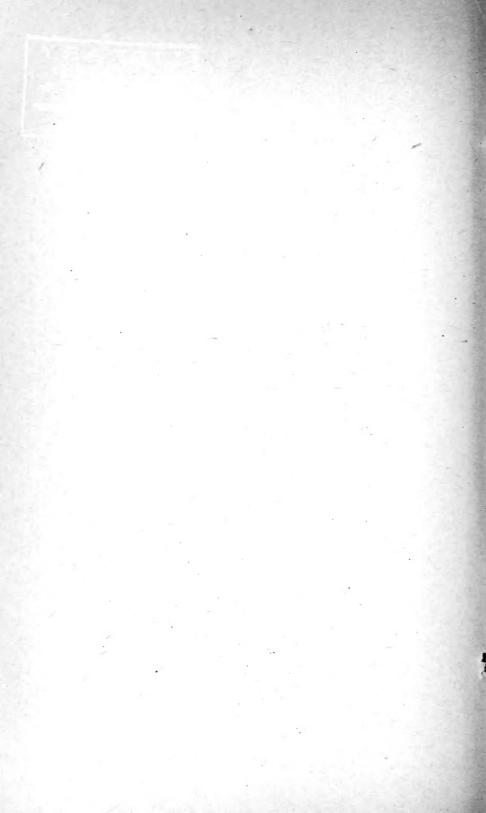




Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



UNITED STATES DEPARTMENT OF AGRICULTURE BULLETIN No. 1021 - 001

Contribution from the Bureau of Plant Industry WM. A. TAYLOR, Chief

Washington, D. C.

PROFESSIONAL PAPER

April 17, 1922

GROUP CLASSIFICATION AND VARIETAL DESCRIPTIONS OF AMERICAN VARIETIES OF SWEET POTATOES

By

H. C. THOMPSON, formerly Horticulturist, and JAMES H. BEATTIE, Horticulturist, Office of Horticultural and Pomological Investigations

CONTENTS

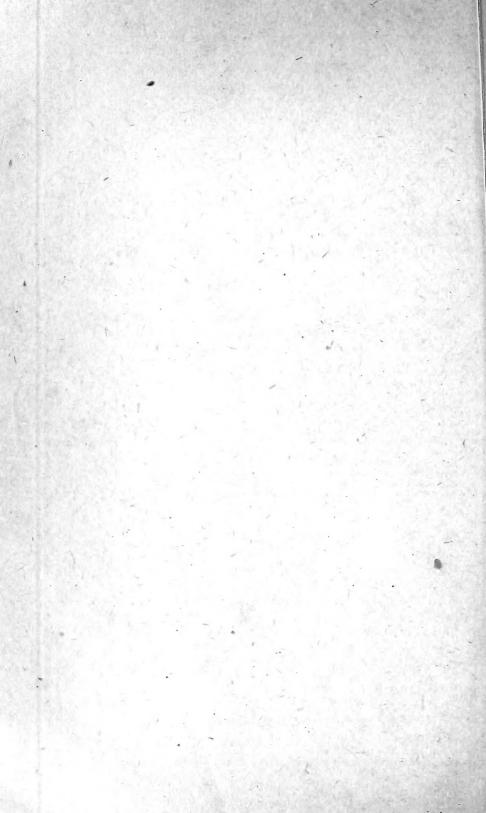
Page	3
1	

Importance of Varietal Class	sif	ic	at	io	n	of	
Sweet Potatoes		•					
Early Attempts at Classificat	io	n					
Proposed System of Classific	at	io	n				
Key to the Groups							
Descriptions of the Groups							

	Page
List of Varieties Included in the Key .	. 11
Descriptions of Varieties	11
Check List of Names Used in Sweet-	
Potato Literature	18
Bibliography of Sweet-Potato Litera-	
ture	26



WASHINGTON GOVERNMENT PRINTING OFFICE







BULLETIN No. 1021

Contribution from the Bureau of Plant Industry WM. A. TAYLOR, Chief.

Washington, D. C.

PROFESSIONAL PAPER

April 17, 1922

GROUP CLASSIFICATION AND VARIETAL DE-SCRIPTIONS OF AMERICAN VARIETIES OF SWEET POTATOES.¹

By H. C. THOMPSON, formerly Horticulturist, and JAMES H. BEATTIE, Horticulturist, Office of Horticultural and Pomological Investigations.

CONTENTS.

Page.		Page.
0	Description of the groups-Contd.	
1	Southern Queen group	9
2	Pumpkin group	9
4	Jersey group	' 10
6	List of varieties included in the key_	11
6	Descriptions of varieties	11
6	Check list of names used in sweet-	
7	potato literature	18
8	Bibliography of sweet-potato litera-	
	ture	26
	1 2 4 6 6 6 7 8 8 8	Description of the groups—Contd. 1 Southern Queen group 2 Pumpkin group 4 Jersey group 6 List of varieties included in the key 6 Descriptions of varieties 6 Check list of names used in sweet 7 potato literature 8 Bibliography of sweet-potato litera

IMPORTANCE OF VARIETAL CLASSIFICATION OF SWEET POTATOES.

To those familiar with the present state of sweet-potato nomenclature it is apparent that there is need for some simple system of classification by which varieties may be identified well enough to place them in the groups to which they belong. The need for such a classification is clearly shown by the large number of new names that each year are given to old varieties. The need is also readily

71638°-22-1

¹ Credit for the description of many of the varieties of sweet potatoes and for the working out of the system of classification contained in this bulletin is due F. J. Tyler, formerly assistant in botany of the Bureau of Plant Industry.

The main portion of the work was done by Mr. Tyler between 1902 and 1906; the addition of a number of important varieties not studied by Mr. Tyler and further work on all the varieties has necessitated changes in the key and in some of the descriptions.

During the progress of these investigations considerable work has been done by W. R. Beattie, horticulturist; Chester J. Hunn, assistant horticulturist; and H. M. Conolly, formerly assistant horticulturist, Office of Horticultural and Pomological Investigations, Bureau of Plant Industry.

seen from a study of the literature on sweet potatoes. There being no recognized system of classification, the investigator uses a local name or the name under which the sweet potato was received. In either case the name may be entirely misleading or may have no significance.

While several hundred names are given to varieties of sweet potatoes grown in the United States, there are not over 40 true varieties. Not more than 10 of these varieties are of commercial importance, and 4 of them constitute the bulk of the commercial crop. Some of the important varieties are known under many different names. The Southern Queen, for example, is known under at least 20 different names, although Southern Queen and Hayman are by far the most common. Probably 90 per cent of the growers of this variety know it under one of the two names mentioned. Even such a well-known variety as Yellow Jersey is known under at least 10 names.

Giving new names to old varieties is very common, but is very confusing. In many cases the giving of a new name to an old variety is done because the true name is not known, but in other cases the new name is given for the purpose of deception. When a grower receives a sweet potato which is not known to him, he should make every effort to learn the correct name and not give it a name of his own choosing. There is certainly no excuse for renaming such wellknown varieties as Southern Queen and Yellow Jersey, but it is the best-known varieties that have the greatest number of names.

To set forth a simple system of classification of sweet-potato varieties that will be of help to investigators, teachers, and growers is the purpose of this bulletin.

EARLY ATTEMPTS AT CLASSIFICATION.

The earliest important attempt at classifying the varieties of sweet potatoes was made by R. H. Price(55),¹ of the Texas Agricultural Experiment Station. Under this system sweet potatoes are classified into three groups based on the shape of the leaves, as follows:

- (1) Varieties with entire or round foliage.
- (2) Varieties with shouldered foliage.
- (3) Varieties with deeply cut or lobed foliage.

After classifying sweet potatoes into the three groups by the typical shape of the leaves, each variety is described separately, but as no key is given except that referring to the shape of the leaves, it is not possible to determine a variety if the name is doubtful or unknown. The procedure to follow under this system is first to deter-

2

¹The serial numbers in parentheses refer to the "Bibliography of sweet-potato literature" at the end of this bulletin.

mine to which of the three groups a given specimen belongs and then to read the descriptions of varieties until one is found which fits the specimen. This is a tedious and cumbersome method, although great credit is due the originator of this system, for it introduced some order into the previous chaotic condition. It is not possible, however, to identify many varieties without taking into consideration many points other than the shape of the foliage. The description given to the varieties is not sufficient to identify most varieties now grown.

Another classification of sweet-potato varieties that has been published is the one worked out by Groth (26). In this system the following factors are considered in making the key:

- A. Shape of leaf.
 - (1) Cut.
 - (2) Round.
 - (3) Long.
 - (4) Broad.
 - (5) Mixed (round and lobed).
- B. Size of leaf.
 - (1) Small (less than 4 inches across).
 - (2) Large (more than 4 inches across).
- C. Length of stem.
 - (1) Long (more than 4 feet long).
 - (2) Short (less than 4 feet long).
- D. Color of stem.
 - (1) Green (with or without brownish areas).
 - (2) Green (with purple around the axils of the leaves).
 - (3) Greenish brown to purple.
 - (4) Purple.
- E. Size of stem.
 - (1) Thin (less than one-eighth of an inch in diameter).
 - (2) Thick (more than one-eighth of an inch in diameter, often three-sixteenths or more).
- F. Presence or absence of star.
 - (1) Star present.
 - (2) Star absent.

- G. Color of lower surface of veins.
 - (1) Vein purple.
 - (2) Midrib pinkish in some old leaves.
 - (3) Purple spot at base of midrib.
 - (4) Veins all green.
- H. Arrangement of hair on the upper surface of the leaf, if any.
 - (1) Hair all over.
 - (2) Chiefly on tips and along veins.
 - (3) Absent.
- *I*. Outside color of the roots.
 - (1) White.
 - (2) Yellow, golden, or bronze.
 - (3) Yellow, red, or pinkish.
 - (4) Red or purple.
- J. Color of flesh of the roots.
 - (1) White.
 - (2) Cream colored or yellowish white.
 - (3) Pinkish white or pinkish yellow.
 - (4) Pinkish orange.
 - (5) Marked with purple.
- K. Distinctness of wood elements in the root.
 - (1) Distinct.
 - (2) Blurred.
 - (3) Not visible.

