table>

A comparison of the chemical analyses of green berseem and lucern has been made in Egypt, and it is given here to show how much more succulent the former is, containing 86.11 per cent of water, while lucern contains only 74.35 per cent. Berseem is poorer in nitrogen and starch, but also has less fiber in it than lucern. It is unfortunate that no analyses of the dry berseem are at hand, for the comparison of the green fodder alone does not give a fair idea of its food value.

*Comparison of chemical analyses of green berseem and lucern, in Egypt.*

<table>
<thead>
<tr>
<th></th>
<th>Berseem.</th>
<th>Lucern.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture</td>
<td>86.11</td>
<td>74.35</td>
</tr>
<tr>
<td>Albuminoids</td>
<td>2.29</td>
<td>4.35</td>
</tr>
<tr>
<td>Fats</td>
<td>1.74</td>
<td>1.66</td>
</tr>
<tr>
<td>Starch, etc</td>
<td>5.78</td>
<td>9.62</td>
</tr>
<tr>
<td>Fiber</td>
<td>3.41</td>
<td>8.41</td>
</tr>
<tr>
<td>Ash</td>
<td>1.67</td>
<td>2.21</td>
</tr>
</tbody>
</table>

*Fuchl* berseem (Pl. XII, fig. 1) is a variety used in Egypt on land which is irrigated by the basin system—i.e., overflowed for forty days in the autumn months from August until November, depending on the latitude and Nile overflow.

The seed is broadcasted at the rate of a bushel per acre on the Nile mud, which has been deposited from the meter or so depth of water which has stood over the land. No later irrigation is given it, and as a consequence it only gives one cutting. This cutting, however, yields 9 tons of green fodder per acre, and having more substance in it than the Muscowi, it makes a heavier hay. It is said to be fed extensively to donkeys. In order to get seed for planting it is often the practice to sow this variety mixed with wheat or barley and reap both together, separating the berseem seed from the grain only after the thrashing has been done. This variety is therefore a short-lived form and will prove of value on such lands as can be given only a single but heavy irrigation in the autumn.

The flood plains of the Colorado Desert region may some day be supplied with that remarkable system of basin irrigation (Pl. VII, figs. 2 and 3) which, although gradually disappearing from many parts of Egypt, is still acknowledged by experts like Mr. Wilcox to be the most wonderful of any, preserving the deposits of rich silt, which, by the perennial method, are largely lost. Such irrigation basins will be preeminently suited to the cultivation of this variety of berseem, and it may find a use as well on land under perennial irrigation where only one cutting is desired.

*Saida* is the name of a variety of berseem which, although yielding less than Muscowi, is relatively more nutritious. It possesses a com-
paratively long tap root (see PI. XII, fig. 2) which enables it to thrive
with much less water than is required for Muscovy, and it is, in fact,
considered a kind of dry land berseem. It is sown in the basins but
requires subsequent irrigation, as it yields two cuttings. Being a
cheaper seed than that of the Muscowi, it is often sold in place of the
latter. In habit it is lower and has a peculiar glaucous appearance,
enabling one to distinguish it from the Muscowi. Its root system is
abundantly supplied with tubercles and is eminently fitted to sustain
the plant during prolonged droughts. It was observed growing luxur-
iously upon stiff Nile silt which was so baked and dried out that large
cracks had formed in it to a considerable depth. On an average 6
tons only of green fodder is produced by the first cutting and 4 to 5
by the second or last. It is not sown to any extent in the Delta, but
is common above Cairo. Experiments with this variety should be
made on soils likely to suffer from drought, and even on land not
under irrigation in regions depending on the natural rainfall, such as
southern Texas, and Louisiana and Florida.

USE AS A GREEN FODDER.

The peculiar value of this crop lies in its use as a green fodder, and
throughout lower Egypt there is scarcely an animal, either in the
city or on the farms, which is not put on berseem for at least a month
in the spring. Most marvelous fattening and conditioning properties
are ascribed to it. Naturally the first effect upon an animal which has
been fed all winter on chopped straw and barley is a purgative one
(many cultivators mix a small amount of seed of fenugreek (Trig-
gonella fenumgreecum) with their berseem seed on sowing to increase the
conditioning effect of the fodder) and weak animals are sometimes
injured by the practice of tethering them all day long in the berseem
fields, but, if strong enough to stand it, the scouring effect puts them
in good condition and they are sent back to the stables in town in
excellent flesh. It is a curious sight, that of a country with every
beast of burden undergoing a sort of cure. In general, animals are
not worked very steadily while on this green diet, as it is not suffi-
ciently strong, and barley is often given work horses as an addition to
the green fodder.

The small expense connected with the raising of this Egyptian clover
and its effect in keeping the weeds in check are points decidedly in its
favor. This latter property is more a matter of the frequent cuttings,
which prevent weeds from seeding, than any effect of crowding out on
the part of the clover. Although weeds grow with the usual aston-
ishing rapidity in Egypt, in general there are fewer weeds than in any
other agricultural region ever visited by the writer. Whether the
berseem is responsible and how far for this clean culture will be hard
to determine.

1971—No. 23—02——2
As a food for milch cows (Pl. III, figs. 2 and 3) one can imagine no sweeter or more delicate one, and from the samples of butter tasted on Mr. Zervudachi's place at Kafr. Dewar, it must be a most excellent milk producer. The large amount of water contained in the green food, however, may influence unfavorably the quality of the milk, making it poor in fats, and complaints in this regard were heard, but certainly for fine flavor the butter tasted was equal to the finest Finnish or Danish butter put on the London market.

BERSEEM AS A HAY CROP.

It would be a great mistake to underestimate the value of Egyptian clover as a hay crop. Great quantities of the cut clover are cured into hay or what the Egyptians call "drees" (Pl. VI, fig. 3) and stored for summer feeding, when a scarcity of green fodder makes the dried hay very acceptable.

Four to 5 tons of this freshly cut plant yield 1 ton of "drees," a curious brittle hay, snapping between one's fingers like pipe-stems, and apparently without any substance to it.

In comparison with alfalfa the freshly cut berseem has 89.61 per cent of water instead of 74.35 per cent, and only 3.41 per cent of fiber in place of 8.41 per cent. The percentage of albuminoids is correspondingly poor, being only 2.29 per cent as compared with 4.35 per cent. But notwithstanding the 15 per cent larger shrinkage, the value of the hay is sufficient to induce such men as Mr. Beyerlé of the Egyptian Crédit Foncier to grow it in fields large enough for American mowing machines (Pl. XI, fig. 3; Pl. XIII and XIV) and sulky rakes to operate in and by means of portable tramways to transport it to his barns. (Pl. V, figs 2 and 3; Pl. XIV.) No baled drees was seen, and baling does not appear to be commonly done in Egypt. Owners of properties some distance from the markets find it does not pay to grow berseem on all of their land not occupied, but, instead, let many acres go fallow.

The yield of hay per acre would vary according to the variety and cutting. Muscowi would yield for the first and second cutting 1½ tons per acre each and for the third and fourth about 1½ tons apiece, making for the four cuttings of the season 6½ tons of dried hay per acre, which is 2½ tons in excess of the maximum yield given for red clover in America, which is cut only twice."

CONCLUSION.

In conclusion, the object of this bulletin is to call attention to a remarkable crop which, in Egypt, is of the very greatest importance.

"Owing to lack of accurate data it was hard to ascertain the yield of drees per acre in Egypt. None could be found who had actually measured it. The figures given are those furnished by Mr. Bonaparte, of the School of Agriculture at Gizeh."
both as regards the value of its green and dried fodder and its fertilizing effect upon the soil, and if possible to introduce its culture into such regions of the United States as shall be suited to its profitable cultivation. A considerable quantity of seed has been secured through the kind assistance of Mr. George P. Foaden, of the Khedivial Agricultural Society of Cairo, for distribution by the Section of Seed and Plant Introduction, and experiments to test it are now under way. Previous experiments with the culture of berseem were based upon an insufficient knowledge of its peculiarities as a winter crop and their failure was practically assured from the start.

It is designed to have the plant tested as a half-year rotation for cotton in Texas, and in connection with the culture of the newly imported Egyptian cotton now being grown experimentally in Arizona and southern California. It is hoped also that it will find a place for itself as a winter soiling and fodder crop for orchards and vineyards in such regions as Arizona and California, where winter irrigation, which has been shown to be so beneficial by Professor McClatchie, is practiced. For spring forage, berseem may prove of value for the Northwest if planted after all danger of frost is over and harvested before the excessive heat of summer comes on, and the humid climate of Washington and Oregon may admit of its use in rotation with wheat, where now many thousands of acres lie fallow throughout the winter. Until careful tests have been made it will be impossible to say to which of these purposes it will prove best adapted.

DESCRIPTION OF PLATES.

Plate I.

Plant of Moscowi berseem in full flower. Natural size. From a photograph taken by Mr. C. S. Seofield of a plant in the trial gardens of Dr. Trabut at Rouiba, near Algiers.

Plate II.

Reclamation of salt lands by the aid of berseem. Fig. 1. Salt land of Aboukire estate near the seacoast of the Nile Delta before any attempts at reclaiming have been made. Fig. 2. Aboukire estate; fresh-water canal at right of picture; on the left, drain for salty water after it has been used for washing salt lands. Fig. 3. Horse feeding in field of berseem on salt lands of Aboukire the second year after the washing and reclaiming work has been begun.

Plate III.

Fig. 1. Water buffaloes feeding in a berseem field at Kaif, Dewar on the estate of Mr. Em. Zervudachi. Fig. 2. Cattle tethered in a berseem field near Cairo. Fig. 3. Cattle in barn, feeding on fresh berseem, at Mr. Beyerdic's estate at Bordein, Egypt.

Plate IV.

Fig. 1. Camels loaded with fresh berseem starting for Alexandria. From photograph taken by Mr. Brand, of Aboukire estate. Fig. 2. Early morning on the road from the Pyramids. Camels loaded with fresh berseem. Fig. 3. A donkey load of fresh berseem.
Plate V.

Fig. 1. Taking green berseem to market. A donkey cart load of berseem which has just been watered to make it weigh more. Fig. 2. Making berseem hay or "drees." Tram wagonload of "drees," showing method of handling on the large estate of Mr. Beyerlé at Bordein. Fig. 3. Tram train of "drees" ready for the barns, Mr. Beyerlé's estate at Bordein.

Plate VI.

Fig. 1. A field of berseem in full flower on Mr. Beyerlé's estate at Bordein. Fig. 2. Camel grazing in field of berseem, Aboukir estate. Fig. 3. A windrow of berseem hay or "drees."

Plate VII.

Fig. 1. A field of berseem before flowering. Roadside near Alexandria. Fig. 2. The irrigation basins of Bedraschine, showing embankment dividing two large basins. Ruined native town in background. Fig. 3. Flood gates barring the entrance to the irrigation basins shown in Fig. 2.

Plate VIII.

Fig. 1. Roots of Mascowi berseem, showing numerous root tubercles on the main and lateral roots. Slightly enlarged. Fig. 2. Roots of Mascowi berseem from a patch which had been cut but once. Natural size.

Plate IX.

Fig. 1. Young plant of Mascowi berseem shortly after the first cutting, showing the base of the dead stem and the new living lateral shoots. Greatly reduced. Fig. 2. Roots of the plant shown in Fig. 1, showing the numerous tubercles. Natural size. Fig. 3. A single plant of Mascowi berseem from Mr. Beyerlé's estate at Bordein on April 14, 1901.

Plate X.

Root of ordinary alfalfa on left and of Mascowi berseem on right, showing the great difference in habit of the two plants, and also the greater number of root tubercles on the berseem. Natural size.

Plate XI.

Fig. 1. Cutting berseem by hand sickle and loading on donkey cart for the market. Fig. 2. Cutting berseem with a scythe; photographed by Mr. Brand, of the Aboukir estate. Fig. 3. Cutting berseem with an American mowing machine on the estate of Mr. Beyerlé, Bordein, Egypt.

Plate XII.

Fig. 1. Plant of Fachl berseem gone to seed, showing the dry heads and shriveled leaves. Gizeh irrigation basin near the Great Pyramids. Photograph taken May 1, 1901. Fig. 2. Plant of Saida berseem in full bloom, showing the long taproot. From the Gizeh irrigation basin near the Great Pyramids. Photograph taken May 1, 1901.

Plate XIII.

American mowing machine and rake in a field of berseem on the estate of Mr. Beyerlé at Bordein, Egypt.

Plate XIV.

Loading trams with berseem hay on estate of Mr. Beyerlé at Bordein, Egypt.
Fig. 1.—Original Aspect of Salt Lands.

Fig. 2.—Ditches in Salt Lands.

Fig. 3.—Growth of Berseem on Salt Lands.

Reclaiming Salt Lands with the Assistance of Berseem.
FIG. 1.—CATTLE GRAZING IN FIELD OF BERSEEM.

FIG. 2.—CATTLE GRAZING IN FIELD OF BERSEEM.

FIG. 3.—BERSEEM USED AS A GREEN FODDER CROP.
BERSEEM USED AS A PASTURE AND GREEN FODDER CROP.
Fig. 1.—Camels Carrying Green Berseem to Market.

Fig. 2.—Line of Animals Loaded with Green Berseem.

Fig. 3.—Donkeys Transporting Green Berseem. Bringing Green Berseem to Market.
Fig. 1.—Taking Green Berseem to Market.

Fig. 2.—Train Wagonload of "Drees."

Fig. 3.—Taking Berseem Hay or "Drees" to the Barn.
FIG. 1.—BERSEEM IN FULL FLOWER.

FIG. 2.—CAMELS GRAZING IN FIELD OF BERSEEM.

FIG. 3.—A WINDROW OF BERSEEM HAY OR "DREES."
Fig. 1.—Field of Berseem before Flowering.

Fig. 2.—Embankment Dividing Two Irrigation Basins.

Fig. 3.—Flood Gate for Irrigation Basins Shown in Fig. 2.
FIG. 1.—ROOTS OF MUSCOWI BERSEEM, SHOWING TUBERCLES ON MAIN AND LATERAL ROOTS. SLIGHTLY ENLARGED.

FIG. 2.—ROOTS OF MUSCOWI BERSEEM TAKEN AFTER FIRST CUTTING. NATURAL SIZE.
ROOTS OF ORDINARY ALFALFA (ON LEFT) AND MUSCOWI BERSEEM (ON RIGHT).
Fig. 1.—Cutting Berseem with Hand Sickle and Loading a Cart for Market.

Fig. 2.—Cutting Berseem with Scythe.

Fig. 3.—Cutting Berseem with American Mowing Machine.
FIG. 1.—PLANT OF FACHL BERSEEM ALREADY GONE TO SEED, MAY 1, 1901.

FIG. 2.—PLANT OF SAIDA BERSEEM IN FLOWER, MAY 1, 1901. REDUCED TO TWO-SEVENTHS NATURAL SIZE.
AMERICAN MOWING MACHINE AND RAKE IN A FIELD OF BERMÉN ON THE ESTATE OF MR. BEVERLE AT BORDEN, EGYPT.
THE MANUFACTURE AND PRESERVATION OF
UNFERMENTED GRAPE MUST.

BY

GEORGE C. HUSMANN,

Expert in Charge of Viticultural Investigations,
Pomological Investigations.

Issued November 6, 1902.

WASHINGTON:
Government Printing Office.
1902.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,
Washington, D. C., July 7, 1902.

Sir: I have the honor to transmit herewith a paper entitled "The Manufacture and Preservation of Unfermented Grape Must," and respectfully recommend that it be published as Bulletin No. 24 of the Bureau series. The paper was prepared by Mr. George C. Husmann, Expert in Charge of Viticultural Investigations, and was submitted by the Pomologist.

Respectfully,

B. T. Galloway,  
Chief of Bureau.

Hon. James Wilson,  
Secretary of Agriculture.
PREFACE.

This bulletin gives the results of recent investigations undertaken by Mr. George C. Husmann, Expert in Charge of Viticultural Investigations, of this office. The manufacture and preservation of unfermented grape must is a subject that is attracting much attention at present and is of vital interest to both manufacturers and consumers.

Mr. Husmann has made a careful investigation of the industry in both its economical and commercial aspects, and the bulletin is designed to aid both manufacturer and consumer in preparing and utilizing a product of the grape that is of most important economic value.

G. B. Brackett,
Pomologist.

Office of the Pomologist,
Washington, D. C., June 24, 1902.
CONTENTS.

Introduction ........................................... 9
Historical notes ..................................... 9
Composition of the grape ......................... 10
Causes of fermentation ............................... 10
Methods of preventing fermentation ............... 10
Process used in California ......................... 11
Methods used in the Eastern States ............... 14
Home manufacture .................................. 16
Uses of unfermented must ......................... 17
A few good recipes .................................. 18
Analyses of grape must .............................. 19
Prices and statistics ................................ 19
ILLUSTRATIONS.

PLATE. Presses and kettles used in the Chautauqua grape district. Frontispiece

TEXT FIGURES.

Fig. 1. Continuous pasteurizer ................................................................. 12
2. Filter for clarifying must ................................................................. 13
3. Cork clamp and pasteurizer for must in bottles ................................. 14
4. Aluminum kettles for heating crushed grapes ................................. 15
THE MANUFACTURE AND PRESERVATION OF UNFERMENTED GRAPE MUST.

INTRODUCTION.

The use of unfermented grape juice is of very ancient origin, being undoubtedly as old as the art of wine making. The industry of manufacturing unfermented grape must on an extensive scale for a general market is, however, as yet in its infancy, as is exemplified by the diversity of the apparatus used in the various factories. Each manufacturer seems to have had a different conception and to have constructed his machinery according to his own ideas.

It is the purpose of this publication to describe the most economical and successful methods of manufacturing must and to discuss its uses and effects on the system, together with the outlook for the commercial success of the industry.

HISTORICAL NOTES.

Galienus, the Greek physician and writer, says (A. D. 131):

A good many Asiatic wines were stored in bottles, which were hung in the corner of the fireplaces, where, by evaporation, they became old and dry. This process was called funarium.

The Greeks had two kinds of wine—the protoplon, or first juice of the grape before pressing, and the denterion, or pressed juice. The Romans called them vinum primarium and vinum secondarium. Some of them drank the juice before fermentation had started, and called it mustum; after the must had been through a heating process (called reduction nowadays), they called it frutum; and when after long heating it had been reduced to one-half or one-third its original volume, they called it sapum. This was used by the Romans on their bread, and was the equivalent of what we now call sirup.

In Europe physicians often send their patients to the wine-growing districts during vintage time to take daily rations of unfermented must as it comes from the crusher. This, however, restricts its use to only one season of the year and to the immediate vicinity of wine districts or to individuals strong enough to undertake a journey.
Of late years extended efforts have been made to keep the must unfermented and put it up in such shape that it can be used anywhere and at all times of the year.

Until recently the use of must was almost exclusively restricted to medicinal purposes. Unrestricted use has been delayed on account of a lack of special knowledge underlying the principles of the process of manufacture and of skill in their application, resulting in many failures, thus making the production of a good article uncertain and very expensive, and inducing some unscrupulous persons to use injurious preservatives to cheapen the cost of manufacture. It is well known that pure must is healthful and nutritious, but with the addition of chemical preservatives it becomes injurious in proportion to the amount and kind of preservative used.

**COMPOSITION OF THE GRAPE.**

The grape contains 15 to 35 per cent of sugar (Balling's scale), about 2 to 3 per cent of nitrogenous substances, and some tartaric and malic acids. The skin contains tannin, cream of tartar, and coloring matter. The seeds contain tannin, amylaceous matters, and fat. The stems contain tannin, divers acids, and mucilaginous matter. The comparative composition of the different parts of the fruit determines the value of must made from any grape.

**CAUSES OF FERMENTATION.**

It is well known that grapes and other fruits when ripe have the invisible spores of various fungi, yeast (ferments), and bacteria adhering to them. When dry these are inert, but after the grapes are crushed and they are surrounded by the must they become active and begin to multiply. If the must is warm, the changes take place rapidly; if, on the other hand, it is cool, the change is slower. But in either case, if left alone, the organisms increase until the must ferments. The most favorable temperature for fermentation is between 65° and 88° F. Cold checks, but does not kill, the ferment. This fermentation, now commonly called the elliptic yeast, changes the sugar in the grape to alcohol and carbonic acid gas, and is the leading factor in converting must into wine; hence it will be readily seen that to keep unfermented must sweet, fermentation must be prevented, and to be salable the product must be clear, bright, and attractive.

**METHODS OF PREVENTING FERMENTATION**

Fermentation can be prevented in either of two ways:

1. By chemical methods, which consist in the addition of germ poisons or antiseptics, which either kill the germs or prevent their growth. Of these, the principal ones used are salicylic, sulphurous, boracic, and benzoic acids, formalin, fluorides, and saccharin. As these sub-
stances are generally regarded as adulterants and injurious, they should not be used.

(2) Mechanical means are sometimes employed. The germs are either removed by some mechanical means, such as a filtering or a centrifugal apparatus, or they are destroyed by heat, electricity, etc. Of these, heat has so far been the most practical.

When a liquid is heated to a sufficiently high temperature all organisms in it are killed. The degree of heat required, however, differs not only with the particular variety of organisms, but also with the liquid in which they are held. Time is also a factor. An organism may not be killed if heated to a high temperature and quickly cooled. If, however, the temperature is kept at the same high degree for some time, it will be killed. It must also be borne in mind that fungi, including yeasts, exist in the growing and the resting states, the latter being much more resistant than the former. A characteristic of the fungi is their great resistance to heat when dry. In this state they can be heated to 212 °F. without being killed. The spores of the common mold are even more resistant. This should be well considered in sterilizing the bottles and corks, which should be steamed to 240 °F. for at least fifteen minutes.

Practical tests so far made indicate that must can be safely sterilized at from 165 to 176 °F. At this temperature the flavor is hardly changed, while at a temperature much above 200 °F. it is. This is an important point, as the success of an enterprise of this character depends entirely upon the flavor and quality of the product.

Such a vast difference exists in the methods pursued in California and in the Eastern States that a description of each is here given.

**PROCESS USED IN CALIFORNIA.**

This method, as described in Bulletin No. 130 of the California Experiment Station, is in substance as follows: Only clean and perfectly sound grapes, preferably those having a high natural acidity, picked and handled when cool, should be used. This fruit should not be too ripe or the must will be too sweet and be difficult to clarify. The grapes are pressed immediately and the juice is run into clean, sterilized puncheons or other receptacles. If the must is 59 °F. or under, it may be left to settle for twenty-four hours or more. This rids the juice of most of the floating solid matter and facilitates subsequent filtering. It is then passed through a continuous pasteurizer (see fig. 1) and heated to 173 °F., and should come out not warmer than 77 °F. when it is run directly by means of a block-tin pipe into fresh vessels. For this purpose sterilized puncheons or other casks may be used, although casks or vats of metal, lined with enamel, would be better.

The greatest care must be taken to avoid contamination of the must
as it flows from the pasteurizer. The ends of the block-tin pipe should be plunged into boiling water in changing from one package to another, and should not touch the hands or any exposed surface. The package should be closed with a sterilized bung as soon as full. After the must has settled some days, or even weeks, it is ready for filtering. This filtration is best accomplished by means of a filter so constructed that the must passes upward through the filtering medium under pressure. Such a filter is seen in fig. 2. This filter consists essentially of two shallow bowls clamped together, mouth to mouth, with the filtering medium between them. The unfiltered must enters the lower bowl through the pipe on the right of the figure, passes through the filtering medium into the upper bowl, and makes its exit, when clear, through the faucet a little to the left of the middle of the figure. The small faucet at the bottom of the lower bowl is for the purpose of cleaning the filter. Occasionally when filtration becomes slow, this faucet is opened for a few minutes. This allows the sediment accumulated at the bottom to escape and at the same time the entering must takes a rotary motion in the lower bowl, thus clearing off the surface of the filtering medium, so that when the clearing faucet is closed filtration proceeds as before. On a large scale a filter press such as is used in large wineries and in beet-sugar factories might be conveniently used.

The must should be bottled as it flows from the filter, corked immediately, and sterilized as soon as possible, preferably within twenty-four hours. On account of recontamination during filtering, a final sterilization must be made after the bottles are corked. This is accomplished by means of a bottle sterilizer.
A simple and efficient form of sterilizer is shown in fig. 3. It consists of a wooden trough, provided with a wooden grating placed about 2 inches from the bottom. The filled bottles are placed in wire baskets which rest upon the grating. The trough should contain enough water to submerge the bottles and be kept at 185° F. by means of a steam coil beneath the grating. It requires fifteen minutes for the must at the bottom to acquire that temperature. For packages of other sizes it is necessary to make a test with a bottle of must in which a thermometer has been placed, in order to determine how long it takes for the entire contents of the bottle to reach the required temperature. Sterilization in bottles should be conducted at a temperature at least 90° F. lower than that reached in the continuous pasteurizer. If the final heating is higher than the first, it may cause a precipitation of solid matter, which will make the must in the bottles cloudy.

During the sterilization in bottles the corks are liable to be expelled by the pressure developed. To prevent this they may be tied down with strong twine, but it is a great saving of time and labor to use some such contrivance as illustrated in fig. 3. Must so sterilized will keep unchanged for years, or until the bottles are opened.

No matter how carefully all previous work may be done, there is still danger of mold germs getting into the liquid through the corks, especially if a poor quality of corks be used. This can be prevented by dipping the necks of the bottles into heated paraffin before putting on the caps or by sealing over the corks with sealing wax.

The quality and character of the grape must will vary greatly with
the quality of the grapes used, and a pleasing effect may be had by the blending or mixing of the must of two or more varieties of grapes. The color of the must will always be white or yellowish, with the exception of that from such varieties as the Bouschets, which have a red juice. Red must can be obtained by a modification of the process described. If the must is allowed to pass through the continuous pasteurizer and flow out hot into a vat containing the skins of red grapes, almost any desired depth of color may be obtained, depending on the variety of grapes used and the time during which the hot must is left on the skins. Must thus prepared differs in other respects than color from the white must, various substances, especially tannin, being extracted from the skins, making the composition more like that of red wine, but containing sugar instead of alcohol. In some instances such an article will be preferred for medicinal use.

METHODS USED IN THE EASTERN STATES.

The methods used in the larger plants of the Eastern States, principally in the Chautauqua district on Lake Erie, are as follows:

The grapes are run through a combined crusher and stemmer in the upper story of the building, passing through wooden chutes to three aluminum kettles directly underneath. (See Frontispiece.) These kettles have double bottoms, so that steam can be used for heating without coming in contact with the contents. They also have in them revolving cylinders which keep the crushed grapes thoroughly stirred while they are being heated to 140° F. This heating and stirring aids in getting more color out of the skins, the relative amount of juice obtained per ton of grapes is larger, and the must has more of the ingredients and taste of red wine, without containing any alcohol. These kettles are filled in rotation, namely: As soon as No. 1 is full, steam is turned on to heat it while No. 2 is being filled. By the time No. 2 is full No. 1 is hot. Steam is then turned on No. 2 while No. 3 is being filled, and No. 1 is emptied and ready to be filled again.
Underneath the kettles are the presses, which are of the hydraulic type. Into these the heated contents of the kettles are emptied and pressed. They are on wheels, and are run backward and forward for filling and emptying in regular rotation. From the presses the juice runs through pipes to aluminum kettles underneath, similar to those in which the crushed grapes are heated, except that they contain no revolving cylinders. (See fig. 4.) In these kettles the juice is heated to 165 °F., skimmed, and run through a pasteurizer underneath at a temperature no lower than 175 °F. and no higher than 200 °F. From the pasteurizer the must is filled directly into freshly sterilized 5-gallon carboys, securely corked, and stored in the vaults until the juice has settled and cleared, after which the clear juice is carefully siphoned off, filtered, filled into bottles, and securely corked, undergoing a final pasteurizing in the bottles, as explained in describing the California method.

By the method just described a dark-colored liquid is made, usually called grape juice. Nine-tenths of the eastern musts placed on the market are of this kind. Should it be desired to make a lighter-colored smooth article, the process should be modified by omitting the heating and stirring before pressing, the crushed grapes being pressed at once.

Attention should be called to the fact that the leading defects so far found with unfermented juice placed on the market are that much of it is not clear, a condition which very much detracts from its otherwise attractive appearance, and is due to two causes already alluded
to—either the final sterilization in bottles has been at a higher temperature than the preceding one, or the juice has been improperly filtered or has not been filtered at all.

In other cases the juices have been sterilized at such high temperature that they have a disagreeable, scorched taste. It should be remembered that when an attempt is made to sterilize at a temperature above 195° F., one is treading on dangerous ground. Another serious mistake has been made in placing grape juice on the market in too large bottles, so that much of it becomes spoiled before it is used.

Grape must properly made and bottled will keep indefinitely if it is not exposed to the atmosphere or mold germs: but when a bottle is once opened it should, like canned goods, be used as soon as possible to keep it from spoiling.

**HOME MANUFACTURE.**

Friends who are fortunate enough to have a small patch, perhaps only an arbor, of grape vines often tell us: "We have so many grapes we do not know what to do with them." The surplus may be used to make unfermented grape juice. The following recipe will enable anyone to make it:

Use only clean, sound, well-ripened grapes. If an ordinary cider mill is at hand, it may be used for crushing and pressing, or the grapes may be crushed and pressed with the hands. If a light-colored juice is desired, put the crushed grapes in a cleanly washed cloth flour sack and tie up. Then either hang up securely and twist it, or let two persons take hold, one on each end of the sack, and twist, when the greater part of the juice will be expressed. Then gradually heat the juice in a double boiler or a large stone jar in a pan of hot water at a temperature of 180° to 200°—never above 200° F. It is best to use a thermometer, but if there be none at hand, heat the juice until it steams, but do not allow it to boil; put it in a glass or enameled vessel to settle for twenty-four hours; carefully drain the juice from the sediment, and run it through several thicknesses of clean flannel, if no other filter be available. After this, fill into clean bottles. Do not fill entirely, but leave room for the liquid to expand when again heated. Fit a thin board over the bottom of an ordinary wash boiler, set the filled bottles (ordinary glass fruit jars are just as good) in it, fill in with water around the bottles to about an inch from the top of them, and gradually heat until it is about to simmer. Then take the bottles out and cork or seal immediately. It is a good idea to take the further precaution of sealing the corks over with sealing wax, to prevent mold germs from entering through the corks. Should it be desired to make a red juice, heat the crushed grapes to not above 200° F., strain through a clean cloth, set away to cool and settle, and proceed the same as with light-colored juice. Many people do not
USES OF UNFERMENTED MUST.

The uses of unfermented must are many. It is used in sickness, convalescence, and good health; as a preventive, as well as a cure. By the young, by persons in the prime of life, and by those in old age it is used at all seasons of the year, whether that season be warm or cold, wet or dry. It is used in churches for sacramental purposes; at soda fountains as a cool and refreshing drink; in homes, at hotels, and at restaurants as a food, as a beverage, as a desert, and in many other ways. When people become accustomed to it they rarely give it up; hence the manufacture of grape juice will probably increase enormously as the years go by.

Dr. Miradow Minas, at Jurjew (Dorpat), experimented on himself with pasteurized must during fifty-three days, dividing the time into thirteen periods. He took the following daily rations of food: Water, 2,100 cubic centimeters; meat, 3,000 grams; tea, 9 grams; meat extract, 5 grams; light bread, 500 grams; sugar, 85.38 grams. During the first two and the last two periods he took no must. In the third period he took 300 cubic centimeters daily; in the fourth, 600 cubic centimeters, and thus gradually increased the portion until 1,250 cubic centimeters in the seventh period, which lasted five days, were taken. After this he gradually decreased the portion until 250 cubic centimeters were used in the eleventh period.

The conclusions reached were:

Through the rational addition of pasteurized must to a satisfactory mixed diet the catabolism of protein in the body is diminished. The power to protect protein is due to the grape sugar present, and is dependent not alone upon the quantity of grape juice taken, but also upon the kind and amount of protein consumed. The richer the food in easily digested protein the greater the power of the grape juice to protect protein. With an abundant diet the more or less long continued use of pasteurized must tends to induce a gain in body weight. The material gained may consist of nitrogenous substance or fatty tissue. When 300 to 750 c. c. of pasteurized grape juice is consumed daily the resorption of nitrogenous material is increased. When larger quantities are consumed (1,000 to 1,250 c. c.) the resorption of nitrogen diminishes somewhat, but in all cases it is better than on the same diet without the addition of pasteurized grape juice. The consumption of 300 to 500 c. c. of unfermented grape juice daily is a valuable addition to the diet and is of great benefit in the recovery of convalescents.
must daily diminishes intestinal fermentation. Larger quantities are either without effect on the intensity of intestinal fermentation or by diminishing the resorption of nitrogen increase the amount of ether sulphates excreted in the urine.

It should be said in considering the results obtained by Minas, that practically the same favorable results attributed to the use of grape juice have been found to follow the consumption of cane sugar. It therefore seems not unlikely that the value of grape juice as a food depends chiefly on the sugars present, though it should be remembered that the agreeable flavor undoubtedly increases the appetite and very probably increases the flow of digestive juices. Furthermore, grape juice offers the sugars in a reasonably dilute as well as a palatable form.

**A FEW GOOD RECIPES.**

**GRAPE NECTAR.**

Take the juice of two lemons and one orange, one pint of grape juice, one small cup of sugar, and a pint of water. Serve ice cold. If served from punch bowl, sliced lemon and orange add to appearance.

**AN INVALID DRINK.**

Put in the bottom of a wineglass two tablespoonfuls of grape juice; add to this the beaten white of one egg and a little chopped ice; sprinkle sugar over top and serve. This is often served in sanitariums.

**GRAPE PUNCH.**

Boil together one pound of sugar and half pint of water until it spins a thread; take from the fire and when cool add the juice of six lemons and a quart of grape juice. Stand aside overnight. Serve with plain water, apollinaris, or soda water.

**GRAPE SHERBET.**

For eight persons, mix one pint of grape must, juice of lemon, and one heaping teaspoonful of gelatin, dissolved in boiling water; freeze quickly; add beaten white of one egg just before finish.

**GRAPE ICE CREAM.**

One quart of must, one quart of cream, one pound of sugar, and the juice of one lemon.

**SYLLABUB.**

One quart of fresh cream, whites of four eggs, one glass of grape must, two small cups of powdered sugar; whip half the sugar with the cream, the balance with the eggs; mix well; add grape juice and pour over sweetened strawberries and pineapple or oranges and bananas. Serve cold.
ANALYSES—PRICES AND STATISTICS.

BOHEMIAN CREAM.

One pint thick cream, one pint grape-juice jelly; stir together; put in cups and set on ice. Serve with lady fingers.

Besides the recipes just given, many more are enumerated by the manufacturers, such as grape ice, grape lemonade, grape water ice, grape juice and egg, baked bananas, snow pudding, grape gelatin, junket and grape jelly, tutti frutti jelly, grape float, grape jelly, grape juice plain, grape soda water, and scores of others.

ANALYSES OF GRAPE MUST.

The analyses of a California must, as published in Bulletin No. 130 of the California Experiment Station, and of Concord grape must analyzed by Mr. L. S. Munson, of the Bureau of Chemistry, U. S. Department of Agriculture, are appended herewith, and may be of interest:

<table>
<thead>
<tr>
<th>Solid contents</th>
<th>Per cent.</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>0.65</td>
<td>0.65</td>
</tr>
<tr>
<td>Total acids (as tartaric)</td>
<td>18.74</td>
<td>19.15</td>
</tr>
<tr>
<td>Volatile acid</td>
<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>Grape sugar</td>
<td>18.74</td>
<td>19.15</td>
</tr>
<tr>
<td>Free tartaric acid</td>
<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>Ash</td>
<td>0.55</td>
<td>0.49</td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Cream of tartar</td>
<td>0.95</td>
<td>0.95</td>
</tr>
</tbody>
</table>

The comparison between the two becomes all the more interesting from the fact that California musts are made from Vinifera, or the European grapes, whereas the commercial musts of the Eastern States are made almost exclusively from the Concord, a Labrusca, or American variety.

PRICES AND STATISTICS.

The average prices to consumers are as follows:

| Cases of 1 dozen quart bottles | $4.50 to $6.00 |
| Cases of 2 dozen pint bottles  | 4.75 to 6.25   |
| Cases of 4 gallon bottles      | 5.00 to 6.00   |

One firm in 1901 used, in their manufacture, 8,000 gross of bottles. To fill these required 1,000 tons of grapes, 8,000 gross of corks, 1,100,000 caps, as many labels and wrappers, and 60,000 boxes. In the Chautauqua district alone about 300,000 gallons of unfermented must was made in 1901, and all those engaged in its manufacture are enlarging their plants.
MISCELLANEOUS PAPERS.

I. THE SEEDS OF RESCUE GRASS AND CHESS.
   By F. H. Hillman, Assistant, Seed Laboratory.

II. SARAGOLLA WHEAT.
   By David G. Fairchild, Agricultural Explorer.

III. PLANT INTRODUCTION NOTES FROM SOUTH AFRICA.
   By David G. Fairchild, Agricultural Explorer.

IV. CONGRESSIONAL SEED AND PLANT DISTRIBUTION CIRCULARS, 1902-1903.

BOTANICAL INVESTIGATIONS AND EXPERIMENTS
AND
SEED AND PLANT INTRODUCTION AND DISTRIBUTION.

Issued July 18, 1903.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903
BUREAU OF PLANT INDUSTRY.

Beverly T. Galloway, Chief of Bureau.

BOTANICAL INVESTIGATIONS AND EXPERIMENTS.

Frederick V. Coville, Botanist.

SEED AND PLANT INTRODUCTION AND DISTRIBUTION.

A. J. Pieters, Botanist in Charge.
The seeds of rescue grass and chess ........................................... 5
Saragolla wheat ........................................................................ 9
Plant introduction notes from South Africa ................................ 13
   Introduction ........................................................................... 13
   Some Cape seedling grape varieties ........................................ 14
      The Red Hanepoot grape ...................................................... 14
      Vitis rupestris metallica ....................................................... 15
      Vitis rupestris Le Roux ......................................................... 16
   Fruit-bearing hedge plants ...................................................... 16
   Rhodes grass .......................................................................... 17
   The Kafir plum as a shade tree ............................................... 18
   The Rooi-bloem, a new corn parasite ...................................... 18
   The Natal pineapple .............................................................. 20
Congressional Seed and Plant Distribution circulars, 1902-1903 ........ 23
   Plan of distribution and allotments ......................................... 23
   Distribution of novelties and specialties ................................... 26
   Directions for planting bulbs ................................................. 47
   Distribution of cotton seed ..................................................... 47
   Rivers Sea Island cotton ....................................................... 59
   Sea Island cotton No. 224 ....................................................... 64
   Iron cowpea .......................................................................... 65
   Kleinwanzleben sugar beet ...................................................... 68
   Distribution of tobacco seed and cultural directions .................. 70
ILLUSTRATIONS.

PLATES.

Plate I. Mature unopened cotton bolls—Parker, Jones Improved, Moore Excelsior, King, and Seabrook Sea Island................................. 48
II. Mature unopened and opened cotton bolls—Griffin and Allen Improved ..................................................................................... 56
III. Fig. 1.—Field infected by wilt and root-knot. Fig. 2.—Roots of Iron cowpea. Fig. 3.—Root-knot on Wonderful cowpea ......................... 64

TEXT FIGURES.

Fig. 1. Florets or seeds of rescue grass ............................................. 6
2. Seeds of chess ............................................................................ 7
3. Upright chess .......................................................................... 7
4. Map showing districts into which the United States has been divided for seed-distribution purposes ............................................. 23
5. Hyacinth, tulip, and narcissus bulbs ......................................... 47
6. Row of Rivers Sea Island cotton in wilt-infected field planted with rows of ordinary Sea Island cotton ................................. 60
I.—THE SEEDS OF RESCUE GRASS AND CHESS.

By F. H. Hillman, Assistant, Seed Laboratory, Botanical Investigations and Experiments.

There have recently been received at the Seed Laboratory from different States of the South several samples of the seed of chess, or cheat (Bromus secalinus), which had been offered for sale as rescue grass (Bromus unioloides). Notwithstanding the close botanical relationship of chess to rescue grass, and the fact that the former is sometimes, like the latter, employed as a hay crop, the difference between the two is so considerable that, if the seeds of both are to be handled in the trade, they should pass under their true names.

The brome grasses belong to the genus Bromus and vary widely in their agricultural value. One of them, the awnless brome grass (Bromus inermis), also called smooth and Hungarian brome grass, is highly valued in the West as a drought-resisting forage and hay plant. Rescue grass bears a somewhat similar relation to the agriculture of the South, while the chess is less valuable than either. Some value is assigned to it in certain localities, but it has been long and widely recognized as a most troublesome weed. The frequency with which it occurs in grain fields has led to the erroneous belief, adhered to by many farmers even to the present day, that chess is a degenerated form of wheat. Chess seeds are often abundant among the seeds of the cereal grains and the larger grass seeds, and sometimes occur with red clover seed.

With the aid of specimens, or descriptions, there should be no difficulty in distinguishing the seed of rescue grass from that of chess. The differences between the seed of chess and that of its near ally, Bromus ravennosus, are more difficult to detect; but from a practical

---

For some reason confusion has arisen in the Southern States regarding rescue grass and chess. Seed of the latter, which, though occasionally grown as a forage crop, is ordinarily a grain-field weed, has been offered for sale repeatedly under the name of the former, which is a valuable forage grass; and it has been thought desirable to issue a brief description of the two, so that both seedmen and purchasers may be able to distinguish them. The present paper is therefore presented. It was prepared under the direction of Mr. A. J. Pieters, Botanist in Charge of the Seed Laboratory.—Frederick V. Coville, Botanist.
standpoint this is not so important, since the two plants are very similar in habit, and it is probable that in many localities the latter would prove quite as undesirable as chess.

Bromus unioloides (Willd.) H. B. K.

(B. schraderi Kunth.)


Florets, or "seeds," 11 to 25 mm. (½ to 1 inch) long, strongly compressed from the sides, sharply keeled along the back, lanceolate as viewed from the side, the apex tapering and usually tipped by a short awn, at the base of which the glume is slightly notched; margins of the glume membranous-edged and usually not infolded except at the base; veins 4 or 5 on each side of the midnerves, or keel, evident as narrow ridges; palea two-thirds to three-fourths the length of the glume, which wholly incloses it; grain folded lengthwise and tightly clasping the infolded center of the palea. The florets are light or yellowish brown or straw-colored, often greenish and sometimes purplish. The surface varies from smooth to very finely rough-hairy, the latter condition being particularly evident on the veins and pedicel. When spread thinly on a level surface the seeds lie on one of the flattened sides. (Fig. 1.)

Bromus secalinus L.


Florets about 7 mm. (¼ to ⅛ inch) long, exclusive of the awn, which varies from 1 to 3 mm. in length, not compressed, cylindrical or somewhat spindle-shaped, obtuse at the apex; glume notched at the apex above the insertion of the awn; margins more or less infolded below the middle, narrowly or scarcely membranous-edged above the middle, usually not at all flaring at the apex; veins 3 on each side of the midnerves, very indistinct; palea equal to the glume, deeply grooved conformably with the grain, the keels hispid-ciliate and partially or wholly

The seeds of these grasses in a commercial sense consist of the grain inclosed in the chaff—i. e., glume and palea.
exposed; grain equal to the glume and pala, often exposed at the apex of the floret, deeply grooved, reddish brown, sometimes occurring free from the glume and pala. The florets are light or dark brown and mostly smooth, and sometimes have a slight diffused luster under the lens. (Fig. 2.)

The more evident characters by which rescue-grass seed and chess seed may be distinguished upon comparison are as follows:

Rescue-grass seeds, being strongly compressed, lie only on one side when resting on a level surface; and thus appear lance-shaped or broadly awl-shaped, tapering uniformly to a sharp, short-awned point. In contrast, the chess seeds are from little more than one-fourth to one-half as long, more robust, not evidently flattened, nearly cylindrical, grooved along one side, abruptly pointed, the apex with a very short or somewhat longer awn or awnless. When resting on a level surface they may lie slightly at one side of the midvein of the back, exposing to view the grooved face and a part of one side, or they may lie on the grooved face, showing the back. They more rarely rest directly on the back. Furthermore, the general color of a sample of chess is much darker brown than one of rescue-grass seed.

Bromus racemosus L.

Upright Chess.

Florets about 9 mm. (¼ inch) long, exclusive of the slender awn, which varies from 4 to 9 mm. in length, similar to those of Bromus secalinus in general form. The glume is broader than in B. secalinus and usually more arched at the margins; edges sometimes membranous, especially at the apex, which is notched above the insertion of the awn and often flaring; veins sometimes distinct; pala shorter than the glume, broadly hollowed or grooved, its keels more or less exposed and hispid-ciliate; grain shorter than the pala or at least covered by it, more broadly grooved than in Bromus secalinus. The
florets are smooth or finely roughened and straw-colored or light brown. (Fig. 3.)

These seeds are as easily distinguished from rescue-grass seeds as are those of chess. They are most readily distinguished from chess seeds by the broader glume, longer awn, and shorter palea and grain.

The following statement of the relative values of rescue grass and chess is contributed by Mr. Carleton R. Ball, Assistant Agrostologist of the Department of Agriculture:

Rescue grass was introduced into the South some fifty years ago and has since been widely cultivated. Its chief value is for winter and early spring grazing. It is very hardy, and makes a luxuriant and rapid growth throughout the winter under favorable conditions. Although it is an annual plant, it is said to become a short-lived perennial under close grazing, which prevents the production of seed. In ordinary practice the grass is allowed to reseed itself each season. Where grazed, stock should be taken off long enough to allow seed to ripen in the early summer. If it is cut for hay in March, the aftermath will usually reseed the ground. A summer crop may be grown on the same ground if it be taken off early enough to allow the young plants to begin their growth in the fall. Rescue grass is best adapted to rich, loamy soils. On light, poor soils it is probably inferior to rye or oats for pasturage or hay.

Chess is becoming more and more common as a weed in southern wheat fields. In some parts of the country, particularly in the Northwest, it has considerable value as a hay crop. A similar value has sometimes been claimed for it in the Southern States, but the general opinion is quite the opposite. It often appears abundantly where grain crops have been killed by unfavorable conditions. There are, however, other catch crops with fewer weedy tendencies and greater forage value which may be employed in such cases. In feeding value, as indicated by chemical analyses, chess ranks lower than most grasses, including rescue grass. This has been proved to be true of it even in the Northwest, where it is so largely used for hay.
II.—SARAGOLLA WHEAT.

By David G. Fairchild, Agricultural Explorer.

Italy is the land of macaroni, and the best of this remarkable food product in the world is to be had in Naples. There seems to be an agreeable flavor about Neapolitan macaroni which is characteristic of it and which one does not find in the French or Spanish, or even in the north Italian made product. Macaroni a la Napolitana, with its sauce made from the plum-like tomatoes that one sees hung up to dry everywhere on the walls of the narrow streets of Naples, must be tasted within sight of Vesuvius before one can judge this national Italian dish.

In searching for a reason for this superiority of the Neapolitan macaroni, the writer's attention was called to the fact that an especially fine-flavored variety is made from a native wheat called Saragolla, and that this variety is made only in small quantities. Paradoxical as it may seem to the American who is ready to pay any price for the best food products, the very finest quality of Italian macaroni is not often exported to America. This is a statement which the writer feels warranted in making after interviewing some of the largest exporters of macaroni, as well as the famous producers of Gragnano and Torre Annunziata. The reason for this anomalous condition of the trade lies in the fact that the very finest kind of macaroni keeps only a few months, while the commonly exported article remains good for a year.

In the days before the macaroni trade had assumed the proportions that it now occupies in the commerce of Italy it was supposed that only the hard wheats of Apulia and Sicily could be used in its manufacture, but as the demand for this foodstuff increased the hard wheats of other countries were imported. Among these wheats those from southern Russia, the so-called Taganrog varieties, proved best suited to the demands of the manufacturer. They are now imported in large quantities every year, and the majority of the macaroni is said to be made from these imported wheats. Nevertheless the manufacturers still consider the durum wheat of the province of Apulia to have a flavor superior to the imported varieties, and they place the so-called Saragolla wheat at the head of all macaroni wheats so far as the production of a fine-flavored product is concerned.
The market price of the Saragolla wheat ranges from 1.25 to 1.75 lire per quintal higher than that charged for the best Taganrog sorts, even after a duty of 8 lire per quintal has been paid; and the reason for this higher price is not so much in the better flavor of the Italian wheat as in the greater yield of semola per given weight of grain. The semola makers get proportionately more salable product out of the Saragolla wheats than they do out of those from Taganrog or other sources of import.

It is from these south Italian wheats that the most delicate macaroni of Naples is made, and the connoisseur who wants to live well in southern Italy insists on having his macaroni made from the hard wheats of Apulia. It makes little difference to him that the more delicate variety does not keep so well and more quickly falls a prey to the attacks of insects. What he wants is the fine flavor.

Like the export Munich beer, or the canned Danish butter, macaroni designed for sale in America, it is said, must be especially prepared, and the tougher gluten of the Taganrog wheat renders the macaroni that is made from it better suited for the export trade. Mixtures of the imported and the Saragolla wheat are also often made, it is said.

The region south of Foggia near the Adriatic coast of southern Italy, where this best Italian macaroni wheat is grown, is one of the driest in the country, having an annual rainfall of only 446.7 mm., or about 17.59 inches. In this respect it is but little superior to some of the Russian wheat regions, which have, according to Carleton, about 15 inches.

Whether or not the generally acknowledged superiority of Italian macaroni, even that made from Taganrog wheat, is due to the water used in its manufacture is a question which would probably require much study to answer. It is difficult to understand how any bacteria present in the water used to make the paste can influence the flavor, for it is employed while boiling hot. There is a possibility, however, that in the cellaring process, or the preliminary drying in the open air, the freshly made macaroni may be affected by the bacteria with which the air of the moist cellars and exposed drying places must be filled.

Although perhaps superfluous to the American manufacturer of macaroni, a description of the process of making it as followed in Gragnano and Torre Annunziata may have some interest as being that pursued by some of the most famous factories in the world.

To travelers in Italy these towns are pointed out as nestling at the base of Vesuvius and forming scarcely more than suburbs to the big city of Naples. They are dependent upon the manufacture of the pastas, as the various types of macaroni are called, and hand-worked mills stand side by side with those run by steam; all squeezing out long strings of yellow paste, which are cut and hung up on poles to
dry. The housetops, courtyards, narrow streets, and hillsides are covered with thousands of reed poles bending under the weight of yellow macaroni, and scattered over the ground on mats lie different sorts of short-shaped pastas.

The process of manufacture seems exceedingly simple, but there may, for all that, be secrets of the trade. As described in general by the manager of a large mill in Torre Annunziata the mode followed by the steam factories is as follows:

The durum wheat is ground into semola and sieved to remove the starchy part of the grains and leave the clear, light amber, or glutinous part. Three or four grades of quality are made, and these depend on the size of the sieve meshes.

The semola is put into a special iron mixer, shaped like an old-fashioned artillery mortar, except that it is square instead of cylindrical, and furnished in the bottom with special screw-shaped fans with which to stir the paste or dough. Boiling water is added to the semola and the dough is mixed for about seven minutes. The mass is then put on a flat, circular kneading board and kneaded by two sharp-edged parallel beams, which rise and fall as the table turns and press into the dough as they descend. A few minutes of kneading are sufficient and the homogeneous dough is then put into the cylinder and the piston descends upon the mass, forcing it in strings slowly through the perforated plate at the bottom. Fifteen minutes are required to convert the gallons of dough into thousands of feet of yellow macaroni. The yellow color is produced by the use of saffron, of which powder a very small quantity is put into each batch of dough.