While most of these characteristics are very important, some of them vary so much under different environmental conditions that their use in a key is of doubtful value. The size of the leaf and size and length of the stem vary so much under different soil and climatic conditions that measurements made under one set of conditions do not fit under different conditions. It is well known that the length of vine of any variety is greater in the South than in the North. The length and size of the vine, as well as the size of the leaf, are greater on heavy soils than on light sandy soils. In the description of the Nancy Hall variety the stem is classed as short (under 4 feet long), while in practically every region where this variety is grown to any great extent the stem grows to be more than 4 feet in length. In the vicinity of Washington, D. C., on a sandy-loam soil the stems grow 4 to 8 feet long. The vine of the Shanghai variety is also classed as short, but under the conditions mentioned in connection with the Nancy Hall it grows to be 6 to 9 feet in length. The stems of the Ticotea and Florida varieties are also classed as short, while under fairly favorable conditions they grow to a length of 6 to 9 or 10 feet. The other characters used in the key, with the possible exception of the "Arrangement of hair on the upper surface of the leaf, if any," and "Distinctness of wood elements in the root," are very important and reliable. All characters should be considered in connection with the mature plant, as many do not develop on new growth and some disappear as the plant nears maturity. The shape of the leaves on new growth is often very different from the shape of fully developed leaves. The surface of young leaves may be covered with hairs, while older leaves may be entirely smooth. The use of letters and numbers rather than the terms for which they stand makes the key rather awkward.

Another attempt at classification of sweet-potato varieties is given in Bulletin 33, "Estacion Experimental Agronomica," Santiago de las Vegas, Cuba, entitled "Las Variedades Cubanas de Boniato." This work deals to a certain degree with American varieties, much of the material having been obtained in this country. In this system of classification four groups—white, yellow, purple, and reddish are made, and these are further divided according to the color of the stems, leaves, and veins on the leaves. This system of classification is not sound, as the color of the roots varies greatly with difference in soil and climatic conditions.

PROPOSED SYSTEM OF CLASSIFICATION.

The work on which the proposed system of classification is based was begun by the Bureau of Plant Industry in 1901 and has been continued up to the present time. During the season of 1901 the varietal work was carried on at College Park, Md., in cooperation with the Maryland Agricultural Experiment Station. At the end of the season, the work and the varietal collection were transferred to the Bureau of Plant Industry. From 1902 to 1920 the collection has been grown every year on the Potomac Flats, near Washington. The

4

soil selected has ranged from sand to a fine sandy loam. Most of the studies have been made from the crops grown at Washington, but the varieties have also been grown at Baton Rouge, La., Florence, S. C., Norfolk, Va., Columbus, Ohio, and Watson, N. Y., for the purpose of studying their behavior under different environments. The varietal descriptions were checked with the collections grown at all of the points mentioned.

During the years the work has been in progress it has been the aim to test all varieties that are grown in the United States. New varieties have been added from time to time, and many so-called new varieties have been grown, only to find that they were old varieties given new names. It is believed that practically all varieties now grown in the United States are included in the present collection. All the important sweet-potato growing regions have been visited by those engaged in the work, and wherever a variety was found which was not definitely known it was added to the collection for study and comparison with the varieties being grown in the test.

Before attempting to classify the varieties of sweet potatoes, careful descriptions were made of all varieties. Those showing a marked similarity were grouped together in the field for further comparison. It has been found that all the varieties that have been grown can be placed in eight well-defined groups, each group being distinct and easily recognized. By means of a simple key, the group to which any variety belongs can be determined very easily and quickly. Each group has been given the name of the most widely known variety or the variety that is most typical of that group. Three of the large groups have been divided into sections to simplify the procedure of identification. It is believed that this grouping of varieties makes identification comparatively easy. After determining the group to which a variety belongs by means of the key the group description should be read to determine the section and the variety. To make sure of the correctness of identification, the descriptions of all varieties in the group should be read.

As indicated in previous pages, no one character can be depended on to establish the identity of any sweet-potato variety; but rather a combination of characters, such as the length and character of the vines and the size, shape, and color of the roots. While typical specimens of such varieties as the Porto Rico, Big-Stem Jersey, Nancy Hall, Triumph, Yellow Strasburg, Southern Queen, and Pumpkin may be described as fusiform to globular, long fusiform, fusiform, medium to long cylindrical, globular, or ovoid in shape, an inspection of Plates I, II, and III, which show the variation in the size and the shape of several specimens of each of these varieties, will show how great the variations in size and shape within the variety really are. In giving the names of the varieties it would be desirable to consider priority of nomenclature, but it is not possible to establish priority. In most cases it has not been possible to determine when, where, and by whom a name was given; therefore it has been deemed advisable to select the name that is in most general use. It is realized that growers in some sections will feel that some of the names used in this bulletin are not the correct ones. Growers in Viriginia may insist that the name Hayman should have been used instead of Southern Queen, but the latter name is more common in all other sweet-potato growing regions. The name Nansemond is more common than Yellow Jersey in Virginia, but the latter name is much more common in all other regions where this variety is grown. The same may be said of all other names selected to designate the important varieties. Some varieties are grown to such a limited extent that there is not much chance for confusion.

KEY TO THE GROUPS.

I. Leaves deeply lobed or parted-1 and 2.

(1) Leaves with purple stain at the base of the leaf blades.

TICOTEA, page 6.

(2) Leaves without purple stain at the base of the leaf blades.

Belmont, page 7.

II. Leaves not deeply lobed or parted-1 and 2.

- (1) Leaves with purple stain at the base of the leaf blades A and B.
 - (A) Stems purple or greenish with decided tinge____SPANISH, page 8.
 - (B) Stems—a and b.
 - (a) Leaves entirely to slightly shouldered; roots white.

S'HANGHAI, page 8.

(b) Leaves toothed with 6 to 10 low marginal teeth, or entire; roots salmon or yellow tinged with salmon.

FLORIDA, page 9.

(2) Leaves without purple stain at the base of the blade or with very faint stain—A and B.

(A) Stems purple_____SOUTHEEN QUEEN, page 9.
(B) Stems green—a and b.

- (a) Stems medium to large in size; roots fusiform, yellow tinged with salmon, with light yellow veins_PUMPKIN, page 9.
 - (b) Stem slender; roots russet yellow or red, ovoid to fusi-

form_____JERSEY, page 10.

DESCRIPTIONS OF THE GROUPS.

In the descriptions of the groups an effort has been made to give the characteristics of the vines and roots of the entire group and not that of any particular variety; in fact, the group description has been made from the descriptions of the varieties belonging to the group.

TICOTEA GROUP.

Vines long. 6 to 12 feet, or short and stocky; stems green in color or with a tinge of purple at the nodes, nearly smooth; leaves very angular in outline, 5 to 7 lobed; blade hairy only on the veins of the upper surface, green except

6

for a deep purple stain at the base of the blade and the summit of the petiole; the latter otherwise green, hairy, or nearly smooth. Roots white, smooth, without veins or ribs, varying from fusiform to cylindrical in shape, of medium to large size; flesh white, but dull or grayish white or light yellow when baked, only slightly sweet, quite dry and mealy, and firm in texture. Flavor not pronounced.

The Ticotea group contains only two varieties, Ticotea and Koali, and is not important.

BELMONT GROUP.

Vines medium to long, 4 to 12 feet, or very short, 1 to $3\frac{1}{2}$ feet; stems slender or thick and coarse, green, hairy, or smooth to nearly smooth; leaves deeply 5 to 7 lobed, upper surface of blade hairy to nearly smooth, lower surface smooth or slightly hairy along the veins, green in color; petiole also green, hairy, or smooth. Roots light salmon, yellow tinged with salmon, russet yellow, or rose to purple; veins often prominent and always lighter in color than the rest of the surface; the roots usually fusiform, smooth except for the veins, of average size; medium to late in season; flesh white, yellow, light salmon to dark salmon in color, but light yellow, dark yellow, or yellow tinged with salmon when baked, sweet to very sweet, and so moist that sirup can be squeezed out with slight pressure; flavor somewhat squashlike; texture soft or at times rather coarse and stringy.

The Belmont group may be divided into two sections, as follows.

Belmont section: Vines long and creeping.

Bunch section: Vines very short and bushy.

The stems of the varieties of the Belmont section are long and slender, from 6 to 12 feet in length; or medium in length, 4 to 8 feet, with internodes 2 to 4 inches long. The leaves are rather small, with narrow lobes, except that those of the Eclipse Sugar "yam"¹ and Vineless Pumpkin "yam" are larger, with broad ovoid lobes.

The following varieties belong to the Belmont section:

- Belmont. (This variety or very slight variations of it is known under the names Georgia and Dunton's Improved.)
- (2) Eclipse Sugar "yam."
- (3) Vineless Pumpkin "yam." (Pl. IV, figs. 1 and 2.)
- (4) Old Time "yam."
- (5) Yellow "yam."
- (6) White Sealy.

The stems of the Bunch section are thick and coarse and from 1 to $3\frac{1}{2}$ feet long, with internodes one-third to one-half an inch long, the leaves being greatly crowded in consequence, and it follows that the total leaf surface of a Bunch vine 18 inches long is nearly or quite equal to that of a Belmont vine 11 to 12 feet in length. The leaves resemble those of the Eclipse variety in being large, with broad ovoid lobes.

The following varieties belong to the Bunch section:

- (1) Gros Grandia.
- (2) Bunch Candy "yam." (Also called Bunch "yam," Vineless, Prolific, and Gold Coin.) (Pl. IV, fig. 3.)

¹ The term "yam" used in this key to designate certain varieties of sweet potatoes is used because it is a varietal designation and not because it refers to a yam. The term "yam" when applied to sweet potatoes is a misnomer, as the true yams belong to an entirely different genus, Dioscorea. Yams are grown to a limited extent only in the more southerly portions of the South, principally Florida, and are of little commercial importance.

SPANISH GROUP.

Vines medium in length, 4 to 10 feet or 6 to 15 feet long (vines of Red Brazil and Creola sometimes grow to be 20 feet long), or short and bushy, 2 to 3 feet, coarse, dark purple in color or green with purple tinge, hairy (especially at the nodes) or smooth; leaves deeply shouldered to entire, green except for a deep purple stain at the base of the blade and the summit of the petiole. The color may extend up the veins, hairy on the upper surface or only on veins, or smooth, the under surface smooth or slightly hairy; petiole green tinged with purple toward the summit, or deep purple. Roots red, yellow, russet yellow, or yellow tinged with rose, usually very irregular, being strongly ribbed and veined or smooth; fusiform, ovoid, or long cylindrical in shape; medium to very large in size, ripening either early or late. Flesh white, yellow, dull yellow, cream, salmon yellow, or dark yellow. When baked, sightly sweet to very sweet, moist to dry and mealy, firm or soft in texture. Flavor caramellike, but not pronounced.

The varieties in the Spanish group may be separated into three sections, as follows:

- (1) Yellow Spanish: Roots light yellow to russet yellow.
- (2) Bermuda: Roots light yellow, yellow tinged more or less with rose or deep rose.
- (3) Red Spanish: Roots dark red to purple.

In the Yellow Spanish section the roots are light yellow in color, usually very irregular, strongly ribbed and veined, but sometimes fairly smooth and regular; flesh white or yellow. The earliest varieties are contained in this section, being listed as follows:

- (1) Pierson. (This same variety or variations of it is known under the names of Arkansas Beauty, California Golden, Early General Grant, Golden Skin, and Dutton's Early.)
- (2) Yellow Strasburg. (Also called Extra Early Golden and Adams.)(Pl. IV, fig. 4, and Pl. V, fig. 1.)
- (3) Yellow Spanish. (Also called Bronze Spanish.)
- (4) Triumph.

The roots of the Bermuda section are light yellow, more or less overlain with transverse dashes and bands of rose, sometimes washed with rose, or deep rose to purple, usually very irregular, strongly ribbed and veined; but some varieties are quite smooth and regular. The varieties are medium early, being listed as follows:

(1) Red Bermuda. (Also known as Cuba "yam," Poreland, Yellow Red.)

(2) Red Brazil or Red Brazilian.

- (3) Porto Rico. (Also called Golden Beauty and Key West "yam.")
- (4) Key West "yam."
- (5) Creola.

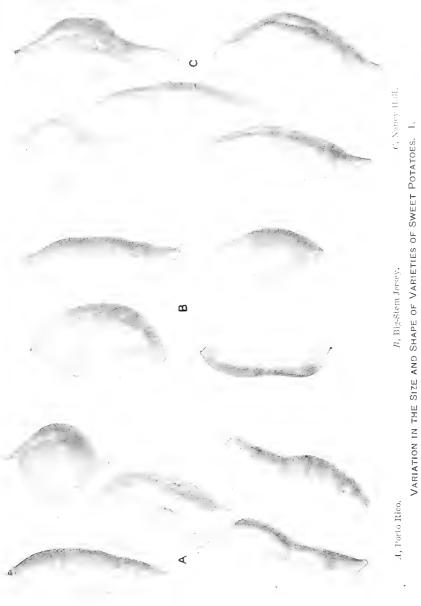
Roots of the Red Spanish section are more regular and are not constricted; the flesh is white, tinged with purple beneath the skin and at the center. The section contains the following varieties:

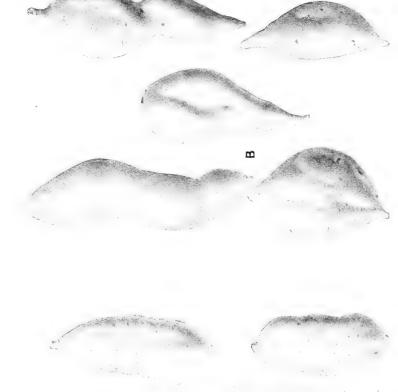
- (1) Red Spanish. (Also called Black Spanish.)
- (2) Purple "yam," or Nigger Choker.
- (3) Dahomey.

SHANGHAI GROUP.

Vines medium to long, 5 to 10 feet, or long, 8 to 16 feet; stems coarse and thick, green in color and hairy, especially at the nodes; leaves large, entire, or sometimes should red, hairy at first, but later smooth except for scattered hairs







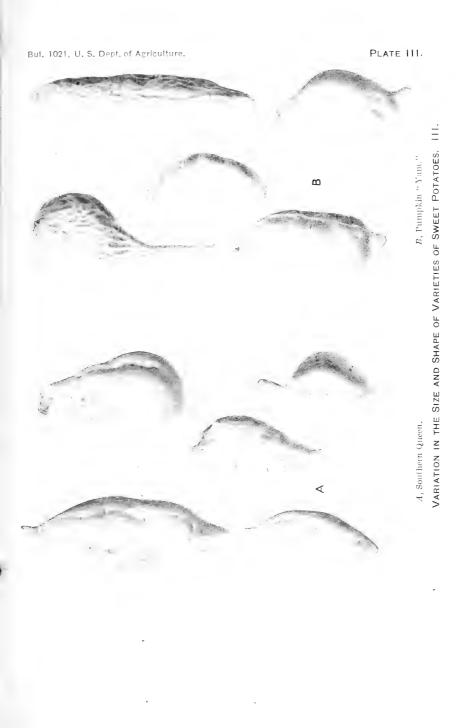
Bul. 1021, U. S. Dept. of Agriculture.

PLATE 11.

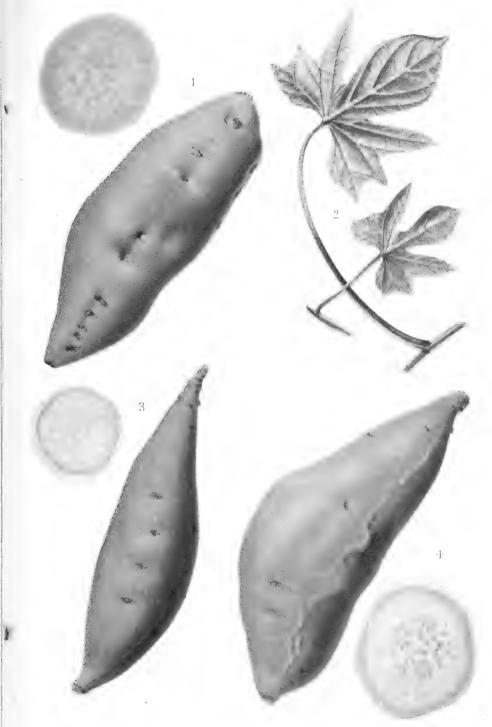
VARIATION IN THE SIZE AND SHAPE OF VARIETIES OF SWEET POTATOES. 11.

A, Triumph.

B, Yellow Strasburg.



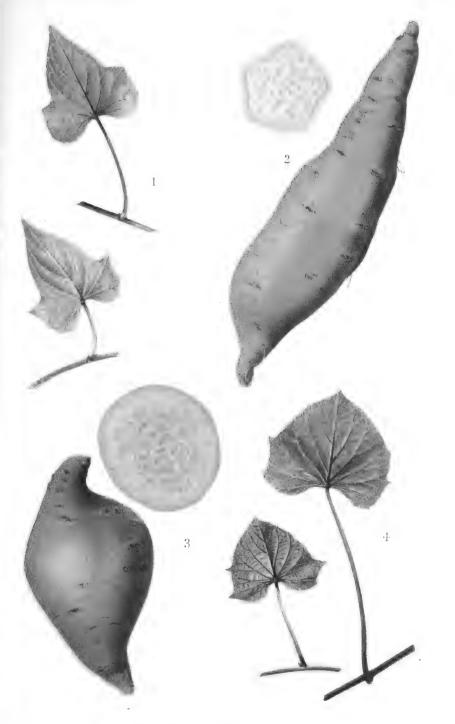




AMERICAN VARIETIES OF SWEET POTATOES. 1.

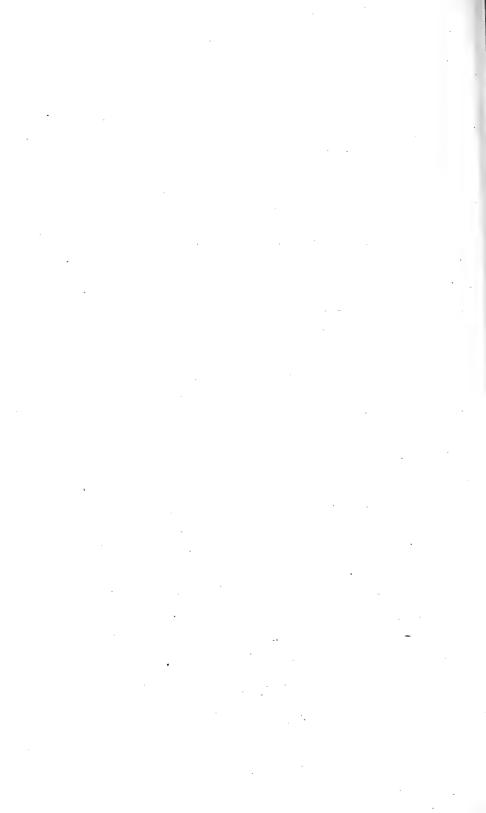
FIG. 1.—The Vineless Pumpkin Yam, a representative of the Belmont group, Belmont section. FIG. 2.—Mature and immature foliage of the Vineless Pumpkin Yam. FIG. 3.—Bunch Candy Yam, a representative of the Belmont group, Bunch section. FIG. 4.—Yellow Strasburg, a representative of the Spanish group, Spanish section; a heavy yielder of very irregular potatoes of fair quality.

• . . . ́с. •



AMERICAN VARIETIES OF SWEET POTATOES. 11.

FIG. 1.—Young and old foliage of Yellow Strasburg. FIG. 2.—Triumph, a representative of the Spanish group, Spanish section; a heavy yielder of roots that are often very, irregular. FIG. 3.—Porto Rico, a representative of the Spanish group. Bermuda section. FIG. 4.—Foliage of Porto Rico, one of the best varieties.



on the veins above, green except for a deep-purple stain at the base of the blade and the summit of the petiole. The purple color runs to the larger veins of the leaf to some extent; petioles green except at upper end, hairy to some extent. Roots white in color, smooth, and regular or veined and ribbed, long cylindrical to fusiform in shape, medium to large in size, and very late in season; flesh yellow or dull grayish white. When baked, only slightly sweet, dry, and mealy, and rather firm in texture. Flavor not pronounced.

The Shanghai group contains the following varieties.

(1) Shanghai. (Also called Early Golden and California.)

(2) Minnet "yam."

FLORIDA GROUP.

Vines medium to long, 4 to 10 feet; stems rather coarse and thick, green, smooth or somewhat hairy at the nodes, or they may be hairy all over; leaves entire or toothed, with 6 to 10 low marginal teeth, hairy or smooth, except for scattered hairs on the veins on the upper surface, green except for a deeppurple stain at the juncture of the blade and the petiole, this color passing to the large veins of the leaf and down the petiole a short distance; petiole otherwise green and smooth or somewhat hairy; roots light yellow or yellow tinged with salmon; veins when present lighter in color than the rest of the surface, short to long, fusiform in color, of medium to large size, season medium; flesh yellow or yellow tinged with salmon to dark salmon, but light yellow to dark orange yellow when baked; sweet to very sweet, and sugary, very moist to quite dry; the texture soft and melting or sometimes rather coarse; flavor good. The following varieties belong to the Florida group:

(1) Florida. (Also called Arizona Prolific and Providence.)

- (2) General Grant Vineless.
- (3) Nancy Hall.

SOUTHERN QUEEN GROUP.

Vines large and vigorous, long, 6 to 12 feet; the stems thick and coarse, dull purple in color, hairy throughout the length, somewhat hairy at the nodes and on new growth, or smooth; leaves shouldered or sometimes entire, slightly hairy above, smooth beneath, green; petiole greenish purple and nearly smooth or hairy (especially at the base). Roots white or light yellow and sometimes very slightly tinged with pink around the upper end, fairly smooth and regular, or somewhat ribbed and veined, globular or short, fusiform in shape or long fusiform; medium to large in size; season medium. Flesh light yellow, sweet, very moist to fairly dry, soft in texture or very fibrous; flavor good.