As soon as the strings of fresh paste which issue continually from the die are of the proper length they are cut and thrown over a reed pole and carried into the sunlight, if the weather is fair, or into sheltered terraces, protected by curtains from the rain, if the weather is unfavorable. On bright days the strings of macaroni are exposed to the sunlight only two hours. They must be dried out only slightly before being cellared for the night in dungeon-like underground vaults similar to the Bavarian beer cellars.

For twelve hours or more the poles of macaroni are kept in these damp places, until the dough has become moist and pliable again and the strings have lost the brittleness that the exposure to the sunlight has given them. From the cellars the poles are carried to shaded storehouses, open on all sides to the air but not lighted from above. Here, in great masses of millions of strings, they hang for several days—from eight to twenty being required, depending upon the dryness of the atmosphere. According to the statements of the manager of a factory this process of drying is necessary to give to the brittle paste a horn-like toughness and fit it to withstand the rough handling to which it will be subjected without breaking into small pieces.
In all this simple process the one point at which bacteria might have a chance to play a rôle is in the first drying, cellaring, and subsequent slow drying in the shade. The theory that the water is responsible for the flavor must rest, it seems to the writer, on other than bacterial grounds, for from the appearance of the tank which supplied the hot water the inference is easy that the water is chalybeate, for the tank was incrusted with lime.

If, aside from the superiority of the macaroni of Gragnano, which is made from Taganrog wheat, a specially fine flavor is produced by the use of Saragolla grain, the growers of durum wheats in America deserve to have their attention called to this variety and be given an opportunity to test it on a reasonably large scale. The thin-skinned nature of the sort and its consequent greater semola-producing properties may not be maintained in all places in America, but regions may be found where these valuable qualities as well as the flavor are retained, and the wheat may prove, as it evidently does in Apulia, a profitable crop.

NAPLES, November 9, 1902.
From the standpoint of an agricultural explorer South Africa is a land of newly introduced plants. Compared with old civilized countries like Egypt and Japan, it is poor in cultivated species that are suitable for introduction into America. Its native flora is rich, but the number of economic plants is small and the most important of these have been brought into Africa in comparatively recent times. Only one who has been bewildered by the hosts of cultivated native plants of the Malay Archipelago can fully realize the dearth of food plants of South Africa. The explanation is simple. The Kafirs and Hottentots were, like our American Indians, races of hunters, and lived mostly on the immense herds of game which roamed over the vast areas of grass land on the South African veldt. As these herds of antelope and other game diminished in numbers or disappeared the natives became stock raisers and counted their wealth by the number of cattle they owned. The cultivation of the soil, which in such lands as Java or Japan was the chief occupation of the people, played a small rôle among the blacks of Cape Colony, and in consequence few wild plants were brought into cultivation, and the staple food plants of other races, when introduced late in the history of the country, were accepted by the Kafirs and grown in a careless, slovenly manner. The mealies of the country are the maize plants from America. Cassava is the West Indian manihot. Kafir corn is the “Dura” of the Arabs.

Several South African wild plants have already found their way into cultivation as valuable ornamentals, but, as Mr. Fairchild has pointed out in the present Bulletin, the South African flora is poor in economic species. There are some, however, that may prove valuable additions to the forage resources of our Southwest, and the grapes and the pineapples described will certainly be worth a careful trial.

The plants and seeds sent through the kindness of Mr. Lathrop have been distributed in such a manner that we shall be able to watch the growth of these plants in the United States.—A. J. Pieters, Botanist in Charge of Seed and Plant Introduction and Distribution, Washington, D. C., May 8, 1903.
and rice and potatoes were practically unknown among their cultivated plants.

It is no wonder that a country in which the natives have neglected their indigenous fruits and grains, and in whose footsteps the early white settlers followed, should prove a land poor in cultivated plants that are worthy of introduction into the New World.

A few things have, however, been called to the writer’s attention during a stay of some weeks in the country, and these have seemed worthy of writing about for the information of American cultivators.

SOME CAPE SEEDLING GRAPE VARIETIES.

It were strange if in so old and isolated a vine region as South Africa seedling varieties of the grape had not originated.

Mr. Enstace Pillans, at present in charge of the Government Wine Farm at Constantia, has called the writer’s attention to three varieties which are either known to be Cape seedlings or are of doubtful Cape origin, and the department of agriculture of the colony has, with that liberality which characterizes it, offered to send in July next a quantity of cuttings of each to America.

THE RED HANEPOOT GRAPE.

The Red Hanepoot, which ranks as one of the best export table grapes from South Africa, and which is called by the late Mr. De Waal, vine expert of the Cape government, the Red Muscat of Alexandria, is described as a variety with large, loose bunches, a large oval berry, which is dark red when ripe and has a sweet and musky flavor. It requires a lime and clay subsoil, and its fruit ripens in the middle of the grape season.

The origin of the Red Hanepoot, I am told, is not known, but it is believed to be a seedling of the White Muscat, called at the Cape White Hanepoot, and Mr. Bioletti, wine expert at the Elsenburg Agricultural School, who was formerly connected with the California Experiment Station, assures me that it is probably of Cape origin, and so far as he knows is not grown anywhere in California. Its good shipping qualities and its excellence as a table grape will, Mr. Bioletti thinks, give it a place beside the Flame Tokay, from which it differs in its decided musky flavor. Its excellent eating qualities Mr. Lathrop and the writer had an opportunity of testing, and there can be no doubt of its desirability for Californian vineyards. Like the other Muscat varieties, it is difficult to graft successfully upon resistant American stocks, and at the Cape it has succeeded best upon a seedling variety of Vitis rupestris called “Le Roux,” which is likewise of South African origin.
Vitis rupestris metallica is the name given by the late Mr. De Waal to a resistant stock grown from American seed on the Government Wine Farm at Constantia. This is quite distinct, Mr. Bioletti says, from a French variety bearing the same name, and is another of the Cape productions which is worthy of the attention of California vineyardists. It was a chance seedling, like the Riparia Gloire de Montpellier stock so universally used, according to De Waal, in the Medoc vine region of France. In the Agricultural Journal for December, 1901, Mr. De Waal published the following statement in reference to the origin of this interesting variety, which is, according to Mr. Pillans, taking the lead all over the colony as a grafting stock for wine grapes:

**RUPESTRIS METALLICA.**

This variety is derived from one seedling stock selected at Groot Constantia from amongst thousands. It was picked out in the year 1894, and new stocks were multiplied as fast as possible by the single-bud or one-eye system of propagation. In 1896 a mother plantation of 3,500 vines was laid out. The combined plantations have this year (1901) given a return of 687,000 cuttings, exclusive of several cartloads of thin ends. As many other mother plantations of this variety have, during the past few years, been laid out in the Constantia and other districts, the old mother stock, selected in 1894, must this year have given rise to an output of several millions of cuttings. The Rupestris Metallica is a strong grower and will thrive well in any loose soil, loam, gravel, or sand, and also in dry, open, heavy soils; it can besides stand a fair amount of wet in loose soils. It forms an excellent graft bearer for all varieties of European vines, except the Hanepoot, and, possibly also, other members of the Muscat family. A large percentage of Hanepoot grafts will die back on it even after a very successful start, and as a stock for Muscat Hambourg its suitability is also doubted. It appears to answer fairly well as a graft bearer for Muscadel, but sufficient experience on this point has not yet been gained to recommend it unreservedly as a stock for that variety.

The latest verdict regarding this Metallica stock from Mr. C. Mayer, who has not been an enthusiastic believer in it, is that it is suitable for dry, light sandy soils, but not for heavy ones. It is remarkable for the ease with which the cuttings root and can be grafted upon. The proportion of failures among grafts upon this stock is said to be remarkably small, and when millions of grafts are concerned this item is an important one.

The vigorous nature of the Metallica is claimed by Mr. Pillans to impart to the graft a very remarkable productiveness, and certainly when compared at Groot Constantia with the same varieties grafted on other American stalks of French origin, the load of fruit on the metallica vines this season bore out Mr. Pillans’s belief. Considered from the standpoint, then, of a quick-rooting, easy-grafting, vigorous stock, which produces good bearing vines, the *Vitis rupestris metallica* is well worth an extensive trial in California.
The Muscat varieties of table grapes, which are among the best, do not generally thrive well when grafted on American phylloxera-resistant stocks, and vineyardists in California are, according to Mr. Bioletti, looking for a better variety of stock than those already in use.

In Cape Colony, two of the best table grapes, the White and Red Hanepoot sorts, are of the Muscat type, and in replanting the vineyards with resistant stocks, the ordinary Riparia and Rupestris varieties have proven uncongenial to these Muscat kinds.

In March, 1899, the Cape department of agriculture appointed a commission to investigate the causes of this failure of the Hanepoot grafts on American vines.

In their printed report members of this commission call attention to the Le Roux, a seedling variety of American parentage which originated in the Cape and which has proved a successful stock for the Hanepoot variety of Muscat grape, of which there are six-year-old plants growing in the colony.

This Le Roux grape is named after Mr. Le Roux, of Drakenstein, upon whose place the seedling was raised and first propagated. Such a stock which, although not yet thoroughly tested, promises to be well suited for Muscat varieties, deserves the attention of our vine growers.

**FRUIT-BEARING HEDGE PLANTS.**

The finest hedges in Natal are the evergreen amatungulas, which are made from the white-flowered, red-fruitd *Carissa grandiflora*, a native of the colony. It is rare to find a fruit-bearing hedge, and of all those which the writer has seen the amatungulas are the most desirable. The genus *Carissa* contains a number of thorny, evergreen shrubs which bear pretty white flowers and edible red fruit.

On the markets in Durban the long, brilliant red fruit of the amatungulas is commonly sold; in fact, during January and February it is one of the commonest fruits to be seen in the stalls. Though variable in size and shape, it has generally an elongated form, with a distinct point, and the diameter of a good-sized Damson plum. The thin, red skin covers a pink flesh with a milky juice, which in flavor is sweet but lacks character, although much praised by European residents for use in making fruit salads.

To make an amatungula hedge, Mr. I. Medley Wood, the curator of the Durban botanic gardens, informs me, is a very simple matter. The seeds are sown in a seed bed, and when the young plants are 6 inches high they are transplanted to the place chosen for the hedge and set a foot apart, alternately in parallel rows, distant from one another a foot or more. As the plants grow they are trimmed into the desired hedge form, and the oftener they are trimmed the thicker
they interweave their tough, thorny branches, making an impenetrable barrier for stock of all kinds. When in flower the white, jasmine-like blossoms show off strikingly against the dark background of foliage; and the red fruit which follows is quite as pretty. It is an interesting sight to see the children hunting up and down the hedges about the city houses for the ripe amatungulas, with which they fill their aprons.

A nearly related species of Carissa (C. arduina DC.) is one of the prettiest shrubs in the municipal gardens in Cape Town. Its symmetrical form and dark-green leaves and branches make it well worth a place on the lawn of any subtropical park, while its pendant red fruits, which look like large barberries, make a showy contrast to the dark background. These fruits, like the amatungulas, are filled with a milky-juiced flesh, and are not unpleasant to the taste, although they have no sprightliness of flavor.

Whether or not the genus has in it sufficient material from which, by breeding, a new superlative fruit plant can be produced, which at the same time will make good hedges, is a question for experiment.

**RHODES GRASS.**

At Groot Schuur, Mr. Cecil Rhodes's estate, near Cape Town, there are several large grass fields of a species of chloris (C. virgata Sw.) grown from seed which Mr. Rhodes had collected in the eastern provinces of Cape Colony some years ago. Although, according to Professor MacOwan, the plant occurs commonly in the subtropical zone in other continents, from the fact that it was first brought into culture in South Africa by so noted a man as Mr. Rhodes it has been given the name of Rhodes grass.

Like other species of the same genus, this one sends out long, creeping stems, which lie flat on the ground, and from these the finger-like inflorescences arise. These stems lying on the ground are tough and hard and are likely to be of little food value, but the mass of leaves which is produced above them on good soil attains, it is said, a foot or more in height and has excellent feeding properties.

It does not seem likely that this species will prove more resistant to drought than many other grasses, for on the slopes of Table Mountain a patch was pointed out which was evidently not a success, and the only explanation for the failure was that the ground there was too dry. However, the planters to whom the steward of the estate has distributed seed have found the grass a valuable fodder plant, and there is such a local demand for the seed that a single sack was all that could be secured for trial in America. This quantity was given after application to the Chartered South African Company and to the steward of Groot Schuur.

27609—No. 25—03—2
THE KAFIR PLUM AS A SHADE TREE.

Professor MacOwan, whose writings on South African plants are so well known, showed the writer a row of Kafir plum trees which, by his advice, were planted in the grounds of the Parliament building at Cape Town. He pointed out that, owing to the situation of the adjoining houses, they were subjected to the most violent cross winds, and that ordinary trees which had been tried there were unable to keep their shape. A "southeaster" which came up before leaving Cape Town permitted the writer to see how these trees were whipped and beaten about with the winds from Table Mountain. It is truly remarkable how well they bear the rough treatment.

The evergreen foliage of this interesting tree is dense and dark, and casts a deep shade, which in sunny climates is always a desirable character. Its gray trunk and upright branches produce a graceful vase form, while its bright red plum-like fruits show off in pretty contrast against the dark background of leaves.

These plums are nearly all seed, only a thin layer of subacid pulp lying between the stone and the thin red skin, and though they are of sufficient sweetness to be attractive to children, they would find no use in our American households.

The species is a tender one and could only succeed in the frostless regions of the country, but its characteristics as a shade or avenue tree should win for it a place among the ornamentals of the subtropical zone.

According to the conservator of forests of Cape Colony, Mr. D. E. Hutchins, the Kafir plum is a large timber tree of the eastern provinces and produces a useful wood that is almost indistinguishable from mahogany, and which, like the latter, requires careful seasoning.

THE ROOI-BLOEM, A NEW CORN PARASITE.

Plant introduction concerns itself with calling to public notice plants which should not be introduced as well as those that are eligible for cultivation.

Professor MacOwan handed the writer the letters which are here reproduced, and which call attention in a forcible way to a parasite of the Indian corn plant which might prove a great pest if once introduced into our corn belt.

The plant has caused damage among the mealies (Indian corn) in Natal, and the Government entomologist, Mr. Fuller, has published in his reports notices of its ravages. While it appears to cause the most injury in poorly cultivated ground, and, in the opinion of Mr. Fuller, requires only clean culture to get rid of it, it is no doubt a pest that American corn growers should beware of introducing. The danger of its introduction seems quite remote, since no grain is imported from South Africa to America, but still it would be well to guard against any chance of its being introduced.
Transvaal Department of Agriculture,
Government Buildings, Pretoria, February 24, 1903.

Sir: I am sending you per same post a box containing a weed forwarded to me for identification. As we are at present without a botanist, I trust you will kindly help me in the matter. * * * For your fuller information I inclose the letter which accompanied the specimen.

I have the honor to be, sir, your obedient servant,

R. A. Davis.

Professor Macowan, Cape Town.

[Inclosure.]

Sandbach, Amsterdam P. O., February 15, 1903.

Sir: I am sending you by this post a box containing a weed which is very prevalent on this farm. The Dutch call it "Rooi-blom." When it appears among mealies it immediately kills the mealies. I have a field of over 40 acres which had a first-class crop of mealies three weeks ago; since then this "Rooi-blom" has appeared, and I am doubtful if I shall get five bags off the whole field. The Dutch say there is no cure for it, and nothing can be done to eradicate it; but I can not find out whether anything has been tried. Will you be good enough to inquire if any known cure exists? It is said that "Rooi-blom" only affects mealies. I have been trying to get oats for sowing in April, but can not get any "Africander" oats.

Yours, faithfully,

G. S. Leslie.

Secretary Land Board, Pretoria.

Cape Government Herbarium, Cape Town, February 28, 1903.

My dear Sir: I am in receipt of your letter of the 24th instant respecting a weed doing mischief in mealie crops, and of the sample belonging thereto.

The plant is a semi-parasite, *Striga coecina* Bth., and is not infrequent on our eastern frontier. Its habits resemble those of *Rhinanthus cristatus* L., the "yellow rattle," and *Melampyrum pratense* L., in that it is able to live easily on its own roots like other normal plants, but also to attach itself to those of more succulent neighbors and draw surreptitiously upon their food material. It will work when it must, but prefers the easier life of a predatory parasitism.

As to extermination of this showy interloper, advise your correspondent to give up for the present the culture of cereals upon the acreage infested with *Striga*, so that the parasite shall find no host to receive it, and perseveringly plow and cross plow, following with the harrow to get the weeds into heaps for drying and burning. A crop of totally different character, such as lucerne, for instance, would be best. But if local conditions do not allow of this, a double cropping with rape, to be grown on till fit for stock food, fed off, and then turned in to make way for the second crop suggests itself. The object is to give no chance to the *Striga* to renew its parasitism. The seed of the *Striga* is small and tenacious of life, hence the repeated working of the soil is important. Also it would be well to use kraal manure, in place of stable dung. It is astonishing what a number of weed seeds pass through the intestinal tract of the horse, and since we very rarely keep his contribution to the fertility of the farm long enough to insure their being killed out by a proper rotting down, we innocently sow a crop of weeds along with the manure. This is the secret of the spread of "zuuring" far and wide.
Will you hereafter let me know what is decided on and what the results amount to? I will consult our recently arrived agricultural assistant, and will let you know sharp whether he has anything different to recommend.

Remaining, my dear sir, yours, faithfully,

P. Macowan.

R. A. Davis, Esq., Pretoria.

THE NATAL PINEAPPLE.

The common pineapple of Natal, which is served everywhere in the colony on private and hotel tables, is one of the most satisfactory varieties of this fruit in the world.

Mr. Lathrop, who has traveled for many years in pineapple-growing countries, found the Natal pine one of the most delicious and in certain respects the most satisfactory of any which he had ever eaten.

This variety is a small one, the fruit often not being over 6 inches long, but this is one of its desirable characters. It is just large enough to serve as an individual fruit at a dinner table, and the result is that in Natal one is given a whole pineapple and prepares it himself, instead of a slice from a fruit that has been prepared in the kitchen and in which fermentation has already set in.

The form of this fruit is in all ways satisfactory. It has a small cluster of leaves at the apex, just large enough to serve as a good handle when you are preparing it for eating. The seed cavities are small and do not enter a great distance into the fruit. The skin is thin and easily cut off with a sharp knife. The flesh, which has a golden-yellow color when ripe, is so crisp and brittle that you can break it away from the slender core with a fork almost as easily as you could tear an apple to pieces. Many pines having a deliciously flavored flesh are so tough and full of fiber that it is only with difficulty that portions can be separated from the core for eating. This character of tender, fiberless flesh is possessed by the Natal pine to a very marked degree, and especially recommends it to people whose delicate digestion prohibits their eating the ordinary sorts, which contain more or less fibrous matter.

As regards flavor this variety leaves little to be desired. It has the characteristic pineapple taste, is deliciously sweet, and compares in these characters very favorably with the best hothouse pines. It may not be quite so juicy as the latter, but this character can scarcely be considered an objection to it.

No pine that has come to our attention has so little core to it as this Natal sort. Some fruits have scarcely any core, the pencil-thick center part itself being tender enough to eat, and as a rule the core spindle which one discards in eating is not over a half inch in diameter.

According to those with whom the writer talked the origin of this Natal pine is not known, though it has been in cultivation many years in the colony. Some time ago the Government, under the impression
that foreign varieties were better than their own. introduced suckers of the Ceylon and other larger fruited sorts for trial. These introductions have produced no effect upon the cultivation of this native sort, I am informed, and the "common pine" is still the great market variety of South Africa.

This Natal variety is so remarkable that suckers for introduction into America would have been secured had not many of the fruits seen in the markets and on the hotel tables been affected with what appears to be a disease: and although the contagious character of this malady or even its determination as of fungus or bacterial origin could not be decided, it was deemed best to take no chances of introducing it into our pineapple plantations.

The fruits affected by this disease have generally soft spots on them near the base, which, when cut into, are found to reach some distance into the flesh. The small cavities characteristic of the outer part of the pine are in these affected areas of a peculiar white color. This appearance resembles somewhat that produced by a felt of very fine fungous mycelium, but with a high-power hand lens no mycelial filaments could be detected. The same white color is also often produced in fruit flesh by the drying out of the juicy cells, and I am inclined to think that empty air-filled cells are the cause of the snowy-white appearance in this case. The flesh about the diseased areas is soft and juicy, but in none of the fruits examined was there any dark discoloration such as characterizes the pineapple disease described from Queensland and which is reported to be caused by the conidial, Fusarium-like form of some Ascomycete. This Natal malady does not agree with the description of the Queensland disease, and, if it proves to be a fungous disease at all, will probably be found to be caused by some new species of fungus.

A pine which is probably identical with this Natal variety is grown extensively in the eastern provinces of Cape Colony. It is there cultivated on the hillsides at a considerable altitude and not on the level plains, and it is grown in such quantities that the markets everywhere are overstocked with it. Pineapples are the cheapest fruit in South Africa.

Some of these eastern province pineapples were sent for by the Cape department of agriculture in order that we might compare them with the Natal variety. These, although not quite so luscious as those eaten in Natal, were evidently the same sort, and the very slight inferiority in flavor might be easily explained by the fact that the eastern-province fruits were picked before becoming quite ripe in order to ship well, while the Natal ones came more directly from the fields.

Through the department of agriculture a number of suckers of this eastern-province pineapple were ordered after it was ascertained that
the disease which affected the Natal fruits was unknown there. These were to be sent from perfectly healthy plantations and are unquestionably safe for introduction; but in order to make doubly sure of not introducing any pernicious pests, the introduced suckers will be grown apart from the commercial plantations and carefully watched.

According to Mr. Malley, the Assistant Cape Entomologist, there are, in the eastern provinces, plantations in which pines do not grow well and some situations where pineapple growing has had to be abandoned. Whether any specific disease is the cause of this or not is a disputed question. A careful examination on his part failed to reveal any cause, and it seems most likely that unsuitable physical conditions will account for the failure of the fruit in these situations.
IV. CONGRESSIONAL SEED AND PLANT DISTRIBUTION CIRCULARS, 1902-1903."

PLAN OF DISTRIBUTION AND ALLOTMENTS OF CONGRESSIONAL SEEDS AND PLANTS, 1902-1903.

Some changes in the plan of conducting the Congressional distribution of seeds, plants, bulbs, etc., during the fiscal year 1902-1903 have been approved by the Honorable Secretary of Agriculture, and in order to aid you in preparing addressed franked envelopes your attention is respectfully called to the changes set forth below.

Division of the country.—With a view of handling the seed to better advantage the country has been divided into six districts, and varieties of seeds and plants particularly adapted to each district will be distributed.

This publication consists of a number of circulars prepared by different members of the scientific force of the Bureau of Plant Industry and one prepared by the Chief of the Bureau of Soils. These circulars were originally printed to accompany the seeds sent out through the Congressional distribution and consist of descriptions of varieties and directions for their culture. Many of these contain matter that should form part of the permanent records of the Department, and they have therefore been collected for publication in this form.—A. J. Pieters, Botanist in Charge of Seed and Plant Introduction and Distribution, Washington, D. C., May 14, 1903.
be distributed therein. The accompanying small map shows the manner in which the divisions have been made.

Vegetable seeds.—There will be, as usual, a distribution of miscellaneous vegetable seeds, and in addition it is planned to furnish a limited number of packages of novelties—that is, seeds of varieties either new or little known and of peculiar merit for distribution in each locality. The miscellaneous vegetable seeds will be put up as usual, 5 packets in a package, and each Senator, Member, and Delegate in Congress will have 12,000 such packages to his credit. There will be 500 packages containing the novelties, each package containing 5 packets. The novelties will be accompanied by a circular describing the varieties in full and giving directions for culture and use. There will also be a franked postal card for each collection of the novelties, so that the recipient may, if he desires, signify his willingness to make a report to the Department on the seeds received.

Flower seeds.—The number of packages of flower seeds allotted to each Senator, Member, and Delegate in Congress has been increased to 500, and arrangements have been made whereby members having city constituents may exchange vegetable seeds for flower seeds, if they so desire. Details of this arrangement will be furnished later. A special collection of flower seeds will be prepared for those having strictly city constituents, the varieties chosen being suitable for window boxes, lots, and small dooryards.

Cotton and tobacco.—The plan adopted last year of putting up special collections of cotton and tobacco best adapted to the districts into which they are sent will be continued. This work has proved very satisfactory, as through it many valuable varieties have been distributed.

Grass seed and forage crops.—Plans for the distribution of these seeds have not yet been fully matured, and a later announcement will therefore be sent out as soon as complete arrangements are perfected.

Plants, trees, and grapevines.—The distribution of plants, trees, and grapevines will be similar to that of last year, excepting that the number of trees will be increased to 100 for each Senator, Member, and Delegate. Full information as to the character of the trees, plants, etc., will be forwarded later.

Bulbs.—These will be ready for distribution early in November, and they should be distributed promptly in order to secure the best results. Due notice will be forwarded when the bulbs are received.

Loose packets of vegetable seed.—In order to enable Senators, Members, and Delegates to quickly meet small miscellaneous demands for vegetable seed, loose packets of the assortments put up for general distribution will be sent to committee rooms, or elsewhere in Washington, upon receipt of proper orders. Envelopes for forwarding these packets through the mails will also be furnished. This plan will make it practicable to send out packages containing more than five
packets, if it is desired to do so. In no case, however, can the Department put up such packets, as the large number of packages to be distributed makes it necessary to use uniform numbers.

Franks.—The present session of Congress authorized the Public Printer to furnish the Secretary of Agriculture with the franks of Senators and Members necessary for sending out the seeds. Arrangements have therefore been made for securing franks with the facsimile signatures of Senators and Members, together with their respective States, printed thereon. These franks will be furnished at once, in sufficient quantity for vegetable and flower seeds, upon request made to the Secretary of Agriculture. With this arrangement there will be no necessity for using document slips, and all of those made for the seed work will be of uniform size and style.

Southern distribution.—It is planned to make the distribution in sections 1 and 2 at an earlier date than heretofore, and to this end arrangements have been made to begin the work in September. In order to do this, members from these sections are earnestly requested to turn in their addressed slips as early as possible.

The following statement shows the amounts of seeds, bulbs, plants, and trees, so far as the allotments have been made, for the fiscal year 1902-3.

Each Senator, Member, and Delegate will receive:
Vegetable seed, 12,000 packages, 5 papers each.
Novelties, vegetable seed, 500 packages, 5 papers each.
Flower seed, 500 packages, 5 papers each.
Tobacco seed, 110 packages, 5 papers each, to districts growing tobacco.
Cotton seed, 70 packages, 1 peck each, to districts growing cotton.
Lawn grass seed, 30 packages.
Forage crop seed, allotment not yet made.
Sorghum seed, allotment not yet made.
Sugar-beet seed, allotment not yet made.
Bulbs, 10 boxes, 35 bulbs each; or 20 boxes, 17 bulbs each.
Grapevines, 8 packages, 5 vines each.
Strawberry plants, 10 packages, 15 plants each.
Trees, 20 packages, 5 trees each.

Note.—One frank will be required for each package given above, and if more than one package is to be sent to one individual it will be necessary to have an addressed frank for each package. The smallest mail sacks used hold approximately 100 packages of vegetable or flower seed, and if it is desired to send less than this number to any one individual it will be necessary, in order to meet the post-office requirements, to have an addressed frank for each package. Over 100 packages, however, may be sent under one addressed frank, provided blank facsimile slips, to the number of packages desired,
accompany the address. In other words, if it is desired to send 200 packages of seed to one individual, one addressed frank and 199 blank franks, with the name of the Senator, Member, or Delegate printed thereon, will answer.

In sending addressed slips to the Department, please, in every case, plainly mark each lot with the name of the seeds or plants the slips are to cover, otherwise the Department will be unable to tell what is wanted.

Respectfully submitted.

B. T. GALLOWAY,
Chief of Bureau.

Approved:

JAMES WILSON, Secretary.

WASHINGTON, D. C., May 28, 1902.

[Distribution of novelties and specialties included in Section 1 of the scheme of distribution.]

DISTRIBUTION OF NOVELTIES AND SPECIALTIES.

SECTION 1.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the Department. In making the report, please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

CORN.

Trucker's Favorite.

A variety of field white dent corn, introduced in 1899 by T. W. Wood & Sons, which is recommended by them for table use. It has found some favor as a substitute for sweet corn, but the quality is poor and decidedly inferior to varieties of sweet corn, though much better than the ordinary varieties of field corn. It possesses the advantage over sweet corn in that it can be planted earlier, is harder, and can be grown successfully sometimes where sweet corn does not grow well. In these respects it resembles the Early Adams or Burlington field corn, which is used so largely as sweet corn, but differs from it principally in being larger eared and later. It is second early in season and follows immediately after Early Adams. The habit of the plant is the same as field corn, and the ears are 14-rowed and handsome. More especially adapted for large truckers than for home gardeners to whom quality is more of a consideration than hardiness.

Seed furnished by T. W. Wood & Sons, Richmond, Va.
SEED AND PLANT DISTRIBUTION.

BEET.

Crimson Globe.

An entirely distinct variety introduced in 1900 by Peter Henderson & Co.

Different from other kinds principally in its deep dark crimson color, and valuable on this account as well as for earliness, beautiful globe shape, and perfectly smooth roots, which are entirely free from root hairs, rootlets, and markings. The taproot is also very fine and slender and the top very smooth, with small crown. The roots are, however, very small, but, the leaves being also small and very erect in habit, the plants can be grown very close together and large crops obtained. The leaves are dark green in color. The flesh is a deep crimson and beautifully zoned with dark crimson and a lighter shade; the quality is very sweet and tender, never coarse nor woody. The season is about the same as Detroit Dark Red.

Seed furnished by T. W. Wood & Sons, Richmond, Va.

LETTUCE.

Wood's Cabbage.

This appears to be a strain of the well-known Hubbard's Market and was named and introduced in 1884 by T. W. Wood & Sons, of Richmond, Va. This is not at all a new variety or even a distinct sort, but is deserving of attention as an especially pure and even stock of Hubbard's Market, from which it was probably developed.

The plant is medium early, medium large, thick-leaved, very solid and compact, strictly cabbage-heading in habit, and medium dark solid green in color. It is a good all-round variety, answering splendidly for both forcing under glass and growing outdoors either in early spring or midsummer. The quality is very fine, being tender and sweet and of a slightly buttery flavor. The plants are hardy and slow to go to seed.

Seed furnished by T. W. Wood & Sons, Richmond, Va.

SQUASH.

Wood's Earliest Prolific.

Originated with market gardeners in Hanover County, Va., and introduced by T. W. Wood & Sons in 1897. It is similar in all respects to the well-known White Bush Scallop, but is said by the originators to be a week to ten days earlier and with scallops not quite so decided and more evenly rounded on the edge.

This variety is a type of the summer squash seen everywhere very early in our markets, and known as cymling in some places and patty-pan in others. The plants are strictly bush in habit and the fruits
flattish and round in shape, with center enlarged and margins flattened and scalloped. In color the fruits are a creamy white, the surface is very smooth, and the rind is exceedingly hard when the fruit is dead ripe. This is the earliest squash obtainable, and though of good quality it is not equal to the winter varieties which are not obtainable till much later in the season.

Seed furnished by T. W. Wool & Sons, Richmond, Va.

**TOMATO.**

**Sparks’s Earlana.**

Originated by George C. Sparks, of Philadelphia, and introduced in 1900 by Johnson & Stokes of the same city.

This variety is unquestionably an improvement in extra early tomatoes. While it is just as early as Atlantic Prize and similar sorts, which have formerly held the lead for smooth early tomatoes, it is an improvement on them in smoothness and size, qualities which are generally gained at the expense of earliness. The fruits are the same bright red color and flattened globe shape as Atlantic Prize, but they are a little larger in size and a considerably larger per cent of them are smooth and salable in the best markets.

The vines have fine foliage, are very open in habit, productive, and require but a short time to mature the season’s crop.

Seed furnished by T. W. Wool & Sons, Richmond, Va.

Approved:

**A. J. Pieters, Botanist in Charge.**

**B. T. Galloway, Chief of Bureau.**

[Circular sent to recipients of seeds of novelties and specialties included in Section 2 of the scheme of distribution.]

**SECTION 2.**

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the Department. In making the report, please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

**BEAN.**

**Jones’s Stringless Wax.**

Originated by A. X. Jones, of Leroy, N. Y., and introduced by American seedsmen in 1898. It is the result of crossing the Yosemite Wax with a white-seeded cross of the Ivory Pod Wax, and combines the superlative quality and fleshy, absolutely stringless pods of the former with the great productiveness and hardiness of the latter. The
"shy" bearing and ill-shaped pods of the Yosemite are eliminated, while the seeds being white makes it especially valuable to market gardeners who wish to use it as a shell bean, in case the marketing of string beans proves unprofitable. The pods are very beautiful, of a waxy white color, cylindrical in shape, and of medium size. The plants are very early, very dwarf in habit, and run remarkably even and pure. This variety is similar to the recently introduced Golden Crown Stringless, and also to the old and well-known Challenge Black Wax, from which it differs principally in color of seed and larger vine.

Seed furnished by D. M. Ferry & Co., Detroit, Mich.

ONION.

SOUTHERN GROWN YELLOW GLOBE DANVERS.

This seed is said by the grower to be specially adapted for the Southern States, and to make better bulbs when planted in the South than seed grown in California even or other sections of the country.

The variety is the old and well-known yellow sort, grown so much more extensively than any other and seen everywhere in our markets. It is deeper in shape than the Yellow Danvers or Flat Danvers, but otherwise is the same. The bulbs are a flat globe shape, of medium size, intermediate in season, medium yellow in color, and of a mild flavor. The variety is hardy, productive, a good keeper, and a good general purpose sort.

Seed furnished by T. W. Wood & Sons, Richmond, Va.

MUSKMELON.

Rocky Ford.

This variety is a strain of the old and well-known Netted Gem, and has been recently developed and grown in immense quantities at Rocky Ford, Colo., whence it has been shipped extensively to all the eastern and northern markets. The variety has been made extremely popular by the Rocky Ford growers, as much on account of the careful shipping they have practiced as for the fine melons they have been able to produce in their ideal melon-growing country. The development of the variety is obscure and disputed. It was first introduced by seedsmen in 1899.

The melon is very early and productive, and the fruit is oval shaped, shallow ribbed, densely netted, small in size, and mottled green and yellow in color. The flesh is green, of the very best quality, and, though not as rich as some others, is not surpassed in sweetness by any, while it is uniformly good and more universally liked than any other.

This seed was carefully selected by D. V. Burrill, of Rocky Ford, Colo., from melons of uniform size that were ideal in every particular.
TOMATO.

QUARTER CENTURY.

Originated in Monmouth County, N. J., in 1896 by Dr. William Van Fleet, and introduced in 1900 in trial packets by W. Atlee Burpee & Co. In the following year it was named Quarter Century. It appeared as a sport in the third generation from a cross between Lorihard, a bright scarlet fruit of the ordinary type of foliage, and Dwarf Champion, a purplish-red fruit of dwarf habit.

The variety is unquestionably, as claimed by the introducer, a valuable one, and larger in vine, more productive, and larger fruited than Dwarf Champion, which is the recognized standard dwarf variety. It differs also in being a bright scarlet instead of purplish red. The fruits are medium large, very deep or nearly round in shape, perfectly smooth, and of high quality. It is most like Dwarf Aristocrat and Dwarf Stone, but much larger fruited than the former and not quite so deep scarlet in color as the latter. It is claimed to be more dwarf, compact, and erect in habit than any other bush variety. It can be planted as close as 2½ feet apart each way.

Seed furnished by T. W. Wood & Sons, Richmond, Va.

RADISH.

White Icicle.

Originated by a German grower several years previous to its introduction into this country in 1899 by J. M. Thorburn & Co.

This variety is a decided acquisition to our list of radishes. It is a long, pure white sort, especially superior to other kinds in its good size and length, combined with earliness and strikingly beautiful color, which is of a rich glossy white, entirely free from purple or yellow tints, and very much the same clear white at the top as at the bottom. The stocks run very even in both color and shape, and in the latter respect are very beautiful and different from other long sorts in retaining their fullness to the bottom. The roots are of the very highest quality and rich, tender, and sweet. The plants remain fit for use fairly long before shooting to seed.

Seed furnished by T. W. Wood & Sons, Richmond, Va.

A. J. Pieters, Botanist in Charge.

B. T. Galloway, Chief of Bureau.

[Circular sent to recipients of seeds of novelties and specialties included in Section 3 of the scheme of distribution.]

SECTION 3.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope
that those who receive them will report the results of their trial to the Department. In making the report, please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

MUSTARD.
Ostrich Plume.

Originated in Augusta, Ga., and introduced in 1897 by the N. L. Willet Drug Company of the same city. It is claimed by the introducer to be the most beautiful and perfect mustard in cultivation, and as pretty as an ornamental plant. It is described as a large plant, often weighing as much as 5 or 6 pounds, and with tender plumes, very long and finely crimped.

Seed furnished by F. Barteldes & Co., Lawrence, Kans.

BEANS.
Wood's Earliest Hardest.

Introduced by T. W. Wood & Sons in 1895, and said by them to resemble the well-known Early Mohawk.

The claims for this variety made by the introducers are extreme earliness and hardness, great productiveness, and fine quality. It is said to excel in these qualities any variety in cultivation; to be able to stand a light frost without injury, and to stand early planting better than any other variety; also on account of its productiveness to be suitable for a main crop or for late planting. The pods are extremely tender and make good snaps, and the dry beans are suitable for winter use as shell beans. The pods are described as very large, long, and flat, and the seeds as white in color.

Seed furnished by T. W. Wood & Sons, Richmond, Va.

LETTUCE.
All Seasons.

A very desirable variety introduced in 1897 by J. C. Vaughan, of Chicago, Ill., but it seems never to have gained any general recognition. Excepting that the seed is black instead of white, it might very generally pass as identical with the well-known Deacon, but it differs from that variety in a number of particulars, the most important of which are its slightly larger size, later season, and rounder head. Where Deacon is liked this variety should be tried, for under some conditions it grows better than the Deacon, though generally it is not so sure a header.

All Seasons is a large, thick-headed, rather soft, but strictly cabbage-heading variety, light green in color, and medium late in season. The quality is very fine, of a soft texture and buttery flavor, and
though it can hardly be said to be strictly delicate in flavor, it is absolutely free from coarseness or bitterness.

Seed furnished by Vaughan's Seed Store, Chicago, Ill.

**MUSKMELON.**

**Rocky Ford.**

This variety is a strain of the old and well-known Netted Gem, and has been recently developed and grown in immense quantities at Rocky Ford, Colo., whence it has been shipped extensively to all the eastern and northern markets. The variety has been made extremely popular by the Rocky Ford growers as much on account of the careful shipping they have practiced as for the fine melons they have been able to produce in their ideal melon-growing country. The development of the variety is obscure and disputed. It was first introduced by seedsmen in 1899.

The melon is very early and productive, and the fruit oval shaped, shallow ribbed, densely netted, small in size, and mottled green and yellow in color. The flesh is green, of the very best quality, and, though not as rich as some others, is not surpassed in sweetness by any, while it is uniformly good and more universally liked than any other.

This seed was carefully selected by D. V. Burrill, of Rocky Ford, Colo., from melons of uniform size that were ideal in every particular.

**WATERMELON.**

**Eden.**

Originated by Mr. C. H. Mathis, of South Carolina, a large Southern melon grower, and introduced in 1900 by T. W. Wood & Sons. It is said by the introducers to be a cross of the Kolb's Gem and Rattlesnake. It very closely resembles the former, but is superior to it in its larger size, brighter striping, and more symmetrical shape. It also resembles the well-known Dixie and recently introduced Iceberg, but differs from them as well as from Kolb's Gem in the color of seeds, which are white instead of mottled grayish-black, as in these varieties. In what further respects, if any, it differs from Iceberg our trials have not yet fully demonstrated, but it is unquestionably shorter in shape than Dixie. The fruits are of mammoth size, short oval in shape, and brilliantly striped light and dark green. The variety is especially valuable as a shipper, but for home use other varieties of better quality are recommended. The quality is fair, but compared to the finer-grained sorts, such as Peerless and Round Light, it is coarse, stringy, and lacks in sweetness and richness.

Seed furnished by T. S. Williams, Columbia, S.C.

A. J. Pieters, **Botanist in Charge.**

Approved:

B. T. Galloway, **Chief of Bureau.**
SEED AND PLANT DISTRIBUTION.

[Circular sent to recipients of seeds of novelties and specialties included in Section 4 of the scheme of distribution.]

SECTION 4.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the Department. In making the report, please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

CORN.
Cosmopolitan.


This is an extra early variety, of good quality and fair-sized ear. It is not quite so early as Cory. First of All, and other first extra early varieties, but is of better quality and the ears are larger. The kernels are wrinkled, very large, broad, flat, and short. Though not in the least flinty, the seed germinates very well, and can be sown earlier than the later and more wrinkled varieties. The ears are 10 and 12 rowed, very well filled, about the same diameter from end to end, and very handsome.


LETTUCE.

Iceberg.

Originated in Italy, and first introduced into this country in 1894 by W. Atlee Burpee & Co. Marblehead Mammoth, which was introduced the following year, is sometimes thought to be the same. Undoubtedly stalks of the two are often interchanged, but the true Marblehead Mammoth is more crumpled in leaf and less heading in habit than Iceberg.

The variety is a very large, late, extremely hard, strictly cabbage-heading sort, light green in color. The leaf is very crumpled, slightly tinged with red, and very curly at the margin. In quality it is very tender, crisp, and sweet, but not as delicate in flavor as some of the smaller and less coarse-growing sorts. It is not suitable for forcing, but does well outdoors and stands the heat well. The well-known Hansen and New York varieties are very much like it in all respects except color.


MUSKMELON.

Defender.

This desirable new variety is a result of continued selection of Paul Rose with the especial view of developing fine quality, thick meat, and

27609—No. 25—03—3
thin rind. It was first introduced in 1801 by D. M. Ferry & Co., by whom it was originated. The fruits resemble Paul Rose more than any other, and being considerably larger and more densely netted than that popular variety, it makes a valuable addition to our list of varieties.

The fruits are strikingly beautiful in appearance, and especially distinguished by regular oval shape, even shallow ribbing, thick netting, and rich mottled color. The flesh is of a deep red color, very sweet, rich, and melting, without the coarseness and stringiness of some of the large-growing, green-fleshed sorts. Being firm and solid, the fruits are well adapted for shipping. They are of medium size, and the plants are productive and early.

Seed furnished by D. M. Ferry & Co., Detroit, Mich.

RADISH.

White Icicle.

Originated by a German grower several years previous to its introduction into this country in 1839 by J. M. Thorburn & Co.

This variety is a decided acquisition to our list of radishes. It is a long, pure white sort, especially superior to other kinds in its good size and length, combined with earliness and strikingly beautiful color, which is of a rich glossy white, entirely free from purple or yellow tints, and very much the same clear white at the top as at the bottom. The stocks run very even in both color and shape, and in the latter respect are very beautiful and different from other long sorts in retaining their fullness to the bottom. The roots are of the highest quality, and rich, tender, and sweet. The plants are rather slow to shoot to seed and the roots are fit for use a fairly long time.


ONION.

Extra Early Brown Spanish.

This variety has been grown and selected for the past few years by C. C. Morse & Co., seed growers, Santa Clara, Cal., and is introduced for the first time this year. The accompanying description was furnished by the growers:

"This onion has been grown for many years in Australia, where it is used for a very early market variety. It is extremely early, and can be had in market at least four weeks before Early Yellow Cracker, Yellow Danvers, Australian Brown, Early Red Globe, or Extra Early Red Flat. It is a half-globe variety, and averages about 2½ inches in diameter. Its color is brown, much the same but a little lighter than Australian Brown. It is mild and sweet, and, while not a good onion for storage, keeps much better than the Bermudas or any of the early white onions. It ripens down evenly, and seldom has any scallions or
stiff necks. With us in California it was ready for market August 1—at least one month before the early varieties mentioned above—and now, October 13, it is still in very good condition for market."

Seed furnished by C. C. Morse & Co., Santa Clara, Cal.


Approved:

[Circular sent to recipients of seeds of novelties and specialties included in Section 4a of the scheme of distribution.]

SECTION 4a.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the Department. In making the report please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

CORN.

Metropolitan.

Introduced in 1898 by Peter Henderson & Co. as a variety combing earliness and good quality to a greater degree than any other. It is claimed to be not only sweet, but to possess also the richness of the later sorts. It is specially recommended to market gardeners as a shipper, and especially to those gardeners who supply the more critical trade. The plant is hardy, dwarf in habit, and extra early in season. The ears are medium sized, 10 to 12 rowed, well filled, and very handsome, with the broad, thick, shallow kernels of the extra early sorts.

LETTUCE.

Crisp as Ice.

Introduced by the Livingston Seed Company in 1895. Plant is intermediate in season, of medium size, dark-green color, very completely, sometimes almost wholly, washed with dark brown, but the inside leaves are well blanched to a light, bright green. The plant makes a firm and well-defined, somewhat ovate-shaped, cabbage head. The leaves, although very thick, are easily broken, and this, together with its unusually dark, somewhat dull brown color, make it both unfit for and unattractive as a general market garden sort. But for home use or where quality is important this variety is one of the very best. It is extremely tender and crisp and of an unusually delicate and sweet flavor, at the same time also slightly buttery.

Seed furnished by C. C. Morse & Co., Santa Clara, Cal.
MUSKMELON.

DEFENDER.

This desirable new variety is a result of continued selection of Paul Rose with the especial view of developing fine quality, thick meat, and thin rind. It was first introduced in 1901 by D. M. Ferry & Co., by whom it was originated. The fruits resemble Paul Rose more than any other, and, being considerably larger and more densely netted than that popular variety, it makes a valuable addition to our list of varieties.

The fruits are strikingly beautiful in appearance, and especially distinguished by regular oval shape, even shallow ribbing, thick netting, and rich, mottled color. The flesh is of a deep red color, very sweet, rich, and melting, without the coarseness and stringiness of some of the large-growing, green-fleshed sorts. Being firm and solid, the fruits are well adapted for shipping. They are of medium size, and the plants are productive and early.

Seed furnished by D. M. Ferry & Co., Detroit, Mich.

BEET.

CRIMSON GLOBE.

An entirely distinct variety introduced in 1900 by Peter Henderson & Co.

Different from other kinds principally in its deep dark crimson color, and valuable on this account as well as for earliness, beautiful globe shape, and perfectly smooth roots, which are entirely free from root hairs, rootlets, and markings. The taproot is also very fine and slender and the top very smooth, with small crown. The roots are, however, very small, but the leaves being also small and very erect in habit the plants can be grown very close together and large crops obtained. The leaves are dark green in color. The flesh is a deep crimson and beautifully zoned with dark crimson and a lighter shade; the quality is very sweet and tender, never coarse nor woody. The season is about the same as Detroit Dark Red.


ONION.

EXTRA EARLY BROWN SPANISH.

This variety has been grown and selected for the past few years by C. C. Morse & Co., seed growers, Santa Clara, Cal., and is introduced for the first time this year. The accompanying description was furnished by the growers:

"This onion has been grown for many years in Australia, where it is used for a very early market variety. It is extremely early, and
can be had in market at least four weeks before Early Yellow Cracker, Yellow Danvers, Australian Brown, Early Red Globe, or Extra Early Red Flat. It is a half-globe variety, and averages about 2½ inches in diameter. Its color is brown, much the same but a little lighter than Australian Brown. It is mild and sweet, and while not a good onion for storage, keeps much better than the Bermudas or any of the early white onions. It ripens down evenly, and seldom has any scallions or stiff necks. With us in California it was ready for market August 1, at least one month before the early varieties mentioned above, and now, October 13, it is still in very good condition for market."

Seed furnished by C. C. Morse & Co., Santa Clara, Cal.

A. J. Pieters, Botanist in Charge.

Approved:

B. T. Galloway, Chief of Bureau.

[Circular sent to recipients of seeds of novelties and specialties included in Section 5 of the scheme of distribution.]

SECTION 5.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the Department. In making the report, please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

MUSKMELON.

Rocky Ford.

This variety is a strain of the old and well-known Netted Gem, and has been recently developed and grown in immense quantities at Rocky Ford, Colo., whence it has been shipped extensively to all the eastern and northern markets. The variety has been made extremely popular by the Rocky Ford growers as much on account of the careful shipping they have practiced as for the fine melons they have been able to produce in their ideal melon-growing country. The development of the variety is obscure and disputed. It was first introduced by seedsmen in 1899.

The melon is very early and productive, and the fruits are oval shaped, shallow ribbed, densely netted, small in size, and mottled green and yellow in color. The flesh is green, of the very best quality, and, though not as rich as some others, is not surpassed in sweetness by any, while it is uniformly good and more universally liked than any other.

This seed was carefully selected by D. V. Burrill, of Rocky Ford, Colo., from melons of uniform size that were ideal in every particular.
BEAN.

**Thorburn's Prolific Market.**

A foreign type of bean obtained by J. M. Thorburn & Co. from Vienna, Austria, and first introduced by them in 1894.

It is claimed by the introducers to be an enormously productive variety, bearing its pods in thick clusters of 35 to 40 pods to a plant, and exceedingly vigorous, healthy, and remarkably rust proof. The pods are light green in color, very long and perfectly round in shape, solid fleshed, and of a very soft and marrowy texture. The vines are very large and erect in habit; the leaves, very dark; seeds, black; season, late. It is claimed by the originators that for productiveness, solidity of flesh, and roundness of pod it excels any variety now in cultivation.


TOMATO.

**Success.**

Originated in 1897 by M. M. Miesse, a market gardener and tomato specialist of Lancaster, Ohio. Introduced in 1900 by Wm. Henry Maule under the name of "Maule's 1900," and in the following year called "Success."

This is an excellent, very large, smooth, deep scarlet variety, similar to many other recently introduced varieties, such as Noble, Century, and Marvel, but said to be superior to them in productiveness, smoothness of fruit, and to be more free from any hard or green core. The variety does undoubtedly combine these qualities to a very large degree, and, as claimed, is of excellent quality and a splendid sort for either the canner, trucker, or private gardener. The foliage is of the common large-leaved kind, and the vines are strong and vigorous. The season is second early. The fruits are a deep flat globe shape, or as nearly globular in form as it is possible to obtain a large tomato.

Seed furnished by M. M. Miesse & Son, Lancaster, Ohio.

RADISH.

**Glass.**

A variety introduced by F. Barteldes & Co. and Northrup, King & Co., as claimed, about ten years ago, the former obtaining his seed from a Denver (Colo.) market gardener and the latter from Cincinnati market gardeners. The variety is considered by many to be identical with the Cincinnati Market and Long Scarlet Short Top varieties, but a few claim that it is not quite so long and that it possesses to a degree greater than Long Scarlet Short Top the peculiar transparency which gives rise to its name.
The roots are very long and tapering, exceedingly smooth, free from root hairs, of a brilliant scarlet color, making it altogether the most handsome and showy of the long red varieties. The variety is medium early in season and remains fit for use fairly long before shooting to seed. The flesh is mild and tender. As the tops are very small, the roots can be planted close together.