The following varieties belong to the Southern Queen group:

- (1) White "yam."
- (2) Southern Queen. (This variety, or slight variations of it. is known under the following names: California "yam," Arkansas Hybrid, Brazilian, Cuban, Common "yam," Hayman, Johnson's Bahama, Kentucky White, McCoy, Polo, Vestal's Newark. Miles "yam." Archers' Hybrid, Hamburg, Caroline Lee, Cullman Cream "yam," Hanover, Catawba White, and Ballinger's Pride.)

PUMPKIN GROUP.

Vines long, 6 to 15 feet; stems small to average size, green, slightly hairy (especially at the nodes and on new growth); leaves low, shouldered, or entire with 4 to 10 low marginal teeth, hairy on the upper surface of the blade and smooth beneath, green; petiole green, slightly hairy (especially near its

71638°-22-2

base). Roots yellow, tinged with salmon, fusiform to cylindrical in shape, veined prominently and often slightly ribbed, the veins light yellow in color, medium to large in size, season late. Flesh yellow to deep orange-yellow. When baked, sweet to very sweet, very moist and soft in texture, flavor distinctly like squash.

The Pumpkin group contains the following varieties:

(1) Pumpkin "yam." (Early Yellow, or Spanish "yam.")

(2) Norton.

(3) Dooley.

(4) White Gilke.

JERSEY GROUP.

Vines low and slender to large in growth very short, 1 to $2\frac{1}{2}$ feet, or long, 6 to 15 feet; stems very slender to thick and coarse, green, hairy (especially at the nodes); leaves shouldered to entire (both extremes may be found on the same vine), green, sometimes a very slight tinge of purple may be found at the juncture of the blade and the petiole especially in the Red Jersey section, smooth or hairy on the upper surface of the blade, slightly hairy, or smooth beneath; petiole green, hairy (especially at the lower end). Roots red or russet yellow in color, usually very regular in shape smooth or veined more or less, short to long fusiform or even globular, small to large in size, season early to late; flesh light yellow to dark yellow. When baked, fairly sweet, usually very dry and mealy, and quite firm in texture.

The Jersey group contains the varieties usually found on the northern markets. These may be divided into the following sections:

(1) Roots red	
(2) Roots russet yellow.	
Stems short and bushy	Bush.
Stems long.	
Stems medium to large	Big-Stem Jersey.
Stems slender	Yellow Jersey.

Varieties of the Red Jersey section have stems varying from slender to coarse, often fasciated; roots light russet, red, or dark red, medium in size, usually fusiform or ovoid, sometimes globular in shape; season medium to late; flesh golden brown. When baked, sweet, dry, and mealy; quite firm in texture.

The following varieties belong to the Red Jersey section:

(1) Japan Brown.

(2) Red Jersey. (Also called Connelly's Early Red, Early Red Carolina, Red Nansemond, and Van Ness Red.)

The stems of the Bush section are very short, 1 to $2\frac{1}{2}$ feet, rather thick and coarse, with very short internodes and crowded leaves, the internodes one-third to one-half inch long; leaves hairy on the upper surface, but more shining than those of the Yellow Jersey section, usually entire or slightly shouldered; roots russet yellow, fusiform to ovoid in shape, medium in size, season medium; flesh yellow. When baked, the flesh is fairly sweet, dry, and mealy, quite firm in texture.

The Bush section contains but one variety, the Vineland Bush. (Also called Georgia Buck "yam" and Vineless Bunch Nansemond.)

In the Big-Stem Jersey section the vines are moderately large growing, long, 6 to 12 feet; stems rather thick and coarse, often fasciated; leaves larger than those of the Yellow Jersey section, strongly shouldered to entire. Roots russet yellow, often strongly veined, but otherwise smooth and regular, usually fusiform in shape, but inclined to become ovoid, medium to large in size; season medium, flesh light yellow. When baked, the flesh is usually very dry and mealy and quite firm in texture; flavor chestnutlike.

- The Big-Stem Jersey section contains the following varieties:
 - Big-Stem Jersey, sometimes called Florida and Improved Big Stem.
 Philipili.

The Yellow Jersey section has vines that are very small and slender to moderately large in growth, long, 6 to 12 feet; stems slender, often fasciated. Roots russet yellow, smooth and regular, or with low veins, fusiform or globular in shape, small to medium in size, season medium; flesh light yellow to salmon. When baked, usually very dry and mealy and onite firm in texture.

- The Yellow Jersey section contains the following varieties:
 - (1) Yellow Jersey. (Other names given to this variety or selections of it are the following: Early Bloomer Nansemond, Big Leaf, Early Carolina, Early Yellow Jersey, Kelly's, McCoy's Sweets, Red Nose, Nansemond, Yellow Nansemond, Up River, Cedarville.)
 - (2) Gold Skin.

LIST OF VARIETIES INCLUDED IN THE KEY.

	Page.		Page.
Belmont	12	Porto Rico	14
Big-Stem Jersey	18	Pumpkin "yam"	16
Bunch Candy "yam"	13	Purple "yam " or Nigger Choker_	15
Creola	14	Red Bermuda	14
Dahomey	15	Red Brazil	14
Dooley	17	Red Jersey	17
Eclipse Sugar "yam"	12	Red Spanish	15
Florida	15	Shanghai	15
General Grant Vineless	16	Southern Queen	16
Gold Skin	18	Ticotea	11
Gros Grandia	13	Triumph	14
Japan Brown	17	Vineland Bush	17
Key West "yam"	14	Vineless Pumpkin "yam "	12
Koali	11	White Gilke	17
Minnet "yam"	15	White Sealy	12
Nancy Hall	16	White "yam"	16
Norton	17	Yellow Jersey	18
Old-Time "yam"	12	Yellow Spanish	13
Philipili	18	Yellow Strasburg	13
Pierson	13	Yellow ." yam "	12

DESCRIPTIONS OF VARIETIES.

TICOTEA. (TICOTEA GROUP.)

Vines large and vigorous, long creeping, 6 to 12 feet; stems green or with a slight tinge of purple at the nodes, nearly smooth; leaves 5 to 7 parted, hairy only along the veins on the upper surface, green except for a deeppurple stain at the blade and the summit of the petiole, the latter otherwise green and hairy; roots white, smooth, and regular, usually very long and cylindrical in shape, medium to large in size, season very late; flesh white, but dull grayish white when baked, only slightly sweet, quite dry and mealy; firm in texture.

This is not an important variety.

KOALI. (TICOTEA GROUP.)

Vines short and stocky; stems green or with a purple tinge at the nodes, smooth or only slightly hairy at the nodes, coarse: leaves deeply 5 to 7 lobed; deep-purple stain at the base of the leaf blade, this purple coloring extending

12

over veins on the under side of the leaf; petiole with purple stain near the base and at the summit, otherwise green, slightly hairy; roots white, cylindrical. medium in size, season late; flesh white, but light yellow when baked; mealy; firm in texture, only slightly sweet.

This variety is not grown in this country except in an experimental way.

BELMONT. (BELMONT SECTION, BELMONT GROUP.)

Vines slender and low, long creeping, 6 to 12 feet; stems light green, hairy; leaves 5 parted with basal lobes inclined to shoulder, hairy above and upon the veins beneath, light green; petiole hairy, green; roots dark yellow with prominent light-yellow veins, fairly smooth and regular, long fusiform in shape, medium in size; season late; flesh golden yellow, but dark yellow when baked, sweet, moist, and soft in texture.

ECLIPSE SUGAR "YAM." (BELMONT SECTION, BELMONT GROUP.)

Vines somewhat larger and coarser in growth than is typical for this section, long creeping, 6 to 12 feet; stems hairy, light green; leaf characters similar to those of the Belmont variety except that the blade is larger and the lobes broader; petiole green, hairy; roots light salmon in color, with prominent light-yellow veins, otherwise smooth and regular, fusiform in shape, medium to large, season late; flesh yellow, tinged with salmon. When baked, sweet, moist, and soft in texture.

VINELESS PUMPKIN "YAM." (BELMONT SECTION, BELMONT GROUP.)

Vines of medium length, 4 to 8 feet; stems green, slightly hairy, especially at the nodes; leaves 5 to 7 parted, hairy above, nearly smooth or slightly hairy upon the veins underneath, green; petiole nearly smooth, green; roots yellow, tinged with salmon, slightly russeted, with a few low, light-yellow veins, fusiform to ovoid, or cylindrical, medium in size, smooth; season late; flesh salmon, with patches of light yellow. When baked, dark yellow to salmon, very sweet and moist; fairly firm in texture.

OLD-TIME "YAM." (BELMONT SECTION, BELMONT GROUP.)

Vines low and slender in growth, long creeping, 6 to 12 feet; stems green, hairy; leaves 5 to 7 parted, hairy above, nearly smooth beneath, green; petiole green, hairy; roots light yellow, somewhat russeted, with prominent light-yellow veins, otherwise smooth and regular, fusiform to cylindrical, medium in size; season late; flesh light yellow. When baked, very sweet, moist, and soft in texture.

YELLOW "YAM." (BELMONT SECTION, BELMONT GROUP.)

Vines low and slender, long creeping, 6 to 12 feet; stems green, hairy; leaves 5 to 7 parted, hairy above and slightly hairy beneath, green; petiole green, hairy (especially at the base); roots yellow, tinged with salmon, with low, very light-yellow veins, fusiform in shape, regular, medium in size; season late; flesh yellow, streaked with salmon, salmon ring just under outer skin. When baked, sweet and moist; soft in texture.

WHITE SEALY. (BELMONT SECTION, BELMONT GROUP.)

Vines medium in length, 4 to 6 feet; stems medium to coarse, green; leaves deeply 5 to 7 lobed, finely cut, green with purple tinge on new growth and at base of petiole, smooth on upper surface and smooth beneath; petioles medium length, green with tinge of purple at upper end on new growth, smooth; roots long, cylindrical, yellow to russet yellow, smooth; flesh light yellow, but grayish white when baked; dry and mealy, decided caramel flavor, but not sweet; only fair in quality.

GROS GRANDIA. (BUNCH SECTION, BELMONT GROUP.)

Vines short to vineless, $1\frac{1}{2}$ to 3 feet; stems very coarse, green, nodes very close, smooth except for a few hairs on the newer growth; leaves deeply 5 to 7 lobed or parted, upper surface nearly smooth or slightly hairy, lower surface smooth; petioles smooth or with a few scattered hairs on the new growth, green; roots long, cylindrical, veins slightly raised, numerous but fine, rose to purplish red in color; flesh white. When baked, moist and poor in quality.

BUNCH CANDY "YAM." (BUNCH SECTION, BELMONT GROUP.)

Vines very short and bushy, 1 to $3\frac{1}{2}$ feet, but medium to vigorous in growth; stems green, nearly smooth, internodes very short, crowding the leaves closely together; leaves 5 to 7 parted, lobes somewhat broader than those of the Belmont variety, hairy above and smooth beneath, light green; petioles nearly smooth, green; roots light yellow, tinged with salmon, slightly russeted, lightyellow veins, small and regular, long spindle or fusiform in shape, small to medium in size; season late; flesh light yellow. When baked, sweet and moist; soft in texture.

PIERSON. (YELLOW SPANISH SECTION, SPANISH GROUP.)

Vines large and vigorous, long creeping, 6 to 15 feet; stems purple in color, hairy; leaves shouldered, hairy only on the veins above, green with a deeppurple stain at the juncture of the blade and the petiole, the latter nearly smooth, green except at the upper end; roots light yellow, strongly ribbed and veined, very rough, fusiform and ovoid in shape, medium to very large; season early; flesh cream color, but dull yellow when baked; only slightly sweet, moist to quite dry and mealy; texture firm. *

YELLOW STRASBURG. (YELLOW SPANISH SECTION, SPANISH GROUP.)

Vines large and vigorous, long creeping, 6 to 15 feet; stems purple in color, nearly smooth; leaves shouldered, slightly hairy above, especially on new growth, green except for a deep-purple stain at the juncture of the blade and the petiole, the latter otherwise green or purple (both colors may appear on the same vine), nearly smooth, roots light yellow, fairly smooth and regular or quite irregular, ovoid or globular in shape, medium to large, season early; flesh dull yellow when baked, sweet, moist, and quite soft in texture.

YELLOW SPANISH. (YELLOW SPANISH SECTION, SPANISH GROUP.)

Vines moderately large in growth, long creeping, 6 to 12 feet; stems dark purple in color, somewhat hairy; leaves deeply shouldered, smooth or with scattered hairs on the midrib and margin of the leaf, dark green, with purple veins, petiole nearly smooth, purple; roots dull russet yellow, often constricted and crooked, fairly smooth, with no veins. long fusiform to long cylindrical, medium in .size, season late; flesh grayish white; when baked, fairly sweet, moist, and soft in texture.

14 BULLETIN 1021, U. S. DEPARTMENT OF AGRICULTURE.

TRIUMPH. (YELLOW SPANISH SECTION, SPANISH GROUP.)

Vines coarse and vigorous, short, 2 to 4 feet, bushy; leaves shouldered, large and thick, hairy on veins of upper surface, smooth beneath; petioles green, with purple stain at the base of the leaf blade and extending up the veins on the - under surface of the leaf; roots medium to long cylindrical in shape, light yellow to russet yellow in color; flesh light yellow, but creamy yellow when baked, medium moist to dry, fairly sweet, and firm in texture. (Pl. V, fig. 2.)

RED BERMUDA. (BERMUDA SECTION, SPANISH GROUP.)

Vines large and vigorous, long creeping, 6 to 12 feet; stems purple in color, hairy; leaves shouldered. slightly hairy above, green except for a deep-purple stain at the base of the blade and the summit of the petiole, the latter green or purple. nearly smooth; roots deep rose or reddish purple, irregular, strongly ribbed, short fusiform. globular, or ovoid in shape, medium to large, season medium; flesh light yellow, but dull yellow when baked; only slightly sweet, dry, and somewhat mealy; firm in texture.

RED BRAZIL. (BERMUDA SECTION, SPANISH GROUP.)

Vines long to very long. 6 to 20 feet, vigorous; stems medium coarse, purple in color, hairy, especially at the nodes on new growth; leaves shouldered to entire, slightly hairy on the upper surface, smooth beneath, deep-purple stain at the base of the blade; petioles green or purplish green, color running up along the veins on the under side of the leaf, deep purple at summit, slightly hairy at base; roots globular, irregular, surface rose in color; flesh dark yellow, but dark golden yellow when baked; sweet, fairly mealy, good quality; season medium to late.

PORTO RICO. (BERMUDA SECTION, SPANISH GROUP.)

Vines medium to long, 5 to 10 feet; stems coarse, internodes short, reddish purple in color, hairy (especially at the nodes and on young growth); leaves shouldered, large in size, green except for a purple stain at the base of the blade and on the veins, slightly hairy on the upper surface, smooth below; petioles medium long, 5 to 8 inches, reddish purple in color, deeper at the base of the leaf blade, color extends to the veins on the lower side of the leaf and also deeper at the base of the petiole; roots light rose to rose in color, fusiform to globular and irregular in shape, smooth; flesh orange yellow to salmon, but dark yellow when baked; moist, very sweet, good quality.

This is one of the most popular varieties in the South, especially where it is well known. (Pl. V, figs. 3 and 4.)

KEY WEST "YAM." (BERMUDA SECTION, SPANISH GROUP.)

Vines medium to long, 4 to 10 feet; stems coarse, hairy, dark purple in color. internodes short; leaves deeply shouldered, upper surface nearly smooth, lower surface smooth; petioles long, stiff, and erect, smooth except on new growth, which is slightly hairy, purple to pink in color, with heavy purple splash at the base of the leaf bladé; roots medium to long, cylindrical, light rose in color; flesh cream to yellow, but dark yellow when baked; fine texture, medium moist, quality good.

CREOLA. (BERMUDA SECTION, SPANISH GROUP.)

Vines long to very long, 8 to 20 feet, vigorous; stems medium to large in size, pink to purple in color, hairy (especially at the nodes); leaves deeply should red to nearly lobed, green in color, with purple tinge; petioles light red to purple

in color, dark purple at the summit and at the base of the leaf blade, long and coarse; roots light rose, oblong to fusiform in shape, regular, smooth, no veins, flesh light yellow, but golden yellow when baked; mealy, sweet, fair quality.

RED SPANISH. (RED SPANISH SECTION, SPANISH GROUP.)

Vines moderately large growing, long, 6 to 12 feet; stems dark purple in color, somewhat hairy; leaves deeply shouldered, smooth or with scattered hairs on the midrib and margin of the blade, dark green with purple veins; petioles purple, smooth; roots dark red in color, smooth and fairly regular, long fusiform to cylindrical in shape, medium to large in size, season late; flesh white with a tinge of purple in the center and near the skin. When baked the flesh is gravish white, fairly sweet, moist, and soft in texture.

PURPLE "YAM," OR NIGGER CHOKER. (RED SPANISH SECTION, SPANISH GROUP.)

Vines long, 6 to 15 feet, stems dark purple in color, somewhat hairy; leaves shouldered, entirely smooth or with scattered hairs on the midrib and margin of the blade, dark green with purple veins; petioles nearly smooth, dark purple; roots deep purple in color, smooth and regular, long cylindrical in shape, medium to large; season late; flesh white, often with a tinge of purple beneath the skin and at the center, but dull grayish white when baked; only slightly sweet, very dry and mealy.

DAHOMEY. (RED SPANISH SECTION, SPANISH GROUP.)

Vines medium to long, 6 to 10 feet; stems green tinged with purple, medium coarse, hairy; leaves entire and heart shaped, tinged with purple around the edge and on the veins of the under surface, hairy on the upper surface, smooth to slightly hairy below; petioles long, 6 to 10 inches, slender, purple toward the base and with a deep-purple splash at the base of the leaf blade and the summit of the petiole; roots deep red to purple, long cylindrical; flesh creamy white, but pale yellow when baked; fine in texture, dry, mealy, fairly sweet, only fair quality.

SHANGHAI. (SHANGHAI GROUP.)

Vines large and vigorous, medium to long, 6 to 9 feet; stems green, hairy; leaves shouldered or entire, hairy on the veins above and smooth beneath, green except for a deep purple stain at the base of the blade and the summit of the petiole, the latter otherwise green, hairy; roots white, fairly smooth and regular, without veins, fusiform to long cylindrical, very large; season late. When baked, the flesh is grayish white, only slightly sweet, dry, and mealy; fairly firm in texture.

MINNET "YAM." (SHANGHAI GROUP.)

Vines long, 8 to 16 feet, coarse; stems green, long internodes, hairy; leaves entire and heart shaped, large, hairy on the upper surface, smooth below; petioles long, smooth except at nodes, green with a dark-purple splash at the summit of the petiole and the base of the leaf blade; roots white, fusiform in shape, heavily ribbed or ve'ned; flesh pale yellow, but light yellow when baked; mealy, dry, poor quality.

FLORIDA. (FLORIDA GROUP.)

Vines large, vigorous, medium in length, 4 to 9 feet; stems green in color, nearly smooth; leaves toothed or entire with 6 to 10 low marginal teeth, hairy above (especially on new leaves) and smooth below, green except for a deep-

purple stain at the base of the blade and the summit of the petiole; petiole smooth or nearly so, green except at the upper end; roots light yellow in color with lighter yellow veins, fairly smooth and regular, long fusiform in shape, medium in size; season medium to late; flesh light yellow. When baked, sweet, moist, and soft in texture.

GENERAL GRANT VINELESS. (FLORIDA GROUP.)

Vines medium to large and vigorous, medium in length, 4 to 10 feet; stems green, slightly hairy (especially at the nodes); leaves entire or slightly toothed, hairy above, slightly hairy beneath (especially on the veins), green in color, a deep-purple stain at the juncture of the blade and the petiole; petiole green except at the upper end, nearly smooth; roots light salmon, smooth and regular, short fusiform to long fusiform in shape, medium in size, season medium to early; flesh gray sh yellow when baked; sweet, dry, and somewhat mealy; fairly firm in texture.

NANCY HALL. (FLORIDA GROUP.)

Vines medium in length, 4 to 8 feet; stems somewhat hairy, green; leaves toothed or entire with 4 to 10 low marginal teeth, hairy on the upper surface and slightly hairy or smooth beneath, green except for a reddish purple stain at the juncture of the blade and the petiole, the latter slightly hairy, green except at the upper end; roots yellow, tinged more or less with salmon, veined, or smooth and regular, fusiform in shape, medium to large in size; season early; flesh dark yellow, tinged with salmon. When baked, very sweet, moist and soft in texture; good quality. (Pl. VI, figs. 1 and 2.)

WHITE "YAM." (SOUTHERN QUEEN GROUP.)

Vines vigorous in growth, long, 5 to 12 feet; stems dull purple, slightly hairy; leaves shouldered or entire, hairy on the veins above, but otherwise smooth, green; petiole nearly smooth, greenish purple; roots yellowish white, with many low veins, otherwise smooth and regular, fusiform or oblong in shape, medium to very large in size, season medium; flesh light yellow. When baked, sweet, quite dry, and mealy; texture fairly firm.

SOUTHERN QUEEN. (SOUTHERN QUEEN GROUP.)