Seed furnished by Northrup, King & Co., Minneapolis, Minn

SQUASH.

GOLDEN BRONZE.

This variety is the result of an accidental cross between the Bay State and Boston Marrow found by Mr. Aaron Low, of Hingham, Mass., in 1896. After being improved by Mr. Low this variety was sold to James J. H. Gregory & Son, who introduced it in 1899 as "No. 7," and in the following year named it "Golden Bronze." The variety is of the same general pointed oval shape as the Boston Marrow, viz. very sloping at stem end and almost blunt at blossom end. The surface is also wrinkled as in Boston Marrow, but in color is a dark grayish green, turning to a greenish bronze on the upper surface when fully ripe. The flesh is a bright golden yellow, fine grained, and of excellent quality. The variety is early, productive, hardy, and a good keeper.

Seed furnished by T. W. Wood & Sons, Richmond, Va

Approved:

A. J. Pieters, Botanist in Charge.

B. T. Galloway, Chief of Bureau.

[Circular sent to recipients of seeds of novelties and specialties included in Section 5a of the scheme of distribution.]

SECTION 5a.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the Department. In making the report please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

BEAN.

THORBURN'S PROLIFIC MARKET.

A foreign type of bean obtained by J. M. Thorburn & Co. from Vienna, Austria and first introduced by them in 1894. It is claimed by the introducers to be an enormously productive variety, bearing its pods in thick clusters of 35 to 40 pods to a plant.
and to be also exceedingly vigorous, healthy, and remarkably rust
proof. The pods are light green in color, very long, and perfectly
round, solid fleshed, and of a very soft and marrowy texture. The
vines are very large and erect in habit, the leaves very dark, the
seeds black, and season late. It is claimed by the originators that
for productiveness, solidity of flesh, and roundness of pod it excels
any variety now in cultivation.


TOMATO.

SUCCESS.

Originated in 1897 by M. M. Miesse, a market gardener and tomato
specialist of Lancaster, Ohio. Introduced in 1900 by William Henry
Maule under the name of "Maule's 1900" and in the following year
called "Success."

This is an excellent, very large, smooth, deep scarlet variety, similar
to many other recently introduced varieties, such as Noble, Century,
and Marvel, but said to be superior to them in productiveness and
smoothness of fruit and to be more free from any hard or green core.
The variety does undoubtedly combine these qualities to a very large
degree and, as claimed, is of excellent quality and a splendid sort for
either the canner, trucker, or private gardener. The foliage is of the
common large-leaved kind, and the vines are strong and vigorous.
The season is second early. The fruits are a deep flat globe shape,
or as nearly globular in form as it is possible to obtain a large tomato.

Seed furnished by M. M. Miesse & Son, Lancaster, Ohio.

MUSKMELON.

Rocky Ford.

This variety is a strain of the old and well-known Netted Gem, and
has recently been developed and grown in immense quantities at
Rocky Ford, Colo., whence it has been shipped extensively to all the
eastern and northern markets. The variety has been made extremely
popular by the Rocky Ford growers as much on account of the care-
ful shipping they have practiced as for the fine melons they have been
able to produce in their ideal melon-growing country. The develop-
ment of the variety is obscure and disputed. It was first introduced
by seedsmen in 1899.

The melon is very early and productive and the fruits oval shaped,
shallow ribbed, densely netted, small in size, and mottled green and
yellow in color. The flesh is green, of the very best quality, and,
though not as rich as some others, is not surpassed in sweetness by any,
while it is uniformly good and more universally liked than any other.

This seed was carefully selected by D. V. Burrill, of Rocky Ford, Colo., from melons of uniform
size that were ideal in every particular.
A variety introduced by F. Barteldes & Co. and Northrup, King & Co., as claimed, about ten years ago, the former obtaining his seed from a Denver (Colo.) market gardener and the latter from Cincinnati market gardeners. The variety is considered by many to be identical with the Cincinnati Market and Long Scarlet Short Top varieties, but a few claim that it is not quite so long and that it possesses to a greater degree than the Long Scarlet Short Top the peculiar transparency which gives rise to its name.

The roots are very long and tapering, exceedingly smooth, free from root hairs, of a brilliant scarlet color, making it altogether the most handsome and showy of the long red varieties. The variety is medium early in season and remains fit for use fairly long before shooting to seed. The flesh is mild and tender. As the tops are very small, the roots can be planted close together.

Seed furnished by Northrup, King & Co., Minneapolis, Minn.

SQUASH.

Golden Hubbard.

A sport of the well-known Hubbard, introduced in 1896 by Storrs & Harrison Co. An exceedingly valuable introduction and entirely distinct. It is considered by many to be the best fall and winter variety yet introduced and has now become a standard sort. The variety is similar to the Hubbard, except in color, which is a deep orange yellow, with a slight greenish tinge at the extreme blossom end, and although somewhat smaller in size it is more productive than its parent. The variety is of large size, pointed oval in shape, extremely warty, and a good keeper. The flesh is fine grained, very dry, rich, sweet, and in color a deep orange extending clear to the rind, without the objectionable greenish tinge found in the Hubbard.


Approved:

A. J. Pieters, Botanist in Charge.

B. T. Galloway, Chief of Bureau.

SECTION 6.

The varieties included in this special distribution are either new or are not as well known as they should be. The seeds are sent out this year, accompanied by full descriptions of the varieties, in the hope that those who receive them will report the results of their trial to the
Department. In making the report, please use the blanks accompanying this circular and return them in the inclosed franked envelope, which requires no postage.

PEA.

Thomas Laxton.

Originated by Messrs. Thomas Laxton & Co., of Bedfordshire, England, and first catalogued by American seedsmen in 1901. Said to be a cross between a seedling of Gradus and a seedling from the extra early varieties.

This is another of the new and very desirable varieties of the large-seeded, large-podded, extra early class of peas which have followed upon the introduction of the Gradus in 1897. It is very much like that variety, but is said to be slightly earlier and hardier. The pods, however, are shorter and not so large and handsome, while in color they are darker, and in shape square instead of pointed at the end. The quality is very good, but not equal to Gradus, and partakes more of the flavor of the ordinary extra early varieties. Its great value lies in its large showy pods, combined with extreme earliness and fair hardiness of plant.

Seed furnished by Northrup, King & Co., Minneapolis, Minn.

BEET.

Ruby Dulcet.

A very popular beet in England. First introduced in this country in 1899 by Johnson & Stokes.

An especially valuable introduction, and very distinct from other globe-shaped beets in its greater depth. The color is a deep red, the shape a deep globe, very full at the top and holding its size well to the bottom, while the surface is very smooth and entirely free from root hairs, rootlets, or markings. The leaves are medium dark red in color and being very small and erect in habit, the variety is therefore suitable for close planting. The season is early, or about the same as Detroit Dark Red. The flesh is very dark and zoned with deep red and a lighter shade; the quality is fine grained, sweet, and tender.

Seed furnished by Johnson & Stokes, Philadelphia, Pa.

TOMATO.

Thorburn's Earliest.

Originated by J. M. Thorburn & Co., and introduced by them in 1902. This variety was obtained by selection of a number of English
greenhouse sorts grown for several seasons out of doors in the vicinity of New York.

It is claimed by the introducers to be the earliest tomato grown and to be five days earlier than the Atlantic Prize, which is the most generally grown extra early sort. This variety is undoubtedly a splendid introduction and extremely early, but of small size. Compared to Atlantic Prize, it is considerably smaller in size but much superior to it in being smoother, less corrugated and scarred, and more of a globe shape. It is similar to Conference and to Bright and Early, but considerably earlier than either, and much larger than the latter. The plants have the fine leaf and habit of growth of the extra early varieties. The fruits are bright scarlet, flat globe shape, and perfectly smooth. Specially recommended for forcing, but a splendid outdoor sort also.


LETTUCE.

Half Century.

A very old variety of foreign origin, seldom catalogued by American seedsmen. John Lewis Childs, of Floral Park, N. Y., it seems, was the first American seedsmen to catalogue it, or at least the first to claim for it any special superiority.

The plant is very dark green in color, of a peculiarly loose, flabby, half-heading habit. It is difficult to make it head well under any conditions, and on account of its behavior in this respect, as well as its weak growth and decidedly inferior appearance, it will never be a general favorite. Its value lies solely in its extra fine quality, for it is exceedingly brittle and tender and of unsurpassed sweetness. The quality is of that delicacy which is free from the buttery quality of some kinds, and the hard crispness, the coarseness, and the strong, slightly bitter quality of some other kinds. The leaves, which are exceedingly brittle but thick, are easily broken. The variety will not stand the least transportation, and is suitable for the home garden only.

Seed furnished by Vaughan's Seed Store, Chicago, Ill.

MUSKMELOX.

Rocky Ford.

This variety is a strain of the old and well-known Netted Gem, and has been recently developed and grown in immense quantities at Rocky Ford, Colo., whence it has been shipped extensively to all the eastern and northern markets. The variety has been made extremely popular by the Rocky Ford growers as much on account of the careful shipping they have practiced as for the fine melons they have been able to
produce in their ideal melon-growing country. The development of
the variety is obscure and disputed. It was first introduced by seeds-
men in 1899.

The melon is very early and productive, and the fruits small and
ovar shaped, shallow ribbed, densely netted, mottled green and yellow.
The flesh is green, of the very best quality, and, though not as rich as
some others, is not surpassed by any, while it is uniformly good and
more universally liked than any other.

This seed was carefully selected by D. V. Burtill, of Rocky Ford, Colo., from melons of uniform
size that were ideal in every particular.

A. J. Pieters, Botanist in Charge.

Approved:
B. T. Galloway, Chief of Bureau

[Circular sent to recipients of seeds of novelties and specialties included in section 6a of the scheme
of distribution.]

SECTION 6a.

The varieties included in this special distribution are either new or
are not as well known as they should be. The seeds are sent out this
year, accompanied by full descriptions of the varieties, in the hope
that those who receive them will report the results of their trial to
the Department. In making the report please use the blanks accom-
p anying this circular and return them in the inclosed franked envelope,
which requires no postage.

PEA.

Prolific Early Market.

Originated by N. B. Keeney & Sons, and first introduced by A. W.
Livingston & Sons and William Henry Maule in 1901. The variety is descendent from a plant found by Mr. Keeney in Extra
Early about twelve years ago.

This valuable acquisition to the extra early varieties resembles
Alaska, and like it and other extra-early, smooth-seeded sorts is of
poor quality but hardy, which latter characteristic enables it to be
planted much earlier and ripened pods obtained far in advance of the
less hardy but better quality peas. The pods are very much larger
and contain more peas, and the plant is considerably more productive
than other extra-early varieties, is a great improvement over them
in many respects and only three or four days later. The vine is tall
and slender like Extra Early, but considerably larger. The pods are
of medium size, light green in color, round, straight, and attractive.

Seed furnished by A. W. Livingston & Sons, Columbus, Ohio.
BEET.

Ruby Pulset.

A very popular beet in England. First introduced in this country in 1899 by Johnson & Stokes.

An especially valuable introduction, and very distinct from other globe-shaped beets in its greater depth. The color is a deep red, the shape a deep globe, very full at the top and holding its size well to the bottom, while the surface is very smooth and entirely free from root hairs, rootlets, or markings. The leaves are medium dark red in color, and being very small and erect in habit, the variety is therefore suitable for close planting. The season is early, or about the same as Detroit Dark Red. The flesh is very dark and zoned with deep red and a lighter shade: the quality is fine grained, sweet, and tender.

seed furnished by Johnson & Stokes, Philadelphia, Pa.

TOMATO.

Thorburn's Earliest.

Originated by J. M. Thorburn & Co., and introduced by them in 1902. This variety was obtained by selection of a number of English greenhouse sorts grown for several seasons out of doors in the vicinity of New York.

It is claimed by the introducers to be the earliest tomato grown and to be five days earlier than the Atlantic Prize, which is the most generally grown extra-early sort. This variety is undoubtedly a splendid introduction and extremely early, but of small size. Compared to Atlantic Prize it is considerably smaller in size, but much superior to it in being smoother, less corrugated and scarred, and more of a globe shape. It is similar to Conference and to Bright and Early, but considerably earlier than either, and much larger than the latter. The plants have the fine leaf and habit of growth of the extra-early varieties. The fruits are bright scarlet, flat globe shape, and perfectly smooth. Specially recommended for forcing, but a splendid outdoor sort also.


LETTUCE.

Half Century.

A very old variety of foreign origin, seldom catalogued by American seedsmen. John Lewis Childs, of Floral Park, N. Y., it seems, was the first American seed-man to catalogue it, or at least the first to claim for it any special superiority.
The plant is very dark green in color, of a peculiarly loose, flabby, half-heading habit. It is difficult to make it head well under any conditions, and on account of its behavior in this respect, as well as its weak growth and decidedly inferior appearance, it will never be a general favorite. Its value lies solely in its extra fine quality; for it is exceedingly brittle and tender, and of unsurpassed sweetness. The quality is of that delicacy which is free from the buttery quality of some kinds, and the hard crispness, the coarseness, and the strong, slightly bitter quality of some other kinds. The leaves, which are exceedingly brittle but thick, are easily broken. The variety will not stand the least transportation, and is suitable for the home garden only.

Seed furnished by Vaughan's Seed Store, Chicago, Ill.

MUSKMELON.

Rocky Ford.

This variety is a strain of the old and well-known Netted Gem, and has been recently developed and grown in immense quantities at Rocky Ford, Colo., whence it has been shipped extensively to all the eastern and northern markets. The variety has been made extremely popular by the Rocky Ford growers as much on account of the careful shipping they have practiced as for the fine melons they have been able to produce in their ideal melon-growing country. The development of the variety is obscure and disputed. It was first introduced by seedsmen in 1899.

The melon is very early and productive, and the fruits small and oval shaped, shallow ribbed, densely netted, mottled green and yellow. The flesh is green, of the very best quality, and, though not as rich as some others, is not surpassed by any, while it is uniformly good and more universally liked than any other.

This seed was carefully selected by D. V. Burrill, of Rocky Ford, Colo., from melons of uniform size that were ideal in every particular.

A. J. Pieters, Botanist in Charge.

Approved:

B. T. Galloway, Chief of Bureau.
SEED AND PLANT DISTRIBUTION.

DIRECTIONS FOR PLANTING BULBS.

The bulbs sent herewith are of three kinds, viz. (1) hyacinth, (2) tulip, and (3) narcissus.

To obtain the best results, plant the bulbs as soon as received, in soil well loosened to a depth of at least 10 inches, setting them as follows: The hyacinth bulbs 7 inches apart and 4 inches deep, the tulip bulbs 5 inches apart and 4 inches deep, and the narcissus bulbs about 10 inches apart and 5 inches deep. If the hyacinths or tulips are to be grown in pots or window boxes, use rich, well-drained soil; place the pots or boxes in a dark room or cellar for a month or more after planting, or until the roots are formed, and then bring them into the light. Keep the soil in these pots or boxes well watered, but avoid overwetting, otherwise the bulbs may rot.

Fig. 5.—Hyacinth, tulip, and narcissus bulbs.
with the varieties they already grow. This will enable them to make comparisons and select varieties best suited to their climatic and soil conditions. Information regarding the success of varieties in different sections is as yet too meager to enable a judgment to be formed as to which will succeed best in a certain locality. In the distribution of cotton seed it is proposed to select, so far as possible, new and little-known varieties which have proved valuable in certain localities, and distribute the seed in such a way as to insure their being generally tested throughout the cotton States. It is intended at the end of the season to follow up each package with a circular in order to obtain information in regard to the success in various sections of the varieties distributed. Growers receiving the seed are urged to cooperate with the Department of Agriculture by making a careful test of the seed which is sent with this circular. In another part of the circular will be found descriptions of the varieties distributed and a statement of the points on which information is desired.

In the distribution the present season several special features have been introduced. The studies of the cotton industry which the Department has been prosecuting strongly indicate that the growing of long-staple cottons is destined to become much more general in the near future and should be encouraged. Seeds of Griffin and Allen Improved, two of the best long-staple Upland cottons, have thus been procured for distribution. A second special feature of the distribution the present season is the Rivers Sea Island cotton, a variety resistant to the serious malady known as wilt or black-root. This cotton has been produced as a result of breeding experiments conducted in conjunction with the Department of Agriculture. A special circular is sent out with the seed of this variety, and it is therefore not described herein. This seed will be distributed in the Sea Island sections of Georgia and Florida. Seabrook Sea Island cotton will also be sent to the same region.

The varieties of ordinary short-staple Upland cotton selected for distribution this year are Parker, Jones Improved, Excelsior, and King. The last-named variety has been procured particularly for distribution in the boll-weevil districts of Texas, because it is probably the earliest of all known varieties, and early ripening sorts have been found to escape damage by boll weevil to a large extent.

The varieties are to be distributed to the different Congressional districts as follows:

**Alabama:**
- First, Third, Fifth, and Eighth districts: Jones and Allen.
- Second, Sixth, Seventh, and Ninth districts: Excelsior and Griffin.
- Fourth district: Parker and Excelsior.

**Arkansas:**
- First, Second, Third, and Sixth districts: Parker and Allen.
- Fourth and Fifth districts: Jones and Griffin.

**Florida,** First and Second districts: Seabrook and Rivers.
SEED AND PLANT DISTRIBUTION.

GEORGIA:
First, Second, and Eleventh districts: Seabrook and Rivers.
Fourth, Sixth, Seventh, and Ninth districts: Excelsior and Allen.
Third and Fifth districts: Parker and Jones.
Eighth and Tenth districts: Parker and Griffin.

LOUISIANA:
Third and Fourth districts: Excelsior and Allen.
Fifth and Sixth districts: Parker and Griffin.

MISSISSIPPI:
Second and Sixth districts: Jones and Griffin.
First, Third, Fifth, and Seventh districts: Parker and Allen.
Fourth district: Excelsior and Griffin.

NORTH CAROLINA:
First, Third, Fourth, and Eighth districts: Parker and Excelsior.
Second, Fifth, Sixth, and Seventh districts: Excelsior and Jones.

SOUTH CAROLINA:
First district: Parker and Griffin.
Third, Fourth, Fifth, and Sixth districts: Excelsior and Griffin.
Second and Seventh districts: Parker and Allen.

TENNESSEE:
Third and Fourth districts: Parker and Excelsior.
Fifth and Eighth districts: Jones and Griffin.
Sixth, Seventh, Ninth, and Tenth districts: Parker and Griffin.

TEXAS:
First, Second, and Thirteenth districts: Excelsior and King.
Third, Fourth, Eighth, and Tenth districts: Parker and King.
Fifth and Sixth districts: King and Allen.
Seventh and Ninth districts: King and Griffin.
Eleventh and Twelfth districts: Jones and King.

OKLAHOMA: Excelsior and Allen.

DESCRIPTION OF VARIETIES DISTRIBUTED.

SHORT-STAPLE UPLAND VARIETIES.

JONES IMPROVED.

This is a big-boll Upland cotton (Pl. 1), said to have been introduced into America from Algiers by Wyche brothers about the year 1857. The history of the introduction, as given by Mr. J. F. Jones, who has been instrumental in bringing the variety into prominence, is as follows:

About 1853 two brothers of a family by the name of Wyche emigrated from Germany, one coming to the United States and the other going to Algiers, on the Mediterranean coast, to work for a French colony engaged there in growing cotton. About 1857 the Algerian brother sent a small package of cotton seed to his brother in the United States. Before the brother in this country had time to fully test the merit of the variety he died. The war between the States came on shortly afterwards, when neglect and lack of conveniences resulted in almost destroying any trace of the variety. In fox hunting over the Wyche plantation I discovered places here and there where there was a wonderful growth of this particular variety. By permission I went into the fields and selected some of the seed, having to assist me a Methodist minister by the name of Warren Beggarly, who later sold some of the seed of the variety to the Government. Beggarly died shortly afterwards and left the
work to me, and since 1877 I have been proprietor of the variety and have had charge of its distribution. From the records you will see that I have furnished seed of this variety to the Government since about 1884, and to our State agricultural farms since about 1877. I have preserved the variety and kept it pure.

Mr. Jones claims that this was the first big-boll, white-seeded cotton grown in this country, and that other big-boll types have been derived from it. Culpepper, a big-boll variety distributed last year, is said to be a hybrid of the Wyche (Jones Improved) and Dixon varieties. It has probably entered into the parentage of many of our best big-boll types.

The variety is recommended as deep-rooting, drought-resistant, and as withstanding adverse conditions with little injury. It is a large, robust, vigorous plant, producing heavily under ordinary conditions. It continues to grow late in the season and forms a good top crop when the conditions are favorable.

Plant vigorous and prolific, with wide spreading branches from near the base; upper branches usually short. Bolls large, 1 1/2 to 2 inches long, ovate, blunt pointed, 5-locked, opening well. Seeds 6 to 10 to the lock, medium large, weighing from 0.13 to 0.14 gram, covered with grayish fuzz, well covered with lint. Lint good for Upland, 1 to 1 1/4 inches in length, strong. Per cent of lint 31 to 32 under ordinary conditions. Season medium late.

The seed of this variety distributed was grown by James F. Jones, at Hogansville, Ga., in the season of 1902.

PARKER.

Parker cotton (Pl. 1) was originated by John M. Parker, sr., in Bolivar County, Miss., about 1868. It was produced by careful selection, and ever since its production has been grown on the extensive Parker plantations in preference to all other varieties. Mr. John M. Parker, jr., the present owner of the plantations, informs the writer that care has been exercised for years in selecting the seed and preserving the variety in a high state of productivity.

In a variety test at Columbia, S. C., in the season of 1902, this variety gave very excellent results. The plants were from 3 1/2 to 4 feet high, vigorous, and well fruited. In season it was one of the earliest of about fifty ordinary sorts. The lint is very good for an ordinary Upland variety, being strong, hard, silky, and above the ordinary in length, averaging on Mr. Parker’s plantation from 1 1/2 to 1 3/8 inches long. Mr. Parker recommends the variety as hardy, vigorous, prolific, and easy to pick.

Plant of Peterkin type, having an erect central stem, with numerous lateral limbs. Bolls medium size, round or ovate, blunt-pointed, 5-locked, opening well. Seeds 7 to 9 per lock, medium size, gray, tufted, well covered. Lint long, 1 1/4 to 1 3/8 inches, white, strong. Per cent of lint, 31 to 33. Season medium early.

The seed distributed by the Department of Agriculture was grown by John M. Parker, jr., on the plantation on which the variety originated, at Maxime, Bolivar County, Miss.
Excelsior is a variety of Upland short-staple cotton (Pl. I) which has become popular in certain parts of South Carolina, and was awarded a gold medal at the Charleston Exposition. The variety was produced in 1896 by taking seed from a sport of unknown parentage which exhibited desirable qualities. Since this time the seed has been selected with care to insure its coming true to type and to increase its production. Mr. Moore informs us that every year selections have been made from an experimental breeding patch, culling out inferior stalks and selecting seed from nothing but the best. Under this rigorous selection the plants, it is claimed, have increased in productivity and have become uniform in type, showing now little tendency to sport or revert to a poorer type.

This variety Mr. Moore recommends as being very prolific and giving large yields. In tests at Columbia, S. C., in the season of 1902, the plants averaged about 3½ feet high and were well bollled.

Some doubt exists as to what name can be correctly applied to this cotton. According to Prof. S. M. Tracy, in a statement published in Bulletin 33, United States Department of Agriculture, Office of Experiment Stations, issued in 1896, Mr. C. R. Ezell, of Eatonton, Ga., originated by selection from the variety New Era, a strain to which the name Excelsior was given. Mr. Moore's Excelsior, according to his statement, was originated in 1896, the year of Professor Tracy's publication. Mr. Ezell's Excelsior would therefore have the priority of name. Owing to this confusion of names we would suggest that Mr. Moore's Excelsior be referred to as *Moore Excelsior*, or simply as the *Moore* cotton.

Plant of Peterkin type, with one main stem and spreading lower limbs, the other lateral limbs being comparatively short. Shows some tendency to develop bolls in pairs or clusters. Bolls medium small, ovate or spherical, blunt pointed, 4 to 5 locked, opening well. Seeds small, weighing 0.09 to 0.10 gram, gray, tufted, 7 to 9 per lock. Lint, good ordinary short staple about 1 inch in length. Per cent of lint 32 to 33. Season medium.

The seed of this variety distributed was grown by Mr. C. F. Moore, Bennettsville, S. C., in the season of 1902.

King.

King, or King's Improved as it has been called, is a very early variety of Upland cotton (Pl. I), originated by T. J. King, of Louisburg, N. C. In attempting to improve the cotton grown on his plantation, Mr. King made tests of very many varieties, but found none that exactly met the requirements as he recognized them. "I therefore determined," he states, "to try to mix the two kinds which, between themselves, appeared to possess all the essentials desired, and
get a composite cotton that combined the good qualities of both varieties." Such a combination he claims to have secured in his King's Improved. The variety has been widely distributed and tested, and is probably as generally known as any other cotton variety. It is very distinct from any other of the well-known varieties.

King is regarded as one of the best varieties for the northern part of the cotton belt, where the season is too short for late varieties. It is the variety most generally planted late in the spring, after oats, as so-called stubble cotton, its short season enabling it to mature a good crop even in the short time then available. The earliness of the variety and its consequent bearing on the boll-weevil question is the principal reason for selecting it for distribution the present season. Observation has shown that the damage caused by the boll-weevil increases as the season advances. In the early part of the season the numbers of the weevils are few, but as the season advances they steadily increase, and become so abundant in the latter part of the season that in badly infested fields hardly a boll is permitted to reach maturity. Many of the bolls which are formed before the weevil has become abundant mature without injury, and the writer has observed many particularly early plants, which, owing to their earliness, escaped damage to a considerable degree and matured a fairly good crop. This feature suggests that one of the most important factors in the control of the boll-weevil is to utilize early-maturing varieties. King is probably the earliest fixed variety known, and as it has given excellent results in tests at the Mississippi Experiment Station, it will probably do well in Texas also. Its use in boll-weevil sections to avoid the ravages of this pest is experimental, and the outcome will be watched with great interest. It is of special importance that growers note the yield of this variety in boll-weevil sections in comparison with other sorts, and be prepared next fall to furnish the Department of Agriculture with a statement of the results obtained. To obtain the best results in sections where the boll-weevil is prevalent, the seed should be planted as early as the season will permit.

Plant 2½ to 5 feet high, rather spreading in habit, with numerous limbs gradually decreasing in length from below upward. Bolls small, nearly round, with small blunt point, 4 to 5 locked, opening well. Seeds medium size, weighing from 0.10 to 0.11 gram, covered with brownish or greenish fuzz. Lint white, strong, three-fourths to 1 inch in length. Per cent of lint usually about 33. Season very early.

The seed distributed by the Department of Agriculture was grown by the originator of the variety, Mr. T. J. King, at Louisburg, N. C., in the season of 1902.

Long-Staple Upland Varieties.

Allen Improved.

Allen Improved (Pl. II) is a variety of cotton originated in Claiborne County, Miss., in 1899, by James B. Allen. Other and similar vari-
eties were earlier introduced by Mr. Allen under the names Allen Yellow Bloom and Allen Hybrid, which have become distributed throughout the country. Allen Improved was distributed to some extent in 1900, but up to the present time has not been generally distributed. It is said by Mr. Allen to be a cross between his Yellow Bloom and Hybrid. The variety is recommended because of its productiveness and its long staple. The bolls when ripe open up wide, like ordinary Upland, letting the cotton hang out and making it easy to pick. It is said to pick easier than the Allen Hybrid and to have a stronger fiber. Mr. Allen states that it has stood the weather better for the past three years than any other variety of long staple he has ever planted, not rotting in wet weather like the Yellow Bloom. It gives an average yield per acre of about 1,500 pounds of seed cotton and from 300 to 400 pounds of lint. The crop of 1900, Mr. Allen states, sold for 17 cents per pound net; that of 1901 for 15 cents; and that of 1902, from which the seed distributed by the Department was taken, for from 16½ to 17 cents. Mr. Allen's cotton is ginned on a saw gin.

Plant 3 to 6 feet high, compact, branching like Truitt, with two or three long basal limbs and one main central stem. Bolls of Upland type, medium size, slightly pointed, 4 to 5 locked, opening wide. Seeds medium large size, weighing 0.14 to 0.15 gram, gray tufted, 7 to 9 per lock. Lint white, fine, and silky, 1½ to 1¾ inches long, fairly strong. Per cent of lint 27. Time of ripening mid-season.

The seed distributed was grown by James B. Allen, the originator of the variety, at Port Gibson, Miss., in the season of 1902.

**Griffin.**

Griffin is a long-staple, big-boll Upland cotton (Pl. 11), produced by John Griffin at Refuge plantation, near Greenville, Washington County, Miss. The first selection was made in the fall of 1867, and the seed first planted in the spring of 1868. After about ten years of selection some seeds were distributed among friends in the vicinity of Greenville, and a few bushels were sold. The variety, however, has never been generally distributed. Regarding its origin, Mr. Griffin says:

The variety resulted from a cross of the old "Green Seed" cotton with Sea Island, the cross being made to give a tendency to the Green Seed to produce a longer and finer fiber. The hybrid was from 12 to 16 feet high and very unproductive. It was recrossed five years in succession with pollen of the constantly improved Green Seed. This resulted in reducing the stalk to within a few inches of the length of that of Green Seed, in giving it a larger boll, and in making it nearly as prolific. Every successive crossing was made on stalks which least resembled the Sea Island form and most nearly approximated the Sea Island lint. The selection of the cotton has continued without intermission from 1867 up to the present time (1902). Selection was practiced five years in succession before hybridization was employed, and continued constantly while the latter was going on. There was at first little difference between the two hybrids produced by crossing Sea Island bloom with Green Seed pollen and Green Seed bloom with Sea Island pollen.
The Sea Island was a little more vigorous and had a few more bolls. Near the end of the five years through which both were crossed with constantly improved Green Seed, the Sea Island far surpassed the Green Seed, which was puny and hard to fertilize with the same pollen which had acted well on the other. The lint of the original Green Seed averaged about 1 inch in length. It gained about one-eighth of an inch in length in five years of selection, making it about 1½ inches when first crossed with Sea Island. The first cross gave it a length of about 1¼ inches, the lint, furthermore, being much finer than that of the original Green Seed.

The character of the stalk is still like that of Green Seed, though more compact. The boll is larger, 65 weighing a pound. The lint pulled from the seed by the fingers averages about 2 inches in length, and is very fine. Ginned on a saw gin, it generally averages from 1½ to 1¾ inches in length. The Griffin cotton is earlier than the Green Seed.

Griffin cotton is without question one of the very best long-staple Upland sorts that has ever been produced. It has been grown for two successive years in tests conducted by the Department of Agriculture at Columbia, S. C., and has given excellent results and attracted considerable attention. Its length of staple here averaged about 1½ to 1¾ inches. Unfortunately the lint is not very uniform in length, and is inclined to be low in strength. In size of boll, ease of picking, and productiveness the variety is very good. A peculiar feature of Griffin cotton is its tendency to produce a few very long fibers. Frequently a group of several dozen fibers will reach a length of 2½ or 3 inches.

The average yield per acre at Mr. Griffin's plantation, on Mississippi bottom land not over 20 years old, is about 400 pounds of lint cotton. On fresh land of this sort it yields about 500 pounds of lint cotton per acre. The proportion of lint to seed cotton, Mr. Griffin states, is about 28 per cent. Professor Tracy, at the Mississippi Experiment Station, gave the per cent as 28 to 29. Professor Duggar at the Alabama Experiment Station obtained 29.2 per cent from the crop grown at Auburn, Ala. The crop produced at Columbia, S. C., the past season gave about 29 per cent.

As an indication of the market value of Griffin cotton, Mr. Griffin gives results of sales as follows: When short staple was selling at 5 cents per pound Griffin sold at 8½ cents. Last year (1901) it sold for 12 cents, against 8 cents for short staple of the same grade. In 1900, when short staple cotton was quoted at between 8 and 9 cents, Griffin sold for 15 cents. A part of the crop of the present year (1902), from which the seed distributed was taken, sold for 14 cents, the average price for short staple of the same grade being 8 cents.

Mr. Griffin states that his crop is regularly ginned on a saw gin. In the crop this year the first 7 bales averaged 1½ inches in length and the last 7 bales 1¾ inches.

Plant vigorous and prolific, with main central stem and several large spreading limbs below; foliage pale green. Bolls medium large, ovate, blunt-pointed, 4 to 5 locked, opening well. Seeds of medium size, weighing about 0.12 to 0.13 gram, gray tufted, 7 to 10 per lock. Lint white, fine, and silky, rather variable in length, ranging from 1½ to 2 inches. Per cent of lint about 28 to 29. Season medium.
The seed distributed by the Department of Agriculture was grown by the originator of the variety, Mr. John Griffin, at Greenville, Miss., in the season of 1902.

**Sea Island Varieties.**

**Seabrook.**

This variety (Pl. I) was originated ten or twelve years ago by E. L. Rivers, James Island, S. C. Its selection and improvement have been carried on since that time by the present owner, Mr. F. P. Seabrook, of James Island, who has given the most careful attention to the fixing of the desired qualities, the aim being the production of a prolific bearer of medium quality, with a large proportion of lint to seed. The method of selection employed by Mr. Seabrook, which is similar to that of most of the Sea Island planters, is as follows: Several of the best plants in his field are selected and marked. Each of these is picked by itself, the seed cotton weighed, and the lint weighed after ginning to determine the ginning average. The staple is examined critically as to length, fineness, strength, uniformity, and softness. Finally the best plant is selected and the others discarded. The seed from this single stalk is planted by itself, one seed in a hill, and usually produces about 500 plants. The seed from these plants is used to sow a field of about 5 acres, from which the general crop is planted the fourth year. A new plant is chosen from the select field each year, so that the process of improvement is continuous.

Plant of compact habit, prolific, and resistant to disease. Bolls of good size, long and pointed, 3-locked, opening well for Sea Island. Lint 2 inches long. Percent of lint about 28 to 29.

The seed of this variety distributed was grown by Mr. F. P. Seabrook, James Island, S. C., in the season of 1901.

**Rivers.**

The Rivers Sea Island cotton, which is immune to the serious malady known as wilt or "black-root," was produced as a result of special breeding experiments conducted by Mr. E. L. Rivers, of James Island, S. C., in conjunction with the Department of Agriculture. It is highly recommended for cultivation in the Sea Island districts of Georgia and Florida on all soils infected with wilt. A special circular is distributed with the Rivers cotton, and this variety is referred to here simply to show the general plan of the entire cotton distribution for the season. A careful description of the variety and of the experiments leading to its production appears in Bulletin No. 27, Division of Vegetable Physiology and Pathology of the U. S. Department of Agriculture, by Mr. W. A. Orton.
METHODS OF CULTIVATION AND GINNING.

SHORT-STAPLE UPLAND VARIETIES.

The methods of cultivation which should be pursued in growing the varieties of short-staple Upland cotton distributed are the same as those used for any ordinary Upland cotton. No exact directions can be given with respect to the distance apart of the rows or the distance between the plants in the row, as the space required by each plant is determined by the richness of the soil in each case. Jones Improved, King, Excelsior, and Parker are all quite similar in size and habit of growth. Under ordinary conditions satisfactory results would be obtained with these varieties by planting the rows 4 feet apart and the plants from 18 to 24 inches apart in the row. On rich soil this distance should be somewhat increased, while on sterile land closer planting would be desirable.

LONG-STAPLE UPLAND VARIETIES.

Allen Improved and Griffin, while producing a long, fine staple, are in size and general appearance very similar to ordinary short-staple varieties such as Jones Improved and Truitt, and the same cultural methods are to be recommended as are used with the ordinary short-staple sorts. In picking, preserving, and ginning, however, more care is required if the highest market price is to be realized. Greater care should be exercised in the picking to avoid getting the fiber mixed with fragments of leaves, bolls, etc. Fiber from immature and weather-stained bolls should also be discarded. Pickers familiar with ordinary cotton methods are liable to be too careless in their endeavor to gather large quantities and increase their wages thereby. In fine grades of long-staple Upland cotton it would probably also be found desirable to spread the seed cotton on a platform in the sun for a few hours to dry before storing it.

The difficulty of properly ginning long-staple Upland cottons has been considered an impediment to their general cultivation. It is generally recognized that long-staple Sea Island sorts require to be ginned on a roller gin, as the saw gins tear and break the fiber to such an extent as to greatly reduce its value. It is also very generally supposed that the long-staple Upland cottons require to be ginned on a roller gin, and this understanding has prevented many from attempting to grow these cottons, as roller gins are ordinarily accessible only to growers in regions where Sea Island cotton is cultivated. Experience has shown, however, that long-staple Upland cottons may be ginned on ordinary saw gins if care is used in the process. Before ginning these cottons the gin saws should be sharpened square across the teeth and then dulled somewhat by use in ginning ordinary short
Mature Unopened and Opened Cotton Bolls—Griffin and Allen Improved (Natural Size).
staples. It is also important to run the gin at a lower rate of speed than in ginning ordinary short-staple cottons. If these precautions are observed the long-staple Upland cottons may be very satisfactorily ginned on any ordinary saw gin. As previously stated, Mr. Griffin and Mr. Allen have regularly had their crops ginned on ordinary saw gins, and the product has uniformly sold at from 14 to 16 cents or more per pound.

It is also important that growers of long-staple Upland cottons give special attention to the marketing of the product. The writer last season saw several bales of long-staple Upland cotton sold to a buyer at a small interior town in South Carolina for 10 cents which were certainly equal to bales of similar cotton which he saw sold in the New Orleans market the week following at 15 cents, when ordinary cotton was selling at $5\frac{1}{2}$ cents. Many of the failures with long-staple Upland cotton have been due to the lack of experience on the part of the grower in the matter of marketing. Many buyers take advantage of the growers' ignorance and purchase cotton for 10 cents that is worth 15 cents and realize the difference themselves. Until buyers inform themselves on the value of long-staple cotton and pay reasonable prices, it will have to be consigned to general long-staple markets such as New Orleans, Savannah, Charleston, etc., or to some of the large New England markets.

SEA ISLAND VARIETIES.

The Seabrook selection of Sea Island cotton is adapted to light, sandy land of good fertility. It is planted in rows 5 feet apart, with a distance of from 18 to 20 inches between the plants in the row. Greater care must be given to the cultivation of Sea Island than is usually given to Upland cotton. The land should be thoroughly prepared and well fertilized. A suitable rotation with corn, cowpeas, peanuts, or other crops should be practiced in order to avoid the exhaustion of the soil produced by many successive cotton crops. Cultivation should be very frequent. In the Sea Islands the cotton is cultivated on an average of once a week until August. Here the cotton is grown on high beds and the soil is drawn up around the plants in cultivation. This method is not recommended for Georgia and Florida, however, where the more economical method of level culture will probably pay the best.

Particular care is necessary in picking and handling Sea Island cotton in order to obtain the highest price. Sea Island cotton requires to be picked often—every week or ten days—in order to avoid staining by the weather. All trash, bits of bolls, immature and diseased or yellow locks must be picked out by hand. The seed cotton should be spread on a platform and exposed to the sun for several hours to dry before storing. It must be ginned on a roller gin and be packed carefully in bags without high pressure.
HOW TO GROW PURE SEED OF GOOD QUALITY.

It is a well-known fact that varieties of cotton become mixed and impure unless special care is taken to prevent crossing with other varieties. If growers receiving seed of any of the varieties sent with this circular desire to grow the same variety another year, precaution should be taken to plant the seed in an isolated patch, situated as far as possible from any other varieties. It should be at least a quarter of a mile from any other cotton and preferably in a field surrounded by a forest, particularly on the side nearest to other cotton fields. Before any seed is gathered for planting all plants which are not true to the type of the variety should be carefully weeded out.

If it is desired to keep the variety up to its full productiveness and better adapt it to local conditions, the planter may easily accomplish this by following a simple and inexpensive method of selection. Before beginning the picking, go over the patch carefully and select and mark with a white cloth the best plants; that is, those most productive, earliest in ripening, and having the largest, best formed, and most numerous bolls. Care should also be exercised to select plants that are true to the type of the variety. Before each picking send a careful man over the patch to pick the seed from the selected plants. Preserve such seed separately, gin it separately to avoid mixing, and use this to plant the crop the next year. If this simple method of selection is carried out each year, the yield will doubtless be greatly increased, and as much or more added to the crop than would result from special fertilization or cultivation, though these factors should by no means be neglected. The importance of careful seed selection is seldom fully recognized, and growers are urged to give this factor of cotton culture more careful attention.

Herbert J. Webber.
Physiologist, in Charge of Laboratory of Plant Breeding.

Approved:
A. F. Woods,
Pathologist and Physiologist.

REPORT OF RESULTS DESIRED FOR PUBLICATION.

In order to determine the comparative values of the different varieties of cotton in various parts of the United States, the growers receiving this seed are requested to give it a thorough trial in comparison with the variety or varieties that they generally grow, and be prepared in the fall of 1903 to report the results of the test to the United States Department of Agriculture. A report will then be requested covering the following points:

(1) Character of the soil.
(2) Character of the season.

(3) Total yield of seed cotton produced. (This should be determined by actually weighing the product.)

(4) Total yield of lint produced. (Determined by actual weighing.)

(5) Size of patch grown. (Determined by actual measurement.)

(6) Yield per acre, estimated from the patch grown.

(7) Is the variety to be classed as excellent, good, fair, or poor for your section?

(8) Name of the variety ordinarily grown by the planter making the test.

(9) Yield of ordinary variety this year on same soil as the variety under consideration.

It is especially requested that growers carefully note the points enumerated above, in order that they may secure the necessary data and be ready to supply accurate information when it is called for next fall. If sufficiently accurate data are furnished, a report will be compiled and issued giving the results of the various trials in all sections, and this report will be sent to all planters cooperating in the experiment. In this way it is hoped to obtain valuable and reliable information regarding the varieties best adapted to various sections of the cotton belt.

Growers receiving this seed, who are willing to cooperate with the Department of Agriculture in making the above test, are requested to fill in the accompanying franked postal card, which requires no postage, as soon as the seed is received, and return the same to the Department.

A. J. Pieters,

Botanist in Charge.

Approved:

B. T. Galloway,

Chief of Bureau.

[Circular sent with seed of Rivers Sea Island cotton.]

RIVERS SEA ISLAND COTTON.

A variety resistant to the wilt disease or "Black-root."

HISTORY OF THE VARIETY.

This variety, the seeds of which are now distributed for the first time, was originated in connection with the investigations of the United States Department of Agriculture on the cotton wilt, a disease which has done great damage in the South. All other methods of treatment having failed, an effort was made to produce a resistant variety. This was based on the observation that some plants remained healthy, even in the worst infected places, and it was thought that the seed from such stalks might produce other resistant plants. This was
found to be the case, and several strains have been produced in this way by saving seed from healthy plants in the worst diseased areas. The seed of the best of these resistant strains is distributed with this circular, the seed having been grown by special arrangement expressly for the Department of Agriculture. Other selections made by the Department or under its direction are also being grown and tested, and will be used for future distribution.

The Rivers cotton was originated in cooperation with the Department of Agriculture by Mr. E. L. Rivers, James Island, S. C., who in 1899 saved the seed of a single plant which had survived the disease, while all surrounding plants had been killed. This seed Mr. Rivers planted in a single row in a badly infected area. The result is shown in the accompanying illustration. In the resistant row not a single plant died, while the adjoining rows planted with ordinary seed were almost totally destroyed.

Sufficient seed was obtained from this row to plant an acre the next year (1901). This land was also infected with the cotton wilt, but only two or three plants became affected, showing the great resistance of the new variety. In 1902, 15 acres were planted. This land was badly infected with wilt and previous crops had been nearly destroyed in portions of the field, so that the land had been abandoned for cotton. The Rivers cotton proved as resistant here as in the previous years. An occasional plant became diseased and was pulled up, but the field as a whole was perfectly healthy and produced a large crop.

These three successful trials of this variety, corroborated by numerous experiments carried on by the Department of Agriculture with
both Sea Island and Upland cotton and by the experience of several cotton planters, demonstrate that the wilt can be overcome by the use of resistant varieties, and this seed is distributed this year in Georgia and Florida to enable the farmers to test its merits and grow for themselves a stock of seed for future planting.

DESCRIPTION OF COTTON WILT.

The especial feature of this variety is its resistance to the wilt, and since some who receive the seed may not be familiar with that disease, a brief description of it is included here. For more detailed information write to the Department of Agriculture at Washington for Bulletins 17 and 27 of the Division of Vegetable Physiology and Pathology.

The Wilt Disease is also known as "Blight" and "Black-root." It is injurious to Sea Island cotton on the Sea Islands of South Carolina, and in southern Georgia and in Florida, and to Upland cotton over wide areas in several States. It is worst on sandy soils, where it persists year after year. Prominent symptoms are the wilting of the plants, which are dwarfed or killed, the brown discoloration of the inner wood of stem and root, and a tufting of the small rootlets.

The wilt is caused by a parasitic fungus in the soil, which enters the roots and grows upward through the water-carrying vessels of the stems, which it clogs. It is aggravated by continuous cropping in cotton, but can not be remedied by rest or rotation, since the fungus can live in the soil for an indefinite time after it has once obtained a foothold. It is not due to the poverty of the land nor to the use of commercial fertilizers, and can not, so far as known, be cured by adding any fertilizer or other substance to the soil.

CONTROL OF THE WILT.

The only remedy known is the use of resistant varieties. When land is badly affected by wilt and seed of resistant cotton can not be had, some other crop than cotton should be planted.

In all cases, even where the disease does not occur or where a resistant variety is available, a rotation of crops is to be recommended, such as corn with cowpeas or peanuts; second, velvet beans; third, cotton; or, first, corn with cowpeas or peanuts; second, oats followed by cowpeas; third, cotton.

DIRECTIONS FOR PLANTING.

In order to fully test the resistant qualities of the variety, this seed should, if possible, be planted on land where cotton has in previous years suffered badly from wilt (black-root). Do not plant Upland cotton near the Sea Island. Much of the "running out" of the long staple cotton in south Georgia is due to accidental hybridization with
neighboring fields of short staple cotton. Since only a small quantity of seed can be had, unusual care ought to be taken in planting to make the seed go as far as possible. The land should be well fertilized and cared for in order to produce a large crop of seed. The Rivers cotton is resistant to wilt, but not necessarily so to rust and other troubles due to poor soil. To secure the best results, therefore, plant the seed on good soil and use from 400 to 600 pounds per acre of commercial fertilizer or its equivalent in stable manure or compost.

In land of ordinary fertility plant in rows 4 feet apart, with the plants 18 inches apart in the row. In rich soil make the rows 5 feet apart, with 20 to 22 inches between the plants. The Rivers cotton is a low, compact variety, and can be planted closer than the average Georgia Sea Island cotton. To economize seed in planting, drop by hand 3 to 5 seeds in a hill, cover lightly, and thin out to one in a place.

In order to give an exact report at the end of the season, the field where this seed is planted should be measured and the yield determined by actual weighing when the crop is picked.

**Picking.**

In picking Sea Island cotton much more care should be taken than is necessary with the Upland cotton. Pick often to avoid injury by the weather. Sun the cotton on a low arbor after picking to dry it, and sort out all trash, yellow, and immature cotton, etc., before ginning, as all these impurities injure the sale of the lint. The high prices obtained for the best grades of Sea Island cotton are due in part to the extreme care taken to remove all trash before marketing.

If your trial of this variety results satisfactorily, save all the seed carefully, as it will be difficult to get more from any source. Gin the cotton separately and clean the gins to avoid mixture with inferior varieties.

**Characters of the Rivers Cotton.**

Plant resistant to wilt, vigorous, compact, pyramidal, branching near the base; limbs small, close-jointed, bearing heavily; bolls medium size, 3 to 4 lobed; seed small, black, well covered; lint 28 per cent; staple 2 inches long, cream-white, fully to extra fine. Time of maturing, early.

**Continual Selection Necessary to Maintain Quality.**

The qualities of resistance, bearing, etc., characteristic of this cotton, will be found to be thoroughly fixed in the seed distributed. It can not be expected that they will be maintained indefinitely, however, unless careful annual selection of seed is practiced. Though the variety is highly resistant to wilt, there will be occasional individuals reverting to the original type and becoming attacked by the disease. All such should be weeded out and destroyed.
The following method of selection is recommended for keeping up the quality of the variety:

1. To obtain seed for the main crop.—Pull up and destroy all diseased or inferior plants and all hybrid or barren stalks, saving seed only from good plants in the general field.

2. To secure an improved stock for future planting.—Select from the general field a few plants of the greatest excellence, marking them with a cloth. Leave these unpicked till the middle of the season, then compare them critically with reference to bearing, length, and quality of staple, resistance to wilt, etc., and choose from this number a single plant which combines the most desirable qualities. Save all the seed carefully and plant separate from the main crop the next year, one seed in a hill, to secure as great a yield as possible. This cotton planted by itself each time will give sufficient seed the third year to plant the whole crop. This selection should be carried out every year. The propagation from single plants insures a uniformity that can be secured in no other way.

This is the method practiced in the Sea Islands, and if it were done in Georgia and Florida there would be less trouble with the "running out" of the cotton.

W. A. Ortón,
Assistant Pathologist.

Approved:
A. F. Woods,
Pathologist and Physiologist.

REPORT RESULTS.

Special attention is called to the fact that this is a new variety of great value, and that it can not be bought in the market at any price. For this reason farmers receiving this seed should plant it with care and save the seed.

It is desired to know the results of all trials of the Rivers cotton, and every farmer who receives seed is requested to return the accompanying card with his name and address, signifying his willingness to report at the end of the season. Blanks will then be sent out to be filled and returned. The Department wishes to continue the work of originating and distributing wilt-resistant varieties adapted to the requirements of the various cotton-producing sections, and the active cooperation of farmers will be of great assistance.

A. J. Peters,
Botanist in Charge.

Approved:
B. T. Galloway,
Chief of Bureau.
SEA ISLAND COTTON NO. 224.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Washington, D. C., February 1, 1903.

Dear Sir: We send you herewith one peck of seed of Sea Island cotton “No. 224.” This is a selection resistant to the wilt disease. It is distributed for trial under our Department number rather than as a named variety, but if it proves desirable to continue its cultivation, a name will be given to it later.

It was originated by selecting from a field badly affected by wilt two plants that had remained healthy. The seed obtained was planted on wilt-infected land the two years following, where it continued to resist the disease, although adjoining cotton was killed. These two successful trials indicate that its wilt resistance is well fixed, and it only remains to establish in this strain the desired commercial qualities, such as length and fineness of staple, uniformity, and productivity.

“No. 224” was developed from one of the coarser kinds of cotton grown on the Sea Islands, and more attention was paid to securing wilt resistance than fine quality. For this reason it is not equal to the best varieties grown on the Sea Islands, though it is of the grade of cotton for which there is most demand in the market. The price obtained for the crop of 1902 was 24 cents per pound, but the factor informed us that it was marketed “in such a bright and showy condition that it was placed on that account in a higher grade than its staple warranted.” These facts are stated plainly in order that the planters who test it may not be disappointed in the results. The Department recommends it for its wilt resistance only, but believes that it is worthy of trial as a basis from which desirable strains can be developed by the methods of selection familiar to Sea Island planters. The fact that this is not a fine cotton should not be taken as an indication that quality need be sacrificed in securing resistance to wilt. Our experience leads us to believe that wilt-resistant strains can be obtained of any degree of fineness desired, depending on the quality of the plant chosen at the beginning of the selection.