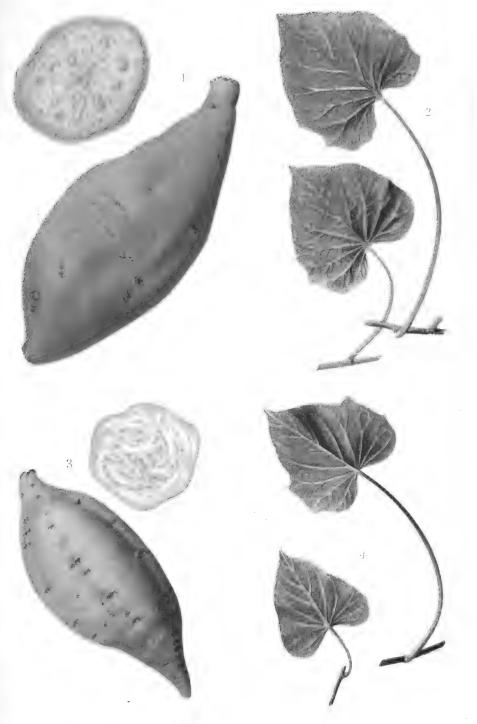
Vines large and vigorous, long. 6 to 12 feet; stems dull purple, slightly hairy (especially at the nodes and on new growth); leaves shouldered or entire, slightly hairy above, green; petiole nearly smooth, greenish purple. Roots white or light yellow, sometimes very slightly tinged with pink, smooth and regular, few or no veins, fusiform, globular or ovoid in shape, medium to large; season medium; flesh light yellow. When baked, sweet, moist, and soft in texture. (Pl. VI, figs. 3 and 4.)

Ballinger's Pride is a strain of Southern Queen, with roots smaller, longer, fusiform in shape, very smooth.

Catawba White and Catawba Yellow are the same as Southern Queen, but the roots smaller, longer, smooth, and attractive in size and shape.

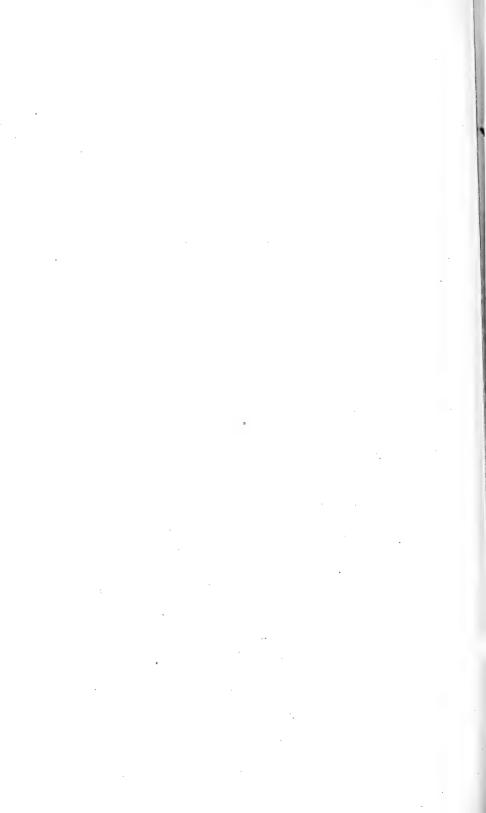
PUMPKIN "YAM." (PUMPKIN GROUP.)

Vines moderately large growing, long, 6 to 12 feet; stems green, hairy; leaves low, shouldered, hairy only on the upper surface, green; petioles green, hairy; roots yellow, tinged with salmon, mostly irregular with prominent light-



AMERICAN VARIETIES OF SWEET POTATOES. III.

 FIG. 1.—Nancy Hall, one of the best varieties of the moist-fleshed type. FIG.
 2.—Foliage of Nancy Hall, mature (above) and immature (below). FIG. 3.— Southern Queen, a heavy yielder of fair quality; known in many sections as the Hayman. FIG. 4.—Young and old foliage of the Southern Queen.

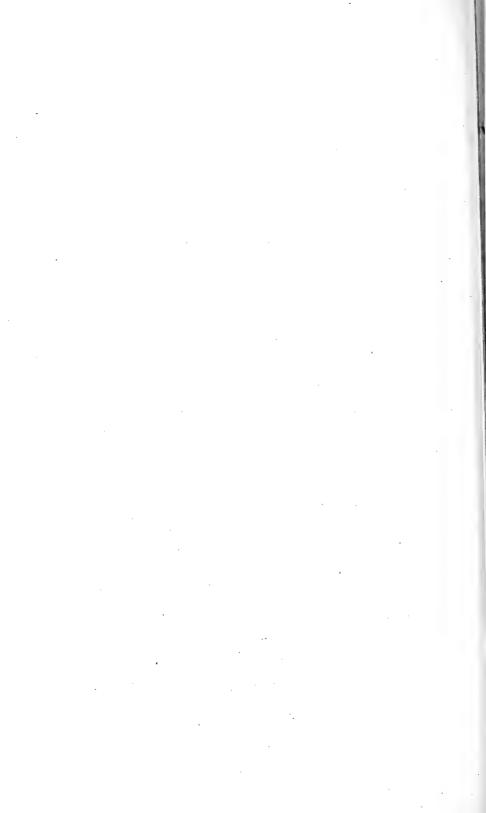


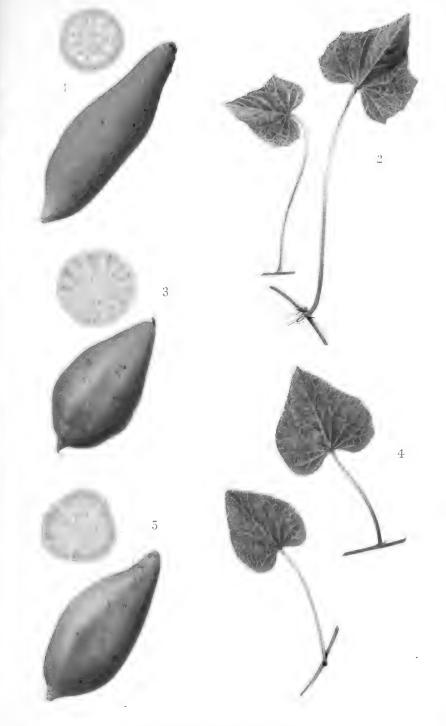
-1-

AMERICAN VARIETIES OF SWEET POTATOES. IV.

3

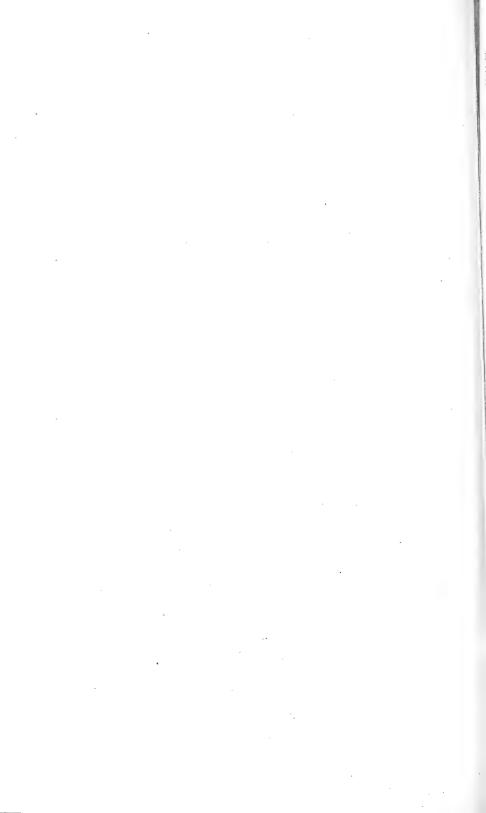
FIG. 1.—Pumpkin Yam, a representative of the Pumpkin group. FIG. 2.—Foliage of the Pumpkin Yam, mature (above) and immature (below). FIG. 3.— Dooley, a popular variety and a representative of the Pumpkin group. FIG 4.—Red Jersey, a member of the Jersey group, largely grown for commercial purposes.





AMERICAN VARIETIES OF SWEET POTATOES. V.

FIG. 1.—Big-Stem Jersey, one of the leading commercial varieties. FIG. 2.— Foliage of the Big-Stem Jersey, mature (at right) and immature (at left). FIG. 3.—Yellow Jersey, the leading variety in the Jersey section. FIG. 4.— Foliage of Yellow Jersey, fully developed (above) and young leaf (below). FIG. 5.—Gold Skin, a member of the Jersey group; of good quality.



yellow veins, some smooth and regular with few or no veins, fusiform in shape, medium in size, season late; flesh dark orange-yellow. When baked, very sweet, moist, and soft in texture. (Pl. VII, figs. 1 and 2.)

NORTON. (PUMPKIN GROUP.)

Vines moderately large growing, long, 6 to 12 feet; stems hairy, green, or sometimes with a slight purple tinge; leaves shouldered or entire, with four to six low marginal teeth, hairy on the upper surface and to some extent beneath, green or sometimes with a slight purple tinge on the upper surface; petioles green, hairy; roots light salmon with light-yellow veins, smooth and regular, fusiform to slightly cylindrical in shape, medium to large; season late; flesh dark yellow. When baked, very sweet and sugary, moist to very moist, soft and melting in texture.

DOOLEY. (PUMPKIN GROUP.)

Vines long to very long. 10 to 15 feet; stems green, slightly hairy (especially at nodes); leaves shouldered or often entire, green in color, hairy above and smooth beneath; petioles green, slightly hairy; roots large in circumference, short fusiform in shape, yellow to salmon in color; flesh dark orange. When baked, soft and sweet, squashlike. (Pl. VII, fig. 3.)

WHITE GILKE. (PUMPKIN GROUP.)

Vines medium short, 3 to 6 feet, or bushy; stems green, coarse, short internodes, hairy (especially at nodes); leaves entire or heart shaped, slightly hairy above, but smooth on the under surface; petioles green, smooth, or slightly hairy near the nodes; roots white to pale russet yellow, smooth, fusiform in shape; flesh yellow to salmon but a golden yellow when baked; fine in texture, fairly sweet, moist, good quality.

JAPAN BROWN. (RED JERSEY SECTION, JERSEY GROUP.)

Vines long, running 6 to 15 feet; stems green, hairy, coarse, long internodes; leaves toothed or entire with four low marginal teeth, smooth on the upper surface of the leaf, slightly hairy below; petioles long, coarse, hairy, green; roots red, long fusiform or slightly cylindrical; flesh white, but light yellow when baked; mealy, coarse in texture, fair quality; season late.

RED JERSEY. (RED JERSEY SECTION, JERSEY GROUP.)