The method of selection that we have found to give best results in breeding wilt-resistant varieties is essentially the same as that usually practiced for improvement of quality. It is necessary that the first selections should be made in a field known to be thoroughly infected with the wilt disease, so that every healthily plant can be assumed to be resistant. Select only those plants that show no trace of the wilt disease. Several of these most prominent resistant plants should be marked and examined critically. Eight or ten that have the finest and longest staple and are most productive should be retained, and the seed of each plant kept separate. The next year these lots of seed
Fig. 1.—Field Infected by Wilt and Root-knot.
Iron cowpea, resistant; speckled cowpea, killed.

Fig. 2.—Roots of Iron Cowpea.

Fig. 3.—Root-knot on Wonderful Cowpea.

From adjoining rows in the same field.
should be planted side by side on badly infected land and the progeny compared carefully with especial reference to power shown of transmitting the resistant quality. If the descendants of any plant show many diseased stalks, the whole selection should be discarded. It will be found that in the most resistant strains almost no susceptible plants will appear. Of the resistant strains, only the one having the best commercial qualities need be retained after the second year; but the first year it is well to start with several plants, as some often turn out to be nonresistant.

To insure the maintenance of uniformity and good quality in the resistant variety, the selections should be repeated every year. The evidence we have now shows that the resistance to wilt can be maintained in this way without difficulty. A resistant variety will run out if neglected, just as any other kind would do.

*Future distributions of seeds.*—The Department of Agriculture is now growing a number of wilt-resistant selections of Sea Island cotton, which it is intended to distribute among the planters as soon as a sufficient quantity is obtained. Some of these may be better than the "No. 224," but in the meantime it is hoped that the planters will continue the work of originating resistant strains for themselves, as so many are now doing.

W. A. Orton,
Assistant Pathologist.

Approved:
A. F. Woods,
Pathologist and Physiologist.

[Circular sent to recipients of seed of the Iron cowpea.]

**IRON COWPEA.**

*(A variety resistant to wilt and root-knot.)*

**HISTORY.**

The Iron cowpea is a variety especially adapted for soil renovation and forage purposes on land where other varieties fail to succeed because of the attacks of wilt, root-knot, and other soil parasites. The seed sent out in two-quart packages accompanying this circular is grown expressly for the Department of Agriculture and is distributed in the Southern States primarily to test its resistance to the diseases mentioned above, which cause the condition of land commonly known as "pea-sickness." In localities where no disease occurs it should be tested for hardiness, resistance to drought and weevils, and general value.

The origin of the Iron cowpea is uncertain. It was found in cultivation in Barnwell and Aiken counties, S. C., and its remarkable
resistance to disease was demonstrated by experiments made by the Department of Agriculture in 1900-2 on the farm of Mr. T. S. Williams, Monetta, S. C., where the seed now distributed was grown. It was tested on land infested with both wilt and root-knot in comparison with over forty other varieties, all of which were wholly or partially destroyed by disease, while the Iron variety remained healthy. A photograph of this field is shown in Plate III, fig. 1. The Speckled cowpea on the right was treated in every respect like the Iron, but was unable to withstand the disease. In all our trials in South Carolina the Iron cowpea has remained free from nematode attacks, but at the Florida Experiment Station it was somewhat affected. It should be understood that under varying conditions different results may be expected, and this variety may not everywhere prove as resistant as in South Carolina. One object of this distribution of the Iron cowpea is to determine its resistance to disease under varying climatic and soil conditions and its suitability for different sections.

CHARACTERS OF THE IRON COWPEA.

The Iron cowpea is of the Clay type. The seeds are small and hard; color buff, of varying shades. The plant is vigorous, erect, or half-trailing; the leaves dark green, with a distinctive bluish luster; time of maturing, medium to late. It blooms and bears continuously through the season, but the pods do not shell out in the field as freely as other sorts. An especially noteworthy feature is that it holds its leaves late in the season, remaining green after other late kinds are dead. It resists the attacks of the wilt fungus and nematode worm, withstands drought well, and the hard seeds are very free from weevil attacks. The seeds will live through the winter in the ground and come up in the spring more freely than any other variety tested. It is reported to be of fair quality as a table pea.

The Iron cowpea will be most valuable for soil improvement and forage where other sorts fail. On healthy soils it is doubtful whether it will replace existing standard varieties, as it is no more productive than many others. Its long bearing season is a fault, making harvesting more difficult.

DIRECTIONS FOR PLANTING.

In order to test the disease-resistant qualities of this cowpea it should be planted on land where the ordinary varieties do not grow well, if any such is available. For the purpose of comparison, a few rows of another variety should be planted beside it. The methods of planting and cultivation should be the same as for the common varieties. To secure a good crop of seed, plant from May 20 to July 10, according to the latitude, in drills 3 to 4 feet apart, at the rate of 2 pecks per acre.
DISEASES OF THE COWPEA.

The Iron cowpea is most noteworthy for its resistance to the cowpea wilt disease and root-knot. A full description of these diseases, with accounts of experiments with remedies, etc., is published in Bulletin No. 17, Bureau of Plant Industry, United States Department of Agriculture, and will be sent free on request. A brief account is given here to enable the farmer to recognize these troubles.

THE COWPEA WILT.

The wilt of the cowpea is common only on light or sandy soils, and occurs principally on land where cowpeas have been grown for several years. It appears about August in spots of varying size, which spread gradually over the field. The plants in these areas turn yellow, lose their leaves, and die. The stems have a reddish-brown tinge, and, when broken, the inside will also be found discolored. Later, these stems become covered with the light-pink spores of the fungus which causes the disease. This fungus enters the roots from the soil and, growing upward, fills the water-carrying vessels of the stem with its threads, thus shutting off the water supply and causing the death of the plant.

Remedies.—The cultivation of the Iron pea is the best means of relief, as it will grow where all other kinds fail. Rotation of crops for two years will give temporary relief, or since the disease does not attack any other crop than the cowpea, velvet beans or other legumes may be substituted.

ROOT-KNOT.

Root-knot, like the wilt, is most injurious on sandy soil, and the two diseases are often found occurring together. It is caused by a minute nematode, or eelworm, which enters the roots and produces large, irregular swellings or galls. These very injurious enlargements should not be confused with the bacterial tubercles found on all healthy cowpea roots. The latter are small and regular in form and greatly benefit the plant by enabling it to draw nitrogen from the air. The accompanying figures illustrate this distinction. A few bacterial tubercles appear on the healthy roots in Pl. III, fig. 2, while the roots in fig. 3 are deformed by root-knot.

Root-knot is also produced on several other plants by the same nematode that attacks cowpeas. Cotton, okra, peaches, and most garden vegetables are greatly injured by it. This is the most serious feature of the disease, since the cultivation of the ordinary varieties of cowpea on nematode-infected land so greatly increases the number of the parasites in the soil that succeeding cotton or other crops are much injured.
Remedies.—It is hoped that work now in progress in the Department of Agriculture will result in the breeding of varieties of cotton, peaches, etc., which will be resistant to root-knot. At present no remedy is known that will entirely free land in our Southern States from this disease. The sterilization of the soil by heat or toxic chemicals, clean fallowing, etc., have been recommended, but the best that can be done in ordinary farm practice is to adopt a rotation designed to starve out the parasites by growing a succession of immune crops, such as the Iron cowpea, beggarweed, corn, oats, or other grains, grasses, etc. A rotation like the following is suggested for cotton planters: First year, corn, with Iron cowpeas between the rows; second year, either beggarweed, velvet beans, or oats, followed by Iron cowpeas; third year, cotton. If necessary cotton might also be planted the fourth year, after which the rotation should be repeated.

W. A. Orton,
Assistant Pathologist.

Approved:
A. F. Woods,
Pathologist and Physiologist.

REPORT RESULTS.

It is desired to know the results of all trials of the Iron cowpea, and every farmer who receives seed is requested to return the accompanying card with his name and address, signifying his willingness to report at the end of the season. Blanks will then be sent out to be filled and returned. A report will be asked for on the character of soil, whether or not infested with wilt or nematodes, manner of planting, character of season, success as a forage crop, yield as compared with other varieties, resistance to disease, etc.

A. J. Pieters,
Botanist in Charge.

Approved:
B. T. Galloway,
Chief of Bureau.

[KLEINWANZLEBEN SUGAR BEET.

Grown by E. H. Morrison, at Fairfield, Wash., from mother beets of exceptionally high sugar content and purity. The Department of Agriculture wishes to have written reports as to the quality of this seed, as sugar beet seed raising in the United States is a new industry. All requests for either beet or vegetable seed for another year from those sending such reports will be given special consideration.]
Culture.—While sugar beets can be successfully grown on a variety of soils, it is usually considered that they thrive best on a rich, sandy loam, having uniform surface and subsoil. The soil should be deep, with moderately porous subsoil, and either naturally or artificially drained. A good crop can not be grown on shallow soil having a hard, impenetrable or water-soaked subsoil. A soil that will grow a good crop of corn or potatoes is well adapted for beet culture. Well-rotted manure, phosphates, and potash may be freely used, but Chile salt-peter, if used at all, should be used sparingly. The proper preparation of the soil is a prerequisite to successful growing. The ground should be fall plowed to a depth of 9 or 10 inches, and subsoiled 5 or 6 inches more. The surface should be thoroughly pulverized by disk-ing and harrowing as soon as the frost is out of the ground. After the weeds have a good start, the ground should be again harrowed to destroy them, and finally harrowed the day before seeding. The seed should be evenly planted in rows 18 inches apart, as early in the spring as the season will permit. If a drill is used, 15 to 20 pounds of seed are required to sow one acre, while 10 to 15 pounds are sufficient if sown by hand. Cover the seed to a depth of one-half to 1½ inches, according to the condition of the soil and the season. To keep weeds from getting a foothold and the surface loose, cultivation should begin as soon as the seeds have sprouted sufficiently to show the rows and continued as long as it is possible to do so without breaking the lower leaves. Thinning should be done as soon as the plants have four well-formed leaves. This can be most easily done by bunching with a 6-inch hoe, leaving a group of plants every 6 to 10 inches. Thin to one plant to each group, using care always to leave the strongest and healthiest plant, even though the plants are at somewhat irregular distances. Give a thorough hoeing at the time of thinning.

It is difficult to give general directions for raising sugar beets, as local conditions of soil and climate often make general rules impracticable, when the individual grower must meet conditions peculiar to his particular locality.—J. E. W. Tracy.

Attention is again called to the desirability of a report on this seed. The beets raised from this seed should be hauled to the factory in a separate load from beets grown from any other seed, and a separate test for sugar content and purity should be made. If persons receiving this seed will send to the undersigned a postal card stating that they are willing to fill out a report, a blank form will be forwarded to them.

A. J. Pieters,

Seed and Plant Introduction and Distribution.
PLAN OF DISTRIBUTING TOBACCO SEED, AND CULTURAL DIRECTIONS FOR THE DIFFERENT TYPES OF TOBACCO DISTRIBUTED.

For several years the Bureau of Plant Industry and the Bureau of Soils have been cooperating in work looking toward the improvement of tobacco in this country. Under the direction of the Chief of the Bureau of Soils the tobacco seed for the forthcoming Congressional seed distribution was secured from carefully selected and matured plants, in accordance with directions issued by the Department to individual growers. The seed was obtained from the best localities for each variety, and a plan of distribution worked out whereby the varieties suitable for certain districts will be sent there.

The following directions for the distribution and culture of the different types of tobacco have been prepared in the office of the Chief of the Bureau of Soils:

PLAN OF DISTRIBUTING TOBACCO SEED.

The Congressional districts in which tobacco seed will be distributed and the varieties which it is believed are best adapted to these districts are as follows:

**Alabama:**
- First district: Florida Sumatra, Florida Cuban, Connecticut Havana.

**Arkansas:**
- Second, Fifth, and Sixth districts: Kentucky White Barley, Virginia Oronoco, Virginia White Stem.

**California:**
- Sixth and Seventh districts: Florida Sumatra, Florida Cuban, Connecticut Havana.

**Connecticut:**
- First, Second, and Fourth districts: Florida Sumatra.

**Florida:**
- First and Second districts: Florida Sumatra, Florida Cuban.

**Georgia:**
- Second district: Florida Sumatra, Florida Cuban.

**Illinois:**
- Nineteenth, Twentieth, and Twenty-second districts: Tennessee Improved Yellow Mammoth, Tennessee Oronoco.

**Indiana:**
- First, Third, and Fourth districts: Tennessee Oronoco, Kentucky White Burley, Tennessee Improved Yellow Mammoth.

**Kentucky:**
- First, Second, and Third districts: Tennessee Improved Yellow Mammoth, Tennessee Oronoco.
- Fourth and Fifth districts: Tennessee Improved Yellow Mammoth, Tennessee Oronoco, Kentucky White Burley.
- Sixth, Seventh, and Ninth districts: Kentucky White Burley.
- Eighth, Tenth, and Eleventh districts: Tennessee Oronoco, Kentucky White Burley.
LOUISIANA:
Second and Third districts: Kentucky White Burley, Tennessee Improved Yellow Mammoth, Florida Cuban.

MARYLAND:
Second and Sixth districts: Ohio Zimmer Spanish, Connecticut Havana.
Fifth district: Maryland Smoking.

MASSACHUSETTS:
First and Second districts: Florida Sumatra.

MISSOURI:
First, Second, Seventh, Eighth, Ninth, Thirteenth, Fourteenth, and Fifteenth districts: Tennessee Improved Yellow Mammoth, Tennessee Oronoco, Kentucky White Burley.

NEW YORK:

NORTH CAROLINA:

OHIO:
Sixth district: Ohio Zimmer Spanish, Florida Cuban, Kentucky White Burley.
Tenth district: Ohio Zimmer Spanish, Connecticut Havana, Kentucky White Burley.
Fifteenth, Sixteenth, and Seventeenth districts: Maryland Smoking, Ohio Zimmer Spanish.
Twentieth district: Maryland Smoking, Ohio Zimmer Spanish, Florida Cuban.

PENNSYLVANIA:

SOUTH CAROLINA:
First, Second, Third, Fourth, Fifth, Sixth, and Seventh districts: Virginia Oronoco, Virginia White Stem, Virginia Blue Pryor, North Carolina Bright Yellow.

TENNESSEE:
First, Second, and Third districts: Tennessee Improved Yellow Mammoth, Tennessee Oronoco, North Carolina Bright Yellow.
Fourth district: Tennessee Improved Yellow Mammoth, Kentucky White Burley.
Sixth district: Tennessee Improved Yellow Mammoth, Tennessee Oronoco, Kentucky White Burley.
Fifth, Seventh, Eighth, Ninth, and Tenth districts: Tennessee Improved Yellow Mammoth, Tennessee Oronoco.

TEXAS:
First, Second, Ninth, and Tenth districts: Florida Sumatra, Florida Cuban, Ohio Zimmer Spanish.

VIRGINIA:
First, Third, Fifth, Seventh, Eighth, and Ninth districts: Virginia Oronoco, Virginia Sun Cured, Virginia Blue Pryor, North Carolina Bright Yellow.
Fourth, Sixth, and Tenth districts: Virginia White Stem, Virginia Sun Cured, Virginia Blue Pryor, North Carolina Bright Yellow.
West Virginia:
Third district: Virginia Oronoco, Virginia Sun Cured, North Carolina Bright Yellow, Kentucky White Burley.
Fourth district: Virginia White Stem, Virginia Sun Cured, North Carolina Bright Yellow, Kentucky White Burley.

Wisconsin:
First, Second, Third, Seventh, and Tenth districts: Florida Sumatra, Florida Cuban, Ohio Zimmer Spanish, Connecticut Havana.

Cultural Directions for the Different Types of Tobacco.

Florida Sumatra Tobacco (Northern Districts).

A very rich spot should be selected for the seed bed of Sumatra tobacco grown in the North. In the early fall this plot should be plowed and divided into beds 6 feet wide and any desirable length, surrounded by a wall made of boards, 2 inches thick and 12 inches wide, set 2 or 3 inches in the ground. These beds should be highly fertilized with cotton-seed meal and stable manure, well spaded in to a depth of 6 or 8 inches, and the whole covered with leaves, manure, or trash to keep out the frost during the winter. About April 1 this top dressing should be taken off and the bed again spaded and the soil well pulverized, after which another application of cotton-seed meal or cotton-hull ash should be given. This should be raked in and the surface made smooth and loose, making the bed ready to receive the seed. About five days before the time of sowing the seed should be put to sprout in apple-tree punk, made soft with warm water. This should be put in a fruit jar and kept in a warm room. It will be observed that the seed will be slower in sprouting than domestic tobacco seed, and it will not sprout uniformly; that is, all the seed will not sprout at the same time. It is best to wait until nearly all the seed is sprouted before sowing. Mix the seed with bran or cotton-seed meal and sow at the rate of 2 tablespoonsfuls of the seed to 100 square yards, after which a heavy roller should be drawn over the bed, thus packing the seed well into the soil, making the surface smooth and preventing the rapid drying out of the soil which would otherwise take place. If the ground is dry, it should be watered immediately after sowing the seed, and this should be continued from time to time as the soil may require. In the absence of rain after the plants are up watering should still be practiced.

There are many enemies of the seed bed in the way of insects, so a careful watch is necessary. As soon as there is any appearance of flea-beetles or horn worms, the bed should be sprayed with Paris green mixed with water at the rate of 1 tablespoonful to 2 gallons of water. In order to keep down the insects, the bed should be sprayed at least three times a week. It is safer to protect these early beds with canvas stretched on frames made over and around the beds.
When the plants are drawn for trans-planting, great care should be taken to get as much root as possible. Each person doing this work should be provided with a bucket of water, and as soon as the plants are drawn the roots should be washed to remove all soil that may have stuck to them. The plants are then placed in a basket, roots down, and are immediately set out. The washing of the roots is not generally practiced, but it has been found that plants live and grow better when the roots are clean. After each drawing of the plants from the bed, the soil should be watered, in order to close up the places from which the plants have been taken.

The soil selected for this tobacco should be a light gray sandy loam or sand with a sand or clay sub-soil, provided the clay is not closer to the surface than 12 or 15 inches. In order to produce a light, thin wrapper, the sandy soil must be very rich and a large quantity of fertilizer is necessary. The land should be broken up in November or December, allowing the plow to cut from 4 to 6 inches deep, according to the nature of the soil and the quantity of fertilizer used. If a large quantity of fertilizer is used, such as cotton-seed meal and stable or barn manure, it should be thrown broadcast over the field and plowed in. This should be done about six weeks before the time of setting out the plants. Often a second application of fertilizer will be needed in order to give a continuous, rapid growth.

The distance between the rows should be 4 feet and between the plants 12 inches. As it is always desirable to get a uniform growth, great care should be exercised to have each plant live. If the ground is moist and showers frequent, watering the plants is unnecessary; but if the ground is dry, they should be watered immediately after setting and, if possible, each day thereafter as long as the plants may require it. After setting the plants they should not be disturbed for at least six days. If the soil becomes packed and hard, a furrow should be run on each side of the row, using a small straight plow and letting it well down. This should be followed immediately by two sweep furrows, which will put the plants on a smooth ridge. The hoe is then used, carefully stirring the soil about the plants. Thereafter cultivation should be frequent and shallow.

As the principal value of Sumatra is its wrapping leaves, great care should be exercised to preserve the soundness of the leaf. In topping the Sumatra tobacco only the bud should be taken out, and all the leaves allowed to grow. If the land is exceedingly rich it is found best not to top at all, but to allow the plant to go to bloom. It has been found by experience that Sumatra tobacco should be harvested at an early stage of ripeness, as the leaf will cure riper and be more elastic—that is, it will have more life. It is usual to take 4 or 6 leaves at each priming, thus going over the field four or five times before the whole crop is harvested.
As soon as the first leaves at the bottom of the stalk begin to ripen, harvesting is begun by plucking off or priming the first four leaves at the bottom and transporting them to the curing shed in baskets. These are strung on strings attached to laths, from 30 to 40 leaves being allowed to a lath. The leaves are placed back to back and face to face, so as to prevent cupping or folding over each other. The laths are then hung in tiers in the barn, where they remain until the leaves are cured.

When the tobacco is primed from the stalk, it should not take more than two weeks to cure; when it is hung on the stalks, three to four weeks are necessary. The manipulation of the barn or curing shed is governed entirely by the condition of the weather and the nature of the tobacco; so no fixed rules can be given. However, in a general way, it can be said that if a barn is filled with green tobacco and the weather is hot and dry, the ventilators should be tightly closed for about three days, by which time the tobacco should be quite yellow. The barn should then be opened at night and kept closed during the day. This is done to prevent rapid curing, which destroys the life of the leaf and gives uneven colors. If there are frequent showers and but little sunshine, the barn should be kept closed and fires started in small charcoal heaters distributed throughout the barn. These fires should be continued as long as it is necessary to keep the tobacco in proper condition. Where charcoal heaters are not available, wood which has as little odor and as little smoke as possible should be used. It is very important to dry out the barn without giving the tobacco any foreign odors. To obtain the best results the tobacco should become fairly moist and fairly dried out once in every twenty-four hours.

When the midribs are thoroughly cured the leaves are ready to be taken to the packing house. To get the tobacco in condition to handle, all the ventilators should be left open for one night, opening them about 6 o'clock in the evening. The next morning the tobacco should be in what is called "good case;" that is, it will have taken up sufficient moisture to become soft and pliable. The barn is then tightly closed, in order to retain the moisture, and the leaves are taken from the laths. The bottom, middle, and top leaves should be kept separate in the barn. After the tobacco has been taken down and packed it should be taken at once to the warehouse for fermentation and baling.

Florida Sumatra Tobacco (Southern Districts).

The land for the seed bed should be preferably fresh, rich hammock, having a light gray soil, moist but not wet. Dry, thirsty land should be avoided. In selecting the seed bed it is best to secure land sloping from north to south, protected on the north by forests and open on the south to let in the midday sun. The time for sowing the
seed is from March 1 to April 15. Plants should be ready for transplanting about sixty days after sowing.

One week before sowing the seed the bed should be thoroughly cleaned and all straw and leaves carefully raked off, after which the ground should be burned. This is done to destroy all grass and weed seeds or roots which might otherwise come up and choke the tobacco plants. The burning is done in the following manner:

After raking the surface well, skids are laid 4 feet apart, running the full length of the plat to be sown. A pile of wood is then laid across the skids, running the width of the bed. The fire is started, and as fast as the ground is thoroughly burned and covered with ashes the fire and wood are drawn along the skids, wood being continuously added. After the entire bed is burned the ground is again raked to remove the coals, letting the ashes remain. The soil is then spaded to a depth of 4 inches, all the roots and tufts being carefully taken out. If the soil needs fertilizing after the spading is completed (the seed bed should be very rich in order to give thrifty, healthy plants), such quantity of fertilizer as may be necessary is thrown broadcast over the surface. Any complete guano may be used. The bed is again raked with an iron-toothed rake to mix the fertilizer well with the soil and to have the surface smooth and loose.

The bed should be divided into "lands" about 4 feet wide, leaving narrow walks between. Each land should be measured to ascertain how many square feet it contains, and enough seed should be mixed with ashes to sow one land at a time, at the rate of 2 tablespoonfuls of the seeds to 100 square yards. This is the usual allowance for 1 acre to be planted. After the sowing is completed the bed should be rolled with a heavy roller. If the ground is dry it should be watered immediately after the sowing of the seed, and this should be continued from time to time as the soil may require. In the absence of rain, after the plants are up, watering should still be practiced.

The manner of transplanting, the kind of soil to be selected, the methods of field culture, and the manipulation of harvesting and curing are the same in both northern and southern districts.

**Florida Cuban Tobacco.**

The seed bed for this variety of tobacco should be the same as that for the Sumatra in the South, and should be cleared, burned, and prepared in the same manner. The time for sowing the seed is from January 15 to March 1, and sometimes as late as April. January and February sowings should give plants large enough for transplanting within sixty or seventy days; those of March and April within forty to sixty days. Transplanting is done in the same way as with the Sumatra, except that the plants are set 14 inches apart. The same rules as to watering and early cultivation apply.
When the plants begin to button, cultivation should stop. Early or low topping is not desirable, as it throws too much growth into the leaves, making them large and coarse. There should be from 14 to 16 leaves to the stalk after the plant is topped. At this point suckers will start at each leaf, but these must be broken off at least twice a week. The battle with the worms, which was begun in the seed bed, does not end until the tobacco is harvested. A careful watch should be maintained to keep all insects off the tobacco.

This variety should be harvested and hung in the curing shed in the same manner as the Sumatra. If it gives promise of being "wrapper"—that is, if it is light green, very sound in leaf, and of desirable size—it should be primed at an early stage of ripeness. If, however, appearances prove that it will be "filler" tobacco, it should be allowed to get thoroughly ripe.

If the soil is rich and the season propitious, a second profitable crop can be produced from the suckers in Southern localities. As soon as the original crop is topped suckers will sprout from each leaf. These, of course, should be broken off as soon as they appear, otherwise they will check the growth of the leaf. When all the leaves have been primed from the original stock, except the four or six leaves at the top, two suckers should be allowed to grow from the bottom of the stalk. These two suckers will be well started by the time the top leaves of the original stalk are ripe. The stalk should then be cut just above where the suckers sprout, and cultivation should begin at once, the soil being brought up around the old stubble. The suckers should not be allowed to have more than six leaves each. The growth of these will be rapid and they will mature quickly. When ripe the leaves should not be primed, but the stalk should be cut. It is often the case, where the seasons are favorable, that the suckers will make a very fine quality for filler purposes.

The same method of curing is used for both Cuban and Sumatra tobacco.

**Connecticut Havana Tobacco.**

The seed bed for this type should be prepared by plowing it in the fall and sowing on a good supply of cotton-seed meal or some other good fertilizer. In the spring, as soon as the frost is out of the ground, the bed should be again plowed or harrowed with a cutaway harrow and a small quantity of phosphate thrown broadcast upon it. The bed should again be harrowed and well raked. The seed should be sown about the middle of April. It is first sprouted by being put in apple-tree punk or moist sand and kept in a warm room. Plants should be ready for setting in the field within six or seven weeks from sowing. The rows should be 3 feet 4 inches apart, and the distance between the plants from 16 to 18 inches. The tobacco is topped so as
to allow from 16 to 18 leaves to the stalk. The average yield per acre is from 1,800 to 2,000 pounds.

The crop is harvested by cutting the stalks and letting them remain in the field until they wilt. Then they are hauled to the barn, where they are speared on laths, from 8 to 12 stalks being allowed to a lath. These are hung up in the barn 8 inches apart.

This tobacco is cured as follows: While the leaves are green the barn should be closed at night and during damp weather and opened during the day; but when the tobacco is half cured, the ventilation should be reversed and the barn closed during the day and opened at night and in damp weather. The tobacco should be fairly dried out and fairly moistened once every twenty-four hours. The curing is completed when the midribs of the leaves are thoroughly dried.

The soil best adapted to the Connecticut Havana variety is a light sandy loam.

**Ohio Zimmer Spanish Tobacco.**

The seed bed for this type, which is prepared in essentially the same way as that for the Connecticut Havana, should be sown from March 1 to April 15, and the plants ought to be ready for transplanting within eight or ten weeks. The rows in the field should be 3 feet apart and the plants 22 inches from each other in the drill. The tobacco should be topped when the seed bud appears, leaving about 16 leaves to the plant. The average yield is 1,000 pounds per acre.

The Zimmer Spanish tobacco is harvested and cured in the manner described for the Connecticut Havana leaf.

The soil best adapted to the Zimmer Spanish variety is sugar-tree red uplands or "Miami clay loam" of the Soil Survey.

**North Carolina Bright Yellow Tobacco.**

The seed bed for this tobacco should, if possible, be selected on a hillside sloping from west to east or from north to south, so as to get all the morning sun and be sheltered from the cold west and north winds. The soil of the seed bed should be as rich alluvial virgin soil as can be had. The bed should be well burned and all the grubs taken out. A little 2-inch bull-tongue plow should be used to break up the soil in two ways so as to tear out all the roots, which should be raked out and the bed made smooth. To 100 square yards put on 100 pounds of high-grade fertilizer and 2 barrels of well rotted stable manure about 1 inch deep. Plow this in with the same bull-tongue plow and rake the bed carefully until the surface is level. After the sowing is completed a heavy roller should be drawn over the bed.

The seed should be sown from the first to the middle of January and not later than the first of February. This will give plants ready for transplanting by April 5. Harvesting should begin from sixty to
seventy days after transplanting. The rows should be $3\frac{1}{2}$ feet and the plants $2\frac{1}{2}$ feet apart. The average yield is 1,000 pounds per acre.

Harvesting may be done by priming the leaves or by cutting the entire stalk. In priming the tobacco the leaves are stripped from the stalk in the field as they ripen, and are strung on strings attached to laths, about 30 leaves being allowed to each lath. These are then hung in the barn to cure. If this method is practiced, from 14 to 16 leaves may be matured on each plant. If it is desired to cure the tobacco on the stalk, the first four bottom leaves should be stripped off and the tobacco topped, so as to leave from 10 to 12 leaves on the stalk. In cutting the tobacco the stalk should be split from the top down to within a few inches from the last set of leaves, and then the stalk should be cut just below these leaves. The plants are hung on the lath by opening the split, 6 to 8 plants being allowed to each lath. These are carried to the barn, where they are hung in tiers.

This tobacco is cured as follows: The barn should be heated to 100° and allowed to remain at that temperature until the tobacco colors well. The temperature should then be gradually raised to 110° and retained until the desired colors are obtained. At 120° the tips of the leaves on the first tier should show signs of drying, and at 125° all the leaves on the first and second tiers should be dry. At this point the barn should be gradually heated to 145°, a pause of several hours being made at 140°. By this time all the leaves in the barn should be dry, but in order to kill the stem the temperature should be raised 5°. Then a rapid rise should be made until 175° is reached, at which temperature the tobacco should be thoroughly cured.

The soil best adapted to this type of tobacco is a light-gray sandy loam.

**Maryland Smoking Tobacco.**

Prepare the seed bed for this variety as for Cuban tobacco, sowing the seed from February 1 to March 20. The other operations in the production of the two types are the same up to transplanting. The Maryland smoking tobacco is transplanted from May 15 to June 1, in rows 3 feet apart, the plants being given a distance of 20 to 24 inches from each other in the drill. The plants should be topped so as to leave about 16 leaves to the stalk. The average yield is 1,000 pounds to the acre.

In harvesting this tobacco, the plants are cut and four rows are thrown together. They are then speared on sticks, from 6 to 8 plants being allowed to the stick. Care should be taken that the plants are not crowded too closely on the sticks or in the barn. The sticks are hung about 8 inches apart in the barn, and after the tobacco is half cured they can be put closer together if necessary, say about 4 inches apart. It generally takes about two months to cure this tobacco sufficiently to strip.
TENNESSEE TYPES (Yellow Pryor, Orornoco, Improved Yellow Mammoth).

The soil best suited for the seed beds of these types is rich, friable, black virgin loam or sandy soil with a southern exposure. The time for sowing the seed is from March 1 to April 15. The preparation and management of the seed bed are the same as for Cuban tobacco. The plants should be ready for transplanting about May 10. The rows in the field should be placed 3½ feet apart each way. Ten days are necessary for the plants to establish themselves in the soil, and at the end of that time cultivation with the plow should begin; afterwards the hoe should be used. The field should be worked first one way and then the other.

About six or eight weeks after transplanting the plants ought to be ready for topping. This is done by pinching off the bud, leaving 8 or 10 leaves to the stalk, not including the leaves at a distance of 6 inches from the ground. All suckers should be kept off the plant.

The tobacco should be allowed to get thoroughly ripe before harvesting, which is done in the following manner: Split the stalk down from the top to within a few inches of the last set of leaves. Cut two rows, laying the plants right and left, and when wilted hang the plants on laths, from 8 to 12 stalks to a lath. These should be laid in small piles at a sufficient distance apart to allow between them the passage of a wagon, on which the laths are loaded and carried to the curing shed. Care should be taken not to cut the plants after a rain or in the hot sun.

This tobacco is cured as follows: After it has been hanging in the barn four or five days, slow fires should be kindled under it, and at the expiration of twenty-four hours the heat should be gradually increased until 150° is reached. The leafy part and one-half the stem should be cured in three days and nights. After this the tobacco should be allowed to come in "order" (soft and pliable) and be dried out by fires. This alternation of getting the tobacco moist and drying it out should be kept up for three or four weeks. This tobacco is cured by open wood fires, made by placing two logs side by side and building a fire between them. Open-fire heat is preferred for all tobacco to be sent abroad.

The soil best adapted to these types is a strong, rich loam with a deep reddish subsoil.

KENTUCKY WHITE BURLEY TOBACCO.

The seed bed for this variety of tobacco is selected and prepared as in the case of the Cuban type, the only variation being in the time of seeding, which for the Burley is limited to February.

As soon as the plants are well rooted cultivation should begin, and
this should be continued during the growing season, so as not to allow
the soil to become crusty and hard. The plants should not be per-
mitted to bloom, but should be topped as soon as the button appears,
leaving from 14 to 16 leaves to the stalk.

The tobacco should be allowed to become thoroughly ripe before
harvesting. It is harvested in much the same way as the Yellow
Pryor and other Tennessee types, but no fire is used in its curing,
which is accomplished by simply hanging in the barn.

**Virginia Types (White Stem or One Sucker, Oronoco, Sun-
Cured, Blue Pryor).**

The situation and kind of soil best suited for the seed bed and the
methods of its preparation and management are the same for all these
types as for the Cuban tobacco, but there are some differences in the
time of sowing the seed and in the manner of cultivating, harvesting,
and curing the different varieties.

*White stem or one-sucker tobacco.*—Seed should be planted from
January to March. Plants should be set in the field in rows 4 feet
apart and given a distance of 3 feet in the drill. The plants should be
topped, so as to allow from 8 to 12 leaves to the stalk. The average
yield is 1,500 pounds per acre.

About fourteen weeks elapse between the time of transplanting and
of harvesting, as this tobacco should be thoroughly ripe when cut.
The crop is cut and harvested in the following manner: The stalk is
split from the top to the last set of leaves and severed about 2 inches
below the split, or just below the last set of leaves. Hang the stalks
on laths by opening the split, seven or eight plants being sufficient for
one lath.

The curing is done as follows: Put the tobacco in the barn as quickly
as possible—before it begins to turn yellow. After the barn is filled
build a fire of dry oak or other hard wood and make it hot enough to
scald the leaves. About five hours of firing at a temperature of from
150° to 155° will usually scald the leaves. Then diminish the heat and
keep a slow fire in the barn until the stalks are cured. Forty-eight
hours are required to perfect this cure.

The soil adapted to this type of tobacco is a sandy loam with a red
dry subsoil. Without such subsoil the tobacco will have a dull, slaty
color, while with it the tobacco will be rich, glossy, and much tougher.

*Oronoco tobacco.*—The time for sowing the seed is from February 1
to April 15. Plants should be ready for transplanting sixty days after
sowing if the season is favorable.

In the field the distance between the rows should be 2\(\frac{1}{2}\) feet and
between the plants in the drill 3 feet. The plants should be topped so
as to leave from 8 to 10 leaves on the stalk. Fifteen hundred pounds
per acre is considered a good crop.
The tobacco is cut in the same way as the White Stem variety. When the plants are wilted, one man walks between the rows, holding the lath on which the plants are to be hung. The hanging is done by two other men, who walk to the right and left of the one carrying the lath. When the laths are full, they are carefully laid on the ground, two or three together. They are then loaded on a wagon and carried to the curing shed, where they are hung in tiers. From 6 to 8 stalks are allowed to a lath.

This type of tobacco is usually cured with a small fire in the barn. Slow fires should be started and kept burning until the leaf is well yellowed; then the temperature should be increased until the leaf is cured and the stalk is brown. After this it is only necessary to have enough fire during the early morning to dry out the leaf until the tobacco is thoroughly cured. From twenty to thirty days are required to complete this curing.

A soil with a stiff clay subsoil is adapted to the growing of this tobacco.

_Sun-cured tobacco._—The time of sowing the seed is from February 1 to April 15. Plants should be ready for transplanting in about ninety days after sowing. The rows should be 3 feet 3 inches apart and the plants in the drill 2 feet. The plants are topped so as to leave 10 to 12 leaves to the stalk. The average yield is 1,000 pounds per acre. The crop is cut and harvested in the same manner as the Oronoco type.

Curing is effected as follows: When the tobacco is taken to the curing shed, it is crowded together and allowed to remain until it is quite yellow. Then the barn should be opened or the tobacco should be hung on racks in the sun until cured. Sun and dew are preferred for curing sweet-flavored tobacco. From five to eight weeks are required to effect this cure.

The soil best adapted to this type of tobacco is a medium sandy soil that is high enough to give good natural drainage.

_White Pyror tobacco._—Seed should be sown from January 1 to March 15. Plants should be set in rows 3 feet 3 inches apart and given a distance of 3 feet in the drill. The plants are topped so as to leave 8 or 10 leaves on the stalk. The average yield is from 1,200 to 1,500 pounds per acre. The method of harvesting is the same as for the previous types.

The tobacco is cured in the following manner: It is hung in the barn until it yellows uniformly; then a slow fire is started and continued until the leaf is cured. From three to five weeks are required for the curing of this type.

The soil best adapted to this tobacco is a gray loam with a red clay subsoil.

27609—No. 25—03——6
COMMERCIAL USES OF THE DIFFERENT VARIETIES OF TOBACCO.

Florida Sumatra tobacco is used almost exclusively as a wrapper for domestic cigars. In the southern districts the thick or broken leaves may be cured for filler purposes.

Florida Cuban is essentially a filler tobacco for domestic cigars, although much desirable wrapper is produced from this type in the southern districts.

Connecticut Havana is grown entirely for wrapper and binder purposes for domestic cigars.

Ohio Zimmer Spanish is used exclusively for filler for domestic cigars.

North Carolina Bright Yellow is used for pipe smoking, chewing, and cigarettes. The most valuable leaves are those used for wrappers for plug tobacco and for all-tobacco cigarettes. This type was formerly grown almost wholly for the domestic market, but now a considerable export trade is maintained with England, Japan, and other countries.

Maryland Smoking tobacco was formerly used to a large extent for domestic pipe smoking, but the principal market is in two or three of the "Regie" countries, France taking the bulk of the crop.

The Tennessee types are principally exported.

The Virginia types are used to a very large extent in the domestic markets for smoking and chewing tobaccos and snuff. Considerable quantities, however, are exported, especially the heavier and cheaper grades.

Kentucky White Burley is used for pipe smoking, chewing, and cigarettes. The bulk of the crop is consumed in our domestic markets, but considerable quantities are exported.

RECENT PUBLICATIONS OF THE DEPARTMENT ON TOBACCO.

The following publications are available for general distribution:

Farmers' Bulletin No. 60.—Methods of Curing Tobacco.

Farmers' Bulletin No. 82.—Culture of Tobacco.

Farmers' Bulletin No. 83.—Tobacco Soils.
SPANISH ALMONDS

AND

THEIR INTRODUCTION INTO AMERICA.

BY

DAVID G. FAIRCHILD, AGRICULTURAL EXPLORER,
SEED INTRODUCTION AND DISTRIBUTION.

WASHINGTON: GOVERNMENT PRINTING OFFICE.
1902.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture.
Bureau of Plant Industry.
Office of the Chief,
Washington, D. C., July 7, 1902.

Sir: I have the honor to transmit herewith a paper on Spanish Almonds and Their Introduction into America, and respectfully recommend that it be published as Bulletin No. 26 of the Bureau series. The paper was prepared by Mr. David G. Fairchild, Agricultural Explorer, and was submitted by the Assistant in Charge of Seed and Plant Introduction.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.

2
The accompanying paper is one of a series, which it is hoped can be issued from time to time, embodying observations made on specific crops by the agricultural explorers of this Department. Already several such papers have appeared and have aroused general interest in the subjects discussed.

Almond culture is an important industry in California, and, to a more limited extent, in Arizona and Utah. It is hoped, therefore, that this bulletin may prove of value to these regions. The introduction of the varieties of almonds herein discussed can not, apparently, be without great benefit.

Ernst A. Bessey,
Assistant in Charge of Seed and Plant Introduction.

Office of Seed and Plant Introduction,
February 14, 1902.
CONTENTS.

Introduction ................................................................. 7
The almond industry in Spain ................................................ 9
  Varieties of Spanish almonds ........................................... 10
  Method of planting and culture ........................................ 12
  Gummosis of the almond ................................................ 13
Possibility of establishing the Jordan almond in America .......... 13
Description of plates ..................................................... 16
ILLUSTRATIONS.

Jordan almonds. Frontispiece.

PLATE I. Almond orchards about Alicante.—Fig. 1. Single large tree of Planeta variety.—Fig. 2. One of the largest almond orchards near Alicante.—Fig. 3. Cultivating an almond orchard in August.

II. Jordan almond orchards about Malaga.—Fig. 1. Low foothills covered with olive and almond trees.—Fig. 2. An old almond orchard among the hills near Cartama.—Fig. 3. Tree of Jordan almond from which scions were taken, near Malaga.

III. The Spanish Sierras, where the best Jordan almonds are grown.—Fig. 1. The village of Almogia; almond trees in foreground.—Fig. 2. Scattered almond trees on the mountain side.—Fig. 3. Beating the fruit from an almond tree on the mountain side.

IV. Varieties of Spanish almonds fresh from the trees.—Fig. 1. Jordan.—Fig. 2. Pastaneta.—Fig. 3. Planeta.—Fig. 4. Mollar.—Fig. 5. Bitter almond.

V. Fig. 1. Branch of Planeta almond from Alicante.—Fig. 2. Tree of Planeta almond growing near Alicante.

VI. Fig. 1. Branch of Mollar almond from Alicante.—Fig. 2. Diseased branch of Jordan almond from garden at Casara Bonella, Spain.

VII. Fig. 1. Jordan almond tree from which scions were taken.—Fig. 2. Branch of ripe Jordan almonds just plucked from the tree.—Fig. 3. Almond growers, descendants of the Moors, in an old Moorish village near Malaga. Heaps of uncracked almonds in foreground.
SPANISH ALMONDS AND THEIR INTRODUCTION INTO AMERICA.

INTRODUCTION.

The most valuable almonds of commerce are those grown in southeastern Spain. They are hard-shelled varieties and bring on the English and American markets 8 to 10 cents a pound more than any other sort, being in favor with confectioners for the manufacture of their best salted and sugar-coated almonds. These superlative sorts are imported from Spain by Boston and New York importers for retail to confectioners, many thousands of dollars being expended annually on this import.

Since 1885 Californians have been growing almonds quite successfully, and there are in certain valleys in the State localities where almond culture has become distinctly profitable.

According to the statistics collected by Mr. W. A. Taylor and published in the Yearbook of the Department of Agriculture for 1897 as much as 2,500,000 pounds had been produced in California in a single year prior to that date. Commercial estimates of the crop of 1900, furnished through the kindness of Mr. Taylor, place the almond yield of California at nearly 5,500,000 pounds in that year. The quality of the product is excellent for many uses, but confectioners prefer the imported article, as is evidenced by the fact that they imported in 1897 over $683,000 worth, largely from Spain. It has been assumed that the superiority of these Spanish nuts over the Californian lies in some unexplained and unexplainable peculiarity in the climate of southeastern Spain which finds no equivalent in California. The better informed growers, however, have known that the question was largely a matter of variety, and that the best Spanish sort had never been introduced into America. The matter of its introduction may have been discussed prior to 1893 by California horticulturists, but up to that year, so far as the writer has been able to discover, only the kernels, which form the commercial article, had been known in this country. In 1893 the Division of Pomology of the Department of Agriculture secured from Mr. Charles Heath, United States consul at Catania, Sicily, a handful of the uncracked nuts which he had secured from a firm in Malaga. These were of the so-called Jordan variety, and were said to have been grown on some islands off the Spanish coast.
ably distinct form of these nuts at once attracted the attention of Mr. H. E. Van Deman, then Chief of the Division of Pomology, and Mr. W. P. Corsa, the nut specialist of the Division, and in his monograph on nut culture in the United States, which was published three years later, Mr. Corsa gave a description, with a drawing of the nut, and strongly recommended its introduction into California. Owing to many difficulties this suggestion seems never to have been followed, although almond growing in California has continued to increase in importance, and certain French sorts, including a kind known as the Provence and supposed to be the same as the Jordan, have been introduced and are now on trial in that State. Heretofore no one has succeeded in getting the scions of trees of the best Spanish almonds, although their kernels continue to be imported into the country from Malaga and Alicante, on the southeast coast of the peninsula.

As an agricultural explorer of the Section of Seed and Plant Introduction, the writer last August made a somewhat hurried trip through the almond orchards of Spain, at the time when the almonds were being gathered, to secure scions. It is a pleasure to say that the scions collected are already growing at several places in the United States.

---

*a Nut Culture in the United States, Embracing Native and Introduced Trees. U. S. Department of Agriculture, Division of Pomology. 1896.*

*b* The following statement regarding an earlier introduction of Spanish almonds than that made by the Department was received from Mr. W. A. Taylor after Mr. Fairchild’s manuscript had been sent to the printer:

Since the Jordan almond buds secured by Mr. Fairchild reached this country and were successfully propagated, Mr. John Rock, manager of the California Nursery Company, Niles, Cal., has sent us samples, evidently of the true Jordan variety, grown on trees imported by him in dormant bud in February, 1897. Mr. Rock’s statement regarding his introduction is substantially as follows:

In 1896 he requested a French firm to secure buds of the Jordan almond in Malaga, Spain, and to propagate them for him at their nursery in France. This was done, and a lot of dormant budded trees on Myrobalan plum stocks reached him on February 17, 1897.

Fearing that the almond would not thrive on the Myrobalan roots, he grafted 100 of these dormant buds on old peach trees, using the entire stock of the Myrobalan plum, with the dormant almond bud upon it, as a scion, the balance being planted out in the usual way. Nearly all grew, but instead of being of one variety they were found to consist of many kinds, most of them resembling the common, hard-shelled almond. They made but a stunted growth and produced nuts in the third and fourth years. Three of the trees bore fruit that was apparently of the Jordan type, the nuts being of an oblong, carved sort.

Mr. Rock, early in 1902, sent samples of these nuts to Consul Ridgely at Malaga, who submitted them to dealers there for identification. They pronounced them the true Jordan almond.

It would appear from this that the credit for the introduction of the Jordan almond belongs to Mr. Rock, although the Department was not informed of this until after the stock secured by Mr. Fairchild had been established at several points in the United States.
THE ALMOND INDUSTRY IN SPAIN.

Almond growing in Spain is a local industry, its main centers being Malaga and Alicante, although other regions along the coast and even the Balearic Islands, it is said, produce small quantities of the nut. The culture is carried on with various degrees of carefulness. Large plantations on the plains about Alicante, carefully tilled and well taken care of, remind one of American orchards, with their straight rows of well pruned trees and cultivated soil (Pl. 1, figs. 2 and 3). In many fields the almond, olive, fig, and carob trees are mixed, with no attempt at regularity, while in the region about Malaga the foothills are covered with almond trees, between the rows of which grapevines are planted. Whether owing to this mixed culture or for tradition's sake, the trees are planted far apart, 20-foot intervals being frequent. This does not appear excessive, as the trees reach a large size and live to a ripe old age, fifty years not being uncommon.

While the kind of soil no doubt plays a certain part in the production of a fine almond, the writer does not believe it decides in any way the form of the variety.

The best land for almonds in Spain is that of the foothills or sierras. This is a gravelly loam, which during August becomes as dry as dust and breaks up into irregular but not very hard lumps (Pl. 1, fig. 3). It is of a light yellowish-gray, sometimes reddish color, and is underlaid by a bed of gravel and rock so firm that it is difficult to get a soil auger into it. Such soil, according to Prof. Milton Whitney, Chief of the Bureau of Soils, to whom samples have been submitted, resembles that of the foothills of California."

The climate of this almond region is a very mild one. Freezes occur in winter and ice a half inch in thickness often forms on the water butts, but a minimum of less than 20° must be uncommon, even in the northernmost limit of almond culture, about Alicante. How severe weather the trees will endure while in dormant bud remains, therefore, to be tested in this country. As regards rainfall in this semiarid region, it is difficult to ascertain the facts, as no reliable published data can be found. From the statements of growers and old inhabitants,

---

"The following is the report of a mechanical analysis of the soil from an almond orchard near Malaga, Spain, made by the Bureau of Soils:

<table>
<thead>
<tr>
<th>Description</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic matter</td>
<td>11.42</td>
</tr>
<tr>
<td>Gravel, 2 to 1 mm</td>
<td>6.96</td>
</tr>
<tr>
<td>Gravel, 1 to 0.5 mm</td>
<td>6.56</td>
</tr>
<tr>
<td>Medium sand, 0.5 to 0.25 mm</td>
<td>3.12</td>
</tr>
<tr>
<td>Fine sand, 0.25 to 0.1 mm</td>
<td>10.74</td>
</tr>
<tr>
<td>Very fine sand, 0.1 to 0.05 mm</td>
<td>7.64</td>
</tr>
<tr>
<td>Silt, 0.05 to 0.005 mm</td>
<td>33.54</td>
</tr>
<tr>
<td>Clay, 0.005 to 0.0001 mm</td>
<td>20.22</td>
</tr>
</tbody>
</table>

The water-soluble material is "0.13 per cent in form of bicarbonates.""
however, the writer concludes that the months of July, August, and September are practically rainless and that the winter rains are neither frequent nor very abundant. The region is essentially a dry one, verging on the arid, and in sheltered portions of it, at Elche, even the tender date palm is grown. It is the only place in all Europe where this palm is grown extensively or where it bears really edible, though not excellent, fruit.

This region is a land of perpetual sunshine, and in it the olive, fig, pomegranate, the famous Malaga grape, and the carob form characteristic cultures, although the center of each of these cultures is not in the immediate locality. The olives, for example, which furnish the Spanish olives of commerce, are grown farther inland, about Granada and Seville: the figs are more important on the Balearic Islands and in southern Portugal; the pomegranates are raised on the salt lands, where figs refuse to do well; the orchards of carobs are largest about Valencia, some distance from the almond region; and the Malaga table grapes have their center about Almeria; the raisin grapes are in the neighborhood of Malaga, it is true, but occur largely in the valleys, while the almonds are generally grown in the foothills. (Pls. II and III.)

VARIETIES OF SPANISH ALMONDS.

It is probable that there are a score or more varieties of Spanish almonds which have been propagated by budding, but owing to the antiquated methods in vogue in the almond regions, little reliable information about most of these sorts is obtainable.

The writer was astonished to learn how local these sorts are and how little could be learned from one grower about sorts grown in even a neighboring locality. This would not be so surprising if one remembered the dearth of horticultural literature at the disposal of the almond growers. Probably many identical sorts are known by different names in different localities.

The English buyers, who were formerly about the only ones, have given names to some of the sorts that are quite different from those known among the growers themselves. The best variety is known in commerce as the Jordan, and yet not once was this name heard applied to the variety by the growers. They call it the "Large e fine," a descriptive name meaning simply "the large, fine almond." As to the origin of this name Jordan there is nothing new to offer. It may be a corruption of the French word "jardin," meaning garden, or the name can easily have related to the origin of the first importations into England, erroneously supposed to have come from the River Jordan. If the word Jordan occurred in the Spanish trade the former assumption might have some weight, but the term seems to have originated among the English importers.
The trade names, as distinct from the varietal, relate to the grades more than to the different sorts. They are "donkeys," "horses," "tigers," "lions," "elephants," and "mammoths," according to the size of the shelled nuts. The "donkeys" are small and bring a lower price, while the "mammoths" are simply the abnormally large nuts found by the sorters who pick over the nuts by hand. These latter bring fancy prices, only a few boxes being secured during the year out of the thousands of all grades which are shipped.

As the nuts are all cracked on the plantation by the men, women, and children, and brought down on donkey backs to the small buyers in the villages, to be sent to the large storehouses of the exporters, these latter know their almonds chiefly from the character of the kernel. Peculiarities of the American tariff, it is said, make the export of shelled nuts more profitable. Purely mechanical devices for grading these almonds, similar to the gold-coin weighing chutes of banking houses, would do away with much of the unnecessary labor of sorting.

There are two more or less distinct types recognized by the exporters of almonds, but these include several varieties.

The Jordan type of nut (see frontispiece and Pl. IV, fig. 1) is the long, narrow, but plump sort, with exceedingly hard, smooth shell, truncated base, and somewhat bent apex, with edges free from a sharp knife-like character common to many bitter almonds. The edge view is more or less arrow-shaped, and there is a distinct dorsi-ventral character to the nut. Its length alone distinguishes it from others of the Spanish sorts, it being by far the longest and slenderest type. Characters in the foliage may be discovered which will distinguish this from other types. No striking peculiarities were noticed, no opportunity occurring to make very careful comparisons.

The fruit itself is rather thin fleshe and covered with a heavy pubescence. The kernel in good specimens nearly fills the cavity of the nut and is covered with a most delicate papery skin. This skin is much thinner and more delicate than that of any other almond in the trade and is one of the most valuable qualities of this variety. In flavor and texture the flesh surpasses in delicacy any other kind.

Attempts have been made to grow this Jordan variety in the neighborhood of Alicante, but without success. Those of the growers with whom the writer talked knew nothing about the sort, so it seems reasonable to assume that these attempts were not made on any considerable scale.

The Valencia class of nut (Pl. IV, figs. 2, 3, and 4; Pl. V, fig. 1; Pl. VI, fig. 1) is radically different in shape from the Jordan, being a short, decidedly heart-shaped form, with a flat, broad kernel, thicker skin, and somewhat less delicate flesh. The longest of these Valencias are often used by shippers for the adulteration of their Jordans, and the extent to which this adulteration goes on is evidenced by the mixed
lot of shapes one sees even among the sugar-coated almonds of the confectioner. Several distinct varieties of almonds are sold by the exporters as Valencias, and a lot of seedling ungrafted trees doubtless contribute their share to make up the bulk of this high but second grade almond.

The two best of the Valencia type found in cultivation in more or less large quantity were the Planeta (Pl. I. fig. 1; Pl. IV, fig. 3; Pl. V, figs. 1 and 2), which is the popular variety grown about Alicante, and the Pastaneta (Pl. IV, fig. 2), which, although superior in flavor and form to the Planeta, is a shier bearer and has proven less profitable. The Planeta is heart-shaped, is much thicker at the base than the apex and with sides unusually straight, while the Pastaneta has a very plump, striking form, truncated at both apex and base. Figures 2 and 3 in Plate IV show these differences distinctly. The Castillet and Fabrica are other sorts of the same general type found growing in a single garden at Alicante, and they merit mention here only to point out the fact that there are doubtless a large number of distinct varieties scattered through the orchards of Spain.

The Valencia nuts are grown about Alicante, and not, as the name would indicate, about Valencia, which latter is distinctly the citrus province of Spain.

The Mollar is a name given to a variety of the soft-shelled almond grown largely for home consumption. (Pl. VI, fig. 1.) It was found growing about Alicante, but the writer suspects it is a name given to any soft-shelled sort. Seedlings without any local names, even, were shown, and some were of sufficient promise to indicate plainly that much can be expected from the seed of these best sorts if judiciously selected. With a view of furnishing almond breeders in America with material for selection, a quantity of nuts was secured for distribution. The bitter almond, used for stocks, is a little, round, sharp-pointed, plump-formed nut, at once distinguishable from the grafted sorts. (Pl. IV, fig. 5.)

METHOD OF PLANTING AND CULTURE.

Most of the almond trees of Spain are grafted, and the bitter variety is usually employed as a stock. Few nurseries exist in the region, and these pay little attention to the almond. Not a single nursery of almond trees was seen, and the writer was informed that, in most cases at least, the seeds of the bitter almond were planted in a rough seed bed, the young trees transplanted to the places they were to occupy in the orchard, and when two years old, or even more, were budded. Budding is done in the spring. The trees are not commonly budded near the ground, but at a height of 2 to 4 feet above it—a fact plainly evident on all the old trees, which show the point of
union of stock and bud some distance above the base of the trunk. (Pl. V, fig. 2; Pl. VII, figs. 1 and 2.)

The flowering season is the deciding moment for the almond more than for almost any other fruit, for it is the earliest flowering of all our cultivated fruit trees, and consequently most subject to injury by late frosts. Even in the sierras about Malaga a total loss of the crop sometimes occurs in certain valleys as a result of a local late frost. The flowering season for the Jordan begins in January or February, as nearly as can be made out from the conflicting statements given, and is not appreciably later for the other sorts grown near Alicante.

The culture as carried on in Spain is simple enough, and seems to consist, in most localities, of watching for the nuts to ripen and in beating them from the trees when the proper season has arrived, which is in early August. (Pl. III, fig. 3.) The nuts are easily separated from the dry, leathery flesh, and are spread out on the rocks to dry, or carefully piled in the courtyard for safe-keeping. (Pl. VII, fig. 3.) When dried sufficiently they are cracked and the kernels taken from them, packed in bags and boxes, and shipped by pack mule to the nearest buyer.

GUMMOSIS OF THE ALMOND.

In some of the almond orchards about Malaga, which were in rather a poor condition, trees were found which were dying from a kind of gummosis that manifested itself in a dying of the bark of the main trunk, a withering and death of the tips of the twigs (Pl. VI, fig. 2), and the formation of gum drops as large as a turkey egg on the trunk and main branches. The fruit of the trees suffering from gummosis was also affected. The shell was discolored in spots, and the kernel was often spotted or the tip covered with a soft gum, which was more or less slimy to the touch. Many trees were seen about the small town of Casara Bonella which were doomed to a speedy death from this disease. Whether or not this gummosis was the effect or the cause of the trouble the writer is unable to say. It seemed to cause the growers no alarm, and was considered by them as a well-known trouble, its prevalence varying with the season. Specimens of the diseased trunks have been submitted to an expert in the Department, and it is possible the cause of the trouble may be discovered.

POSSIBILITY OF ESTABLISHING THE JORDAN ALMOND IN AMERICA.

The principal difficulty in the successful introduction of the Jordan variety of almond into America will be to find localities suited to almond culture which are not subject to late frosts. The soil conditions, if suited to the growth of other good varieties, will, in all probability, fill the requirements put upon them by this superlative sort. Califor-
nians have shown already that they can grow from a half million to two and a half million pounds of almonds per year, and of a quality which "compares favorably with all but the best;" and if regions free from January and February frosts can be discovered there seems no reason to doubt the successful issue of an experiment.

Why no other nation than Spain has grown these varieties is not difficult to explain when one realizes that the nuts are exported almost exclusively to England and this country, and that even the French markets do not handle them. The natural inertia and indifference of the growers in Sicily account for the failure to thoroughly test the cultivation of the Jordan almond there.

Although California is the largest almond producer in America, there are small areas in Texas, New Mexico, Arizona, Nevada, Utah, Idaho, and Oregon where growers should be found who are willing to experiment with these introductions.
DESCRIPTION OF PLATES.


PLATE I. Almond orchards about Alicante.—Fig. 1. A single large tree of the variety Planeta.—Fig. 2. One of the largest almond orchards near Alicante, showing a fine state of cultivation and freedom from weeds and other vegetation.—Fig. 3. Cultivating an almond orchard near Alicante in August. Note the character of the soil and the freedom from weeds.

PLATE II. Jordan almond orchards about Malaga.—Fig. 1. The low foothills covered with olive and almond trees.—Fig. 2. An old almond orchard among the hills near Cartana. Notice the clean culture.—Fig. 3. Tree of Jordan almond, near the city of Malaga, from which scions were obtained for introduction into the United States.

PLATE III. Scenes in the Spanish sierras, where the best Jordan almonds are grown.—Fig. 1. The village of Almogia: almond trees in the foreground.—Fig. 2. Scattered almond trees on the mountain side.—Fig. 3. Beating the fruit from an almond tree on the mountain side.

PLATE IV. Nuts of five varieties of Spanish almonds fresh from the trees. These are shown in ventral and lateral views within the fleshy envelope and lateral view with half of the envelope removed. All figures reduced one-third.—Fig. 1. Variety Jordan from Malaga.—Fig. 2. Pastaneta from Alicante.—Fig. 3. Planeta from Alicante.—Fig. 4. Mollar from Alicante.—Fig. 5. Bitter almond from Malaga, used as stock for the Jordan.

PLATE V.—Fig. 1. A branch of Planeta almond from Alicante, showing foliage and ripe fruits.—Fig. 2. Tree of Planeta almond growing near Alicante, showing enlargement of trunk due to grafting. Note the clean culture given to the soil.

PLATE VI. Fig. 1. A branch of Mollar almond from Alicante, showing foliage and ripe fruits.—Fig. 2. A branch of Jordan almond affected with gummosis, from a garden at Casara Bonella, Spain.

PLATE VII. Fig. 1. Tree of Jordan almond from which scions were obtained. The enlargement on the trunk is at the point where the tree was grafted.—Fig. 2. Branch of Jordan almond just cut from the tree, showing foliage and ripe fruits. Large almond trees in the background.—Fig. 3. A group of almond growers, descendants of the Moors, in an old Moorish village near Malaga. In the foreground are heaps of uncracked almonds.
Fig. 1.—Single Large Tree of Planeta Variety.

Fig. 2.—One of the Largest Almond Orchards near Alicante.

Fig. 3.—Cultivating an Almond Orchard in August.

Almond Orchards about Alicante.
Fig. 1.—Low foothills covered with olive and almond trees.

Fig. 2.—An old almond orchard among the hills near Cartana.

Fig. 3.—Tree of Jordan almond near Malaga, from which slips were taken.

Jordan Almond Orchards about Malaga.
The Spanish Sierras, where the best Jordan almonds are grown.
Varieties of Spanish Almonds Fresh from the Trees (Reduced One-Third).
Fig. 1. Branch of Planeta Almond from Alicante

Fig. 2. Tree of Planeta Almond near Alicante
Fig. 1—Branch of Mollar Almond from Alicante.

Fig. 2—Diseased Branch of Jordan Almond from Casara Bonella.
LETTERS ON AGRICULTURE IN THE WEST INDIES, SPAIN, AND THE ORIENT.

BY

DAVID G. FAIRCHILD, Agricultural Explorer.

SEED AND PLANT INTRODUCTION AND DISTRIBUTION.

Issued November 20, 1902.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1902.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture.
Bureau of Plant Industry.
Office of the Chief.
Washington, D. C., September 2, 1902.

Sir: I have the honor to transmit herewith letters and reports from Mr. David G. Fairchild, Agricultural Explorer, regarding agricultural conditions noted by him in travels in the British West Indies, Philippine Islands, Spain, China, Japan, India, and the region of the Persian Gulf, and recommend that they be published as Bulletin No. 27 of the Bureau series. The observations of Mr. Fairchild were made while he was traveling as the assistant of Mr. Barbour Lathrop on expeditions planned by him in cooperation with this Department.

These reports and letters have been submitted with a view to publication by Mr. A. J. Pieters, Botanist in Charge of Seed and Plant Introduction and Distribution.

Respectfully,

B. T. Galloway.
Chief of Bureau.

Hon. James Wilson.
Secretary of Agriculture.
PREFACE.

From time to time Mr. D. G. Fairchild, Agricultural Explorer for the Department, has given in letters to the Secretary of Agriculture his impressions of matters pertaining to agriculture as observed by him in his travels. Mr. Fairchild's wide experience and his habit of observing closely the agricultural conditions of the countries through which he passes make his communications of especial interest and value. The Secretary of Agriculture directed the publication of these letters, and five of them, written at different times from January 30, 1899, to August 22, 1902, together with three other papers, which from their nature seem to belong here, are included in this bulletin. Mr. Fairchild's letters are arranged chronologically and are published practically in full.

A. J. Pieters,
Botanist in Charge.

SEED AND PLANT INTRODUCTION AND DISTRIBUTION.
Washington, D. C., July 30, 1902.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture in the British West Indies</td>
<td>9</td>
</tr>
<tr>
<td>Jamaica yam cultivation</td>
<td>12</td>
</tr>
<tr>
<td>Opportunities for agricultural and botanical research in the Philippine Islands</td>
<td>15</td>
</tr>
<tr>
<td>Agricultural conditions in Spain</td>
<td>19</td>
</tr>
<tr>
<td>Notes on conditions in China</td>
<td>22</td>
</tr>
<tr>
<td>The Persian Gulf region</td>
<td>27</td>
</tr>
<tr>
<td>Breeds of milch cattle and carabaos for the Philippine Islands</td>
<td>31</td>
</tr>
<tr>
<td>Agriculture in Japan</td>
<td>33</td>
</tr>
<tr>
<td>Description of plates</td>
<td>39</td>
</tr>
</tbody>
</table>
ILLUSTRATIONS.

Plate I. Fig. 1.—A modern Spanish fanning mill. Fig. 2.—A modern Spanish threshing machine. Fig. 3.—A modern Spanish subsoil plow

II. Fig. 1.—Homes of natives on the bank of the Tigris River. Fig. 2.—Scene in a date garden, Bagdad

III. Fig. 1.—Sind cow from Karachi, India. Fig. 2.—Delhi carabao from Delhi, India. Fig. 3.—Rump view of Delhi carabao

IV. Fig. 1.—Surti milk carabao from Gujarát, India. Fig. 2.—Rump view of Surti milk carabao

V. Fig. 1.—Laboratory of Professor Hirase at Hikone, Japan. Fig. 2.—Experiment station buildings at Shizuoka, Japan. Fig. 3.—The plum market of Ikeda, Japan
LETTERS ON AGRICULTURE IN THE WEST INDIES, SPAIN, AND THE ORIENT.

AGRICULTURE IN THE BRITISH WEST INDIES.

Port of Spain,
Trinidad, British West Indies,
January 30, 1902.

Considerable shipments of West Indian yams have been arranged for, which I believe will form an addition to the root crops of the Gulf States, and of Florida especially. These yams are the staple food of the Jamaican blacks, and are worthy of general introduction to American tables. They are totally distinct from what are usually known in America as yams, belonging to quite a different family of plants. They yield a very large amount of food material per acre, the average of three years’ trial in Trinidad being over ten tons.

You will be interested in an account of the preparations which are being made in the British West Indies to establish experiment stations and agricultural colleges for the investigation of problems in tropical agriculture and for the instruction of planters and natives in modern methods.

I was present at a special meeting of the Jamaica Institute in Kingston, where was discussed the plans for an experiment station to be established in Jamaica. I met there the representative scientists and agricultural educators of the island, and at their request spoke to them on the organization of American agricultural colleges and experiment stations. From the acquaintances made at the meeting I learned that it was their aim to model the new station after the American plan.

The Royal West Indian Commission has recommended in its report on the means which should be employed to relieve agricultural depression in the islands, the establishment of a department of agriculture to be supported by Imperial grant, and not, as in India, to be dependent upon the colonial government. The expressed purpose of this new department is the "restoring of the sugar industry to a condition in which it could be profitably carried on, and to encourage the establishment of other industries in such colonies as afford suitable conditions

a See p. 12 of this bulletin.
to supplement the staple industry." The funds at the disposal of the department are £17,500 yearly for ten years, and Dr. D. Morris, formerly assistant director in Kew, has been selected as commissioner. Contrary to my impression before coming here, this department does not include in so far as the expenditure of Imperial funds is concerned all the British West Indies. The colonies of British Guiana with 65 million acres, Trinidad with over one million acres, and Jamaica with more than 2½ million acres, were considered by the commission as able to support their own excellent experiment stations, and receive from the Imperial Government no grants in aid, the commissioner having only advisory power over the independent stations of these colonies. The total area, therefore, which will be affected by the Imperial grant of £17,500 is only a trifle over 825,000 acres, only 580,000 of which are cultivable. This does not necessarily mean that certain aid in the way of agricultural instruction may not be given to the colonies of British Guiana, Jamaica, and Trinidad.

Dr. Morris's plans for the expenditure of the funds intrusted by Parliament to his department have been outlined in the report of the commission published in 1897, as well as somewhat more fully in a speech before the agricultural conference held in Barbados previous to our arrival. They include as principal features the continuance of the very excellent experiments in the breeding of sugar cane which were inaugurated by Dr. Harrison, of British Guiana, while he was still in Barbados, and which have opened up a new field of research and proved beyond a doubt that the sugar cane is capable of very great improvement by means of crossing and selecting the seedling canes. There have been produced seedling varieties which contain more than one-fourth more sugar per ton of cane than the best Bourbon cane heretofore grown in these islands. The variety known as Barbados No. 147 has yielded three-fourths of a ton more sugar per acre than the Bourbon variety.

It should be noted, however, that notwithstanding the great interest in the experiments and the number of investigators engaged, there has been no systematic breeding done and the male parentage of the best canes is in no case known, while the female parent is in many cases a matter of conjecture. At least, after diligent inquiry, I have been unable to find any record of hand crosses being made.

A second feature of the work will be the introduction of new plant industries, and the various botanical stations already established on the islands of Tobago, Grenada, St. Vincent, Barbados: St. Lucia, Dominica, Monserrat, Antigua, and St. Kitts-Nevis, and the large and excellently equipped botanical gardens in Jamaica, British Guiana, and Trinidad make the systematic work of introduction a much simpler matter; and were the conservatism of the average English planter less great, many new and profitable industries, I believe, could be estab-
lished. This conservatism is sure to play a great rôle in the carrying out of this feature of the work, and I am more fully convinced than ever that the American cultivator when he does once enter the field of tropical agriculture will make his mark, as he has in the agriculture of temperate regions, by introducing into the markets of the world a host of new food products. My attention has been called to a large number of tropical fruits that could be grown successfully in Porto Rico and which would bear shipment by fast steamer to New York, where, if once properly advertised, they would make a market for themselves and become as common as the pomelo or Japanese persimmon. These fruits are as yet nothing but seedlings, as no work in their amelioration has been done. What they could be bred into, the experienced American horticulturist can easily conjecture.

A third feature of the department's prospective work has to do with the establishment of agricultural schools on the islands of Dominica, St. Vincent, St. Lucia, and St. Kitts-Nevis for the manual training of orphans and destitute children; the employment of teachers in agricultural science in the higher schools and colleges; courses in agriculture of a normal character, to which the teachers in the elementary schools will be invited; and small grants to elementary schools teaching the theory of agriculture. In connection with the educational part of the plans of the new department, traveling teachers or instructors will be sent about the islands, holding meetings similar to the farmers' institutes in America. Agricultural exhibitions or fairs in the different islands will be fostered by small grants for prizes, etc.

The Imperial Government has already advertised for a new steamship line direct from Jamaica to the mother country, with a view to the encouragement of the Jamaica fruit trade, and a second to run between Trinidad, Barbados, and Canada (Halifax). No provision is made to develop the fruit trade with New York, although Dr. Morris informed me that this might ultimately be done. The fear that our tariff might at any time be changed to their detriment has decided the authorities to encourage trade with the mother country and Canada only.

After a somewhat careful study of the institutions of Jamaica, Barbados, and Trinidad, it becomes evident to me that there is not as yet what an American would consider a modern experiment station in the West Indies. There are well-equipped chemical laboritories and comfortable, well-arranged, botanical laboratories, but no happy combinations of botanist, entomologist, chemist, and agriculturist, which make up an American experiment station.

The most fully equipped botanical garden and the most profitable place in the West Indies for American students who wish to learn the elements of tropical agriculture is here in Trinidad, where a comfortable laboratory and an unusually rich economic botanical garden, under
the able management of Mr. J. H. Hart, would enable a young American to pursue any line of research relating to the culture of tropical plants. Mr. Hart’s interest in American methods and his acquaintance with American characteristics would make him a very profitable associate for any student who could be sent.

The key to the situation lies in the breeding of tropical plants, and already here in Trinidad the first successful attempts at grafting cocoa have been made. Cocoa, coffee, tea, and many other of the tropical food plants will soon be propagated by grafting, and a host of new and better varieties will be developed by hybridizing and selecting.

In conclusion, I wish to call attention to the object of the expedition which Mr. Lathrop is conducting, which is not to study exhaustively any one country, but to get an idea of its possibilities and ascertain whether or not it would be worth while to send an explorer into it to study its resources, spending months in such study, and at the same time to pick up such seeds and plants as would be of evident utility should they succeed when introduced into America. Only such species as are already successful as food or otherwise economic plants in the countries visited will be sent.

We have already sent, or arranged to have sent, the yams above mentioned, a collection of the celebrated Barbados sweet potatoes; four of the most noted varieties of East Indian mangoes; a number of plants of the “Trinidad” lime, the largest lime I ever saw; cuttings of a new variety of Poincettia, the showiest foliage plant I have ever seen; a collection of Trinidad varieties of Hibiscus, some of which are the showiest of their kind, and will surely be appreciated; a quantity of the “Para” grass, one of the most highly prized forage grasses of the Tropics, which will succeed admirably in Florida, it is believed; and seeds of the cashew tree, which bears what in the opinion of the connoisseurs is the most delicious of all table nuts, the cashew nut. The cultivation of this tree could be made to develop into an industry similar to the pecan industry of Louisiana, if properly introduced into Porto Rico or southern Florida.

JAMAICA YAM CULTIVATION.

The cultivation in Jamaica of the vegetables known as yams seems to date from a remote period, as no one, even of the oldest inhabitants, seems able to recollect when any of the varieties now grown were not sold on the markets. Yam culture has, however, within the last ten years, greatly increased, perhaps doubled, and in the eastern portion of the island the patches devoted to it are more numerous than those given up to any other plant, save the banana, which to-day forms the principal export fruit of the island. Fully 40 per cent of the native women who walk to market with baskets of produce on their heads, at this time of year at least, have their baskets filled with yams. The
yam forms certainly one of the most important articles of exchange at the large markets, and it would be no exaggeration to say that it is the staple food plant of the Jamaica blacks and a most important vegetable of the Europeans and half-castes.

Just when and by whom the yam was introduced into Jamaica, I have not been able to discover. It is not, however, indigenous, although some of the varieties which will be mentioned later are probably of Jamaican origin.

The culture of this vegetable is not, as might be supposed, confined to the native blacks, but is given serious attention by some of the most intelligent planters on the island. Especially suited as the yam is to culture in the higher altitudes, it forms a part of many coffee planters’ business to grow a certain number of yams for their own consumption and for sale to the blacks. The profits from such culture are not great, but the business is reasonably remunerative.

So far as the consular digest shows, no yams are exported to America, although were a taste for the finest variety created, there would certainly be a good market for it, as it is a vegetable of sufficiently characteristic flavor to win for itself a place on the finest hotel tables and attract the attention of the most exacting. The variety which is so superior to all others, is known by the name of “Yampie,” and is worthy the serious consideration of Florida and Louisiana planters as a vegetable to be grown for the highest-priced or fancy markets. Certainly, a baked Yampie is more palatable than a baked Irish potato, and the crisp skin of the baked root has a flavor not possessed by any vegetable, so far as I know.

The culture of the plant is not so simple as might be supposed at first sight, and, as in the treatment of many plants, different varieties (in this case species, botanically speaking) require different methods.

The Yampie is a vine resembling our American species of smilax somewhat, with clusters of large fleshy roots like sweet potatoes. It is propagated by what are called “heads,” which are no more than the extremities of the enlarged roots, containing adventitious buds which under suitable conditions are able to develop into new vines. These heads are planted (in Jamaica, at any time of year almost) in hills 6 to 8 feet apart each way, 3 heads being placed 6 inches or so apart in each hill, and a stout 8-foot pole is driven near one of the heads, upon which the vigorous vines are trained. Planted in rich soil they grow without any attention other than the cultivation necessary to keep the weeds down, and from each single head several vines spring. These vines draw their nourishment from the head, sucking it dry as a squeezed orange, and by the time the vines are established on their own roots they begin forming underneath the heads the fleshy roots which form the crop. In the course of five or six months these roots are large enough to harvest. The roots are gathered without destroy-
ing the vines, and sometimes three or more crops are taken from one planting. After the harvest of the deeply buried roots, the portions above are allowed to grow and "make heads," as they say here. These heads are used to start a new plantation, being cut into large pieces, each containing several buds, and are then buried or covered in a pile, together with straw or leaves, until the buds start, when they are planted as just described. From one head several of the edible roots are produced, but the proportionate increase in comparison with sweet potatoes is in the latter's favor. The yield is not more than three or four times what is planted. So far as I could ascertain, it is the general practice in Jamaica to plant large heads, the larger the better, or at least large cuttings of the root itself. No such system of sprouting is employed as with the sweet potato; in fact, the idea prevails that the young plant is dependent for too long a time upon what nourishment it draws from the head to make such a method possible. Only feeble plants would result.

Of the recognized varieties of yams, the Negro yam, Lucy yam, or Blue Vine yam, which are considered by Mr. R. W. Miles, one of the best informed growers of these plants in the island, as synonymous or at least only slightly different varieties, is that bearing in the shortest time from planting. If planted in April it matures its crop in October. The White yam, although requiring longer to mature, is a much better keeper; in fact, it can be kept for months with perfect ease if the broken surfaces are painted with a mixture of quicklime and water. The Affoo or Yellow yam is extensively grown, but is considered no better than the White and is inferior in keeping qualities. The Yampie is a poor keeper and from the difficulties in its culture, as well as its great inferiority in size, is, for amount of nutriment furnished, a much more expensive product. Slight bruises injure the roots and decays start in very quickly.

The yam plantations are more abundant and successful in the cooler moist regions of the island. I am informed, and from all appearances it is reasonable to assume that the plant requires a great deal of moisture.

Should an attempt be made to grow these yams in America it could only hope for success in regions where either the rainfall is heavy enough, over 20 inches a year, or where water for irrigation is at command. This is not stating that the plant can not withstand a reasonable amount of dry weather. The heads ought to be planted as soon as danger from frost is past in spring; advantageously, in boxes in a cold frame. Two months would be no exorbitant estimate for starting the heads, and they might well be planted in February under a cold frame. When planted in hills the heads should be well covered, the earth being drawn up well about the base of the vine, as with sweet potatoes. To maintain sufficient heads for planting the follow-
ing season, the crop should be removed without disturbing any more than necessary the base of the vine and that collection of irregular root tips which forms the incipient head. The latter should be covered and allowed to remain as long as possible before digging.

Experience would teach what modifications of the methods in vogue here would be necessary in the Southern States of America.

It seems certain that the cultivation of these superior varieties of yams, especially of Yampie, would be lucrative if such yams were introduced into our northern markets and people were informed how they should be prepared. The Jamaica Cookery Book, issued in 1897, gives four or more different methods of preparing the Jamaica yam, but omits the important recipe for baking, although the baked Yampies are more palatable than any other form of prepared yam. The crisp browned skin of a Yampie baked for ten minutes in a quick native oven is especially palatable.

OPPORTUNITIES FOR AGRICULTURAL AND BOTANICAL RESEARCH IN THE PHILIPPINE ISLANDS.

S. S. "Tonkin."
MESSAGERIE MARATIME,
BETWEEN SINGAPORE AND COLOMBO,
April 17, 1900.

The agricultural and botanical institutions in the city of Manila are in the most dilapidated condition. In 1897 the more or less extensive herbarium and collections of natural history, as well as the library of scientific books relating to the Philippines, was accidentally burned. There are now existing in the city only a few miscellaneous works on the fauna and flora of the islands and a small but neatly kept museum of zoological and botanical specimens in the Jesuit Academy, in charge of Padre Simon.

Some works on forestry which were formerly in the office of the Inspection de Montes, or inspection of lands, were sought for in vain. The office building was occupied by the Twenty-seventh Regiment and crowded with camp stoves and other army supplies, looking as little as possible like a forestry department. It is evident that this department was given more than usual attention by the Spanish colonial government, and as evidence of this Captain Ahern, of the board of claims, informed us that the forest laws were far more carefully drawn up and more comprehensive than those of our own country.

Judging from the large quantities of very excellent timber which have been used in the construction of churches and houses, the forests must have contained and still possess a wealth of exceptionally good tropical wood. Polished floors made of 14-inch boards, as straight as if newly laid and without a check, are a great rarity elsewhere in the Tropics, and such a floor as that of the Jesuit Church, which is as
smooth as marble, made of large squares of hard wood, would be a novelty anywhere. In the astronomical observatory is a dark mahogany-brown table top, 6 feet wide and 12 feet long, of native "harra" wood, which shows the large size to which these forest trees sometimes grow, and corroborates the statements made in works of travel as well as by officers that large forests of giant trees exist, into the hollow stumps of some of which it is possible to ride on horseback.

With such valuable timbers, the problem of their protection and proper exploitation becomes an important one, notwithstanding the well-understood fact that comparatively few tropical cabinet woods pay for exportation to Europe or America. The Dutch have shown in Java what can be done in the forestry management of a tropical island, and their system is well worth study.

There are the remains of a botanical garden near the heart of the city which was formerly under the directorship of Dr. Regino Garcia, a man of intelligence and a botanist. Dr. Garcia was in the employ of the Spanish Government from 1866 to January 31, 1899, and received from that and other governments various decorations and diplomas for expositions of Philippine products. At present the garden is in charge of an American, and his supervision extends to the public plazas and roadways. The garden itself contains only about six or seven acres, lying between the two principal driveways to the "Lametta" or promenade. During the insurrection prior to the American occupation, the iron fence about the garden was removed and many of the best specimens of plants dug up or cut down. The larger trees were roughly pruned and hacked to pieces, and so far as possible everything which could serve as a shelter for the insurgents against the fire from the walled city near by was pulled down. A small two-story frame building of five rooms and a gate-keeper's lodge were, however, left standing, and the former is being put into a habitable condition. As to labels, those most perishable and yet necessary adjuncts of a botanic garden, there are practically none, nor could I discover that there existed any list of the few hundred plants contained in the garden. A redetermination of most of the species will be necessary.

Although I have seen botanic gardens which were little more than heterogeneous collections of ill-kept plants and lawnless stretches of bare earth, this garden in Manila is at present the worst I have ever seen.

The street tree planting which is going on deserves careful direction in the selection of trees best suited for avenue purposes. Nothing could add more to the general comfort of the citizens of Manila than a replanting of the numerous small plazas and the setting out and protection of shade trees along such streets as are wide enough to admit them. It is no doubt true that many street trees which served to shelter the insurgents were cut down by the Spanish, but such sad
looking wastes as the "Lanetta," are evidences that there never has been in Manila anything worthy the name of a park.

Maps of the city show that a series of parks and avenues could be easily arranged with the walled city as a starting point, which would greatly improve and beautify the place, and the old moat and canal, if properly handled, could be transformed into one of the most picturesque spots in the Orient.

I do not believe the botanical work done in the islands was ever great, and when compared with what Holland has done for her colonies it is as nothing.

It would be unfair in this connection to omit to mention the very creditable work of Soler y Vidal on the forest flora of the islands, or to fail to allude to the other Spanish botanists who have contributed to a knowledge of the Philippine botany, but considering the length of the occupation and the richness of the plant world one is forced to the conclusion that valuable botanical opportunities have been wasted.

The agricultural problems to be solved and the botanical explorations to be made are very attractive, and offer an interesting life to any young man who is willing to work for the interests of a native race like the Filipinos and identify himself with the development of a rich tropical archipelago.

Some of the questions which, according to certain prominent business residents, are most evidently worthy of consideration, pertain to the work of plant introduction and plant pathology; others relate to the complicated matters of native labor, imperfect means of transportation, and want of modern machinery; but the most important in the minds of all the business men, planters as well as exporters, is the quick pacification of the country districts and the regulation of the custom-house and other municipal departments.

The cultivation of tea is a possibility, but the profits will depend largely on the price of labor, which has been gradually rising since the American occupation of the islands.

Coffee of a reputed excellent quality was once grown in the islands, but the trees were destroyed by an insect pest, of which, Dr. Garcia informs me, the life history has been, in part at least, studied out. Whether the Ceylon coffee-leaf disease is already in the islands or not was not ascertained.

Good grades of cotton have been produced and the culture of Sea Island and Egyptian varieties has been suggested as likely to yield profitable returns and form an article of export. It is probable that some of the many islands possess a climate especially suited for cotton culture. The small island of Lombok, in the Dutch East Indies, it is said, grows a good quality of cotton for export, and its culture is entirely in the hands of the natives.
The Manila hemp industry is still a monopoly, although the plant grows well in other tropical regions, and could be easily cultivated in the Straits Settlements, according to Dr. Ridley of the Botanic Gardens in Singapore. According to information furnished by one of the largest hemp exporters in Manila, the methods of culture are those practiced with any semiwild plant, it being grown over a large area of forest land, especially in the regions about Albay. The problem of increased production is not the cultivation of more hemp plants to a given area but the invention of a machine of large capacity for extracting the fibre. With the old hand machines, which require only three men to work them, and are carried on the heads of the operators into the forests of the hemp plant, the extraction is done so slowly that for every stalk which is cut and stripped into fiber at least five are left to decay in the field. The rapidity with which the fiber deteriorates after the stalks are cut has so far prevented the work of extraction being done at one central point. Increased means of transportation might make such a central factory possible.

The manager of one of the largest tobacco factories, for which Manila is famous, asserted that the quality of the leaf received from the native growers was inferior to what it had been twenty years ago, and although it was well known that the original seed was imported from Habana, that no late importations of good tobacco seed from Cuba had been made. The distribution by the Government of a large quantity of the best Cuban and Sumatran seed is an experiment well worth making, and the careful selection of the seed from the best Manila-grown strains a matter of prime importance, considering the very large dividends paid by the Sumatra companies out of sales made principally in America, and the possibility of there being produced in the Philippines a cigar wrapper equal to the famous Sumatran.

There is a great variety of native-made fabrics which are most diaphanous in nature. These are woven in plain but pretty patterns, and are so universally worn by the natives of even the poorest classes that they give the street and market scenes an appearance of neatness and bright color not met with elsewhere in the East. These fabrics are made from the Manila hemp fiber and that of the native pineapple, and are often shot with threads of bright-colored silk. Though of a harsh texture, and objectionable when worn next the skin, they are easily washed and starched, and are of great durability. The Chinese of Singapore are said to pay big prices for this pineapple cloth, of which they make their loose, comfortable jackets. It is possible that improved machinery and an increasing Chinese demand may make the manufacture of these Manila fabrics a paying industry. As yet the fiber of the pine is obtained chiefly by means of primitive machines worked by hand.

The prospects for rubber cultivation are as yet unexplored. There
may be localities where the Para rubber trees can be grown and will yield paying amounts of rubber, but the occurrence of a pronounced dry season on most of the islands will probably reduce the flow, as it does in Ceylon, below the point of profitable cultivation. An early survey of the islands with this in view should be made, and experimental groves set out if necessary. The employment of an expert acquainted with rubber cultivation might save the colony much time and money, as he could point out the regions in which rubber trees would be most likely to succeed.

For the orchid hunter the rich and little explored island of Mindanao will yield many new treasures. It is considered by an orchid fancier and successful orchid breeder of Manila as the most promising island in the archipelago for this family of plants.

The Manila markets have a large variety of native vegetables and fruits, but the absence of such a superior vegetable as the alligator pear and the great scarcity of the tropical yam, upon which the blacks of Jamaica live, indicate that there are many lines along which profitable plant introductions can be made.

Although the inertia of the Oriental native will be a constant drawback to the work of introducing new cultures, such successful examples as those furnished by the introduction of the cotton plant into Egypt during our civil war, and the civilizing effects of the introduction of coffee among the savage head hunters of northern Celebes in 1882 should be encouragement enough to induce our Government to try on a larger scale the civilizing effects of the introduction and improvement of tropical plants in the islands.

AGRICULTURAL CONDITIONS IN SPAIN.

BARCELONA, SPAIN.

August 6, 1901.

Before leaving southeastern Spain, where I have been successful in getting the finest almonds in the world for our California growers, it gives me pleasure to write a few general impressions of the country.

The idea grows on one, with a prolonged stay, that this region is agriculturally now so far behind that it will have hard work to catch up. The price of farm labor in southeastern Spain has dropped to an equivalent of 21 cents a day. Spanish as well as foreign capital is chary of investment in new undertakings. There is wealth here, but the Spaniard can get 5 per cent on Government bonds and hesitates to exploit a mine or go into sugar beet raising lest some change in the tariff regulations will injure his business; he prefers, therefore, to invest his money in bonds and live quietly on the interest they bring. Foreign capital is afraid of changes and invests cautiously. Certain companies advertise that buyers will be charged for any changes due to new Government regulations.
The operations of the farm in southern Spain (Andalusia especially) are exceedingly primitive. Egyptian methods are not so crude in many respects. In some places the subsoil plow seems to be entirely unknown, and I have seen a wheat stubble field of at least 100 acres being worked over by mattocks: 15 to 20 men were working their way laboriously across the field.

The absence of cattle is most striking in southern Spain, no fodder except small patches of alfalfa under irrigation being obtainable. In place of cattle, large herds of mixed-bred goats are kept, and everywhere their high-tasting milk is served. The only butter used is in the hotels and houses of foreigners, and it is said that most foreigners prefer to go without it. Swedish and Danish brands are sold. Consul Ridgely, of Malaga, informed me that the duty on butter from America would have to be lowered before any considerable import could be made. My impression is that it will not be a big market, for the people have gone without butter for so many centuries.

Farm machinery of American and English make is being imported slowly. The agent in Madrid for an American pump manufacturer told me that his assistant who tried to sell an English reaper in a southern village was mobbed by the laborers and came near losing his life. Thrashing machines of large size are quite out of the question. I am told that the farmers will not combine and buy one, and are so jealous of one another that even a traveling threshing machine would have a very hard time. Few farmers have enough grain to warrant their purchasing a machine for their own use. The old threshing floor of Biblical times is in evidence everywhere. Every village has an open space outside the town where threshing and winnowing by hand are done. I have seen 25 men and 20 mules at work on one of these floors, taking about two weeks to do what a 10-horse thrasher would accomplish in two days; every farmer with his own stack, threshing-board, and mule.

There is one point regarding the threshing machine which is complained of throughout the Levant. It does not crush and break up the straw sufficiently. In Egypt the straw is considered quite as valuable as the wheat, being fed to live stock as "tibbin." The old style of threshing floor prepares the straw admirably for this stock feeding. Furthermore, the straw-chopping machines known here do not prepare the straw satisfactorily.

Commercial fertilizers are beginning to be used, but unfortunately spurious imitations have been sold, and they have prejudiced many farmers against them.

The principal cultures in Spain are the almond and raisin industries of the extreme southeast, the hard wheat of the interior dry districts, the Valencian orange and lemon plains of the northeast coast, and the olive orchards about Sevilla.
The almond orchards are scattered through many provinces and as a rule are small, the dry sierras and sheltered hillsides being preferred. There are several sorts which are shipped to the New York market, but the best, and the one that formed the principal object of my visit to Spain is the “Jordan.” This has long been coveted by Californian almond growers, and as it is a distinct variety I see no reason, except the difficulty of finding valleys in California free from January and February frosts, why the plants sent will not grow as well there as they do in Spain. These are the finest almonds in the world and enormous quantities are sent to America.

The raisin industry has suffered very severely from Phylloxera, and is localized in a few towns along the coast, Almería being one of the centers. Gradually all vines are being grafted on American resistant roots. I understand that these raisin varieties have been already introduced into California, but my time was so taken up with the almonds that I did not learn much about this culture.

Spanish wheat is not as a rule of first quality. The tender wheats, I am told, are lacking in gluten, and the hard wheats make a variety of macaroni inferior to that produced by Russian “Taganrog” wheat. I made some small preliminary purchases of tender and hard wheats which I believe will show resistance to black rust and be valuable on the plains.

There may be in the world other plains more fertile and highly cultivated than that of Valencia, but I have never seen them. The orange and lemon orchards extend on both sides of the railway as far as the eye can see, and the train travels for hours through them. Last year over three million boxes (of 100 fruits each) and thousands of freight cars loaded with unboxed fruit were exported; largely to England. This province of Valencia is the richest in Spain, except Catalonia, in which Barcelona is situated. Unlike Catalonia, its wealth comes from its exports to foreign countries, whereas Barcelona’s wealth is built up on the sales of manufactured articles sold in the other provinces of Spain. Barcelona is said to have more industries than all the rest of Spain put together.

The methods of culture in Valencia are rational, and although the land is in the hands of small owners, I am told, there is a uniformity of varieties and more or less cooperation in the matter of shipping. I do not believe they yet understand the art of shipping as Californians do. The difference in gauge of their railways from those in France makes a transshipment at the border necessary, in which transshipment much time is lost and damage done.

The beet-sugar industry flourished very well for a few years, but is now, I am informed, being greatly overdone. Nowhere in the world does sugar cost more than in Spain. The import duty is something excessive, and it is no wonder the first beet-sugar factories made money,
Olives for pickling and export to America and England, and olives for oil, form, second to the cultivation of the vine for wine purposes, the next greatest culture. Many thousands of the olive trees were planted by the Moors a century or more ago, and the good and bad varieties are mixed together. The crop is a precarious one, insect pests being abundant, but a good year will yield very heavy returns, up to 80 per cent. I have been told. Forests of olives of many miles extent are traversed on the railways from Malaga to Barcelona.

The vine is in evidence everywhere and wine is said to be "cheaper than water" in some places. The methods of preparation are not as a rule modern and the wines are strong, and fetch (with some special exceptions) low prices on the market. The culture of wine grapes is no longer very profitable.

NOTES ON CONDITIONS IN CHINA.

COLOMBO, CEYLON, January 4, 1902.

We remained in Shanghai only so long as was necessary for the Japanese steamer on which we left San Francisco to unload her cargo of American dried fruit, tinned beef (with the Department inspection tags on it), and American flour.

European and American business in the city of Shanghai is booming. Many new houses are in process of construction, and of late the white population has considerably increased. New enterprises are seeking to get a foothold everywhere; office rents are high, and it is often well-nigh impossible to get suitable office rooms.

The missionaries, displaced by the troubles, are returning to their posts, and foreign merchants claim that the outlook for trade improvement is most favorable in this region, as Shanghai, at the mouth of an immense waterway, is and must remain the great distributing point of all central China.

I am informed that American trade is more than holding her own against that of other countries, and the impression seems to be that she has decided natural advantages and should be able to keep them. Japan's trade has greatly increased here of late, and she is not only an active but may become a dangerous competitor.

A twelve days' stop in Hongkong enabled me to go to Canton in search of the south Chinese peaches and plums, scions and trees of which, I am happy to write, are now en route to Washington, together with some promising leitches, bamboos, and persimmons for California and Florida.

Canton, one of the largest of Chinese cities, said to have a population of more than two millions, lies seven hours by steamer up the great West River from Hongkong, which latter is for south China what Shanghai is for central China, the great distributing point.
The Cantonese metropolis lies in an extensive, fertile delta of rice fields and orchards, through which in every direction run navigable canals and river branches that form favorite retreats for the Chinese pirates, and the steamers plying on these waterways are provided with stands of loaded arms and quick-firing guns. Two years ago, after a good deal of travel in the Orient, I found Canton one of the most interesting places in the world, and a second visit has not led me to change my mind, although many Americans see nothing more in it than a "disgustingly filthy place."

A chair ride through the streets of this immense metropolis (although filthy and as narrow as the alleys of a steamer passage way) presents many curious sights, and suggests possibilities of future development along lines favorable to any business in competition with western commerce and manufactures. One can not fail to have forced upon him the tremendous amount of physical and mental power which lies waiting to be employed in more lucrative occupations than the careful chopping of a sheep's entrails or the making of exquisitely beautiful images of rice paste, which sell for a few cents apiece.

The precision of movement, the concentration, the earnestness of application, and the continual activity which are now exerted on the pettiest trifles, can not fail, when employed in the manufacture of articles which the white man wants, to have a marked influence upon the market supply of such goods.

Whether you watch the countless junks or sampans along the waterways, or jostle with the crowds in the narrow thoroughfares, the impression is the same; you are in the midst of two millions of the most industrious, temperate, and philosophically minded people in the world.

Canton was the home of many an emigrant Chinaman, and his abilities as a workman can be best understood if seen both in his own land and in the countries to which he has emigrated.

This populous city, which is almost entirely built up in one or two story houses, covers many miles of territory, and is surrounded by rice fields, orchards, taro patches, and groves of guava, while the fertile foothills in the interior are clothed, I am told, with orchards of chestnut, peaches, and plums, which supply in their season the fruit markets of the Cantonese.

Rice is the staple food, and there are many varieties suited to distinctly different uses. They even export to their relatives in America (smuggling it out of Canton because the export of rice is prohibited by imperial law) a variety which they consider superior to any of our home-grown sorts. The gardens of citrus fruits, leitechees, carambolas, and guavas are often surrounded by taro patches and paddy fields.

Everywhere one is impressed by the quantity of marsh plants cultivated. These in their several varieties play a most important rôle
in the food economy of the Chinese, and we have much to learn from them regarding methods of handling our swamp lands.

"As is well known, the Chinese are good gardeners, and although one is disappointed to find how cruelly they graft and propagate their plants, he must admire their appreciation of the value of manure, however disgusting the manner of its collecting may be. The secret of their success seems to be in the attention they give to each individual plant. They live with and care for it as a stable boy does his pet racing thoroughbred.

Two horticultural practices struck me as especially interesting. The Mon Tan peonies, which are the Chinaman's pride, and for which he is willing to pay as high as a gold dollar a piece for each blossom, are grown in one of the towns near Tientsin until some time in December, when they are imported by the thousand into Canton, a week or more journey by steamer. Here they are repotted and brought into bloom in time for the Chinese New Year.

A variety of jasmine is started in a similar way in Canton, grown until flower buds begin to form and then is sent in great quantities to Tientsin, where it is planted in pots, brought into flower, and the fragrant blossoms are used to mix with the tea leaves during the drying process, in order to give them the desirable aroma. Should the matter of their use promise to improve the market value of the tea production of our country we will make it a point for investigation next autumn, securing, if desirable, a quantity of the plants for propagation. The Chinese and Japanese papers, by the way, have all printed telegrams regarding the success of the efforts of the Department of Agriculture in the home production of tea, and producers and shippers in Japan and China are much interested in the financial outcome of the experiments, though as yet they seem to be quite skeptical, believing the cost of picking will be too great.

There are two new elements which have recently combined to disturb the set conditions in this part of China—the American occupation of Manila and the war about Pekin. The former has led to a remarkable increase in prices of labor, hotel accommodations, and food products. Coolie wages have greatly increased in Hongkong since the Spanish-American war, and there is much complaint about the scarcity of Chinese labor in the dockyards and other new important enterprises that are being started.

Hotel prices are 50 per cent higher than they were before the war, and residents claim that the general cost of living has doubled in the last five years.

The effect of the Boxer troubles will be far reaching, for the Chinese Government, in order to pay the war indemnity, has levied a tax of the equivalent of 5 American cents a year on each rafter of every house in the country. Already the Viceroy in Canton is having great difficulty in collecting the taxes, and white people living there
say that this tax is arousing a great deal of animosity toward foreigners, and that one of the results of the war, it is believed, will be to change the ideas of the upper-class Chinaman regarding Western methods and make him more willing to accept them.

The common people in the coast and river ports have been most unfavorably impressed by reports of alleged brutality of foreign troops, and I am told, their opinion of the white man has been decidedly lowered. Foreigners come in for a share in the war tax, and already pay about 5 per cent ad valorem duty on practically everything imported.

Already American flour is being imported in large quantities into China, and is sold cheaper there than the native wheat can be grown and ground.

The growth of our agricultural as well as other exports to China will, I believe, be a phenomenal one, and will include many classes of canned and dried goods from our orchards, and preserved meats and dairy products from our farms and ranches.

There are, aside from these purely American products, many strictly Chinese things as yet unknown to our cultivators, which might probably be grown profitably for export into the Orient, such as the red watermelon seeds, of which the consumption must be enormous; the "Chinese olives," of equal importance; the wood oil tree, the product of which is used for all classes of painter's work; ginger, water chestnuts, dried persimmons, and a host of other products. The discovery of such new industries can only be made by the presence of trained observers who are not stationed so long in the regions as to lose touch with American conditions, but remain long enough to thoroughly master the methods of cultivation of the crops and secure the necessary seeds and plants for introduction.

I can give no adequate idea of the impression of wealth as a field for plant introduction work which this short visit to Canton has given me. It is worthy of all the attention which has been given to it in the past, and will amply reward any efforts which may be made in the future.

The great interest, however, of a visit to Canton is in the attempt one is continually and almost involuntarily making to forecast the probable development of the Chinese race.

From the close contact with the peasant classes of the various countries they visit into which your agricultural explorers are forced, they are placed, perhaps, in positions peculiarly advantageous for comparisons of the relative intelligence, industry, and endurance of the different races. The value of comparisons regarding the capacity of different races does not generally depend so much on long acquaintance with the customs of a single nationality as on a comparative knowledge of the inhabitants of many different countries.
The Chinaman is a marvel of industry and accuracy, and is probably developing with all the rapidity which his centuries of inherent conservatism will permit.

The farming class is, so far as I have observed, more intelligent about its own affairs, quicker, and vastly more industrious than the peasant class of Europe. These Chinese peasants are not as a rule unwilling to learn, and are quick to appreciate the value of tools which are really improvements over their own. The delight which a Chinese mulberry grower showed at the sight of a pair of modern pruning shears which I was using, could hardly have been equaled by a peasant in southern Europe.

There are everywhere the most unmistakable signs of progress, and the sooner Americans come to look upon China as a growing commercial nation the better it will be for our interests.

The accounts of the Chinaman's wonderful ability to imitate have not been exaggerated, but his reputed want of the inventive faculty does not stand the test. These conceptions are falsely colored, either by the blind prejudice of the transient visitor to China or the disappointment of the old white resident, who forgets how moderately the average workman of any old civilization is equipped with inventive powers.

One among many examples of their ingenuity will serve to illustrate how false this idea is. In Taku, during the construction, recently, of some very large iron flat boats or lighters with which to unload or coal the incoming steamers, the problem of lowering these heavy iron boats that had been constructed on a high framework became a puzzling one. Large derricks and expensive steam cranes were discussed. One of the Chinese master workmen suggested placing under the lighters a large number of columnar close-woven wicker baskets packed with sand. Then by knocking out the stays formerly employed the lighter would rest on the pillars of sand, and by puncturing the baskets the sand would gradually run out, allowing the heavy boat to settle to the desired level. This inexpensive suggestion of the Chinaman was followed by the European constructors, proving a complete success and saving much time and money.