Vines low and slender in growth, long, 6 to 12 feet; stems green, hairy (especially at the nodes); leaves shouldered, often entire, hairy on the upper surface and smooth beneath, green; petiole green, hairy; roots red in color, fusiform or spindle shaped, smooth and regular or veined to some extent, small to medium in size; season medium; flesh yellow. When baked, fairly sweet, very dry, and mealy; firm in texture. (Pl. VII, fig. 4.)

VINELAND BUSH. (BUSH SECTION, JERSEY GROUP.)

Vines vigorous in growth, very short, 1 to $2\frac{1}{2}$ feet; stems green, hairy, sometimes fasciated; numerous leaves, this character resulting from the very short internodes; leaves shouldered or more often entire, hairy above and smooth beneath, green; petioles green, slightly hairy; roots russet yellow in color, smooth and regular, fusiform to ovoid, not veined, medium in size, season early; flesh yellow. When baked, sweet, dry, and mealy; firm in texture.

BIG-STEM JERSEY. (BIG-STEM JERSEY SECTION, JERSEY GROUP.)

Vines moderately large growing, long, 6 to 12 feet; stems green, hairy; leaves shouldered or entire, hairy above and smooth beneath, green; petiole hairy, green; roots russet yellow in color, smooth and regular, long fusiform in shape, may be veined or smooth, small to large in size, but larger than Yellow Jersey or Red Jersey, season medium to late; flesh yellow. When baked, sweet, dry, and mealy; texture firm. (Pl. VIII, figs. 1 and 2.)

PHILIPILI. (BIG-STEM JERSEY SECTION, JERSEY GROUP.)

Vines vigorous; medium in length, 4 to 8 feet; stems large, green, slightly hairy; leaves entire, hairy above and smooth on lower surface, light green in color; petioles green, slightly hairy at base; roots white or slightly russet yellow in color, flesh white, but pale yellow when baked; dry and mealy; poor quality.

YELLOW JERSEY. (YELLOW JERSEY SECTION, JERSEY GROUP.)

Vines small, slender, long. 6 to 12 feet; stems green, hairy, often fascated; leaves shouldered or entire, hairy only on the upper surface, green; petioles green, hairy; roots dark russet yellow, long or short, fusiform to globular or ovoid in shape (two types known on the market, one long fusiform and another very short), smooth or veined; small to medium in size; season medium, flesh yellow. When baked, very dry and mealy, fairly sweet; texture quite firm. (Pl. VIII, figs. 3 and 4.)

GOLD SKIN. (YELLOW JERSEY SECTION, JERSEY GROUP.)

Vines medium to long, 6 to 10 feet; slender, hairy (especially at nodes); green in color; leaves shouldered or entire (both forms may be found on the same vine), light green, hairy above, slightly hairy beneath; petioles short, slender, hairy, green, except for slight tinge of purple at the base of the leaf blade; roots dark russet yellow, fusiform in shape, smooth and regular; season medium; flesh salmon, but a dark yellow when baked; medium dry and mealy, very sweet; texture firm. (Pl. VIII, fig. 5.)

CHECK LIST OF NAMES USED IN SWEET-POTATO LITERATURE.

Names appearing in boldface type are recognized varieties; those in italic type are synonyms.

Adams. Synonym of Yellow Stras- BURG.	Arizona Prolific. Synonym of Florida. Arkansas Beauty. Synonym of Pier-
African Bunch.	SON.
African Red (probably same as Rep	Arkansas Hybrid. Synonym of South-
Spanish).	ERN QUEEN.
Alabama.	Arranca madre.
Alabama Red (probably same as	Bahama or Bahamas (probably same
PORTO RICO).	as Southern Queen).
Amarillo.	Bahama "yam" (sometimes called
Archers' Hybrid. Synonym of South-	Mexican "yam").
ERN QUEEN.	Baker. Synonym of TRIUMPH.
Archias Hybrid (probably same as	Ballinger's Pride. Synonym of South-
Southern Queen).	ERN QUEEN.

Barbado. See Barbados. Brujo colorado. Barbadoes. See Barbados. Brujo morado. Barbados. Buckskin (probably same as Southern Barbados Seedlings. QUEEN). Buck "yam." Barbascoa. Bardos (probably same as Southern Bunch Candy "yam." Bunch Dooley (probably same QUEEN). - 8.9 Baydus (sometimes known as Barba-DOOLEY). Bunch "yam." Synonym of BUNCH does). CANDY "YAM." Belmont. Busby "yam." Benson. Bush "yam." Benson Mammoth (probably same as Caddle (probably same as Southern Benson). Bermuda (probably same as RED BER-QUEEN). Calabaza. MUDA). Bermuda Red (probably same as RED California. Synonym of SHANGHAL. California BERMUDA). Golden. Synonym of Bermuda Sweet. PIERSON. Bermuda White, California "yam." Synonym of South-Big Leaf. Synonym of YELLOW JERSEY. ERN QUEEN. Big-Leaf Jersey. Camaguez. Big Stem (probably same as BIG-STEM Camarete. JERSEY). Camarioca. Big-Stem Jersey. Camote Silbestre. Campanilla. Big-Stem Nansemond (probably same as BIG-STEM JERSEY). Canal. Candela. Black. Black Rock. Carolina. Black Spanish. Synonym of RED Carolina Extra Early (probably same SPANISH. as Extra Early Carolina). Blanca. Carolina "yam." Blanco. Caroline Lee. Synonym of Southern Bloomer Nansemond (probably same as QUEEN. YELLOW JERSEY). Catawba White. Synonym of South-Boca Sagarto. ERN QUEEN. Boone Red. See Boone's Red. Catawba "yam" (probably same as Boone's Red. SOUTHERN QUEEN). Boone's White. Catawba Yellow. Synonym of South-Bradley "yam." ERN QUEEN. Brasiliano (probably same as Brazil-Cavitt's Earliest. ian). Cedarville. Synonym of YELLOW JER-Brass Cannon. SEY. Brazilian. Synonym of Southern Centauro amarillo. QUEEN. Centauro colorado. Brazilian "yam" (probably same as Chazal. Brazilian; sometimes called White Chesboro. Brazilian). Chinese 30 Days. Bronze. Chinco blanco. Choker (sometimes called Orleans Bronze Spanish. Synonym of Yellow SPANISH. Red). Bronze Yellow (probably same as YEL-Ciclon. LOW SPANISH). Cienfuegos. Brown Seedling. Cinco dedos. Brujo blanco. Cluster "yam."

Colman "vam." Columbia Yellow. Common Louisiana "yam" (sometimes called Georgia "yam"). Common Red. Common "yam." Synonym of South ERN QUEEN. Connelly's Early Red. Synonym of RED JERSEY. Cooney. Creola. Creole (sometimes called Sugar "yam"). Cuba. Cuba "yam." Synonym of RED BER-MUDA. Cuban. Synonym of Southern Queen. Cuban Queen (probably same as SOUTHERN QUEEN). Cuban "yam," Cullman Cream "yam" (probably same as SOUTHERN QUEEN). Curtis. Dade County. Dahomey. Davis' Enormous. Davis' Golden Beauty (probably same as PORTO RICO). Delaware (Jersey group, probably GOLD SKIN). Dhamake White. Disciplinado. Dog River. Dooley. Dooley "yam" (probably same as DOOLEY). Dunton's Early. Synonym of PIERSON. Dunton's Improved. Synonym of BEL-MONT. Early Bloomer Nansemond. Synonym of Yellow Jersey. Early Bunch "yam" (probably strain of Bunch "yam"). Early California (probably strain of California). Early Carolina. Synonym of Yellow JERSEY. Early Caroline (probably strain of YELLOW JERSEY). Early General Grant, Synonym of PIERSON. Early Golden. Synonym of Shanghai. Early Golden "yam."

Early Jersey (probably same as YEL-LOW JERSEY). Early Light Jersey (probably same as YELLOW JERSEY). Early Nansemond (probably same as YELLOW JERSEY). Early Peabody (probably strain of PEABODY. Early Red. Early Red Carolina. Synonym of RED JERSEY. Early Rivers. Early Peabody (probably strain of TRIUMPH). Early Yellow. Synonym of PUMPKIN " YAM." Early Yellow Bunch. Early Yellow Carolina (probably same as Yellow Jersey). Early Yellow Jersey. Synonym of YELLOW JERSEY. Early Yellow Nansemond (probably same as YELLOW JERSEY). Early York. Eclipse Sugar "yam," Elv. Enano. Enormous. Extra Early Accomac. Extra Early Carolina. Extra Early Caroline (probably same as Yellow Jersey). Extra Early Golden. Synonym of YELLOW STRASBURG. Extra Early Red Caroline (probably same as RED JERSEY). Extra Red Carolina (same as Rep JERSEY). Familia. Fire Brass. Florida. Florida (sometimes applied to BIG-STEM JERSEY). Florida Bunch. Florida Bunch "yam" (probably same as Southern Queen). Florida "vam." See Florida. Forked-Leaf Pumpkin (probably same as PUMPKIN "YAM"). Forty in a Hill, Fullerton Yellow "yam." Furbelow Yellow "yam."

General Grant (probably same as	Huamoa.
SOUTHERN QUEEN).	Huffs.
General Grant Vineless.	Hunt's Red.
Georgia. Synonym of Belmont.	Ihumai.
Georgia Buck (probably same as GEORGIA BUCK "yam").	Improved Big Stem, Synonym of Big- Stem Jersey.
Georgia Buck "yam." Synonym of	Improved Big-Stem Jersey. See Big-
VINELAND BUSH.	STEM JERSEY.
Georgia Sugar "yam."	Improved Dooley "yam." See Dooley.
Georgia "yam" (sometimes called	Improved Providence, See Providence.
common Louisiana "yam.").	India Red.
Gold Coin. Synonym of Pierson.	Indian Red.
Gold Coin Bunch "yam" (probably	Isla de Pinos.
same as BUNCH CANDY "YAM").	Japan Brown.
Gold Skin.	Japanese "yam" (probably of the
Golden Beauty. Synonym of Porto	Belmont group).
RICO.	Java No. 1. (Introductions.)
Golden Coin (probably same as South-	Java No. 2. (Introductions.)
ERN QUEEN).	Java No. 3. (Introductions.)
Golden Queen.	Java No. 4. (Introductions.)
Golden Skin. Synonym of Pierson.	Java No. 5. (Introductions.)
Golden Strassburg (probably same as	Jersey (probably same as Yellow Jer-
YELLOW STRASBURG).	SEY).
Governor.	Jersey Red (probably same as Red
Gros Grandia.	JERSEY).
Guinero.	Jersey Sweet (probably of the Jersey
Hache.	group-Yellow Jersey).
Haiti "yam" (sometimes called Mus-	Jersey Yellow (probably same as YEL-
GROVE).	LOW JERSEY).
Hall. See NANCY HALL.	Jerusalem.
Halomai "yam."	Jerusalem "yam."
Halonaipu.	Jewell "yam."
Hamburg, Synonym of Southern	Jiguani.
QUEEN.	John Burnet.
Hannover. See Hanover.	Johnson's Bahama. Synonym of
Hanover. Synonym of Southern Queen.	Southern Queen.
Hanover (sometimes called ROYAL OF	Kala.
HANOVER).	Kapo.
Hanover "yam." See HANOVER.	Kauaheahe.
Harman (sometimes called WHITE "YAM").	Kawelo. Kelly's. Synonym of Yellow Jersey.
Hayman. Synonym of Southern Queen.	Kentucky White. Synonym of South- ERN QUEEN.
Hayti (probably of the Spanish	Key West.
group).	Key West "yam."
Hayti Spanish (probably of the Span-	Key West "yam" (sometimes applied
ish group).	to Porto Rico).
Heckler.	Koali.
Heckler "yam."	Laiakona.
Hen and Chickens.	Lexington "yam."
Hornero.	Light Early Red.
Horton "yam."	Little Bunch.