Throughout China, the Europeans carry on their business by means of Chinese clerks, called "compradors." The comprador is an absolute necessity, and from being a mere accountant and interpreter he gradually rises to a position of control, becomes often immensely wealthy, and supports the European who originally hired him. This course of affairs is of frequent occurrence; so common, in fact, that the Europeans are often spoken of as merely the employees of the wealthy Chinese.

That the Chinaman understands how to accumulate wealth is so well known as to need no emphasizing. In a Hongkong paper I saw
THE PERSIAN GULF REGION.

YOKOHAMA, JAPAN, April 8, 1902.

I have just returned from a trip up the Persian Gulf to Bagdad in search of dates, hard wheats, and whatever else of interest was to be found, and take the first occasion to send a brief account of conditions in the Persian Gulf and lower Mesopotamia. The region is a difficult one to get into, being a long way out of the beaten track of travel, and I find that even in a place lying so near on the map as Bombay there is little to be found out about it.
Owing to the rigidness with which the Turkish quarantine laws are enforced, few English people from India go into the region, although there are regular weekly steamers of the British-India line going up the gulf, which, though small, are not very uncomfortable.

The trip from Bombay to Bagdad and back required two months, and the greater part of this time was spent in travel. The collections made during the trip include 224 date palms, representing 45 of the best varieties from the various noted date-growing regions: a number of Persian and Arabian hard wheats, in quantities large enough for preliminary trials; and several interesting fodder plants, about which latter, however, it is impossible to predict anything.

The main object of the trip being to secure the best dates and hard wheats, I feel it has been on the whole very successful; and predict an important future for some of the dates, which are sorts far superior to any that come on our markets from this region and are likely to ripen earlier than the north African varieties, which latter characteristic is considered by those interested in this new industry a most important one. The purchases which I have made and shipped for Mr. Lathrop include over 100 different things, and weigh about 40 tons. They left Bombay the 6th of last April and full particulars regarding them went forward.

Recent affairs at the Arabian port of Koweit have attracted the attention of the public to the question of the political control of the Persian Gulf. This trip along its shores tends to strengthen one's impression that affairs in that region are gradually coming to a head, and that it will not be long before important political changes in Persia and Arabia will take place.

Both the Arabian and the Persian coasts of the Gulf, as seen from the steamer, are precipitous barren cliffs or stretches of desert sand. Little indication of wealth is in sight, and the towns, with their flat-roofed mud houses and filthy streets, indicate the undeveloped nature of the country. There are extensive tracts of territory in the interior, I am informed, where the subterranean streams of fresh water come to within 3 feet of the surface of the soil. But it was only after leaving the Gulf of Persia and starting up the broad river Shat-el-Arab, which is formed by the junction of the Tigris and Euphrates, that I began in some small measure to realize the extent of the unimproved lands of the Sultan's possessions in Arabia.

Chaldea and Mesopotamia are Biblical places to whose present conditions I had never given any thought, and the actual conditions of the region were a great surprise to me. It is easy to understand where the great wealth of Babylon and Nineveh came from after traveling for five and one-half days up a muddy river which so nearly fills its banks that the inhabitants of the village have only to reach down from them to wash their hands in its waters. On both sides as
far as the eye can reach stretch level plains of alluvium which is so fine that one could hunt all day without finding a stone the size of a man's fist.

The Tigris, for over 700 miles in length, from Basrah to Mosul, resembles more a huge crooked irrigation canal than anything else, and, with the exception of a stretch of 70 miles of date gardens between Mahammea and Kurna, the lands on both banks as far as one can see are practically unimproved desert.

Scarcely a shrub or plant of any size has been spared by the wandering tribes of Arabs, who grub up even the smallest roots for firewood. Yet much of this region, it is supposed, was once covered with vegetation, and at one time supported many millions of people.

The recent excavations are revealing every year more evidences of the former immense wealth of this remarkable country, which has remained so many centuries neglected. There exists perhaps nowhere in the world such a single area of unimproved fertile desert land which is capable of irrigation. That the region has been irrigated is shown by the ruins of old canals which are supposed to date back, some of them, to Babylonian times, and which, according to recent surveys of a French engineer sent out by the Turkish Government, could be repaired and put into operation.

One of the principal canals of this old system, the Nahr Wan, is over 185 miles long, and must, with its thirty branches, have irrigated many millions of acres of land which are now as barren of vegetation as the deserts of California.

The soil is adobe, remarkably like the Nile silt, and capable without manuring of growing almost any crop which will mature in a subtropical climate.

The occasional gardens of the native sheiks, or chiefs, along the river are full of all sorts of citrus fruits, apricots, peaches, and pomegranates, proving the suitability of the soil. The fine hard and soft wheats grown there attest, further, its value for grain-growing purposes, and yet with all this immense territory, through which I traveled for nearly a week, the largest place on the banks of the Tigris between Basrah and Bagdad was a town of less than 4,000 inhabitants.

The situation partakes of the incredible. No one I met in the country, not even the Turkish official in charge of the Sultan's estate, or Sheik Kassem Kedery, one of the wealthiest chiefs of the place, could give any idea as to the number of millions of acres there are in this fertile valley, which is almost as level as the table I am writing on.

As in the valley of the Nile, patches of salt land are to be seen here and there, but to wash this salt out there is a water supply all the year round waiting to be tapped by canals.

The winter climate is as delightful as that of California in the same season, but the summers are about as hot as anywhere in the world.
There are very few native inhabitants, but these few are sober, and, as Orientals go, industrious; and yet this whole region is almost as barren as the desert of Sahara.

The recent discoveries of oil on the Persian side of the Karun River, one of the tributaries of the Shat-el-Arab, are possibly the beginning of a new era for Mesopotamia, and the Anatolian railway through Asia Minor to Bagdad, for which Germany holds the concession, although looked upon only as a very remote possibility by the white residents, may open up this neglected corner of Arabia to planters with large resources.

The concession for the exploitation of the oil recently discovered at Kasr-i-Sherin was granted by Persia to an English millionaire mine owner, and it is interesting to note that the new oil fields lie in disputed territory between Arabia and Persia. If the borings, which are being made by an American expert, should prove the existence of really extensive oil fields, Turkey may put in a claim for the territory and the matter become subject for an international dispute. From an agricultural standpoint these great valleys of the Tigris and Euphrates will have to be reckoned with as a future center of production of grain, cotton, dried fruits, wool, and live stock. They are capable of producing all of these in quantities only limited by the amount of water which the river can supply.

The Euphrates is said to be a sluggish stream, with many sand banks and comparatively little water, but the Tigris is a river varying in width from 250 to 500 yards, in its narrowest banks only reaching 50 yards, and flowing at a rate of from six-tenths of a mile to 4 miles an hour.

America's interests in the gulf are represented by less than a score of missionaries, whose medical work, whatever the Mohammedans may think of their missionary work, is highly spoken of.

There are good opportunities for American trade in wind-mills, farm machinery, piece goods, etc., and through the efforts of Mr. Hurner, our vice-consul at Bagdad, a contract is being made by which an American company is to build a steel bridge across the Tigris to take the place of the present most dilapidated pontoon affair of almost pre-Babylonian simplicity.

Whether Americans will ever take a hand in the opening up of this wonderfully fertile region or not, they can not fail to be interested in it as a country of immense agricultural wealth and a possible future competitor in the markets of the world.

The principal plant industry of the country, the culture of the date, is dependent in a measure upon the American market, which is the biggest buyer of the best quality of this fruit.
MILCH CATTLE AND CARABAOS.

31

BREEDS OF MILCH CATTLE AND CARABAOS FOR THE PHILIPPINE ISLANDS.

During a stay in Ceylon and a visit to Poona, India, my attention was called to the question of the milk supply of those tropical regions.

Notwithstanding the marked improvement in the methods of milk sterilization, the continued use of canned milk and butter becomes finally, to anyone living in the Tropics, unpleasant, and the question of securing fresh dairy products is a most important one for the comfort of European residents.

The best breeds of milch cattle, like Jerseys, Guernseys, and Holsteins, when introduced into the Tropics very quickly degenerate. They are not suited to its climate and can not be easily acclimatized. They soon grow thin and sickly, cease giving large quantities of milk, and die.

In Ceylon several attempts to acclimatize them have been made, but with no success, and I am told that the dairymen who have made these trials have been obliged to return to the use of the South Indian or Madras breeds. Recently, however, the Sind cattle have come into prominence as a milch breed, and the introduction of this breed into other parts of India has been a great success. It is a remarkably vigorous race, and the cows are much better milk producers than the South Indian or Madras breed.

A visit made to the agricultural college in Colombo was very interesting in this connection. In the college herd the three breeds were represented.

The bulls of the Sind variety are great, handsome fellows, with immense humps on their shoulders, for they belong to the *Bos indicus* species. They were dark chestnut in color, with black extremities, and one could find nowhere healthier-looking animals than these Sind specimens which were some time ago imported from Karachi. The cows were sleek coated, with large udders and fine broad backs—pictures of health. The Madras animals were of that long-legged, lean type which is so common in the Oriental Tropics, and the cows had small udders and peaked backs; while the Jersey bull which had been brought down from one of the high altitude tea estates, for breeding purposes, was a sad enough sight, pale about the eyes and mouth, sway-backed, and with hind legs all out of shape, though not nearly so ill-conditioned as the pitiful looking, emaciated cows of the same breed, which were seemingly in the very last stages of consumption.

The object lesson could not have been more convincing nor the contrast between the perfect health of the Sind cattle and the mangy appearance of the European race more striking.

The statement by Mr. Drieberg, the director, that without the Sind cattle it would be impossible to make up the Ceylon dairy was quite significant.
While in Poona, India, the site of the Bombay Agricultural School, I saw some of this Sind breed of cattle and learned that although it deserved all that it was credited with in Ceylon, it has been superseded, for butter-making purposes, at least in the Bombay presidency, by the milk carabaos.

The carabao or water buffalo (*Bubalus bubalis*, Lyd.) is a well-known object in Manila, and its use as a beast of burden thoroughly understood, but, so far as I am aware, little attention has been paid to it as a milk producer.

Unthinking prejudice, which prevents us from eating many excellent things, may play the same rôle in Manila that it does in Ceylon, and forbid the employment of buffalo milk. If this is so it is a great pity, for there is a race of water buffaloes which come from Delhi, India, that gives over 30 pounds of milk per day, while the best Sind cattle give only 18, and this buffalo milk is so rich in fat that 12 to 13 pounds of it make a pound of butter, whereas 20 pounds of milk of a Sind cow are required.

These Delhi buffaloes are easier to keep, less expensive, and cleaner (having almost no hair) than ordinary cattle. They sell for about 180 rupees, or $56 gold, in Bombay, and can be bought at Dawans, the buffalo market, near Grant Road Station, but could be best secured by applying to Mr. Mollison, director-general of agriculture for India, at Poona, who could probably be prevailed upon to arrange to have good specimens picked out.

In general, the animals are priced according to the amount of milk they give, 10 rupees being added to the price for every two additional pounds of milk given per day.

Another good variety of milch buffalo is that from Gujarát, called the *Surti*. It yields only about 20 pounds of milk per day, and is sold at from $33 to $36 gold. The cost of keeping this variety per day amounts at Poona to only 16 cents gold, and it is considered the most economical race by Mr. Kelkar, the foreman in charge of the college herd. According to him, a dairy should have both buffaloes and Sind cattle. The buffaloes are better for butter production, and the cattle are superior for milk purposes, because the milk fetches a better price, being, in fact, much preferred to that of the buffaloes, which has a bluish color and a slight, though not disagreeable, odor.

Both the buffaloes from Delhi and Gujarát and the Sind cattle are well worth introducing into the Philippines. The buffaloes should be tested for butter making, though they cost more to feed than the Sind cattle, which latter will prove, however, especially useful for milk.

Breeding animals of these different races might be secured through Director Mollison, of Poona, who could arrange for their shipment to Manila through such a well-known shipping firm as Latham & Co., of Bombay.
As regards the quality of the butter made from buffaloes' milk, I can only judge from its general use in the Bombay presidency that it is in no way really objectionable, though its white color is not so attractive nor its aroma so full as that of Danish butter.

The introduction of these good milk breeds of cattle and buffaloes would add materially to the comfort of the white people in the Philippines, and deserves the serious attention of the Department of Agriculture.

**AGRICULTURE IN JAPAN.**

Steamship Hongkong,
En route to San Francisco,
August 22, 1902.

The most startling fact about Japan is the small area of cultivation that almost completely supplies the wants of a large population. According to statistics supplied by the Government, out of the less than 147,000 square miles in Japan proper not more than 19,000 square miles are cultivated, which means that an agricultural area one-third the size of Illinois comfortably supports some 42,000,000 people, and this means that every square mile of cultivation supports on the average about 2,200 persons.

This becomes still more interesting from the other fact that the agriculture which supports these millions is one in which animal husbandry is almost totally lacking.

To the Occidental an agriculture without farm food animals of any kind is hard to imagine, but to Orientals, who do not know the taste of dairy products nor relish the most delicate beefsteaks or mutton chops, the care of live stock seems a disagreeable and even degrading business.

No considerable herds of cattle are said to exist in the islands, and sheep, hogs, and goats are nowhere bred to any extent. A few work bulls and cows are kept in stalls, and from these the foreigners get their supply of beef, which is of very good quality. Small quantities of these animals are exported from Kobe to Manila and China. This lack of domestic animals and the resulting absence in the country of stable manure or crops grown for fodder give to the farming of Japan a peculiar feature.

That this one-sided agriculture is a mistake, the most progressive of Japanese agriculturists frankly admit. It necessitates, or at least has brought about, a rotation in many sections of the country of barley and rice. Such a rotation, and a still simpler one of rice followed by a season of fallow must have gradually decreased the fertility of the soil had not the system of collection and distribution of night soil been so extensively developed.
If instead of barley the Japanese farmer could have grown a leguminous winter fodder crop, such as the Egyptian fellah has for centuries cultivated, he could have prevented, in part at least, this impoverishing process.

With no animals to feed there has naturally been no development of fodder crops in Japan, but the necessity to fertilize with seaweeds, liquid manures, and straw ashes has given the peasant an appreciation of the value of manures which is surprisingly in advance of that of Western nations.

Comparing the keen knowledge of fertilizers shown by the Japanese peasants with that of the Greek, Italian, or Spanish farmers, or even with the small farmers of our country, one appreciates how advanced they are along these lines of farming and what an enormous waste of nitrogenous materials is continually going on in Europe and America.

The peasant classes of Japan are the cleanest personally of any in the world, and with an income which is so small that an American farmer would starve to death on it, they live happily and surround themselves with comforts which even many of our fairly well-to-do people do not possess. When compared with the peasants of any European country the Japanese live more comfortably by 50 per cent, at an actual cost of less than half what the European spends. They have learned by centuries of experience how to best utilize the vegetable products of their country. Their bamboo utensils, mud-thatched roofs, paper screen walls, cheap straw and rush mats, homemade, durable clothing, exquisite inexpensive wood and lacquer work, and multitude of pliable paper articles are some of the luxuries in which, compared with the European peasants, they are rich. This remarkable frugality and intelligent use of trifles enables the Japanese farmer to get along on an income of less than $100 gold a year, and on this to support a family of four or five persons.

The capital of these peasants is so small as a rule that a thrifty American farmer could buy out a small village of them. One hundred gold dollars would in many thousands of cases pay for all the belongings of a comfortably situated family. From the standpoint of foreign money, therefore, the Japanese farmer is a poor man, and a tax which would scarcely be felt by our landowners would be a heavy burden for him.

With the increasing tastes among all classes for better food and greater conveniences and the steady increase in population, it seems probable that the development of the agricultural resources of the country will not much more than keep pace with the increasing home demands, and that for some time to come, at least, Japan's exports of the products of the farm will be very limited. The commodity of which she has an abundance, however, is human energy, and it is a pitiful sight to an American to see the wastage of manual labor that
is expended in the rice fields of this country. Small, irregular fields owned by conservative families make the use of labor-saving machinery practically impossible, even if the bitter conservatism of the laborers would permit machines to be used which would take away the only occupation they have.

A wrong impression of this interesting agriculture would be given were one to fail to mention the efforts which the General Government and the provincial governments are making to improve it. In fact, no country except the United States has made such rapid progress as Japan in the establishment of institutes of agricultural research. She has copied our system and adapted it to her different conditions. Within the last five or six years there have been established in the provinces nine well-equipped experiment stations, which compare favorably in their corps of specialists with those which were started in America only a few years ago. One central station at Tokyo controls these branch stations, or at least has supervision over them, and disburses every year $90,000 gold to the party of experts, twenty-six assistants, over seventy employees, and a hundred or so laborers, who carry on this work. In addition to these nine branch stations, there are a large number of municipal and prefectural stations scattered through the country, and even one private station supported by a marquis, formerly one of the Daimios, or feudal lords. Several of these institutes of research were visited and the excellence of their equipment was a surprise. They were, as a rule, neat, wooden laboratories, supplied with good apparatus and small working libraries, and were surrounded by white-staked experiment plots, or provided with glass houses for experiments with chemical fertilizers or breeding cases for noxious insects.

The directors and assistants are many of them industrious, enthusiastic men, who enjoy nothing so well as the use of their microscopes or to study the habits of injurious insects. They delineate with extraordinary skill the characters of the parasites, either fungous or insect.

Chemical fertilizers monopolize the largest share of the attention of these stations. The large number of factories of rape-seed cake, etc., necessitates a correspondingly large number of analyses by the chemists, and as many of the stations are directed by chemists who have passed through the agricultural college of Komaba, where Professor Loew (formerly in the United States Department of Agriculture) is actively engaged in teaching, it is natural that the tendency of the lines of research should be chemical.

No provision has been made for any local control over these stations by practical farmers, such as compose our boards of control in America. As a result of this separation from the practical farmer there is naturally a great lack of appreciation of the work done by the stations. This tendency toward too close laboratory work and too little practi-
cal experimentation on the farm may be explained by the fondness of Japanese students for quiet contemplation. Microscopic and artistic descriptive work appeals to them more than practical field experiments. This, it is said, is a deplorable feature of Japanese medical education also, the young doctors mastering thoroughly the theory of medicine, but rarely learning it as an art.

This increased interest in scientific plant cultivation in Japan is unmistakable, and with the introduction of compulsory school education several years ago and the formation in every district of agricultural societies, the quick dissemination and assimilation of new facts relating to the different plant industries are practically assured. Bulletins, illustrated with photographs and charts for the instruction of the farmers, are being printed by the thousand, and in the middle schools the sciences related to agriculture are taught much as they are in America. Even in many of the primary schools, gardens of named plants for the instruction of the children are to be found. These changes would come slowly with any other race than one which, like the Japanese, is saturated with a love for plants. The lowest-born coolly knows more about the care of a potted plant than 90 per cent of the educated classes of America or Europe. They are a race of plant artists, and care for fancy varieties of flowers as other nations do for pet animals. Yet it is a surprising fact that notwithstanding this love for plant life the Japanese are not great plant breeders, and artificial hybridization is a process not well understood by them.

One of the effects of Western civilization upon the country will be the gradual introduction of more meat into the daily diet of the people. Already the number of butcher shops in all of the principal cities is increasing, and the number of animals slaughtered is three or four times what it was ten years ago. The growing taste of the Japanese for foreign food is recognized as a fact by many old resident Americans. Whether the Government will succeed in making stock raising an important industry in the country is a debatable question.

The tea industry has received a new stimulus through the removal of the duty in our country, but the president of the largest association of tea growers in Japan stated that it will not lead to any considerable increase in the tea-growing area. At a recent meeting of the association a resolution was passed having for its object the improvement of the quality of the exported article rather than the increase of the quantity. The exporters say that the change in the tariff has had the effect of raising the price at which the Japanese producers sell to them.

Within the last two or three years, machinery has been introduced successfully into a number of tea-fering factories, and one of these factories where 10 men now do the work which it required 100 to do before was visited. The rolling of the fresh leaf is still done by hand, however, although the central experiment station experts are working
upon several new inventions along this line which they hope to perfect. At present they do about the same class of rolling that the Jackson rollers do in Ceylon and India.

People who have studied the question think that Japan as an agricultural exporting nation will hardly become important for many years. There is, however, a possibility that the industries of canning and drying fruits may be given an impetus by the Government in the near future, and that Japanese fruit growers will ultimately export large quantities of cheap canned goods of this character to China and India. Japanese canned peaches which sell at $1.25 a quart are not at all bad, and it is said that 17,000 of these cans were put up last year by one establishment.

That the Japanese are reaching out after Chinese trade seems to be an acknowledged fact, and with their greater facilities for learning the language they should be able to introduce the Western products which they manufacture into parts of China now inaccessible to Europeans and Americans, and will very probably play an important rôle in the opening up of China.
DESCRIPTION OF PLATES.

Plate 1. Fig. 1.—A modern Spanish fanning mill. Fig. 2.—A modern Spanish thrashing machine. Fig. 3.—A modern Spanish subsoil plow.

II. Fig. 1.—Homes of the natives on the bank of the Tigris River. Fig. 2.—Scene in a date garden, Bagdad.

III. Fig. 1.—Sind cow from Karachi, India. This cow gives 18 pounds of milk, or less than 1 pound of butter, per day. It costs in Karachi $19 to $22. Fig. 2.—Delhi carabao from Delhi, India. This animal has given over 30 pounds of milk per day. Cost, 180 rupees, or over $50. Fig. 3.—Rump view of Delhi carabao, showing large udder.

IV. Fig. 1.—Surti milk carabao from Gujurát, India. This animal yields 20 pounds of milk, or 1½ pounds of butter, per day, at a cost of 16 cents a day for feed. It is considered one of the most economical of all the milk breeds of buffalo. It costs in Bombay $33 to $36. (Photograph taken on experiment farm at Poona, India.) Fig. 2.—Rump view of Surti milk carabao (same animal as in fig. 1), showing udder.

V. Fig. 1.—Interior view of laboratory of Professor Hirase, at Hikone, showing the equipment of a botanical laboratory in a middle school in Japan. Fig. 2.—Exterior view of the experiment-station buildings at Shizuoka, Japan, one of many such experiment stations in the country. Fig. 3.—The plum market of Ikeda, showing the auctioning off of freshly picked fruit at this center of plum culture in Japan.
Fig. 1.—A Modern Spanish Fanning Mill.

Fig. 2.—A Modern Spanish Thrashing Machine.

Fig. 3.—A Modern Spanish Subsoil Plow
Fig. 1.—Homes of the Natives on the Bank of the Tigris River.

Fig. 2.—Scene in a Date Garden, Baghdad.
Fig. 1.—Sind Cow from Karachi, India.

Fig. 2.—Delhi Carabao from Delhi, India.

Fig. 3.—Rump View of Delhi Carabao.
Fig. 1. *Suriti* Milk Carabao from Gujarat, India.

Fig. 2. Rump View of *Suriti* Milk Carabao.
Fig. 1.—Botanical Laboratory, Hikone, Japan

Fig. 2.—Experiment Station Buildings, Shizuoka, Japan.

Fig. 3.—The Plum Market, Ikeda, Japan.
THE MANGO IN PORTO RICO.

BY

G. N. COLLINS,
Assistant Botanist in Tropical Agriculture,
BOTANICAL INVESTIGATIONS AND EXPERIMENTS.

ISSUED JANUARY 17, 1903.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,
Washington, D. C., September 27, 1902.

Sir: I have the honor to transmit herewith a paper on The Mango in Porto Rico, by G. N. Collins, Assistant Botanist in Tropical Agriculture, and respectfully recommend that it be published as Bulletin No. 28 of the series of this Bureau. The paper has been submitted for publication by the Acting Botanist in Charge of Botanical Investigations and Experiments.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.
The mango is a fruit highly esteemed throughout the Tropics, in most places outranking in popularity both the banana and the orange. European residents in the Tropics almost universally acquire a fondness for the mango, and in England the demand for it is steadily increasing, it having been found possible to make importations from India, notwithstanding the immense distance. The mango is as yet little known in the United States, having been represented in our markets only by fruit of inferior varieties. These give no suggestion of the qualities of the better sorts and tend rather to discourage than to increase the demand. If an effort similar to that which brought the banana into favor in the United States could place an adequate supply of good mangoes before the public, there is no apparent reason why this new tropical fruit should not repeat the history of its now popular predecessor.

Porto Rico is favorably located for the growth of the mango, the south side of the island especially possessing the right climatic conditions. The trees are very prolific and remarkably free from diseases. High-grade varieties are already growing in different parts of the West Indies, Florida, Central America, and Mexico, and their introduction into Porto Rico should be attended with little difficulty.

This bulletin, written by Mr. G. X. Collins, under the direction of Mr. O. F. Cook, botanist in charge of investigations in tropical agriculture, and based largely upon observations made by the author while engaged in a botanical exploration in Porto Rico in cooperation with the recently established Porto Rico Agricultural Experiment Station, discusses the possibilities and requirements of the mango there, and it is hoped that it will help to establish the growing of mangoes as one of the profitable industries of the island.

Lyster H. Dewey, Acting Botanist.

Office of Botanical Investigations and Experiments.
Washington, D. C., September 18, 1902.
# CONTENTS

- Introduction ................................................. 9
- Description ............................................... 10
- Origin .................................................. 11
- Culture .................................................. 13
- Requirements .............................................. 13
- Methods of propagation ....................................
  - Seed .................................................. 14
  - Inarching ............................................. 14
  - Layering .............................................. 16
  - Patch budding ......................................... 17
- Cultivation ................................................ 19
- Diseases .................................................. 20
- Uses ..................................................... 21
  - The canning of the green or ripe fruit .................. 21
  - Marmalade and jelly ................................... 22
  - Chutney ............................................... 23
  - Alcohol ............................................... 23
  - Medicinal properties ................................... 23
  - Dye, tan, and pigment .................................. 24
  - Gum ................................................... 25
  - Minor uses in India .................................... 25
- The mango in Porto Rico ...................................
  - Present status ......................................... 25
  - Best localities ........................................ 26
  - Porto Rican forms ....................................... 27
    - Mango de Mayaguez .................................. 27
    - Mangotina ........................................... 27
    - Melocoton ........................................... 27
    - Mango de rosa ...................................... 27
    - Mango piña .......................................... 28
    - Mango largo ......................................... 28
    - Mango mango ......................................... 28
    - Mango jobos ......................................... 28
    - Mango redondo ....................................... 28
  - Varieties to be introduced .............................. 28
    - Mulgoba ............................................. 29
    - Alphonse, Aphoos, or Alfoos .......................... 29
    - No. 11 ............................................... 30
    - Manila ............................................... 30
    - Mango china ......................................... 31
    - Gordon ............................................... 31
    - Peters ............................................... 32
    - Julie ................................................ 32
- Best method of introducing new varieties .............. 32
- Packing and shipping .................................... 33
- Market ................................................... 35
- Summary .................................................. 36
- Description of plates ................................... 37
ILLUSTRATIONS.

PLATE I. Grove of mango trees between Cabo Rojo and Joyua, P. R. .......... 38
II. Mango tree in fruit, Tapachula, Mexico ........................................ 38
III. Branch of mango tree, with fruit, Tapachula, Mexico ...................... 38
IV. Fig. 1.—Mango tree growing in dry region near San José, Guate-
mala. Fig. 2.—Section of "Redondo" mango fruit, Ponce, P. R............. 38
V. Mango seeds: 1, "Cocha;" 2, "Largo;" 3, "China." Guatemala City .................. 38
VI. Fig. 1.—Mango fruit, showing method of peeling. Fig. 2.—Mango fruit, showing method of packing. Fig. 3.—Mango fork ..................... 38
VII. "Mayaguez" mango fruit, San Juan, P. R. ................................. 38
VIII. Mango fruits, Porto Rico: Fig. 1.—"Melocoton." Fig. 2.—"Rosa." Fig. 3.—"Largo." Fig. 4.—"Mangotina" ........................................ 38
IX. "Píña" mango fruits, San Juan, P. R. ........................................ 38
X. "Largo" mango fruits, Ponce, P. R. ........................................... 38
XI. "Mangó" mango fruits, San Juan, P. R. ....................................... 38
XII. "Jobos" mango fruits, San Juan, P. R. ...................................... 38
XIII. "Redondo" mango fruits, Ponce, P. R ...................................... 38
XIV. "Manila" mango fruits, City of Mexico .................................... 38
XV. "China" mango fruits, Guatemala City ...................................... 38
THE MANGO IN PORTO RICO.

INTRODUCTION.

The mango is considered by many to be the finest of tropical fruits, though on this point there is much diversity of opinion, occasioned to a great extent by difference in taste, but still more by the great diversity in the fruit itself, which varies enormously in different localities, there being large areas where the mango is common and where not a single good variety is to be had. Persons forming their opinion of the fruit in such localities usually indorse the proverbial statement that the mango is "a mass of tow saturated with turpentine." On the other hand, those acquainted with the fruit at its best are almost unanimously enthusiastic in their praise. Elphinstone, the historian of India, says:

"The mango is the best fruit of India, at once rich and delicate, and all other fruits are comparatively insipid beside its intensity of taste. There is something in it that is nothing less than voluptuous."

A taste for mangoes, at least for the varieties existing in Porto Rico, has in most people to be cultivated; but once acquired, it is like a taste for olives, and becomes almost a craving. The milder flavored varieties, in which no taste of turpentine is to be detected, are usually enjoyed even by the novice, but after one becomes familiar with the fruit a slight taste of turpentine ceases to be disagreeable. The fiber, however, that exists in the poorer varieties is an unmitigated evil, and renders the eating of a mango a serious operation, to which one must devote his entire attention and may need to conclude with a bath. In the varieties where the fiber is the worst, one can not even have recourse to slicing the meat from the seed, as in that case the cut ends of the fibers are stiff enough to irritate the tongue.

Good mangoes are produced in America, but as yet in such small quantity that few persons have had an opportunity to taste any but inferior fruit. Sample lots of the more common and poorer varieties are frequently shipped to northern markets, and have doubtless done much to hinder the growth of the trade. A first impression is very lasting, and first impressions of the mango based on such fruit are likely to be anything but favorable. As an example, mangoes are frequently
to be found in the Washington market, but we have never seen one that could be called good, even in comparison with the Porto Rican fruit.

This impression formed in the minds of the novelty-loving public will doubtless be difficult to dispel; but if really good mangoes could be placed in the markets their increase in popular favor would be certain and the growing of mangoes might become a profitable pursuit.

In spite of the fact that in all mango-producing countries the natives consider the fruit wholesome and perfectly safe, prejudice against it exists among some military officials and others, who condemn the fruit as positively dangerous. During the Spanish war this prejudice was so strong that the soldiers in Porto Rico were prohibited from eating the mango, and many beautiful trees were cut down. This unjust prejudice probably arose from eating the fruit when unripe, in which state, like most other fruits, it is unwholesome. Soldiers, hungry for fresh fruit and quite unfamiliar with the mango, might easily mistake the green for the ripe, especially as in Porto Rico some of the varieties when ripe still remain green in color. All varieties become mellow when ripe, however, and if eaten in that condition can not but be wholesome. It is commonly believed in Porto Rico that the mango and rum should never be partaken at the same time. This again probably applies to the green fruit.

In some parts of India the natives at one season of the year live almost exclusively on mangoes, apparently without harm; and among the writers consulted all commend it as extremely wholesome except Sir George Birdwood, who states that the fruit is apt to act injuriously on the kidneys. On the other hand, the mango is considered by most authorities to have medicinal properties decidedly beneficial. An extract from the Pharmacographia Indica, in Watt's Dictionary, describes the fruit as "invigorating and refreshing, fattening, and slightly laxative and diuretic."

DESCRIPTION.

The mango tree (Mangifera indica) varies in height, according to the variety, from little more than a bush to a tree 50 to 70 feet high, with a trunk 6 to 10 feet high and 2 feet or more in diameter. The leaves are lanceolate, about 1 foot in length, tapering gradually to a narrow point, with a smooth, shining surface. The young leaves are first pink, then red before turning green. The top is rounded and very dense. (See Pls. I, II, III.) The bark is gray and smooth. The flowers are small, reddish-white, or yellowish, borne in large upright racemes. The fruit varies greatly, according to the variety. In some kinds it is not more than 2 or 3 inches in greatest diameter, while others are three or four times that size, some weighing as much as 4 pounds. In form they vary from nearly spherical to long and
narrow like a cucumber, straight or crooked. The most common varieties are usually from 2 to 4 inches in length, more or less kidney-shaped, with the "nak," or stigmatic point, more or less produced. In color they may be green, yellow, or red. In composition the difference is no less pronounced. In some the seed is large (see Pl. IV, fig 2), and the thin flesh between it and the skin consists almost entirely of fiber attached to the seed, while in others the seed is small, and in some so nearly aborted that it is easily cut with a knife. In the best varieties the fiber is almost entirely wanting and the entire fruit consists of a mass of juicy, usually orange-colored pulp. This in some varieties is so firm that it may be sliced with a knife; in others it is soft enough to be eaten with a spoon.

The characters usually utilized in distinguishing varieties of the fruit are the size, color, and form: the extent of the depression at the stem; the location and prominence of the "nak" or stigmatic point; the color and thickness of the flesh and the amount of fiber contained; the presence or absence of a turpentine flavor. The seeds of different varieties are also very distinct. A glance at Pl. V will give some idea of the diversity, and although these characters are quite as constant as those more commonly used, they seem never to have been utilized in the description of varieties.

The Anacardiaceae, to which the mango belongs, include also the turpentine tree (Pistacia terebinthus), the original source of turpentine, and it seems not at all unlikely that the characteristic odor of the mango is in reality due to the presence of turpentine or some closely allied substance. Exudations of a transparent resinous substance similar to that of the turpentine tree are frequently to be noticed in the mango.

ORIGIN.

The mango (Mangifera indica) is said by De Candolle to be native in South Asia or the Malay Archipelago, and recent authors report it as wild in the forests of Ceylon and the regions at the base of the Himalayas, especially toward the east, at an altitude of from 1,000 to 2,000 feet. The species has been so long under cultivation that it would be extremely difficult to locate definitely the place or places where it was actually domesticated. The general region is, however, without doubt that given above. Of the 37 species of Mangifera enumerated in Index Kewensis, all are from the Indo-Malayan region except two—one, described by Oliver, from West Africa, and one, by M. Dessousseaux, from the island of Mauritius. Engler and Prantl describe the genus as containing 27 species from the East Indies and the Malay Archipelago. Its culture is very ancient, as shown by references in Sanskrit mythology and ancient Hindu folklore.

For so old and so useful a plant, its distribution was comparatively
limited until historic times. To the west, it had not passed the Red Sea, being unknown in Egypt, while to the east it had apparently not reached the islands of the Pacific. According to Rumphius (1750) it was introduced into some of the islands of the Malay Archipelago within the memory of living men, though the variety of native names would argue an earlier introduction. The species is not well adapted for distribution by natural agencies, and man has probably been chiefly responsible for its dissemination.

In the New World it seems to have been first introduced into Brazil, although it is not known at what date. The earliest record of its introduction into the West Indies appears in Hughes's Natural History of Barbados, 1750, where it states: "This tree or its seed was recently brought from Rio Janiero and grows only at the Guiney plantation." The date of this importation is more definitely placed at about 1742 or 1743 by letters published in Transactions of the Society for the Encouragement of Arts, etc., 1786, page 217. In 1782 Captain Marshall, of Lord Rodney's squadron, captured a French vessel, bound from the island of Réunion or Mauritius to Santo Domingo, that had on board many valuable plants, among which was the mango, said to have been in the form of grafted stock. These were planted in the botanic gardens of Mr. Hinton East at Gordon Town, Jamaica. Two kinds—one labeled No. 11 and the other No. 32—have since been known by these designations, No. 11 being one of the most popular varieties in Jamaica at the present time.

The mango is now a common fruit throughout the Tropics of the world. It has been developed to the highest state of perfection in its home in India, where the number of well-marked varieties is enormous. Mr. Maries, of Durbhungah, has collected over 500 varieties, 100 of which he characterizes as good. Thirty-four of these varieties he describes in Watt's Dictionary of Economic Products of India. Ceylon is also famous for its mangoes. Both the east and the west coasts of Africa have several good varieties. In Australia the culture is fast increasing, and it bids fair to become one of the most popular fruits. One very fine variety is said to exist in the island of St. Helena. The mango is the most highly prized fruit of Guam, where there is a fine seedling variety. Its cultivation in that island is, however, not a success, owing probably to the thin soil, which affords such a shallow footing that the hurricanes uproot the trees in all exposed localities. In the Hawaiian Islands, Mr. William C. Stubbs reports: "The mango is receiving perhaps more attention just now than any other fruit. As many as twelve or fifteen varieties have already been introduced. It is a delicious fruit, and decidedly ornamental in any ground." In the New World, Trinidad and Jamaica

---

"Bul. No. 95, Office of Experiment Stations, U. S. Dept. of Agriculture, Report on the Agricultural Resources and Capabilities of Hawaii, p. 40."
have the largest collections, although the drier regions of Central America and Mexico may be found to offer better seedling varieties.

In spite of the many discouraging frosts that have visited Florida, planters of that State are actively engaged in propagating good varieties by budding, grafting, andarching, and, if visited with no further misfortune, will in a few years produce considerable quantities of high-grade fruit.

CULTURE.

Requirements.

The mango will grow in a variety of conditions, and it seems to have little preference as to soil, the most important requirement being a deep soil that is well drained. As to climate, it is much more exacting, and the fact that the tree may thrive well in a given locality and yet fail to produce fruit should be kept always in mind. It may be considered as proven that the mango will be prolific only in regions subjected to a considerable dry season. On the moist north side of Porto Rico the trees grow luxuriantly, but they are not nearly so prolific nor is the fruit of such good quality as on the dry south side, and in the very dry region about Yanceo and at Cabo Rojo the fruit seemed at its best, while its abundance was attested by the fact that fine fruit was selling as low as 12 for a cent. In Guatemala and Mexico the mango was found at its best only in regions where severe dry seasons prevailed. This position is amply supported by reports of the mango in other localities.

The moist conditions that prevail at the Botanic Gardens of Trinidad are reported by Mr. Hart to be very unfavorable to the production of mangoes, a decided improvement being noticed in particularly dry seasons. This was also found to be the case in Jamaica, reports from different parts of the island all agreeing that the mango fruits but sparingly in moist localities, and in such is much more prolific in dry seasons.

Rains at the time of flowering seem to be especially injurious. It has been suggested by Mr. Hart and others that the moist weather interferes with pollination. If this is accomplished by insects the damp weather may easily affect their operations. Information on this point seems entirely wanting and investigation might be well repaid. In cases where the trees do not flower the explanation is probably to be found in the fact that the mango, like so many other plants, needs some check to its growth to induce the formation of blossoms. Where the dry season is lacking, artificial means of checking the growth are often resorted to, and old trees that have never borne fruit are sometimes made to produce enormous crops.

---

The tree is seldom seen at high altitudes, but this may also be due to the fact that high altitudes are often moist. At Senahu, Alta Vera Paz, Guatemala, trees were seen growing at an altitude of between 2,000 and 3,000 feet. They looked strong and healthy but were without signs of fruit or flowers, and it was said that these trees had never been known to produce fruit.

**METHODS OF PROPAGATION.**

**SEED.**

The mango grows readily from seed, and this is the only method of propagation practiced in Porto Rico. For transporting the seed long distances it is, of course, necessary to remove the pulp, and the best results have been obtained with cleaned seeds, dried on the outside and packed so as to conserve the moisture without molding. Packed in this way, several successful importations of seed have been made from the East Indies to Florida.

The ease and rapidity with which mangoes can be propagated by means of seed are decided advantages, but the results are very uncertain, and very few of the really desirable varieties can be maintained by this method. There are a few good varieties in different parts of the world the seedlings of which appear to produce fruit identical with the parent.

Much could doubtless be done to improve the mango in Porto Rico by the growth of seedlings from selected fruit, and really good varieties might be originated. Cross fertilization of the flowers might produce new varieties and increase the chances of producing good forms. On the other hand, if the mango follows the analogy of other fruits, it might be worth while to try the experiment of self-pollinating some of the best varieties, with the idea that the reproductive fertility would be thus impaired and the size of the seed reduced.

A more expeditious method of reducing the size of the seed might be to cross-fertilize with the pollen of some variety or perhaps species so distantly related that partially or completely sterile hybrids would be secured. Breeding experiments of all kinds require, however, so much time that for practical purposes the introduction of superior varieties existing in other countries is certainly the first step to be taken.

**INARCHING.**

This, and methods to be described later, provide means of propagating good varieties, so that the fruit of the new plant will be identical, or nearly so, with that of the parent. No greater variation need be expected than that occurring on a single tree.

In India and wherever the cultivation of the mango is carried on to any great extent, inarching is by far the most common method of
propagating. An article in the Sugar Journal and Tropical Cultivator describes the process as follows:

The best method of propagating good varieties of mangoes is by means of inarching, which is a very simple process. It is performed usually between a large tree of superior variety growing in the ground and a seedling growing in a pot—small, cheap flowerpots about 8 or 9 inches deep and 6 inches diameter do well for the purpose. The soil should be good potting soil, with a fair proportion of manure. A single large mango stone should be planted in each pot. The seedlings are ready for inarching, if well grown, in ten months or so; if not well grown, they should be older. Two-year-old seedlings are very successfully inarched. The stem of the seedling should in each be fairly thick, with the wood fairly developed—near the root the stem will be somewhat thicker than an ordinary workingman’s smallest finger. Any number of seedlings in pots can be inarched in one tree by erecting a stage [for their support] under the lower branches. The stem of the branch to be inarched should be about the same thickness as the stem of the seedling, and like the seedling, should be fairly developed wood. The juncture where the inarching is performed should be about 6 or 8 inches from the root of the seedling and about a foot or so from the growing point of the branch, unless the branch is making new vigorous growth, in which case the distance will be more. A straight, well-shaped branch should be selected, so that the future grafted tree will be well proportioned. A slice of wood and bark should be cut from the seedlings and from the branch, so that the inner bark of both can be made to touch accurately; the two wounded surfaces are bound securely with tape or bast fiber, and grafting clay applied to keep out air. The juncture of branch and seedling should extend for a length of about 3 inches, but at no point should the wound in either be deep; the slices should in fact be of almost uniform thickness throughout and not thick. Tenacious clay should not be used to cover the inarch; it soon cracks and admits air. One part of fresh cattle dung, mixed with two parts of good soil, kneaded together with a little water, serves the purpose excellently. Inarching can be done in India at any season, but it is most successful when the trees are in active growth. It takes some time (several months) before the inarched juncture is perfectly joined by the new wood and bark cells. Meantime the seedlings in the pots must be carefully and regularly watered. When the juncture is complete the leading shoot of the seedling should be removed immediately above the inarch juncture and some days afterwards the branch of the tree may be severed immediately below the juncture.

Trees for inarching should be in a sheltered situation, because if swayed much by the wind the pots or the platform are disturbed from their position.

In planting out young grafts the pots should be broken if the young plant can not be removed without disturbing the earth on the roots. If the earth on the roots is much disturbed the plant will almost certainly die. They should be planted with plenty of manure in pits 3 feet deep and wide.¹

Mr. Lewis A. Bernay, in “Cultural Industries for Queensland,” recommends that the seedlings be inarched when only three weeks old and 6 or 8 inches high. They can then be taken from the pots, the roots wrapped in grass, and the whole tied to the branch which is to be grafted. He recommends that the grafting be done early in the rainy season, and states that the grafts may be severed from the parent within a month or as soon as thirteen days. Inarched mangoes should come into bearing in from three to five years after planting.

Inarched stock in Wardian cases can be shipped long distances, and importations into Florida have shown that if properly handled a fair percentage of the plants may be expected to live.

Other forms of grafting are also used to some extent to propagate mangoes. Grafting is, however, difficult in the case of the mango, and can only be practiced by experienced hands.

Layering.

Propagation by layering, a method used to some extent where early fruiting trees are desired, is described in Firminger’s Manual of Gardening (p. 86), as follows:

Select a branch of ripened wood of the plant to be layered that will bear being bent down to the earth without breaking. Cut the branch half through with a sharp knife just under one of the leaf buds toward its extremity, and then pass the knife upward, so as to slit the branch about an inch or two up. The slit piece, with the leaf bud at its extremity, called the “tongue,” should be kept open by inserting a small piece of tile. Remove the earth to the depth of 2 or 3 inches from, or place a flowerpot over, the spot just where the tongue falls on the branch being bent down; then carefully bend the tongued part of the branch into the earth or into the flower pot, secure it in that position by a peg, and cover it over with earth, which should be pressed down and watered.

Chinese layering, a variation of this method, called gootee in India, where it is used to some extent, is described by Mr. Masters* of the Calcutta Botanical Gardens as follows:

Select a firm, healthy branch, the wood of which is well ripened, and immediately under a leaf bud take off a small ring of bark about 1 inch wide. Scrape the woody part well, so that no bark remains. Apply a ball of well-tempered clay; bind it on securely with a tow or other soft bandage; make it fast to a stake if necessary; hang a small pot, having a hole in the bottom, just over the gootee and supply it with water daily. In a few months you obtain a fine, well-rooted plant.

As the fibers are emitted from the buds that are above the wound they will descend into the ball of earth and form roots. As soon as they are seen protruding themselves through the bandage, the branch may be cut off from the parent tree, and planted where it is intended it should remain. This appears to be the most expeditious method of obtaining strong, well-rooted plants, and, at the same time, is a sure method of procuring duplicates of any desirable variety.

An ingenious method for watering the gootee is described by Firminger, as follows:

A piece of rope has a knot tied at one end of it, the other end is passed within the pot and drawn through the hole at its bottom until the knot is brought down to fall upon and close up the hole. The rope, thus secured by its knotted end within the pot, is carried on at full stretch and coiled around the gootee. By this means the water, when poured into the pot, oozes slowly out, trickles down the rope and along the coil, and so distributes itself along the whole gootee.

Trees started by layering or gootee are said to be prolific, but to bear small fruit. They are also thought to be short lived. These objections are so great that these methods are seldom employed.

---

PATCH Budding.

The budding of mangoes was formerly thought to be extremely difficult, but planters in Florida have found it one of the best methods of propagation, and use it very extensively on stocks that are to remain in place. For nursery stock that is to be transplanted inarching is still considered the most satisfactory. Budding has lately been tried in India, but has not as yet proved successful.

What appears to be an entirely new method of budding is described by Mr. Knight in the Queensland Agricultural Journal for July—September, 1890 (p. 256), under the name of bark grafting. If all that is claimed for it is true, it would seem to put an entirely new aspect on the propagation of improved varieties, making transportation of scions an easy matter and their propagation so simple and sure that it can be undertaken by persons having no special training or experience. The possibilities are at least sufficient to warrant thorough experiments.

Mr. Knight says:

After twelve years' close observation and a large number of experiments made on the mango tree, the conclusion that I have arrived at is that no tree is simpler to graft.

The work can be successfully done by anyone and at any time, whether the sap is active or dormant. The buds are certainly not so quick in coming when the sap is down, but they make up for any delay when once started.

Still it cannot be said that grafting, when the sap is down, is the best time for the operation. On the contrary, the first three months in the year have proved to be preferable. All the remarks in this article apply to one process only; that is, the use of bark without any wood adhering to it. Up to date the best material for tying on the grafts is ordinary candle cotton, procurable at the ironmongers, and generally sold in 1-pound balls. The grafts are simple pieces of bark without any growth whatever on them. Of course there must be dormant buds or eyes on them. The pieces of bark may vary in length and width according to the size of trunk or limb on which they are intended to be engrafted.

The plates accompanying this article show grafts measuring 2½ inches long by five-sevenths of an inch wide for the smallest piece, and 3½ inches by 1⅛ inches wide for the largest size. Mr. Knight further states:

The most convenient size to use is a piece about twice the length of the width, and if taken off where rings exist, so that the ring is across the center of the section, there will be two or three latent buds near the ring. The rings on the trunk and limbs denote the exact number of growths and rest the tree has made. At the point of every new growth, while resting, there is a whorl of leaves and at the base of every leaf there is a bud which is capable of becoming a tree, and whether it is used for grafting during its infancy or ten years afterwards it will develop with proper treatment. The youngest bark used on the tree shown on Pl. 11 (1) was 4 years old and the oldest section 9 years old when transplanted. The older the bark the easier it is to remove, and it is much handier to trim into shape. First cut out the section for transplanting, and, should the edges be bruised and torn, cut them away to sound bark. Now press the piece firmly onto the spot where it is intended to grow and make a clean cut all round. Next take out the bark inside the mark and put the prepared section in its place. Do not make it fit so tightly that it has to be

8992—No. 28—02—2
The Mango in Porto Rico.

squeezed in, but make it a nice fit. Now bind it with the candle cotton, with just sufficient pressure to make it touch its new parent. Avoid, if possible, binding immediately over the buds. The old notion that all air must be excluded to effect a union is a delusion as far as grafting the mango is concerned. There is no necessity for clay, grafting wax, or any other nasty stuff to insure a good union, but just the candle cotton. Now it may be that a section of bark has been prepared for transplanting which is much thicker than the piece taken out. Well, never mind; tie it on, and it will grow, although it is not a comfortable fit. Should the weather be hot and dry when the grafting is being done the top may be left on the tree for shade, but it must be thoroughly ring-barked 6 or 8 inches above the graft. In two or three weeks cut the top off at the spot where it was ring-barked, and if the buds on the graft have started into growth remove the binding.

When the young shoots which have sprung from the grafts have ripened, the old wood projecting beyond the graft should be sawn off close to the base of the new growth. As the new wood continues to grow it will cover up the entire end where it was sawn off, making very neat work of it. In the mango a term "ripened" shoot applies when the leaves and bark of the latter have taken their full green color (chlorophyll), or when the shoot has rested and is ready to continue its growth.

In a matured growth, the green coloring matter has been succeeded by a brown color which varies considerably with age.

Accompanying the above article were photographs showing: (1) A tree with its entire top cut off and fourteen different varieties of mango grafted on it, all of which were growing; in less than two months from the time of grafting the new growth in some cases measured 7 inches. (2) A grafted mango tree where the grafts had made a growth of 3 feet 6 inches in twelve months, with no cultivation. Mr. Knight adds that experiments have proven beyond a doubt that "sections of the mango tree will keep good for grafting purposes from three to six months' time according to variety and the constitution of the tree from which they are obtained." Such mature bark with its dormant buds would probably be much less subject to injury and decay during the vicissitudes of the voyage to the West Indies than would the tender shoots usually employed as cuttings, and as no such time as the above is necessary for the journey from India to the West Indies, it would seem that the introduction of the best varieties into Porto Rico might now be a comparatively simple matter.

Mr. G. W. Oliver, a of the United States Department of Agriculture, has recently reported excellent results with a method called by the preferable name "patch budding," similar to that described by Mr. Knight, but originated independently. Mr. Oliver's directions are as follows:

The method I wish to call attention to must be performed under certain conditions, the first and most important of which is that the stock must be in active growth. The best time is when the new leaves are not far enough developed to show the bright green color. The bark is then most easily removed. Choose the thick part of the stem only a few inches above the surface of the ground; cut out a rectangular

---

piece of bark about $\frac{1}{2}$ inches in length, and from the variety to be propagated cut a
similar piece with a bud in the center, not, however, from new wood, but from that
which is at least 2 years old and which has lost its green color and assumed the
grayish brown tint. Fit the section of bark, with bud attached, into the space
formed by the removal of the bark from the stock. If this piece of bark removed
from the stock has a bud in the central part, the wood exposed to view will fit better
with the section of bark to be applied. When the section has been put in place,
with a small brush apply a light coating of liquid grafting wax in which there is a
large quantity of resin, to the cut parts, and immediately tie firmly with thick
pieces of raffia; then an 8-inch wide strip of strong wrapping paper wound round and
round the stem a few inches above the bud, and tied above with a cord, completes
the operation for the time being.

If good material is selected and the operation carefully carried out at the proper
time, there is no reason why a high percentage of successful unions should not be
secured.

It is said that in Martinique a the mango has been successfully
grafted on the cashew tree (Anacardium occidentale), and it is further
stated that seedling mangoes so grafted produce fruit doubled in size,
free from fiber, and with the seed so reduced that it is frequently with-
out the power to germinate. The fruit although melting and very
juicy is said to be without flavor. These results, as reported, are so
radically opposed to those usually obtained from similar experiments
that they are not likely to be generally accepted until verified.

CULTIVATION.

The culture of the mango in localities to which it is suited is largely
a question of the best method of propagation. Once established the
tree needs little care.

Whether mangoes are planted directly in the field or started in pots
and transplanted, it is recommended that the holes be prepared some
time in advance, and, if possible, that a layer of rich soil, mixed with
bones, be placed at the bottom. Manuring in the early stages, though
often retarding the production of fruit, makes strong, vigorous trees.
Twenty to 30 feet is recommended as a good planting distance, though
this should doubtless be modified according to the variety, as some kinds
produce much larger trees than others. For the varieties already in
Porto Rico this distance should probably be increased to 40 or 50 feet.
The better grafted varieties usually make much smaller trees, and with
these the distance might be reduced to 15 feet or even less. If subse-
quent manuring is practiced, the fertilizer should be applied after the
fruiting season, and at the same time the ground around the trees
should be stirred.

In parts of India the young trees are shaded for a time until they
are large enough to stand the sun, and bananas are recommended
to provide the desired protection. In Porto Rico this seems hardly

---

a Annals de la Société d'Agriculture de la Martinique (Tome II), quoted in Jumelle's
Cultures Coloniales, p. 212.
necessary, except perhaps in some of the very dry localities on the south side.

In moist regions, where the mango fails to flower, it will be found necessary to check the growth. This can be accomplished in a variety of ways, the most primitive of which is mutilation of the trees or ring-barking the smaller branches. This method is common in India, but is not recommended as it disfigures the trees and may eventually kill them. Concerning the efficacy of this treatment, Mr. Horace Knight reports that in Queensland trees 10 or 12 years old that had been bearing only about a dozen fruits, after being ringbarked on their smaller branches by opossums, bore such a crop that they had to be propped to save them from breaking. The method recommended by Mr. Knight, however, is that of root pruning, which he thinks will accomplish the same result without disfiguring the tree.

Another method is to lay the roots bare for a time, and as soon as the tree flowers cover them with rich earth. With trees growing in warm, moist localities Woodrow advocates the application of salt at the end of the rainy season, about 10 pounds to the tree. This doubtless acts in the same manner, and if efficacious would seem a simple and economical method.

Under favorable conditions the mango is very prolific. The tree shown in Pl. II was estimated to have in the neighborhood of 5,000 fruits at the time the photograph was taken, and trees quite as prolific were seen near Cabo Rojo, P. R.; while trees in southern Florida before the freeze of 1886 were estimated to bear as high as 10,000 mangoes. From this it will be seen that with 25 to 100 trees per acre enormous quantities of mangoes can be produced on very small tracts of land, provided the right climatic conditions exist.

**DISEASES.**

The mango in Porto Rico seems almost entirely free from diseases or the attacks of insects. On the north side of the island the skin of the fruit is frequently disfigured by black spots, probably a fungus. Though in no way injuring the eating quality of the fruit these detract from its appearance and would doubtless lessen its market value. In the drier localities this discoloration was not observed, the fruit being uniformly smooth and clear. Should it be deemed advisable to take measures to prevent these spots, spraying with some fungicide would doubtless accomplish the desired result. With the introduction of better varieties, some of the diseases met with in other countries will possibly make their appearance. In Trinidad the better varieties are frequently affected by a disease that causes the pulp around the seed to darken and become sour and entirely inedible. It seems not improbable that the moist conditions prevalent in Trinidad may conduce to this disease, in which case the dry south side of Porto Rico will have an additional advantage.
In Porto Rico termites frequently build their nests in mango trees, but their galleries are constructed entirely on the outside of the bark, and do not appear to injure the tree in any way.

In introducing new varieties great care should be exercised not to introduce any of the almost innumerable parasites, both animal and vegetable, that prey upon the mango in other countries. All grafted stock and cuttings should be carefully inspected and disinfected before being planted.

**USES.**

The principal use of the mango is as a fresh fruit, and as such it deserves to become as common as the orange or the banana. A justification of this rather sweeping assertion is to be found in the degree of popularity which the mango enjoys in comparison with these better-known tropical fruits in countries where all are well established. Experience has shown that such comparisons are a better criterion of the ultimate popularity of an introduced fruit than the judgment of otherwise competent persons with whom the fruit is more or less of a novelty.

The intense flavor of some of the most fibrous mangoes is by many preferred to the milder and less fibrous varieties. The eating of the former is, however, such a difficult and untidy performance that the taste is much less frequently acquired than would be the case could some better method of conducting the operation be devised. Where the fruit is plentiful the method of peeling shown in Pl. VI enables one to secure the greater part of the flesh of a stringy mango without soiling the hands. A cut is made around either end of the fruit and these are then connected along one side, the central strip being peeled off in one piece. The skin remaining on the ends of the fruit affords a means of holding it without the fingers coming in contact with the juicy flesh. If in addition a sharp-pointed fork is at hand, this can be firmly fixed in the seed and the skin at the ends removed, thus saving the sweetest part of the fruit. Pl. VI, fig. 3, shows a special mango fork secured in Mexico by Dr. J. N. Rose. The long, slender tine in the center easily penetrates the seed and the shorter outer tines need only to touch the seed to prevent it from turning.

The mango has numerous important secondary uses, among which may be mentioned the following:

**THE CANNING OF THE GREEN OR RIPE FRUIT.**

Mr. E. M. Shelton, of the department of agriculture, Queensland, gives the following recipe:

After peeling, the fruit is separated from the stones by slicing into pieces of convenient size; these should be stewed for a few minutes only, before pouring into cans, in sirup strong or weak in sugar to suit taste, or the fruit may be cooked in the can.

---

with sirup, as before. There may be a difference of opinion as to the palatableness of canned mangoes. A considerable number of those persons who have tasted the results of our work have pronounced the canned fruit excellent, while others have declared their indifference to it. A like diversity of opinion, we note, holds respecting the raw fruit, particularly to those unaccustomed to its peculiar flavor. Mangoes stewed in the form of sauce will be found a welcome addition to any dinner table. "As good as stewed peaches," we have heard them pronounced.

**MARMALADE AND JELLY.**

The same writer also gives the following directions for making the fruit into marmalade and jelly:

*Marmalade.*—Peel and slice the mango, cutting close to the stone, and cook, using plenty of water. Boil until the fruit is thoroughly disintegrated, when the pulp should be run through the colander with the purpose of extracting the "wool." Sugar should now be added to suit the taste (about three-fourths of a pound to the pint of pulp), and the mass boiled until clear, when it should be poured into the molds or jars in which it is to be kept. This marmalade is of a rich golden-yellow color; it retains the form of the mold perfectly, and seems in all respects to satisfy the most exacting taste. In the absence of the experience necessary to test the keeping qualities of mango marmalade, it would be the part of wisdom to seal the jars designed for future use while hot with wax, or better yet, with a plug of cotton wool.

**Jelly.**—For jelly, prepare the mangoes by slicing as for marmalade, boil the fruit with water, prolonging the boiling only to the extent of extracting the juices. Great care should be taken in boiling, as the mango rapidly "boils to pieces," in which case it is impossible to make satisfactory jelly. Pour off the juice, strain, and boil down to a jelly, an operation that occupies only a few moments, as the mango is rich in gelatinous materials; the pulp remaining after the jelly has been removed may be used to advantage in making marmalade. In the amount of sugar used in making jelly, the housekeeper is safe in following old practices in this respect with other fruits. It is impossible to give exact rules in all the operations connected with working up this fruit. In general, it will be well to use, in boiling, water somewhat to excess, and as the mango "cooks" readily, constant watchfulness is needed to prevent burning.

To show something of what is possible in the way of results with this fruit, I may say that in our experiments 15 good-sized mangoes gave 1 pint of jelly and 5 quarts of marmalade. This certainly must be counted a very favorable, not to say remarkable, result.

About Acapulco Dr. Edward Palmer found the foreign residents making the unripe mangoes into an excellent jelly, with the mango flavor so modified as to please even those who do not care for the fresh fruit. At the same place the experiment had been tried of making sweet pickles of the green fruit, with very satisfactory results.

During the height of the season in Porto Rico, mangoes can be bought at retail at the rate of 5 to 25 cents per hundred, at which price the cost of the fruit in making jellies and marmalades is nominal, and as the cheap sugar made in Porto Rico is suitable for making preserves, and the transportation charges on the finished product low, it would seem that if a salable article could be produced, its manufacture ought to be profitable. In view of the abundant supply and the
wonderful cheapness of the mango in Porto Rico, some of these uses will warrant investigation and experiment. Another consideration in this regard is the fact that the commoner sorts at present growing in Porto Rico are probably much better suited to the above uses than the milder-flavored varieties so highly prized for consumption in the fresh state.

A very delicious dish can be made by simply peeling mangoes when unripe but nearly full grown; slice, place in a dish, pile on sugar, and bake in a slow oven.

CHUTNEY.

The mango forms one of the chief ingredients of chutneys, concerning which the following, copied from Bulletin No. 46, Botanical Department, Jamaica, applies equally well to Porto Rico:

Large quantities of chutney are imported into America from India, although it could readily be supplied from Jamaica, affording employment to a number of people, and utilizing much material which now goes to waste.

The following recipe has been kindly forwarded by a correspondent: Three pounds common mangoes (turned, but not ripe); 3 pounds tamarinds; 2 pounds raisins (weighed after stoning); 8 pounds brown sugar; ½ pound chilies; 2 pounds green ginger; ½ pound garlic or 1½ pounds onions; ½ ounce mace; 1 ounce mustard seed; ½ ounce cloves; ½ ounce pimento; ½ pound table salt. Soak the tamarinds in 2 quarts of the best vinegar, stir them about with a wooden spoon to get the pulp off, and take out the seeds and the leathery part in which they are inclosed. Cut the raisins small. Peel the ginger and grate it. Pound the chilies, garlic, and mustard seed in a mortar, using a little of the vinegar to moisten. Mix all together thoroughly; it is then ready for use.

ALCOHOL.

According to Mr. Dybowski, the bruised and imperfect fruit that would otherwise be lost is sometimes utilized to produce by distillation a fair grade of alcohol.

MEDICINAL PROPERTIES.

While not possessing any pronounced and universally recognized medicinal properties, the mango is in India credited by the natives with a great variety of virtues, and numerous medical authorities speak very highly of certain of its uses.

As stated elsewhere, the fresh ripe fruit is considered slightly laxative and diuretic. The rind and fiber, as well as the unripe fruit, are astringent and acid. A long list of medicinal properties is given in Watt's Dictionary of the Economic Products of India, among which the most important and best authenticated are the following:

The unripe fruit, peeled, cut from the stone, and dried, is considered one of the best antiscorbutics, and is said to stamp out scurvy when lime juice and all other available remedies fail. Prepared in this way

a Traité Pratique de Cultures Tropicales, Paris, 1902, p. 534.
it is known as *amchîr or ambejîr*, and is an extensive article of diet in India.

The dried and powdered kernel of the seed is a valuable astringent, extensively used in cases of diarrhea and dysentery. One-half of a kernel taken in the morning and the same dose repeated in the evening are said to cure the most obstinate case inside of five days.

The unripe fruit roasted and made into a sherbet is taken by the natives of India to prevent sunstroke; the pulp is also rubbed over the body for the same purpose.

An extract of the bark or rind is highly recommended for its extra-

DYE, TAN, AND PIGMENT.

In some parts of India the leaves of the mango are used to produce a yellow dye, as is also the bark, which is frequently mixed with that of other trees, among which are mentioned the pomegranate and a species of Bauhinia. With the bark of some trees it yields a permanent black. The juice of the bark mixed with lime is said to produce a fleeting green dye, while the addition of tumeric to the above mixture gives a bright rose-pink.

The dry, unripe fruit is extensively used as a mordant, especially in dyeing with safflower.

The bark and even the leaves are used as a tanning material, one sample of the bark yielding, on analysis, 16.7 per cent tannin.

Piuri, or Indian yellow, a coloring matter used in water colors and for painting houses in India, is indirectly the product of the mango. Before August, 1883, the source of this Indian coloring matter was unknown. At that time F. N. Mukhargi, at the request of Sir Joseph Hooker, made a trip to Monghyr, where the dye is produced, and found that it was obtained from the urine of cows fed on mango leaves. His letter is published in No. 30 of the Kew bulletins. Mr. Mukhargi states that the cows utilized for this purpose are kept exclusively on a diet of mango leaves and water, which increases the bile pigments and imparts to the urine a light-yellow color. The cows thus treated are made to pass urine three or four times a day by having the urinary organ rubbed, and soon lose the ability to urinate voluntarily. The urine is heated and the yellow precipitate is strained out and made into balls, dried on charcoal fires and in the sun, when it is ready for market. The price paid by the dealers is about 40 cents per pound. About 2 ounces a day is obtained from an average cow.

An exclusive diet of mango leaves is said to be injurious to the cows, and to keep up their strength the animals are now and then allowed grass or other fodder, which, however, reduces the proportion of the coloring matter.

---

GUM.

The gum which exudes from the trunks of mango trees, frequently in considerable quantities, is said to be a substitute for gum arabic.

MINOR USES IN INDIA.

The multitude of uses the mango has in India, where it is not merely a luxury but an important food staple, have been summarized in Watt's Dictionary as follows:

When green, the stone is extracted, the fruit cut into halves or slices, and (a) put into curries; (b) made into a pickle, with salt, mustard oil, chilies, and other ingredients; (c) made into preserves and jellies by being boiled and cooked in sirup; (d) boiled, strained, and with milk and sugar made into a custard known as mango-foul; (e) dried and made into the native "ambshur," used for adding acidity to certain curries; (f) when very young cut into small pieces, mixed with a little salt, and sliced chilies and milk added, it forms a "tasty" salad.

When ripe (a) it is made into curry which has a sweet, acid, not unpleasant, taste; (b) it is cut into small pieces and made into a salad with vinegar and chilies (the sour fruit is sometimes so used); (c) the juice is strained, spread on plates, and allowed to dry; this forms the thin cakes known as amb-sath. The kernels are eaten in times of famine, and by the poorer classes in many parts of India they are boiled and eaten as greens. They are also ground with meal and mixed with various other ingredients to form the relish known as am-khatai. When stuffed with coriander, turmeric, and other spices, and boiled in mustard oil, they are esteemed a great delicacy.

THE MANGO IN PORTO RICO.

PRESENT STATUS.

The mango is one of the most common fruits in Porto Rico, and during the season when this fruit is ripe it is eaten in larger quantities than any other, with the possible exception of the banana, which latter is used more as a vegetable, cooked in one form or other. That it is a popular as well as common fruit is shown by the fact that when mangoes are scarce people are willing to pay comparatively high prices for them, and this in spite of their being looked upon as luxuries rather than as staple articles of food.

Porto Rico seems very well adapted to the production of mangoes and, as the plant is strictly tropical and very susceptible to cold, would seem to have a decided advantage over Florida, where good varieties are already successfully grown, but where, except in the extreme southern part, the danger of injury from cold is very great. A really high-grade mango is unknown in Porto Rico, and the first steps toward making their exportation profitable is the introduction from the other islands, or from Florida, Mexico, or the East Indies, of grafted stock of the best varieties. Even seedlings of improved forms would without doubt be a great advance, but until the quality is in some way improved the shipping of mangoes in other than small lots will scarcely prove profitable, as the sale of the mango in its present
form will be largely limited to those who have at some time lived in a
country where the fruit is grown and have already acquired a liking
for it. With this class even poor mangoes will always find a market,
if good ones are not to be had.

That mangoes of the best varieties can be grown in America has
been demonstrated, although only small quantities are as yet produced.
Mr. D. G. Fairchild, who has had excellent opportunities to test
mangoes in all parts of the world, says that with the possible exception
of the Bombay Alphonse the finest mango he ever tasted was one
of the variety known as "Mulgoba" and grown in Florida.

The mango grows in all parts of Porto Rico, but is more common
on the drier south side of the island, where the trees will occasionally
be seen growing so thick as to suggest an orchard. (See Pl. 1.) It can
scarcely be said to be cultivated at all, as few trees are planted and
most of the fruit is obtained from trees that have spread spontane-
ously. It seems to prefer dry hill slopes, and was seen in the greatest
profusion about Cabo Rojo. Trees are seldom seen growing about
houses. This may, however, be due to a superstition that the shade
of the mango is dangerous, our Porto Rican driver on one occasion
preferring to have his horses stand in the hot sun rather than in the
shade of the deadly mango.

If the tree is propagated artificially at all, it is by means of seeds.
The only indication that any grafted stock exists in Porto Rico was a
statement heard in Yance to the effect that the variety known as
Melocotom is from grafted stock brought from Martinique. The
importation may have been made, but even if such is the case it has
been of little value, as it has since been propagated only through
seedlings.

The season of ripe mangoes in Porto Rico is from May to August.
By selecting proper varieties this might be prolonged, since in some
parts of India it extends over a period of six months. This would
be a great advantage in shipping the fruit to temperate regions, as at
present the season coincides with the season of temperate fruits, which
places the mango at a decided disadvantage.

Best Localities.

Mango plantations in Porto Rico, to be most profitable, should with-
out doubt be located in the drier parts of the island, where, as has
been said, the trees are not only more prolific, but the fruit is better
formed and more free from blemishes. The whole south side, a nar-
row strip across the western end, and the northwest corner would seem
to be well adapted. The southwestern part of the island is at present
producing the best mangoes. In this region there are many more or
less extensive tracts of low-priced land unsuited to the growing of
other crops, but apparently adapted to the mango.
Mango trees are common about San Juan, but this region is so moist that the trees are not prolific and the fruit is frequently deformed and spotted.

PORTO RICAN FORMS.

There are a great many forms of the mango in Porto Rico, but at present their classification is little more than a list of names. The same name is applied in different parts of the island to distinct fruits, and, again, what appears to be the same form will receive distinct names in different localities. In any given market, however, considerable agreement will be found as to the terminology of forms, though the fruit is evidently picked in bulk and sorted before being offered for sale. In some markets this is carried much further than in others. The fruit of the same tree seems always to be very nearly uniform, but as the mango comes true to seed only to a limited extent and the fruit in Porto Rico is all from seedlings, an almost endless variety is naturally to be expected.

True varieties—that is, varieties propagated by asexual methods—do not exist in Porto Rico, and the following descriptions are intended to assist in fixing the vague terminology of the market forms and if possible to stimulate further observation as to whether these come true to seed. These forms should not be confused either with true horticultural varieties or, until further investigation, with races that are known to come true to seed.

The forms described below are those that fell under immediate notice, the name most commonly in use being appended.

*Mango de Mayaguez* (Pl. VII).—A small yellow form, with comparatively large seed, but with good flavor, soft flesh, and few fibers. This form, for sale in the San Juan markets, is considered one of the finest. It has very little of the turpentine taste, but its flavor did not appear to be any better than that of several others, while its small size and thin flesh make it seem on the whole inferior. In shape it is asymmetrical, with depressed stem. The color in the early part of the season is a uniform yellow; later many specimens were seen with one side red.

*Mangotina* (Pl. VIII, fig. 4).—A very small yellow form, with one side red. Similar to the Mango de Mayaguez seen at San Juan but longer, with rounder base and the stigmatic point nearer the apex.

*Melocoton “peach” mango* (Pl. VIII, fig. 1).—A small yellow and red form seen at Yauco, said to have come from grafted stock brought from Martinique. Base very square, stem slightly depressed, skin thin, meat with very few fibers, mild in flavor.

*Mango de rosa* (Pl. VIII, fig. 2).—A nearly spherical form seen at Yauco, yellow in color, with one side a beautiful red. The skin is very thin, the meat comparatively free from fiber, very mild and pleasant, without a trace of the turpentine flavor.
Mango piña (Pl. IX).—A short, thick form found in the San Juan market before the middle of June, green, slightly asymmetrical, with rather oblique base, stem depressed. The meat is thick, of good texture and flavor.

Mango largo (Pls. VIII and X).—A form common on the south side of the island and at Mayaguez. Long, nearly straight, stem not depressed, green in color. The flesh is very firm, moderately thick, and with very few fibers. At Yauco slightly shorter specimens were called "Mangotina," a name used very loosely in all markets, this form selling there at 10 for 1 cent. The flavor is fine, though the taste of turpentine is pronounced, and to those who do not object to this feature it will appeal as one of the best Porto Rican forms.

Mango mangó (Pl. XI.)—A large, rather straight form, with a very square base, somewhat resembling "largo," but slightly more symmetrical and thicker. Large quantities were seen in the San Juan market on June 22; a month later none were to be found. The flesh was fairly thick and of good quality.

This name may possibly be a contraction of mangon, which would be not at all inapplicable, as this is one of the largest Porto Rican forms. Stahl gives mangó as the common name of Mangifera indica in Porto Rico.

Mango jobos (Pl. XII).—A common form in the San Juan market in the early part of the season. A very poor kind, considered to be the wild or unimproved form. It is green in color, with a large seed and very stringy meat, frequently ripening unevenly and having a strong turpentine flavor. In form it is slightly asymmetrical, stem not depressed.

Mango redondo (Pl. XIII and Pl. IV, fig. 2).—A large, thick-meated form, common in the Ponce market. In form it is quite symmetrical, with a decidedly depressed stem. In color it varies from green to red, the difference being in some instances so marked as to suggest a distinct type. The color seemed the only difference, however, and the market people insisted that the green and red might come from the same tree. The flesh is very juicy, moderately free from fibers, and of a very good flavor.

**Varieties to be Introduced.**

There are probably hundreds of excellent varieties and forms grown in India and elsewhere that might profitably be introduced into this country, but it would perhaps be better to introduce a very few of the best sorts and get them thoroughly established than to dissipate energy on a great number.

As early as 1869 some seventeen varieties of Indian mangoes were successfully introduced into Jamaica. These have since been propagated and new importations made until there exists in Jamaica a con-
siderable number of Indian mangoes. The best varieties are, however, confined to gardens, and very few of the choicer kinds are exported. There are also a few Indian varieties in Trinidad and Florida.

Among the varieties of mangoes that should be introduced into Porto Rico, the following may be mentioned:

Mulgoba.—"Form roundish, oblique, reniform; size large, weighing from three-fourths pound to 1 pound; surface smooth and undulating; color yellow, beautifully blushed with red and faintly dotted with numerous brown dots; skin thin, tough, tenacious; seed reniform, oval, rather large; fiber scanty, fine, and tender; flesh rich, apricot yellow, very tender, melting and juicy, sweet, rich, fragrant; quality very good.

"The Mulgoba surpasses in flavor and quality the seedlings previously grown, but its most distinctly marked features of superiority are the tenderness of the flesh and absence of the objectionable fiber and strong turpentine flavor common to most of the seedlings grown in this country.

"The tree is a strong, symmetrical grower, and appears to be abundantly productive."

Grafted stock of this variety was secured by the Division of Pomology, U. S. Department of Agriculture, in 1889 and placed with fruit growers in southern Florida. After a narrow escape from the freeze of 1895 the surviving tree has done well, and the variety has been successfully propagated. This variety should be at once introduced into Porto Rico.

Alphonse, Alphonse, or Alphons, is perhaps the most noted of mangoes. Woodrow says:

It is universally admitted to be the finest of all mangoes. In flavor its fruit is indescribable; it seems to be a subtle blending of all agreeable flavors. In weight the fruit averages 8 ounces, and in color green, enriched by a crimson glow on the exposed side, and in shape oblong, slightly thickened at the upper end, and without any prominent stigmatic point or beak.

The leaves vary much in size and shape, and with difficulty can be distinguished from common varieties; but among the choice varieties the leaves of the Alphonse may be known by the bright red midrib apparent until the leaves are nearly ripe. The branches of the inflorescence are of a rich rosy color.

In manner of growth or habit this variety is rather stunted and irregular, rarely forming a graceful tree. It is also very delicate and apt to give way before insect attacks more than other varieties; but as its fruit is valuable it should be kept free from insects and otherwise protected in proportion to the price the fruit brings.

This is a very early variety and so highly prized in India that as much as $19 a hundred is sometimes paid by dealers for selected fruit.

In June, 1902, several grafted plants of this variety, all from a single tree known to produce superior fruit, were sent from Bombay by

---

b Gardening in India, pp. 226, 227.
Mr. D. G. Fairchild, Agricultural Explorer of the U. S. Department of Agriculture. Some of these were sent out at once through the Division of Pomology to experienced growers in Florida, where they were budded on healthy stock and are now doing well. Budding was also successfully accomplished from the remaining plants held in the greenhouses at Washington, and the variety seems now safely established.

A letter from Col. J. G. E. Griffith, a Hodges, Black River, Jamaica, states that after three attempts he imported in 1901 six Alphonse and six Paeree plants, eight of which are now doing well. Five of these are believed to be Alphonse.

Every effort should be made to preserve this valuable variety, and budded or inarched stock should be introduced into Porto Rico as soon as possible.

It might also be desirable to secure one or two of the late fruiting forms. Several varieties, grouped in Watt's Dictionary under the name of Budayas, are said to fruit as late as September or October, whereas the Alphonse fruits in May.

No. 11.—This variety, the original stock of which was among the first mangoes introduced into Jamaica by Captain Marshall, in 1782, is still the most popular variety in the island. It is a fine fruit, though somewhat stringy, and is said to come true to seed. Mr. Hart identifies this variety with the Reine Amelie of Martinique. As Martinique received a large part of its early introduced plants from Mauritius, the source of this variety in Jamaica, this identification doubtless means identity of origin, and the fact that these distinct strains are still identifiable would argue great constancy for this variety. Budded stock of this variety is also growing in Florida.

Manila (Pl. XIV).—A Mexican race, almost entirely free from fiber, and of a mild, pleasant flavor. The skin is uniformly light yellow and thin; the flesh is also light colored and firm. The seed is very thin and small in proportion to the amount of flesh.

This is a really high-grade mango, not unlike the Mulgoba in flavor. Its shipping qualities have not been tested, but perfectly ripe fruit purchased in Mexican markets kept in good condition for several days. This mango was very popular in the City of Mexico about the end of June. It was sold in all the markets and hawked on the streets, the price being usually 4 cents apiece Mexican. The uniformity of the fruit as it appeared in the different markets, taken with the absence of asexual methods of propagation in Mexico, would argue that it is a form that comes true to seed. If this is the case, it would certainly be one of the most desirable mangoes for Porto Rico, and seed should be secured at an early date.

The name of this race suggests that it came from the Philippine

---

VARIETIES TO BE INTRODUCED.

Islands, and indeed it is not impossible that it was brought to Mexico from those islands by one of the Spanish galleons that during the seventeenth century plied regularly between the Philippines and Mexico.

A form resembling this in Guam is there commonly supposed to have come from the Philippines, but as ships only touched at Guam on the return voyage from Mexico the fruit must have reached Guam by way of America, and would naturally have become established in both countries. Possibly a further confirmation is to be found in the occurrence of the same or a very similar form in Cuba, known as the Philippine mango.

**Manggo china.**—A very fine seedling race, common in the markets of Guatemala City, and considered the finest mango of that region. The form of the fruit is characteristic, being very thin and almost circular in outline, with a prominent blunt "nak," located some distance from the apex. The flesh is thick and remarkably free from fiber for a seedling, mild and aromatic, without suggesting turpentine.

This variety differs from others examined in having pronounced longitudinal ridges on the seed, which is thin and very broad. (See Pl. V, fig. 1.) Like the Manila of Mexico, this form apparently comes true to seed. It could easily be secured and would certainly be an improvement on anything at present in the island. By some this form is called *Manggo de brea.* This name is, however, more appropriately applied to another form in which the fruit is more or less coated with a pitch-like exudation, *brea* meaning pitch.

There are a number of excellent varieties and forms already growing in other islands of the West Indies, which it might be desirable to introduce. The fact, however, that Indian fruit is outselling the West Indian in the London market would indicate that the best Indian varieties should receive the most attention. It is possible that the best kinds are not exported from the British West Indies where mangoes as good as Indian varieties may be growing, but where under the unfavorable conditions they do not bear sufficient fruit to permit of being exported. These same mangoes, if transplanted to the south side of Porto Rico, might become much more prolific, and on account of the ease with which they could be introduced the subject should receive careful attention.

In Bulletin No. 20 of the Botanical Department of Trinidad, July, 1889, Mr. J. H. Hart describes the Trinidad varieties, some of which would appear to be very excellent. Among the most desirable kinds may be mentioned the following:

**Gordon.**—A fine large fruit. The seedlings are said to produce fruit almost identical with those of the grafted stock, and are thought to bear better.
Peters.—One of the finest flavored of all Trinidad mangoes, said to
bear regular crops. In Trinidad this variety is very subject to sour-
ing in the center of the fruit. This would probably be much less
troublesome in Porto Rico.

Julie.—A fine, large mango, with thin, long seed; commences to bear
when very young.

On the west coast of Africa and in some other localities the mango
has two seasons of bearing ripe fruit, about six months apart. At
Esquintla, Guatemala, where the mango grows luxuriantly and is very
prolific, this appears to be the case, as many trees were seen bearing
flowers and nearly ripe fruit at the same time, April 16. If this is a
difference in kind and not due to climatic conditions these forms should
be imported, as the placing of a new fruit on the market would be
greatly facilitated could it be done in the winter, when competition
with native fruits would be less.

BEST METHOD OF INTRODUCING NEW VARIETIES.

The introduction of new varieties from the East Indies has been
attended with much difficulty. Seeds can, of course, be secured at com-
paratively small expense, but in most of the cases on record only a small
percentage have germinated, and these, after the trouble and delay of
bringing them to bearing, are likely to produce fruit with only a
slight resemblance to the variety desired.

Hitherto the most successful importations have been in the form of
inarched stock in Wardian cases. This, though a very satisfactory
method, is very expensive, and a less costly plan would greatly encour-
age importations.

Experiments in packing cuttings, suitable for budding, so that they
may be sent through the mails, have been made by Mr. D. G. Fair-
child. He recommends the following method:

Have a cylindrical tin case made, 10 inches long, 2 inches in diameter, with a well-
fitting cap 2 inches long, in which to send the cuttings through the post. This case
should be fitted in a cloth sack before dispatching. Cut scions about 10 inches long,
making sure that they have good buds on them. Dip the cut ends in collodion or
melted beeswax, wrap each scion in a strip of light tin foil, and wrap these again
in oiled paper. Pack not more than four or five in each case, with slightly moist-
ened sawdust. Be careful to put the address on the tag.

The first shipment of mango cuttings packed in this manner arrived
in rather poor condition, the sawdust in which they were packed being
apparently too moist. Buds, which were immediately placed in the
healthy stock, showed signs of life, but it is still too early to report
the success or failure of the experiment. The sending of a second
shipment, packed in drier sawdust, was so delayed that the severe heat
encountered on the voyage resulted in an entire loss. Experiments
with this method of packing are being continued by Messrs. Taylor and Fairehild, as the system has not as yet received a fair trial.

Experiments made by Mr. H. Knight, in Queensland, on the keeping quality of mango cuttings proved that cuttings carefully packed in cocoanut fiber would remain alive and in good condition for at least three and one-half months. Cuttings were tried in both moist sand and cocoanut fiber that had been boiled, washed, and squeezed dry. The cuttings were packed in tight tins. At the end of two months, of 14 cuttings packed in moist sand, all were dead but one, while after three and one-half months all the cuttings in the cocoanut fiber were alive and had shoots from 2 to 4 inches long. This length of time is ample for the introduction of new varieties from India to this country, but the cuttings thus experimented with were doubtless kept at a reasonably uniform temperature, and it must not be inferred that they would have survived a voyage to the West Indies where, owing to the changes to which they would be subjected, they would probably have deteriorated much more rapidly. The fact that the cuttings made sprouts, while indicating the success of this method of preserving the life of the cuttings, would not be desirable if the cuttings were to be used for budding. This could, however, doubtless be prevented by drier packing.

The introduction of new varieties by means of cuttings that can be sent through the mails would be such a simple and economical method that it is well worthy of experiment, but in view of the difficulties which many have experienced in budding the mangoes it may be well not to place too much dependence on this method until budding has been successfully accomplished from cuttings thus treated.

The propagation and dissemination of the finer varieties of the mango might well be one of the lines of activity of the experiment stations recently established in the tropical possessions of the United States.

PACKING AND SHIPPING.

The packing and shipping of mangoes is a question of great importance, as the success or failure of their production on a commercial scale is to a large extent dependent on its proper solution. With the poorer varieties, it is a comparatively simple matter, and the fruit wrapped in paper and packed in cases comes through in very good shape. With the finer varieties the question is, however, much more difficult. Sample lots of the best varieties grown in the West Indies have been shipped long distances, as from Jamaica to London, and have arrived in good condition.

In larger lots it would doubtless be much more difficult, but with proper care it would seem that the loss need not be serious. The
advisability of shipping in cold storage has never been properly tested, but the general opinion seems to be that low temperatures injure the flavor of the fruit. Mr. J. H. Hart, Superintendent of the Royal Botanical Gardens of Trinidad, recommends a temperature some 8° or 10° below that in which the fruit was ripened. "Pick the fruit," he says, "when fully formed or 'full,' handle without bruising, or, as I wrote many years ago of oranges, 'handle as you would eggs,' choose well-formed and uninjured fruit, pack so that fruit receives no undue weight or pressure, place for transit in a well-ventilated part of the ship, and nearly every kind of fruit can be carried successfully for voyages of from six to fourteen days or more, mangoes of the best kind among the number." while experiments in shipping mangoes from Australia would indicate that a temperature of about 35° was the most satisfactory.

There can be no doubt that questions of ventilation and of packing so that the fruit is not subjected to undue pressure are of more importance than the exact temperature, and the instructions of Mr. Hart will, if followed, allow good fruit to reach the northern markets in prime condition.

The United States consul at Bombay, William Thomas Fee, in his report for October, 1901, states that in the large shipments of mangoes now being sent from India to London the fruit is packed in the cast-off boxes used for shipping oil to India, and that it arrives in good condition.

M. Nollet, director of the garden at Martinique, has succeeded in making small shipments from that island to Paris with a loss not exceeding 10 per cent. The fruit was wrapped in soft paper and packed one dozen in a box, the interstices filled with sawdust and the whole placed in cold storage.

The fruit is usually picked when of full size, but before it has completely ripened, and is placed in shade to complete the process. In some parts of India it is buried in the ground to ripen, as this is supposed to make it sweeter.

To establish a market for Porto Rican mangoes, it will be necessary for some individual or company to undertake to grade, pack, and ship the fruit on a scale sufficiently large to enable commission merchants to receive regular consignments and feel confidence in the uniform quality and condition of the shipments. Growers may hesitate to embark in the production of mangoes on a large scale before a market is assured, but a market will not be assured until the supply can meet the above conditions. A large and well-organized plantation could probably best meet these requirements, but, in the absence of such, the neighboring planters of mangoes might very advantageously cooperate

---

by combining their crops and placing the grading, packing, and shipping of the fruit in the hands of one person. The industry might thus be successfully launched without serious risk to individual planters.

**MARKET.**

Although a local market already exists in Porto Rico, the only outlook for making the growing of mangoes profitable is in a trade with the temperate regions. Such a trade can hardly be said to exist in this country, for, although small lots are frequently sent North and are disposed of at from 5 to 10 cents apiece, they have been sold merely as novelties; for the few larger shipments that have been made there was no sufficient demand, and to avoid total loss prices had to be lowered so that Porto Rican mangoes have been sold in Washington at the rate of 2 for 5 cents.

What can be done with mangoes of the best quality in this country is still a matter of conjecture; but in view of the unanimously favorable opinion of those who have tasted good varieties, it would seem that it is merely a question of being able to produce good fruit and to ship it in good condition.

The history of the mango in Florida affords some very encouraging data regarding profits to be derived from mango culture. The following, quoted from Bulletin No. 1, Division of Pomology, U. S. Department of Agriculture, refers to trees growing in the neighborhood of Tampa Bay:

One grower on the point sold, from eleven trees in the fourth year from the seed, fruit which brought him $219. In their sixth year he shipped bushels to various places, realizing at Chicago 60 cents per dozen, and the fruit shipping well. Another dealer received from the produce of one of his bearing trees $86 in its sixth year.

These mangoes were probably of inferior varieties, as Mr. William A. Taylor states that prior to 1889 none but seedling mango trees were grown in Florida. On the other hand, the quantities were so small that the fruit was probably sold as a novelty and the profits realized give little idea of how larger and continued shipments would fare.

In England the trade is much farther advanced. There has been a small trade between Jamaica and England for a number of years. The following, copied from the Bulletin of the Botanical Department of Jamaica, No. 39, January, 1893, page 23, is a statement of the number and value of mangoes exported during the years 1887 to 1892, to which is added the approximate price per 100.

*Yearbook, U. S. Dept. of Agriculture, 1901, p. 390.*
THE MANGO IN PORTO RICO.

Number and value of mangoes exported from Jamaica, 1887 to 1892.

<table>
<thead>
<tr>
<th>Year exported</th>
<th>Number</th>
<th>Value</th>
<th>Approximate value per 100.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1892</td>
<td>258,060</td>
<td>203</td>
<td>2 6</td>
</tr>
<tr>
<td>1891</td>
<td>222,029</td>
<td>158</td>
<td>12 6</td>
</tr>
<tr>
<td>1889 (one-half year)</td>
<td>18,288</td>
<td>19</td>
<td>19 0</td>
</tr>
<tr>
<td>1888</td>
<td>176,988</td>
<td>100</td>
<td>19 6</td>
</tr>
<tr>
<td>1887</td>
<td>265,484</td>
<td>258</td>
<td>9 0</td>
</tr>
<tr>
<td></td>
<td>56,470</td>
<td>116</td>
<td>6 0</td>
</tr>
</tbody>
</table>

The following statement is also made:

This export will never be of any great value unless the fruit is picked by hand and packed with care, for the least bruise is fatal. Good mangoes would doubtless fetch a good price in New York.

Large shipments of fine East Indian mangoes are now being received in London and not only arrive in good condition, but are bringing fancy prices, quite outselling the West Indian fruit, to which they are much superior.

This is decidedly encouraging, for if there is a demand for good mangoes in England, why not in the United States? And if it is possible to successfully ship fine varieties from India to London, there ought surely to be no difficulty in shipping from Porto Rico to New York.

SUMMARY.

The essentials for making the cultivation of mangoes in Porto Rico a profitable industry may be summarized as follows:

(1) The introduction and propagation of good varieties, meaning (a) fair-sized fruit, moderately free from fiber and with little of the turpentine flavor; (b) fruit that will stand shipping; (c) early and late fruiting varieties, and if possible varieties bearing two crops a year.

(2) Care in picking, packing, and shipping, that the fruit may reach the market in good condition.

(3) A general supervision of the shipping by some responsible person or firm, insuring uniformity and regularity of supply.

(4) The placing of good fruit before the public in such quantities that the price need not be excessive, and that the supply can be regular and continuous during the fruiting season.

If these conditions can be met, an increasing demand may be expected, and there seems no reason why the commercial production of mangoes should not be added to the agricultural industries of Porto Rico.
DESCRIPTION OF PLATES.

Plate 1. Grove of mango trees between Cabo Rojo and Joyua, Porto Rico. These trees were injured by the hurricane of 1899, and have not regained their typical form.

II. Mango tree in fruit, Tapachula, Mexico; estimated to be bearing about 5,000 mangoes.

III. Branch of mango tree, with fruit, Tapachula, Mexico.

IV. Fig. 1.—Mango tree, growing in dry region near San José, Guatemala. Fig. 2.—Section of “Redondo” mango fruit, Ponce, Porto Rico. (Natural size.)

V. Mango seeds: Fig. 1.—“Cocha.” Fig. 2.—“Largo.” Fig. 3.—“China.” Guatemala City, Guatemala. (Natural size.)

VI. Fig. 1.—Mango fruit, showing method of peeling. (Natural size.) Fig. 2.—Crate of mangoes shipped from Florida to Washington, D. C., showing a successful method of packing. (Photograph loaned by W. A. Taylor.) Fig. 3.—Mango fork. (Natural size.)

VII. “Mango de Mayaguez” fruit, San Juan, Porto Rico. (Natural size.)

VIII. Mango fruits: Fig. 1.—“Melocoton.” Fig. 2.—“Rosa.” Fig. 3.—“Largo.” Fig. 4.—“Mangotina.” Yauco, Porto Rico. (Natural size.)

IX. “Mango piña” fruit, San Juan, Porto Rico. (Natural size.)

X. “Mango largo” fruit, Ponce, Porto Rico. (Natural size.)

XI. “Mango mangó” fruit, San Juan, Porto Rico. (Natural size.)

XII. “Mango jobos” fruit, San Juan, Porto Rico. (Natural size.)

XIII. “Mango redondo” fruit, Ponce, Porto Rico. (Natural size.)

XIV. “Manila” mango fruit, City of Mexico. (Natural size.)

XV. “Mango china” fruit, Guatemala City, Guatemala. (Natural size.)
Mango Tree in Fruit, Tapachula, Mexico.
Branch of Mango Tree with Fruit, Tapachula, Mexico.
Mango Seeds, Guatemala City (Natural Size).

Fig. 1.—Mango Fruit, Showing Method of Peeling (Natural Size).

Fig. 2.—Mango Fruit, Showing Method of Packing.

Fig. 3.—Mango Fork (Full Size).
"Mayaguez" Mango Fruit, San Juan, P. R. (Natural Size).
FIG. 1. — "MELOCOTON."

FIG. 2. — "ROSA."

FIG. 3. — "LARGO."

FIG. 4. — "MANGOTINA."

Mango Fruits, Porto Rico (Natural Size).
"Piña" Mango Fruits, San Juan, P. R. (Natural Size).
"Largo" Mango Fruits, Ponce, P. R. (Natural Size).
"Mango" Mango Fruits, San Juan, P. R. (Natural Size.)
"Jobos" Mango Fruits, San Juan, P. R.
"Redondo" Mango Fruits, Ponce, P. R. (Natural Size).
"Manila" Mango Fruits, City of Mexico (Natural Size)
"CHINA" Mango Fruits Guatemala City (Natural Size).
THE EFFECT OF BLACK ROT ON TURNIPS:

A SERIES OF PHOTOMICROGRAPHS, ACCOMPANIED BY AN EXPLANATORY TEXT.

BY

ERWIN F. SMITH,
PATHOLOGIST, LABORATORY OF PLANT PATHOLOGY,
VEGETABLE PATHOLOGICAL AND PHYSIOLOGICAL INVESTIGATIONS.

Issued January 17, 1903.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.
LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,
Washington, D. C., October 7, 1902.

Sir: I have the honor to transmit herewith a technical paper on "The Effect of Black Rot on Turnips: A Series of Photomicrographs, Accompanied by an Explanatory Text," and respectfully recommend that it be published as No. 29 of the series of bulletins of this Bureau. The paper was prepared by Dr. Erwin F. Smith, in charge of the Laboratory of Plant Pathology, Vegetable Pathological and Physiological Investigations, and was submitted by the Pathologist and Physiologist.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.
PREFACE.

Dr. Smith's studies of the bacterial organism causing the black or brown rot of turnips dealt with in this paper were begun in September, 1896. In other papers he has discussed the morphology and cultural peculiarities of the parasite and has pointed out methods for limiting the spread of the disease. In this paper he confines his attention to the action of the parasite on the host plant, demonstrating by means of the microscope and camera the ability of the organism to destroy cell walls, and illustrating various stages in the progress of the disease. The paper is timely in that the ability of bacteria to destroy cell walls in living plants is still disputed in many quarters and is a subject left untreated in most of the text-books.

The paper is technical and is designed for the use of investigators in plant pathology.

ALBERT F. WOODS,
Pathologist and Physiologist.

OFFICE OF THE PATHOLOGIST AND PHYSIOLOGIST,
Washington, D. C., October 6, 1902.
## CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory</td>
<td>9</td>
</tr>
<tr>
<td>General considerations</td>
<td>10</td>
</tr>
<tr>
<td>Plant furnishing the cultures</td>
<td>11</td>
</tr>
<tr>
<td>The method of inoculation, etc</td>
<td>12</td>
</tr>
<tr>
<td>Symptoms which resulted</td>
<td>13</td>
</tr>
<tr>
<td>Technique employed in study of diseased plant</td>
<td>13</td>
</tr>
<tr>
<td>Special account of the diseased plant</td>
<td>15</td>
</tr>
<tr>
<td>Results of synchronous inoculations into other plants</td>
<td>19</td>
</tr>
<tr>
<td>Description of plates</td>
<td>20</td>
</tr>
</tbody>
</table>
ILLUSTRATIONS.

Diagrammatic representation of inoculated turnip plant.................Frontispiece.

Plate I. Fig. 1.—Bacterial cavity in turnip root. Fig. 2.—Bacteria in vessel of turnip root, highly magnified................................. 20
II. Cross section of lower part of root of turnip plant shown in frontispiece. 20
III. Cross section of turnip root higher up than Pl. II.......................... 20
IV. Fig. 1.—Cross section of turnip root just under the leaves. Fig. 2.—Shows bacterial occupation of vessels of root at same level as fig. 1. 20
V. Fig. 1.—Vertical section of turnip root, showing bacteria in vessels. Fig. 2.—Vertical section of turnip root, showing bacteria in vessels. 20
VI. Fig. 1.—Cross section of turnip root, showing bacteria confined to a single vessel. Fig. 2.—Cross section of turnip root, showing bacterial occupation of several vessels. Fig. 3.—Cross section of turnip root, showing several vessels and many parenchyma cells occupied by bacteria. Fig. 4.—Bacteria wedging apart parenchyma cells. Fig. 5.—Bacteria wedging apart parenchyma cells. Fig. 6.—Bacteria of the black rot magnified 1,000 times; cover glass preparation .................................................. 20
VII. Figs. 1 and 2.—Cross sections of turnip root, showing occupation of vessels.......................................................... 20
VIII. Fig. 1.—Bacteria occupying intercellular spaces in the parenchyma of the turnip root. Fig. 2.—Bacteria escaping from a small bundle into the surrounding tissues................................. 20
IX. Figs. 1 and 2 illustrate early stages in the formation of bacterial cavities in the turnip root .................................................. 20
X. Figs. 1 and 2 illustrate later stages in the formation of bacterial cavities in the turnip root .................................................. 20
XI. Margins of bacterial cavities, showing progressive destruction of the cell walls; more highly magnified than in Pl. XI......................... 20
XII. Fig. 1.—Longitudinal section through turnip root near the cambium, showing bacterial cavities. Fig. 2.—Small portion of the larger cavity of fig. 1, highly magnified............................... 20
XIII. Figs. 1 and 2.—Additional details from the larger cavity in Pl. XII, fig. 1
THE EFFECT OF BLACK ROT ON TURNIPS.

INTRODUCTORY

Very few persons would now have the hardihood to deny the existence of plant diseases due to bacteria, but great ignorance still exists respecting this class of diseases, and particularly respecting the capacity of these bacteria for destroying cell walls and making their way, unaided by other organisms, from one part of the plant to another. Even so good a physiologist as H. Marshall Ward, in so recent a book as Disease in Plants (1900), knows nothing about the destruction of cellulose by bacteria, and is inclined to think that, in most cases of "bacterial" disease, fungi act as carriers of the bacteria or forerunners.

The writer has found so much of interest attached to the study of his slides that he is prepared to believe that photographs of them will be of more or less general scientific interest. The behavior of Pseudomonas campestris when inoculated into cruciferous plants is not unique, and this particular organism has been selected accidentally, rather than for any special reason, to illustrate what I have to say at this time. The writer possesses alcoholic material of equal interest from many kinds of plants inoculated with various bacteria and a single turnip plant attacked by one organism has been selected for these illustrations, principally because the material proved excellent and appeared to be sufficient for the purpose in hand. The figures will also serve to illustrate how much may be learned from the careful examination of a single specimen.

The following study is purely morphological, and it, of course, raises various questions which can be settled only by the isolation of a cytase. Judging by the time required for cruciferous plants to get into the condition shown in inoculated plant No. 53, the enzymic action on the cell walls must be rather slow, and experimental evidence with the precipitated substances containing the enzyme would probably be less readily obtained than in case of those bacteria which act on the tissues very rapidly. The isolation of the enzyme, and the study of its action were tempting subjects, but the writer's time was very fully occupied with other matters, and the requisite leisure could not be found. This

---

a This disease is also called brown rot.

b The plant from which sections were cut for nearly all of these illustrations.
is the less to be regretted, however, since we may confidently expect this phase of the subject to be treated very fully and satisfactorily in the forthcoming papers of Jones and Potter.α

**GENERAL CONSIDERATIONS.**

So far as I can determine from sections, *Ps. campestris* is capable not only of destroying the middle lamella, but also of dissolving the cell wall proper. This it does slowly. At first I thought that I detected a swelling of the walls prior to their disappearance, but subsequent comparative measurements of the walls supposed to be swollen with normal walls left me in doubt. Fresh material, which has not been examined to this end, might give a very different result. That the solution of the cell walls is progressive is shown by the fact that many of the walls still remaining in the bacterial masses are only one-third to one-fourth as thick as the walls of adjacent uninjured cells. In certain cases where the bacterial mass lies up against the wall of a cell on one side and not on the other, there has been a distinct thinning of the wall on the side next to the bacteria. The difficulty of making exact determinations is increased by the considerable variability in thickness of the walls in the normal parts of the plant.

Russow’s cellulose test gave very distinct pictures of the gradual solution and final disappearance of the cell wall. The uninjured cell walls gave a blue reaction, those in process of solution stained feebly or not at all. Sections were also stained in carbol fuchsin, picro-nigrosin, iron haematoxylin, and Fleming’s triple stain. The vessels of the root are distinguished very readily from the other parts of the root by the safranin of the triple stain, which picks out the lignified reticulations. The bacteria are stained well by carbol fuchsin, by iron haematoxylin, and by nigrosin.

The closed bacterial cavities in this root vary in size from openings involving only two or three adjacent cells to spaces formed by the destruction of hundreds, even thousands, of cells. They are full of bacteria when not so exposed that the latter have diffused out into the alcohol.

In many cases parenchyma cells are squeezed together from without and the bacteria do not enter them until they are crushed out of all

αSince this was written Mr. Potter’s paper has been published. He finds that individual bacteria of *Ps. destructans* bore small holes through membranes previously softened by an enzyme, and in this way enter the cells. Such observations are of course enormously complicated by the minuteness and abundance of the bacteria, and one must be on guard against appearances, which are often deceptive, particularly with dry lenses. Potter’s statements, however, are positive, and are based on a number of observations with both fresh and fixed stained material, so that for the present, and so far at least as regards the species in question, we may accept his statements as substantially correct. They will probably soon be verified or contradicted by other observers.
semblance to cells, but in other cases cells which seem to belong to
the parenchyma are filled relatively early without being crushed.
These are generally nonlignified wood cells bordering on or lying in
the vicinity of the vascular bundles. Probably the organisms bore
their way through the cell wall in the manner described by Potter, but
the writer has never been able to make out clearly any such penetration.

The writer will be pleased at any time to show the slides from which
these photographs were made to anyone who is interested, and in
exceptional cases will mail slides, or material from which sections may
be cut, to those who are particularly interested, this especially because
all reproductive processes are imperfect, the gelatin prints being
inferior to the negatives and the latter to the microscopic image of
the sections. Most of the sections were cut and the photographs made
early in 1901, but other work got in the way and delayed the comple-
tion of the paper. Most of the negatives were, however, exhibited
in the form of lantern slides at several places early in 1901, e. g.,
University of Michigan, Michigan Agricultural College, The Botanical
Seminar of Washington, and the substance of the paper was presented
before the Society for Plant Morphology and Physiology at its fifth
annual meeting in New York, December 30, 1901, where the lantern
slides were again exhibited.

The following statements will be made plainer by a brief account of
the structure of the turnip root. As may be seen from Pls. II and
III, the basal and swollen part of the turnip root consists of a small
pith, a large cylinder of xylem, a narrow cambium cylinder, and a
phloem cylinder, beyond which is a cylinder of cortical parenchyma
surrounded by cork. In other words, the structure is that of many
dicotyledonous stems. The upper part of the root has a larger pith
and better differentiated medullary rays. The xylem part of the root
contains much wood parenchyma, which is not always easily distin-
guishable from the medullary rays. The only lignified parts are the
reticulations in the vessels. These stain a bright pink with safranin
and come out quite distinct from the surrounding wood parenchyma
in many of the photographs.

PLANT FURNISHING THE CULTURES.

On Pl. 1, fig. 1, is shown the cross section of a turnip root, the
interior of which has been destroyed by the bacterium of the brown
rot, Pseudomonas campesiris (Pammel) Smith. This root was collected
in September, 1896, from a field near Baltimore.

Turnips attacked by brown rot often live for a long time, but the
diseased root does not enlarge much radially. This one, like many
others observed by the writer, had the form of a carrot root rather than
that of a turnip root, although it was several months old. The walls of
the cavities in such roots are usually black or brown, and hence the
common name. Frequently there is no external indication of the
cavity. For a painting in perspective of such a root see Centrallblatt
für Bakteriologie. 2 Abt., III Bd., Pl. VI, fig. 1.

THE METHOD OF INOCULATION, ETC.

On the frontispiece will be found a diagrammatic representation of
a turnip plant inoculated with a pure culture of *Pseudomonas camp-
pestris*. This figure is intended to represent plant No. 53, which was
inoculated on the blades of two leaves by means of delicate needle
punctures. The plant was then some weeks old and about 9 or 10
or possibly 12 inches high. The material used for inoculation con-
sisted of a well clouded, moderately turbid bouillon culture (eleven
days old), which had been used for control in thermal-death point
experiments, and which was just beginning to throw down a small
amount of yellow precipitate. In other words, the culture was still in
active growth and in excellent condition for purposes of inoculation.
The original source of the organism was the interior of a turnip
such as that which furnished the cross section shown on Pl. I, fig. 1.
The inoculations were made in the following manner: Selecting two
leaves five or six removes from the lowest leaf, some of the germ-
laden fluid was first removed from the tube on the end of a sterile
platinum loop and placed on the clean surface of the leaf blades,
and then from 75 to 100 delicate pricks were made through this fluid
into the leaf, by means of a fine-pointed steel needle, which was passed
through the flame before and after use on each plant. Finally, a fresh
loop of the bacterial liquid was lifted out of the tube and spread
over these punctures. The punctures of themselves did not do the plant
any serious injury. The inoculated leaves were covered for an hour or
two after the punctures by means of clean white paper—i.e., until
sunset. This was done partly to avoid insolation and partly to prevent
a too rapid evaporation of the fluid from the surface of the leaf. The
leaf surfaces were not sterilized before inoculation for three reasons:
(1) Because it was desired to have the inoculations made under condi-
tions simulating as nearly as possible those occurring naturally; (2)
because numerous experiments had already shown that with a proper
selection of plants such as those used for this series of inoculations,
needle punctures unaccompanied by bacteria did not lead to disease;
(3) because exposure of the delicate leaves to mercuric chloride or
other strong germicides for a time sufficient to destroy all surface
spores would, probably, in spite of subsequent washings, have left
enough poison on the leaves to inhibit the growth of the parasite, if
not to seriously injure the plant. The pricked area on each leaf
included perhaps 2 to 3 square centimeters.
SYMPTOMS WHICH RESULTED.

The history of this plant, which was examined nearly every day, is as follows:

*December 19, 1896.*—Plant inoculated.

*December 28.*—A slight yellowing of part of the pricked areas.

*December 30.*—Yellowing and wilt over the whole of the pricked area on one leaf and over one-fourth of the pricked area on the other leaf.

*January 2, 1897.*—A marked progress of the disease on each leaf. The wilt now involves from 5 to 8 square centimeters on each leaf, and has run out to the margin of each leaf near the apex.

*January 4.*—The wilt now involves from 10 to 15 square centimeters on each leaf.

*January 8.*—The wilt is still confined to the two inoculated leaves, about 30 square centimeters on each leaf blade being involved. The advancing part of the diseased area is dull green and flabby. The brown veining on these leaves is not nearly so conspicuous as in the cabbage and kale plants which were inoculated at the same time and from the same cultures.

*January 16 (28th day).*—Up to this time there have been no constitutional symptoms—that is, no leaves have shown symptoms except those which were inoculated.

*February 9 (52d day).*—This plant is now badly dwarfed and the top is dying. The four large outer leaves which remain have shriveled nearly to their base, and the bundles in the base of the petioles are plainly blackened. One small leaf is now wilting and shows a distinct blackening of its veins. One other small upper leaf is still green and normal in appearance. This leaf is but slightly developed.

The plant was now pulled up and examined. The rootlets were sound. The main root axis, which was about 3 inches long and one-half inch in diameter in the largest part, was smooth, white, and sound externally. The root was now washed and inspected critically. A most careful examination of the surface of the root gave no indication as to the cause of the disease. The root was then cut open crosswise in three places, namely, at the top, in the middle swollen part, and at the base of the swollen part. In the upper cut, which was made about one-eighth inch under the crown of leaves, the bundles were decidedly black, and many were occupied by the bacteria; there were various small bacterial cavities but no large cavity. In both of the other sections of the root there were small cavities here and there, the affected xylem was pale brown, and in the middle part the whole inner tissue seemed to be softening. The bark part of the root was perfectly sound.

TECHNIQUE EMPLOYED IN STUDY OF DISEASED PLANT.

When examined microscopically, the vessels of some of the bundles were found to be full of bacteria. The vessels of other bundles were free, or filled in part. No fungus threads were present. The root had a turnipy smell when cut. Before putting the specimen into alcohol two tubes of potato were inoculated from the interior. Both
yielded a prompt and very abundant growth of the same organism with which the plant had been inoculated fifty-two days before, and no other organism appeared in the tubes. The root remained in strong alcohol for more than four years—i.e., until an opportunity was found for making sections. Portions of it were then placed successively in absolute alcohol, alcohol and chloroform, pure chloroform, cold chloroform containing paraffin, warm chloroform with more paraffin, and finally pure melted paraffin. When thoroughly infiltrated with paraffin they were suitably embedded and cut on the Reinhold-Giltay microtome with a very sharp knife. The sections were floated out and cemented to clean glass slides by means of sterile, distilled water containing one-half per cent of gelatin, freshly prepared. Mild heat was used in straightening out the wrinkles in the sections and the excess of water was removed by setting the slides on end. When dry, the slides were gently warmed until the paraffin was melted, and were then placed in turpentine or xylene until the paraffin had been removed. They were then passed in succession, gently, into Coplin staining jars containing a mixture of turpentine or xylene and absolute alcohol, pure alcohol, graded mixtures of alcohol and water, and finally Ziehl's carbol fuchs-in, in which they were allowed to remain from three to five minutes. The excess of stain was removed by leaving the slides in a mixture of equal parts of alcohol and water until the proper differentiation in color had been secured. They were then passed rapidly through graded alcohols into absolute alcohol, and from that into a mixture of alcohol and xylene, into pure xylene, and finally into Canada balsam or Dammar balsam dissolved in xylene. In a very few of the sections here shown, viz., Pl. I, fig. 2, and Pls. II and IV, nigrosin was substituted for carbol fuchs-in. A series of sections (cross and longitudinal) from this root were prepared, stained, and studied, and the results obtained are illustrated by means of the accompanying photomicrographs.

The fixing of the root in strong alcohol was considered necessary in order to prevent the bacteria from diffusing out into the fluid. Even 95 per cent alcohol does not entirely prevent diffusion in case the bacterial cavities are large, but does so quite satisfactorily in case of single vessels or small cavities. The knife used for making the sections was very sharp, and did not shave or tear them to any extent, but the strong alcohol in which the material was fixed did, of course, cause more or less twisting and shrinking of the delicate parenchymatous tissues. During the process of hydrating, staining, bleaching, dehydrating, and mounting the cell walls were also occasionally broken and displaced. Observations on the fresh root left no doubt that the vessels were the primary seat of the disease, but the exact limits of the bacterial occupation remained to be determined from properly infiltrated material. This has now been accomplished. The manner of fixing, of infiltrating,
and of cutting, and the subsequent fastening to the slide and careful manipulation during the removal of the paraffin, the hydrating, staining, differential bleaching, dehydrating, and mounting processes leaves no doubt whatever that the location of the bacteria in the tissues, as shown in the photomicrographs, is the same as in the fresh root. There has been no tearing of these bacterial masses or shoving or crowding of them into parts of the root where they were not originally present, such as would naturally occur in making sections of living or uninfiltreated material. In some cases the more delicate parts of the root have been broken a little in places, as already mentioned, but only to a slight extent, which in no way interferes with one's judgment as to the effect of the bacteria upon the root. Indeed the process of fixing renders the bacterial layer tougher and less liable to shoving or rupture by the knife than any other part of the root, as may be readily seen from an inspection of my sections. The bacteria in the sections have taken a deep purple stain, and, there being very little ground stain, the individual rods stand out clearly under the oil-immersion lens, much more clearly than in the photomicrographs. The sections are remarkably good, but owing to their thickness (6 μ to 10 μ) a number of layers of bacteria lie one behind the other and seriously interfere with the photographic image. Very likely also a more expert photomicrographer would be able to make more out of the sections than the writer. Attempts were made to cut thinner sections, but the material did not seem well adapted to very thin sections. In those 2–4 μ thick there was so much shoving together and tearing that they could not be used.

SPECIAL ACCOUNT OF THE DISEASED PLANT.

On Pl. II may be seen a cross section of the lower part of the root, magnified 50 times. The section was taken from the point marked "3" on the frontispiece. The bleaching process subsequent to the staining has been carried so far that the root is only slightly stained, except where there is bacterial occupation of the vessels and wood parenchyma. The actual size of this section is indicated by a circle at the bottom of the plate.

The extent of bacterial occupation and disorganization in the interior of the root is very interesting. In one of the cross sections of this root, made higher up than that shown on Pl. II and involving less than one-half the circumference, the writer counted 93 distinct centers of bacterial infection and 15 bacterial cavities, involving in cross section from 50 to 300 cells each. In a cross section from nearly the same level as Pl. II, 146 distinct groups of bacteria were counted in the vessels. In the photograph here reproduced it will be observed that the bacteria are confined to the inner portions of the root, principally to the vessels and the surrounding nonlignified wood parenchyma.
There are no bacterial pockets in the bark part of the root (phloëm and cortical parenchyma), forming the outer 30 to 60 rows of cells. The bacterial foci, of which there are about 130 in this section, are also for the most part at a considerable distance from the center of the root—i.e., in the outer part of the xylem, which, consequently, we may assume either to have been the first portion of the root to become infected or else to have been that part most readily attacked by the organism. The cavities are all or nearly all on the rim of the xylem. There are many infected bundles farther inward in the xylem, but cavities are wanting in that part of the root and are still very small in the outer xylem at this level, and are not clearly visible with this magnification. Farther up the root (Pl. III) the cavities are larger, and only the smaller and medium-sized ones have retained their bacterial contents intact. The sections agree, however, in that the outer part of the xylem has suffered most, and in that all parts external to the cambium are free from infection.

Fig. 2 of Pl. I shows a single small vessel magnified 2,000 times. It is from the inner part of the root and is filled with the bacteria. It corresponds to one of the vessels of Pl. II.

Pl. III is from a cross section in the middle swollen part of the root. (Frontispiece, at point marked "2.") In comparing it with Pl. II, it should be remembered that the magnification is not the same. The actual size of the section is shown on the lower left-hand side of the plate. From the largest cavities the bacteria have diffused out into the alcohol, and only the borders of these cavities are still occupied by the organism. That these open places are also true bacterial cavities and not due to anything else is shown by an inspection of the serial sections, an open cavity in one giving place to a bacterially filled cavity in another, and all being free from fungi and insect injuries. Two of the largest of these full cavities may be seen in the upper part of the picture. On the lower left-hand side of this section is an irregular oblong cavity, which was made by a platinum loop thrust into the tissue to remove some of the organism for cultural purposes.

Pl. IV, fig. 1, represents a cross section taken from the top of the root (frontispiece, point marked "1."). showing transition into stem. The magnification is too small and makes evident much less than the section, but suffices for orientation, and shows that there is no surface wound or large cavity. The pith and the cortical parenchyma are entirely free from the bacteria. Most of the phloëm is also free, but bacteria are present in it at the point marked "Y." Fig. 2 is a detail from the same slide, more highly magnified.

A study of Pls. II, III, and IV, and of corresponding longitudinal sections not here represented, shows that while the vascular system of the plant is very badly infested, the bulk of the tissue is still free from the bacteria; i.e., at least nine-tenths of it, including all of the
outer portion of the root which has come into direct contact with the fungi and bacteria of the soil, and which would be more or less rotted if the organism had entered the plant from the earth. If the infection had been from the soil, the root would also have contained a mixture of things and not one species in pure culture, and certainly not Ps. campesris, since the soil was not obtained from cabbage fields, and all the numerous uninoculated turnip plants grown in it remained entirely free from this disease.

The following photomicrographs are all made from sections of this root at level No. 2. (See frontispiece and Pl. III.)

Pl. V, fig. 1, represents a longitudinal section through a small bundle fully occupied by the bacteria and deeply stained. The magnification is not sufficient to show the individual organisms, but it can be made out quite clearly that the surrounding parenchyma is not occupied and that there is as yet no disorganization of the tissues. The second figure on this plate is a longitudinal section through two small vascular bundles. The knife passed through the middle of the lower bundle and the extreme margin of the upper one. The tissue around the upper bundle is just becoming hollowed out into a cavity; that around the lower one is still intact and unoccupied by the bacteria. The vessels themselves are crowded full of the organism.

Three of the reproductions on Pl. VI are from cross sections of small bundles, i. e., bundles similar to those illustrated in Pl. V. In the lower right-hand corner is a cross section showing a single vessel occupied by the bacteria, the rest of the tissue being entirely free. In the lower left-hand corner are several vessels so occupied; the larger one, however, contains only a narrow film of bacteria (around the walls), which may have entered from above or below, or at this level, through the side of the vessel next to the more fully occupied part of the bundle. The surrounding tissue here is also entirely free from these organisms. The upper figure on this plate corresponds more nearly to the lower figure on Pl. V. Here several vessels are occupied, together with their connective tissue and the surrounding parenchyma, and we have the first stage in the formation of a bacterial cavity. The left-hand side of this figure is shown more highly magnified on Pl. IX, fig. 1. The middle figures at the left show the manner in which the bacteria crowd apart parenchymatous cells, multiplying first in the intercellular spaces and either dissolving or splitting apart the middle lamella, probably both. The middle figure at the right is a cover glass (smear) of Ps. campesris stained with carbol fuchsin and magnified 1,000. It was made directly from the vessels of a cabbage plant and is the only figure not taken from the turnip.

On Pl. VII are two additional figures showing early stages in the occupation of small bundles. Nonlignified wood-parenchyma cells are also occupied, at least in fig. 2. The surrounding tissues are
entirely free from bacteria. In both figures the bacterial contents of vessels have fused. This I take to have occurred through natural openings rather than through openings made by the bacteria, because occasionally in cross sections of unoccupied bundles I find reticulations thinning out and disappearing in the same way. In the lower figure a few of the cell walls have been broken and displaced slightly in mounting.

The upper figure on Pl. VIII shows an early stage in the destruction of the parenchyma, the intercellular spaces are occupied by the bacteria, but the cells themselves are still free and have not been wedged apart, as in figs. 4 and 5, Pl. VI. The granular matter in the center of the cells is protoplasmic material. The lower figure shows in cross section a very small vascular bundle. The two reticulated vessels are filled and the bacteria have found their way outside of these into the intercellular spaces which are filled and greatly enlarged, the cells being crowded apart and, in case of one of the lower ones, crushed in. Two or three nonlignified cells are also filled.

Pl. IX shows two stages in the formation of bacterial cavities. In the upper figure there is more or less vagueness in the cell walls, one of which, on the right-hand side, has almost entirely disappeared. This figure shows a single vessel in the center (comparable to fig. 1, Pl. V). The surrounding cells which are so fully occupied by the bacteria are nonlignified wood cells of the fleshy root. In the lower figure there has been a greater softening of tissue and a considerable cavity is in process of formation. Here in the center (from right to left) are at least four vessels, and there is probably a fifth vessel just above the cell marked X. The reader’s attention is called particularly to the vagueness of the cell walls and to the open cavity which is shown in the lower middle part and the left-hand part. The whole forms a very instructive and typical picture of the way in which cavities are brought about by the mechanical and solvent action of this organism. The tissue for a long distance around both of these foci is sound and entirely free from bacteria, and, as in the other cases, the bacteria could have entered these bundles only as a result of the leaf inoculations already described.

On Pl. X are shown two figures illustrating a further advance in the destruction of the parenchyma of the root and the formation of bacterial pockets. The cells are separated from each other by masses of bacteria, are crushed in, and are slowly dissolving, their walls becoming vaguer and vaguer until at the middle of the cavity they can not be seen at all. Fine examples of this gradual destruction of the cell walls are to be seen in both of these figures. The reader’s attention is called in particular to the right-hand side of the upper figure, showing bacterial occupation of the intercellular spaces which usually precedes the formation of an open cavity. In the upper part of the upper figure, in the last one of the second row of cells at the
RESULTS

The two figures shown in Pl. XI are from the margin of bacterial cavities similar to those shown on Pl. X, but more highly magnified. Here also the cell walls are in all stages of separation and decomposition. In the middle of fig. 1, and at the left side of fig. 2, cell walls may be seen in all stages of solution. In none of these serial sections is there to be found any trace of fungus threads or of insect or other animal devastation, the entire injury being due to an enormous multiplication of the organism which was inoculated into the leaves of the plant, and which found its way into the root through the vascular bundles of the petioles. Part of the injury is plainly mechanical, due to crowding, and part is chemical, due undoubtedly to the solvent action of a cytase. Had the plant been allowed to remain in the soil a few weeks longer, the result must have been the fusing of these various small cavities into one or more large cavities. We should then have had a phenomenon like that shown on Pl. 1, fig. 1.

Pl. XII, fig. 1, is from a radial longitudinal section showing cambium and phloem at the right (top) and xylem (wood parenchyma) at the left with cavities close to the cambium. Fig. 2 is a detail from the larger of these cavities taken at the point marked X.

Pl. XIII is a continuation of XII, showing details from the larger cavity taken at the points marked Y and Z. Here again cell walls are crushed and undergoing solutions, and the bacteria are present in incalculable numbers and no other organisms are present. In the upper part of fig. 1, at the right, the bacteria may be seen wedging apart two parenchyma cells. Similar phenomena may be seen in the upper right-hand corner of fig. 2.

RESULTS OF SYNCHRONOUS INOCULATIONS INTO OTHER PLANTS.

At the same time and from the same culture as turnip No. 53 twenty-eight other plants were inoculated as follows: Four rape, 6 radish, 6 cabbage, 5 kale, 3 turnip, and four Roman hyacinth. Twenty-three of the 28 plants contracted the disease, as follows: Four rape—1 plant became diseased constitutionally, 3 showed only local symptoms; 5 radish—3 developed constitutional symptoms, 2 local symptoms only; 6 cabbage—all 6 developed constitutional symptoms, and No. 42 was illustrated in 1897 in 2te Abt., Centralblatt f. Bakt. (III Bd., Taf. VI, fig. 5), and in the same journal in 1901 (VII Bd., Taf. VIII and IX); 5 kale—3 developed constitutional symptoms, 2 only local symptoms; 3 turnips—1 developed only local symptoms, the others showed also constitutional symptoms. The hyacinths did not become diseased.
DESCRIPTION OF PLATES.

Frontispiece.—Turnip plant No. 53, showing place of inoculation (on leaves) and indicating by figures the part of root from which sections were taken for the photomicrographs. Diagrammatic. The illustrations were all made from the root of plant No. 53, except fig. 1, Pl. I, from another turnip, and fig. 6, Pl. VI, which was made from a cabbage plant attacked by the same disease.

Plates. I. Fig. 1.—Cross section of turnip plant, showing bacterial cavity. Natural infection. From a field near Baltimore. Zeiss planar. x 4½ circa. Fig. 2.—Single vessel from Pl. II, showing bacterial occupation. Stained with nigrosin. x 2000.

II. Cross section of lower part of the root (Frontispiece, 3), differentially stained with safranin and picr-nigrosin to bring out location of the bacteria. x 50.

III. Cross section of a part of the middle portion of the root (Frontispiece, 2), differentially stained with carbol fuchsin, showing numerous bacterial cavities. x 15.

IV. Fig. 1.—Cross section, extreme upper portion of the root (Frontispiece at point marked 1), differentially stained. Zeiss, 70 mm. x 23. Fig. 2.—Detail from the same section (at X) more highly magnified. Zeiss, 16 mm. x 155.

V. Fig. 1.—Longitudinal section in middle of root (Frontispiece, 2) showing reticulated vessels filled with the bacteria and surrounding tissue free from infection. x 154. Fig. 2.—Longitudinal section from same level as Fig. 1, showing vessels filled with the Pseudomonas, and a cavity around the upper bundle. x 135.

VI. Fig. 1.—Cross section, middle of root, differentially stained, showing a single vessel packed with the bacteria. This may be compared with fig. 1, Pl. V, x 520. Fig. 2.—Cross section from same portion of the root differentially stained, showing a small bundle partly occupied by the Pseudomonas. The larger vessel contains only a rim of bacteria. The surrounding tissue is free from bacteria. x 460. Fig. 3.—Cross section, middle of root, differentially stained, showing vessels and non-lignified wood parenchyma occupied by the bacteria. In the middle portion the cells have begun to disorganize and a bacterial cavity is in process of formation. x 385. Figs. 4 and 5.—Bacteria separating cell walls. x 1000. Fig. 6.—P. cappodites. Smear preparation from a cabbage stem, stained with carbol fuchsin. x 1000.

VII. Figs. 1 and 2.—Cross sections, middle of root, differentially stained, showing small bundles very fully occupied by the Pseudomonas. Fig. 1 x 475. Fig. 2 x 470.

VIII. Fig. 1.—Cross section, middle of root, differentially stained, showing parenchyma cells with bacteria multiplying in their intercellular spaces. The cell cavities are free. x 1000. Fig. 2.—Cross section, middle of root, differentially stained, showing disorganization of a small bundle. x 1000.

IX. Figs. 1 and 2.—Cross sections, middle of root, differentially stained, showing formation of bacterial cavities. Zeiss apochromatic 3 mm. oil immersion objective 1:40 N. A. and compensating ocular No. 4. Cramer's slow isochromatic plates, Zettnow's color screen, with sunlight. x 1000.

X. Figs. 1 and 2.—Cross sections, middle of root, differentially stained, showing well developed, small cavities filled with the Pseudomonas and with remnants of the disorganized cells, the latter conspicuous only on the margins of the cavity. x 340.

XI. Figs. 1 and 2.—Cross sections, middle of root, differentially stained, showing margins of cavities with cell walls in all stages of solution. x 1000.

XII. Fig. 1.—Radial longitudinal section, middle of root, differentially stained, showing one large cavity and several small ones. Bark part of root at right-hand side. x 85. Fig. 2.—Detail from upper left-hand corner (X) of fig. 1. x 475.

XIII. Details from fig. 1, Pl. XII, showing various stages in the separation and solution of cell walls. Fig. 1 is from XII, 1, Y. Fig. 2 is from XII, 1, Z. x 475.
BROWN ROT OF THE TURNIP
PSEUDOMONAS CAMPESTRIS (PAMMEL) SMITH.
BROWN ROT OF THE TURNIP
PSEUDOMONAS CAMPESTRIS PAMMEL SMITH.
BROWN ROT OF THE TURNIP.

PSEUDOMONAS CAMPESTRIS PAMMEL SMITH
Plate IV.

BROWN ROT OF THE TURNIP.
PSEUDOMONAS CAMESTRIS PAMMELI SMITH.
BROWN ROT OF THE TURNIP.

PSEUDOMONAS CAMPESTRIS PAMMEL SMITH.
PSEUDOMONAS CAMPESTRIS PAMMEL
BUDDING THE PECAN.

BY

GEORGE W. OLIVER, Expert.

SEED AND PLANT INTRODUCTION AND DISTRIBUTION.

Issued December 9, 1902.
LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE.
BUREAU OF PLANT INDUSTRY.
OFFICE OF THE CHIEF.
Washington, D. C., October 15, 1902.

Sir: I have the honor to transmit herewith a paper by Mr. George W. Oliver, Expert in the Office of Seed and Plant Introduction and Distribution, on "Budding the Pecan." Owing to the increased interest in nut culture in this country Mr. Oliver's method of rapidly propagating the pecan by budding is worthy of careful attention, and I respectfully recommend that the paper be published as a bulletin of the regular series of this Bureau.

Respectfully,

B. T. GALLOWAY,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.
<table>
<thead>
<tr>
<th>CONTENTS.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulties encountered in pecan budding</td>
<td>9</td>
</tr>
<tr>
<td>Why the pecan should be budded</td>
<td>10</td>
</tr>
<tr>
<td>Raising seedling stocks</td>
<td>10</td>
</tr>
<tr>
<td>Selection of dormant buds</td>
<td>11</td>
</tr>
<tr>
<td>Location of the buds</td>
<td>12</td>
</tr>
<tr>
<td>Experiments with buds of the current season</td>
<td>13</td>
</tr>
<tr>
<td>An improved method of budding</td>
<td>13</td>
</tr>
<tr>
<td>Other methods of budding</td>
<td>14</td>
</tr>
<tr>
<td>Starting buds into growth</td>
<td>15</td>
</tr>
<tr>
<td>Transplanting budded trees</td>
<td>16</td>
</tr>
<tr>
<td>Description of plates</td>
<td>20</td>
</tr>
</tbody>
</table>
ILLUSTRATIONS.

Seedling pecans budded by new method. Frontispiece.

Plate I. Fig. 1.—Pecan branch, summer condition. Fig. 2.—Pecan branch, winter condition. 20

II. Fig. 1.—Pecan branch, fruiting condition. Fig. 2.—Seven-year-old branch of *Hicoria texinosa*. 20

III. Fig. 1.—Patch budding; method of removing section of bark from stock; bud prepared ready for inserting. Fig. 2.—Seedling pecan stock; preliminary incisions in bark; bud ready for inserting. Fig. 3.—Seedling pecan stock; bark raised ready for bud. 20

IV. Fig. 1.—Seedling pecan stock; bud in position ready to be tied. Fig. 2.—Budded seedling pecan; bud inserted and tied. Fig. 3.—Budded seedling pecan; method of wrapping with strip of waxed cloth. 20

V. Fig. 1.—Budded seedling pecan; method of covering with paper to prevent injury from sun. Fig. 2.—Triangular budding; seedling stock prepared ready for bud; bud ready to be inserted. 20

VI. Branch of pecan. 20

VII. Three-year-old budded pecan trees, recently transplanted. 20
BUDDING THE PECAN.

DIFFICULTIES ENCOUNTERED IN PECAN BUDDING.

The propagation of the pecan has hitherto been one of the principal drawbacks to the successful cultivation of this nut tree. According to the published experiences of growers who have given attention to propagation by budding and grafting, the percentage of successful unions in the total number of plants worked has been small. Although the young budded or grafted trees are sold at very high prices, the work is unremunerative from the nurseryman's point of view. Much of the work of pecan propagation has doubtless been along similar lines to those favorable to the propagation of well-understood subjects, such as the apple, peach, and other fruit trees. Consequently the pecan has earned the reputation of being difficult to work on stocks of the same or allied species. This is not to be wondered at, as mistakes are very easily made in the selection of working material, time of operating, etc. The writer is convinced, however, that if budding be performed as herein described the pecan will reward the careful operator with a high percentage of unions.

The principal trouble encountered in pecan budding is undoubtedly due to the selection of wrong material from the tree to be propagated. By the methods usually adopted a success not above the average was attained, and it is easy to understand why small trees budded from choice varieties can not be sold at less than from $1 to $3 each. By the use of a method which has been devised for budding the pecan and, the selection of 1-year-old buds the outlook is good for very successful propagation. It will be seen where some of the trouble lies if the budding of the peach is compared with that of the pecan. In the case of the former a shoot of the current year's growth will by the latter part of August give a very large number of buds which can be worked successfully. This is not the case with the pecan. True, a number of likely looking buds are formed on a shoot of the current season, but by the method of budding in use at present not many of the buds on a shoot are used. Two or three at the base are generally selected, but, as will be explained later, there is great danger of unsatisfactory results through using even the best of these buds.
WHY THE PECAN SHOULD BE BUDDED.

In the pecan region of the Southern States there are at least fifty named varieties, nearly all of which are well worthy of perpetuation on account of the large size and fine flavor of the nuts. These choice varieties of the pecan are as yet but little known, owing to the very small number of trees in cultivation. In the course of time, however, as they are more widely grown, they will become the most prized of all the nuts for domestic use, and it is probable that when the supply is large enough they will be preferred abroad to the best Persian walnuts. The nuts of the choicer varieties of pecan, owing to the supposed difficulty of bud propagation, are much in demand at fancy prices for the purpose of raising young plants. It has been ascertained, however, that seedlings from nuts of the choice varieties do not come true, resembling in this particular many of our popular fruit trees. Many of these seedling pecans bear nuts not much superior to the common wild forms. With the knowledge now acquired as to the liability of varieties to vary in their seedlings through the agency of cross fertilization, it would indeed be remarkable were the seedlings to produce nuts equal in size and flavor to those of the mother tree. The chance trees which bear large nuts are found wild in widely different parts of the South. The nuts from these trees are much above the average not only in point of size, but also on account of other desirable qualities. Being peculiarly situated, and as they cannot depend wholly upon their own pollen to aid in the reproduction from seed, there is nothing to prevent pollen from undesirable forms gaining access to the pistillate flowers, thus securing a reduction of the size or a decrease in the flavor of the nuts borne by the seedlings. After waiting several years for the seedling trees to bear, this naturally causes the grower a good deal of disappointment. So, necessarily, as with apples, peaches, and other fruits, the only way in which the choice varieties of the pecan can with certainty be perpetuated in a manner to permit of being handled by dealers, is by budding or grafting on seedling stocks.

RAISING SEEDLING STOCKS.

Up to the present time it has not been demonstrated that there is a better stock for the reception of buds or grafts of the pecan than seedling stocks of the same species. In raising pecan seedlings for stocks it is advisable to select seeds from trees at the northern limit of the pecan belt, because, while seedlings from that section will thrive throughout the belt, those from the extreme south can not be expected to prove as hardy and thrifty at the northern limit as those trees which are growing wild in that section.

The seed nuts should be secured as early as possible after they are ripe, so as to make certain of preventing loss through drying out.
Stratification should be begun late in the fall. For this purpose it is most convenient to use boxes, say, 3 feet long, 1 foot wide, and 3 inches deep. A mixture of sand and ashes in about equal proportions is a good medium in which to imbed the nuts. A layer of this material 1 inch thick should be placed in the bottom of a box, then a layer of pecans as close together as possible. It is not advisable to put more than a single layer in a box, because of the brittle nature of the root, the nuts being somewhat irregular in sprouting. Each box is then filled with the sand and ashes, and all the boxes used should be piled together to a convenient height. They should occupy a sheltered position out of doors, and be covered with a considerable thickness of straw, mats, or old sacking until the nuts show signs of germinating, which will usually occur toward the end of April. To give facilities for inserting the buds on the north side of the seedling stocks, the nuts are then planted in rows running east and west. The rows should be 3 feet apart and the nuts placed 5 inches apart in the row. It is not possible the first season to raise seedlings which are large enough to be used as stocks, but in order to secure a good, stout growth, so as to have them large enough for working the second season, the soil should be deeply worked with a plow, rolled and, when necessary, harrowed several times until it is well pulverized. The remaining part of the work must be done by hand.

The position to be occupied by the seedlings is marked by the aid of a stick with a notch cut in one end. This is run along the line, leaving a well-defined mark in the soil. With a spade a trench is dug about 5 inches deep. In the bottom of the trench about 2 inches of equal parts of leaf soil and sand are placed. The nuts are carefully laid on this. In planting those which have the root developed to a length of more than 1 inch, a hole is made in the soil with the fingers and the root placed in it. If the soil be dry, water is given. Fine soil is then raked level over the nuts and slightly firm with the end of the rake. The operation is finished by a mulch of 1 inch half-rotted leaves, cut cornstalks, or other material. This prevents baking of the soil after rains and supplies a surface which is easily pierced by the sprouts. The nuts thus treated should germinate very evenly, and at the close of the first season should show a stem above ground of about 12 inches in length. Many of the seedlings will attain a thickness of three-eighths of an inch close to the ground. The taproot will average fully 2 1/4 feet in length and will be supplied with quite a number of very small fibrous roots. By the middle of the following June the seedlings will average over half an inch in diameter near the ground, making excellent stocks for budding.

**SELECTION OF DORMANT BUDS.**

After a series of trials with buds of the current season's growth and those of the preceding season, none but those which were formed
during the season preceding the operation of budding are recommended for use. The dormant buds (Pl. I, fig. 1, A) during the month of June are ready to burst into active growth when given the slightest encouragement. Moreover, they can be very easily removed from the bud stick, together with a section of thick, solid bark. The bark on the old wood can be handled without being injured in any way, and it is in every particular splendidly adapted for successful work. After the union has taken place and the stocks are cut back, the bud will give a stronger growth and attain a greater length than growths from the current season's buds. In using buds from the current season's wood (Pl. I, fig. 1, B) many difficulties will be encountered, and the results will be found disappointing. Until the season is pretty well advanced the current year's bark is very thin and more or less succulent, and it can not be removed from the wood without being bruised. Sometimes, even when the greatest care is exercised by the operator, it will split lengthwise and be rendered useless. Again, especially up to the latter part of July, the cuticle is very apt to peel, and where it does stay on it is almost certain to be bruised in the operation of tying. Another serious objection is the presence of the leaf stalk. This, shortly after the bud is inserted, will shrivel up and fall, or it can easily be detached; but the scar left, which in most cases is a large one, is, it is thought, the channel through which a large part of the sap of the bark is lost before it has had an opportunity to unite with the cambium of the stock.

**LOCATION OF THE BUDS.**

It is important that the position which the dormant buds occupy on the branches be accurately understood, so that the proper ones may be selected for the work of budding. They are to be found on the branches made the year preceding that in which it is desired to insert the buds. The pecan trees which have been examined in the vicinity of Washington show exceedingly few growths from terminal buds. The growth of a season starts from one of the large axillary buds near the apex of the preceding year's growth (Pl. I, fig. 2, A). Two or more of these buds may produce growths, but commonly only one. In fruiting branches the nut cluster takes the place of the terminal bud on the young wood, as seen in Pl. II, fig. 1. The strong shoots from these axillary buds when 1 year old are the ones which give good material for budding. Each bud will be found immediately above a leaf scar of the preceding season (Pl. I, fig. 1, A). Those buds which are nearest the base of the shoot are the smallest and firmest; consequently they are the best fitted for the work. Regarding the period during which buds retain their power of bursting into active growth, Pl. II, fig. 2, shows a 7-year-old branch of an allied species of hickory (**Carya laciniata**) with three small growths from
dormant buds made during the present season, together with a bud quite dormant and evidently able to persist for some time. In the selection of bud wood it is preferable to cut the branches from the tree to be propagated in the early part of the day, choosing shoots as large in diameter as possible and those which show the greatest number of short, plump buds. Immediately on severing the branches from the tree the growth of the current season is severed and discarded, and the 1-year-old bud sticks are wrapped in dampened newspapers. If necessary, they can in this manner be kept for several days without danger of drying out.

**EXPERIMENTS WITH BUDS OF THE CURRENT SEASON.**

In a recent series of budding experiments with the current season’s buds the work began June 6. The buds selected were principally the small, plump ones found at the base of the soft wood (Pl. I, fig. 1, B). At that date the buds were slightly immature; consequently, when a large section of bark was removed from the wood it showed signs of injury. The cuticle peeled easily, and even with great care in removing buds with sections of bark attached and in placing and tying them in position, the percentage of unions was small. Up to the end of July separate lots of the current year’s buds were worked at intervals of one week, the percentage of unions increasing slightly with each week. Patch budding (Pl. III, fig. 1), which is merely a modification of annular budding, was the method used. Taking everything into consideration, the results obtained could by no means be considered satisfactory.

**AN IMPROVED METHOD OF BUDDING.**

An improved method, which has been demonstrated to be a perfect way in which to bud the pecan and one by the use of which there are very few failures, is as follows: For the reception of the bud make two transverse cuts in the bark of the seedling stock (Pl. III, fig. 2) a few inches above the ground line, these two cuts, about 1 inch apart, to be connected by a longitudinal incision. The bark at each side of the longitudinal cut is then raised far enough (Pl. III, fig. 3) to admit of the insertion of the section of bark on which the bud is situated (Pl. III, fig. 2, A). The rectangular section of bark when prepared for insertion must be of exactly the same length as the cut in the stock. It is taken from the stick of buds by making two transverse cuts through the bark at equal distances from the bud. Two longitudinal cuts are then made through the bark, leaving the bud in the center of the patch, which should be a little over 1 inch long and five-eighths of an inch wide. The patch must be raised carefully from the bud stick to guard against breaking and with as little bending during the operation as possible. When the operator finds that he does not
succeed at the first trial, it will be advisable to practice for a time on wood which is of no value. The stick of buds should be grasped firmly in the left hand, with the knife held by the fingers of the right, the thumb resting on the bud stick. Insert the point of the knife at one end of one of the longitudinal cuts, pressing the blade toward the thumb; this pressure will start the bark. Next insert the end of the handle of the knife, gradually removing the section. The patch is prepared for insertion by first cutting the two ends as straight as possible, using a very sharp knife. The outer bark at the sides (Pl. III, fig. 2, A) is then shaved off, so that the edges will make a perfect fit when under the bark of the stock (Pl. IV, fig. 1). When the bud is securely in place, the two wings of bark on the stock are bound firmly over the bud section with raffia (Pl. IV, fig. 2), and, as a preventive against the admission of water during the process of uniting, a little soft grafting wax may be smeared across the upper transverse cut and the whole wrapped with a narrow strip of waxed cloth (Pl. IV, fig. 3). The wrapping should be started at the bottom, each wrap being half covered by the succeeding one; this will effectually keep out moisture during wet weather. As a protection against the heat of the sun, strips of paper, 8 inches long by 6 inches wide, should be tied around the stem of the stock an inch or two above the bud, but covering it (Pl. V, fig. 1), allowing the bottom part to remain open. After the sixth day the paper covering should be removed, and after the tenth day the waxed cloth may be taken off. By the fifteenth day the buds will have united sufficiently to allow of the removal of the raffia. This method of budding will be found to give an exceedingly satisfactory union. Experience has shown that with carefully selected buds from 1-year-old wood and healthy, vigorous growing seedling stocks, every section of bark will unite.

OTHER METHODS OF BUDDING.

Sometimes, when the seedling stocks are small and the size of the section of bark necessary for the union will more than cover half of the circumference of the stem of the stock, a quick growth on the part of the stock will produce a swelling immediately above the upper transverse cut in the bark. This can be averted by the use of a triangular patch bud (Pl. V, fig. 2), with one of the angles pointing upward. In using this method care must be taken that the three sides of the bud section should exactly fit the sides of the space prepared for them. It will be found advisable to smear a small quantity of soft grafting wax over the cut parts after the bud is in position and before tying with raffia. This makes an exceedingly neat union and is best used with small buds. Large ones need a larger section of bark attached.

In patch budding (Pl. III, fig. 1) a rectangular piece of bark, similar in size to that given in Pl. III, fig. 2, is taken from the bud stick. A
corresponding piece is removed from the stock and the section from
the bud stick carefully fitted in its place. It is then tied with a strand
of dampened raffia, but this is used only to keep the bud firmly in
place; the top and bottom of the section are left uncovered, because
there is a danger of the raffia injuring the cut ends, which are held
tightly in place by narrow strips of waxed cloth covering all but the
bud. A wrapping of paper is then given, as already described. The
principal objection to this method of budding is that the sides of the
bark are apt to rise somewhat during the growth of the stock. This,
while in no way injuring or retarding the growth of the bud, does not
have a very neat appearance for some time after the union is effected
and may have a tendency to weaken the point of union, besides giving
opportunities for harboring noxious insects.

STARTING BUDS INTO GROWTH.

It is desirable that the buds be started into growth as soon as possible
after it has been ascertained that the union has taken place. Buds
which are united to stocks having a large section of bark attached are
liable to have more or less of the bark decay during the winter months.
This occurs principally with young buds, especially when they are
worked on 1-year-old wood. This would seem to be common to all
the species of the hickory family, but where 1-year-old buds are used
the danger is lessened considerably. However, in the latter case they
lose their vigor in proportion to the time they remain on the stock
without being encouraged to break.

In order to force the bud into growth it is necessary that the top of
the seedling stock be removed, leaving only one or two healthy leaves
at the base of the present season's growth. In a few days the buds in
the axils of these leaves will push out, and they should be removed as
soon as they can be handled, and on down the stem the small dormant
buds formed in the axils of the leaves of the preceding season will
burst into active growth and must be rubbed off at once. By this
time the scion bud will have swollen considerably, and in a month's
time it will have developed several full-sized leaves. With buds
inserted up to the end of June there is abundant time for the develop-
ment of a good-sized shoot. The terminal buds of these shoots
reach maturity in the majority of cases, but this is of little consequence,
as one of the lateral buds will push out strongly the following spring.

The practice of tying the growth of the scion to the top of the stock
is a good one; it not only saves the soft growth from being whipped
about by the wind, but it also secures a close, upright growth. At
the beginning of the second season all of that part of the stock which
is above the union should be carefully removed, not with a pair of
pruning shears, but with a sharp knife, so as to leave a cleanly cut
surface, with the bark uninjured. The cut surface should be covered
with melted grafting wax to prevent decay.
TRANSPANTING BUDDED TREES.

The pecan is usually regarded as a difficult subject to deal with in transplanting. A large percentage of the trees die back after being placed in their permanent positions from nursery rows. However, if certain precautions be observed it will be found that there is no ground for the supposed difficulty, as the pecan will withstand the ordeal of transplanting in a young state quite as well as any other forest tree. In transplanting the pecan its requirements must be carefully considered. In a young state it is a very deep-rooting subject, and any attempt to change its nature by coaxing the roots to grow near the surface of the soil will end disastrously.

Pl. VII shows part of a row of 3-year-old budded trees, which were planted during the spring of 1902, after being out of the ground for several weeks. In this row there are about 40 plants, and only one of them shows signs of poor health. The work of removing these trees from nursery rows was evidently carried out with no more care than is ordinarily bestowed on young forest trees, except that a fairly successful attempt was made to save as many roots as possible. A few of the large roots were mutilated, and during a journey of a week or more from the nurseries the roots became dry. The mutilated roots were pruned and the cut surfaces covered with melted grafting wax to prevent decay. They have been treated since coming to the nursery of the U. S. Department of Agriculture as described below, and the result is a lot of young trees with new growths in every way satisfactory.

To insure the growth of the trees after transplanting, it is very necessary to avoid excessive trimming of the branches and roots. There must be at least one healthy undisturbed shoot of the previous season left on the plant untouched, because the large, plump axillary buds near the tip of the shoot will come into leaf with greater certainty and more quickly than will older buds on cut-back growths. Especially is this the case after the tree has undergone removal, involving the tremendous disturbance of the root system, which almost completely robs the plant for the time being of its water supply. Seedlings in nursery rows with undisturbed roots, when trimmed down to the small lateral buds on 1 or 2-year-old wood, will start as readily, if not as strongly, as the buds near the end of the most recent growth. It must be remembered that the terminal buds of the pecan very seldom grow. They sometimes do so in seedlings, but very seldom after a certain age. This is shown in Pl. I, fig. 2, Pl. II, fig. 1, and Pl. VI, which represent the growths made during three seasons. In Pl. I, fig. 2, the large, plump bud near the terminal contains the flowering branch. The branch shown in Pl. II, fig. 1, is developed from this bud. Pl. VI shows a still further development. The small, dead stump between the two living shoots represents the position occupied
by the nuts the preceding year, while the two shoots are from two of the large buds near the nut. (Pl. II, fig. 1.)

In transplanting young trees, especially those which are to a certain extent weakened by the operation of budding, it is impossible to save all of the lateral roots during the operation of digging from the seed rows. It is, however, very desirable that as few as possible be sacrificed. Very careful lifting will pay for the extra labor. In seedling trees the taproot is usually severed much too near the collar and at too early a stage. It must be allowed to grow the first and second seasons if the seedlings are to be budded, because when removed at the end of the first season or the beginning of the second the weak growth will render it impossible to perform any budding operations during that year. Therefore, it is not till the third year that the taproot can be interfered with, but it is well not to risk touching it until the growth of that season is completed, for the reason that although the shoot made from the inserted bud makes considerable growth the same season it is put on, it will make very large growth the season following. The budded seedlings will then bear removal. They may have a small part of the taproot removed and be either planted permanently or in nursery rows. The budded seedlings of the present day, if the variety be a good one, are retailed at about $2.50 an piece. When the tree brings that amount—and the supply is understood to be far short of the demand—it should be furnished with good roots. If it is worth that sum to the purchaser, it is certainly entitled to a little further expenditure of time and care in the preparation of suitable conditions under which to grow. The retention of roots at least 2½ feet below the surface of the soil is desirable. If the ground in which the young trees are to be placed is not composed of good soil to that depth, it should be supplied. A good start the first year after planting means everything to the future tree; a bad start will, in the majority of cases, mean a sickly tree for a long time and an unprofitable investment in the end. With the roots deep in good, light, loamy soil the tree is to a certain extent independent of moisture from the surface. When growth begins in earnest, the roots will grow in the direction of the food supply. The severance of a large portion of the taproot saves a good deal of labor in digging and planting, but it means a complete defeat of nature's method in supplying the wants of the tree. Anyone who tries the two methods and compares the results will be convinced in one season in favor of large roots.

As a further precaution, the roots should be plunged in liquid mud the moment they are free from the soil and never be exposed for a minute longer than is necessary, as they too often are, to the drying influence of the air. After taking from the mud, the roots should be
wrapped in damp sacking, moss, or any other material which will hold moisture, and kept in this condition until they are about to be planted. They should then be again plunged in liquid mud, and while this is hanging to the roots they should be planted. When the soil has been well firmed about the roots of the tree and the hole is about two-thirds filled with soil, the remaining space should be filled with water. When this has disappeared, fill in the rest of the soil. A mulch of short grass, stable litter, or half-decayed leaves left on during the summer will supply favorable conditions. If these little details are faithfully attended to there is little danger that unsuccessful results will follow. A little extra expense is involved at first, but careless handling will be far more costly in the end.
DESCRIPTION OF PLATES.

Frontispiece. Part of row of seedlings budded by new method on June 26, 1902; photographed August 15, 1902.

Plate I. Fig. 1.—Branch of pecan, showing growth of two seasons, with old and new buds. A, 1-year-old dormant buds; B, current season’s buds; C, small plump buds at base of growth, from which the leaves fall early. Fig. 2.—Twig of pecan; top part of season’s growth, showing buds during winter; A, flower bud; B, terminal bud.

II. Fig. 1.—Fruiting branch of pecan, developed from bud shown in Plate I, fig. 1. A, buds from which the growth of the following season is developed, the buds, B, remaining dormant. Fig. 2.—Seven-year-old branch of Hicoria luciniosa. A, growth made from buds which stayed dormant during seven years; B, dormant bud in good condition.

III. Fig. 1.—Patch budding. Two-year-old seedling pecan with piece of bark removed. A, bud with section of bark attached, ready to be fitted on stock. Fig. 2.—Seedling pecan stock, showing incisions made in the bark with a knife previous to lifting the bark; A, bud with section of bark which has the sides shaved down, ready to be inserted under the bark of the stock. Fig. 3.—Seedling pecan stock, with bark raised and ready for bud to be inserted.

IV. Fig. 1.—Seedling pecan stock, showing bud in position ready to be tied. Fig. 2.—Budded seedling pecan, the wings of bark on the stock almost covering the bud section. Both are held securely in position while the union is being accomplished. Fig. 3.—Budded seedling pecan, showing the method by which the narrow strip of waxed cloth should be applied.

V. Fig. 1.—Seedling pecan budded, showing how the paper covering should be fastened for protection from sun. Fig. 2.—Triangular budding. Seedling pecan, with triangular section of bark removed: A, bud of variety to be propagated ready to insert in stock.

VI. Branch of pecan, showing shoots made from buds near the base of the nut cluster, as seen in Plate II, fig. 1, A; A, position occupied by nut cluster during preceding year.

VII. Three-year-old budded trees transplanted during March, 1902; photographed August 15, 1902.
Fig. 1.—Pecan Branch—Summer Condition.

Fig. 2.—Pecan Branch—Winter Condition.
Fig. 1.—Pecan Branch—Fruiting Condition.

Fig. 2.—Seven-year-old Branch of Hicoria laciniosa.
Fig. 1.—Patch Budding. Bud Ready for Insertion.

Fig. 2.—Seedling Pecan Stock. Preliminary Incisions in Bark.

Fig. 3.—Seedling Pecan Stock. Bark Raised Ready for Bud.
Fig. 1.—Seedling Pecan Stock. Bud Inserted Ready to be Tied.

Fig. 2.—Budded Seedling Pecan. Bud Inserted and Tied.

Fig. 3.—Budded Seedling Pecan. Bud Wrapped with Waxed Cloth.
Fig. 1.—Budded Seedling Pecan, Covered with Paper

Fig. 2.—Triangular Budding. Bud Ready for Insertion
Branch of Pecan, Showing Shoots from Buds near Nut Cluster of Previous Season.
TWO-YEAR-OLD BUDDED PEACAN TREES RECENTLY TRANSPLANTED