P

P P

Little-Stem Jersey (probably same as	Myers' Early.
YELLOW JERSEY).	Myers' "yam."
Louisiana.	Nancy Hall.
Louisiana "yam."	Nansemond. Synonym of Yellow
McCoy. Synonym of Southern Queen. McCoy's Sweet. Synonym of Yellow	JERSEY.
JERSEY.	Nansemond Improved (probably same as Yellow JERSEY.
McDonald.	Nansemond Red (probably same as
Maleta.	RED JERSEY.
Mamey.	Nansemond White.
Mameya.	Negrito.
Mameyana.	Negro Choker (probably same as
Mameyita.	NIGGER CHOKER).
Mani.	Negro Killer (probably same as
Mani blanco.	NIGGER CHOKER).
Mani colorado.	Newfoundland.
Mani morado.	New Jersey (probably same as YELLOW
Manila.	JERSEY.
Manila colorado.	New Jersey Nansemond (probably
Marada.	same as Yellow Jersey.).
Martinica blanco.	New Nansemond (probably same as
Martinica morado.	YELLOW JERSEY).
Martinico.	Nigger Choker. Synonym of PURPLE
Matejita.	"YAM."
Matojito.	Nigger Killer (probably same as
Matojo.	NIGGER CHOKEB).
MERCED SWEET (same as JERSEY	Nina.
SWEET).	North Carolina "yam."
Mexican (sometimes called BAHAMA	Northern Yellow.
" YAM ").	Norton.
Miami.	Norton "yam" (probably same as
Miles "yam." Synonym of Southern	NORTON).
QUEEN.	,
Minnet "yam."	Notch-Leaf Bunch " yam."
Minnie White.	Nueva Gerona.
Minute "yam."	Oebi Hitam.
Miseria.	Oebi Kang Kong.
Mississippi Yellow (probably same as	Oebi Radjit.
Yellow Jersey.	Old Maurice.
Molly Malone.	Old-Time " yam."
Mono Negro.	Orange.
Morado.	Oriente.
Morning Glory.	Orleans Red (sometimes called
Morris Sweet Seed.	CHOKER).
Muffard.	Orum.
Muffard "yam."	Padisha.
Mulato.	Padishah.
Mullihan. Synonym of NANCY HALL.	Pancho. Pancho del Sol.
Murray.	
Murray Extra Early.	Pan con Vino.
Murrey's Extra Early.	Papa.
Murry's Extra Early.	Papa blanco.
Muscatine.	Paragon.
Musgrove (sometimes called HAITI	Patasaw "yam."
"YAM").	L'action of James

AMERICAN VARIETIES OF SWEET POTATOES.

Pattusal "yam."	Red Nose. Synonym of Yellow Jer-
Peabody.	SEY.
Pearson (probably same as PIERSON).	Red Providence.
Pepper's Choice.	Red Sealy.
Peruvian.	Red-skinned Yellow "yam."
Peruvian "yam."	Red Spanish.
Philipili.	Red "Yam."
Phillipin "yam" (sometimes called	Redding.
Early Yellow Bunch).	Relampago.
Picadito.	Rockport.
Pierson.	Roosevelt.
Pikonui,	Rositas.
Pilipili.	Royal Sweet Potato of Hanover. See
Pimento (sometimes called Yellow	Hanover.
PIMENTO).	Running Dooley (probably same as
Poland.	DOOLEY).
Polo. Synonym of Southern Queen.	Sabanilla blanco.
Pool's "yam."	Sabanilla colorado.
Poor Land (probably same as Pore-	Sadies Prolific.
LAND).	St. Domingo.
Poplar Spanish (probably same as	San Domingo (sometimes called WHITE
POPULAR ROOT SPANISH).	SAN DOMINGO).
Popular Root (sometimes called South-	San Fernando.
ERN QUEEN).	San Juan.
Popular Root Spanish.	San Pedro blanco.
Poreland. Synonym of Red Bermuda.	San Pedro colorado.
Porto Rico.	San Roque.
Porto Viejo.	Santa Maria.
Pride of Kansas.	Santa Rita.
Prolific. Synonym of BUNCH CANDY	Santiago.
" YAM."	Santiaguero.
Providence. Synonym of FLORIDA.	Sapotillo.
Providential.	Shaker Yellow.
Pu.	Shanghai (sometimes called Califor-
Pumpkin.	NIA).
Pumpkin Early Yellow "yam."	
Pumpkin "yam."	Short Vine Yellow "yam."
Purple "yam."	Sopa en vino. Southern Nansemond (probably same
Queen.	as YELLOW JERSEY).
Queen of the South (probably same as	Southern Queen.
SOUTHERN QUEEN).	Southern Red.
Queen of the West.	Southern Red "yam."
Rayo.	Southern "yam."
Red Beans.	Southern Yellow.
Red Bermuda.	Southern Yellow "yam."
Red Brazil.	Spanish.
Red Brazilian.	Spanish Bunch.
Red Jersey.	Spanish Poplar.
Red Nancemond (probably same as	Spanish Poplar Root.
RED JERSEY).	Spanish Red (probably same as Red
Red Nansemond. Synonym of RED	Spanish field (probably same as field Spanish).
JERSEY.	Spanish White.

23

Spanish "yam." Synonym of PUMP- | Vineless "vam." KIN "YAM." Vinerlonian. Split Leaf (sometimes known as Geor-Vino tinto. gia "yam"). Violette Blanche. Strasboury. Violette Rouge. Strasburg. Virginia Nansemond. Strassberg. Virginia Red Nose. Strassburg. Vuelta amajo. Strousburg. Vuelta arriba. Sugar. Vuelta bajero. Sugar "yam." West India "vam." Sulla. White Barbadoes. Tennessee. White Belmont, Synonym of WHITE Tennessee Notchleaf (sometimes called " YAM." YELLOW "YAM"). White Bermuda. Tennessee Notched Leaf. White Brazilian (sometimes called Tennessee "yam," BRAZILIAN "YAM"). Texas "yam." White California. Thegamia Red. White Columbia. Thegamia White. White Gilk. Thompson's Favorite. White Gilke. Ticotea. White Gilkes. Tolman Spanish. White Nansemond (sometimes called Tornasol. ARKANSAS BEAUTY). Trinidadian No. 1. White Providence. Trinidadian No. 2. White St. Domingo (sometimes called Triumph. SAN DOMINGO). True Brass. White Sealy. True Parson Prince. White Seedling. Tuna. White Skinner. Up River. Synonym of Yellow Jersey. White Spanish. Up Rivers (probably same as YELLOW White Vineless. JERSEY). White West India. Vaca. White "yam." Van Ness Red. Willets' Red Skin. Van Nest Red. Synonym of RED JER-"Yams" (sometimes called Southern SEY. QUEEN). Vestal's Newark. Synonym of South-Yellow (sometimes called YELLOW ERN QUEEN. "YAM "). Vestal's New Arkansas Yellow "yam." Yellow Barbadoes. Vincetoman "yam." Yellow Bean, Vincentonia. Yellow Belmont. Synonym of YEL-Vineland Bunch. LOW "YAM." Vineland Bunch "yam," Yellow Bermuda. Vineland Bush. Yellow Buckskin. Vineland Sweets. Yellow Columbia. Vineless. Synonym' of BUNCH CANDY Yellow Jersey. " YAM." Yellow Mauritius. Vineless Beach. Yellow Nancemond (probably same Vineless Bunch. Vineless Bunch Nansemond (probably as YELLOW JERSEY). same as VINELAND BUNCH). Yellow Nansemond. Synonym of Vineless Bunch "yam." Yellow Jersey. Vineless Pumpkin "yam."

Yellow Pimento (sometimes called	Yellow Strasburg.
Pimento).	Yellow Straussberg, See YELLOW
Yellow Providence.	STRASBURG.
Yellow Red. Synonym of RED BER-	Yellow Sugar.
MUDA.	Yellow Trinidadian,
Yellow Rind.	Yellow " yam."
Yellow Spanish.	Yema de huevo,

BIBLIOGRAPHY OF SWEET-POTATO LITERATURE.

(1) Ames, C. T.

1914. Report of the work done at Holly Springs branch experiment station, 1913. In Miss. Agr. Exp. Sta. Bul. 165, 32 p., 13 fig.

(2) AUSTIN, C. F.

- 1909. Report of the Department of horticulture. In Cuba. Estac. Cent. Agron. 2d Rept., 1905/8, Eng. ed., p. 58-67, pl. 13-17 B (on 7 pl.).
- (3) BARRETT COMPANY, Agricultural Department.
 - [1918] Sweet Potatoes and Yams. 15 p., 11 fig. New York. [Pub.] no. 19.
- (4) BEATTIE, W. R.
 - 1908. Sweet potatoes. U. S. Dept. Agr., Farmers' Bul. 324, 39 p., 24 fig. Reprinted 1917.
- (5) BENNETT, R. L.
 - 1891. Sweet potatoes, tests of varieties, analysis of varieties. . In Ark. Agr. Exp. Sta. 3rd Ann. Rpt., 1890, p. 123–128.
- (6) and IRBY, G. B.

1894. Experiments at Northeast sub-station. Sweet potatoes. In Ark. Agr. Exp. Sta. Bul. 31, p. 16–19.

- (7) BLOUNT, A. E.
 - 1894. Agriculture and horticulture. In N. Mex. Agr. Exp. Sta. 4th Ann. Rpt., 1892/93, p. 6–9.

(8) BROWN, JAMES B.

1886. Reference Book explanatory of Brown's improved above-ground Storehouse for the Keeping over Winter of Fruit, Sweet and Irish Potatoes . . . with a prize Essay on the Propagation, Cultivation, and Preservation of the Sweet Potato . . . 20 p. McMinnville, Tenn.

(9) BRUNK, T. L.

1889. Report of the horticulturist. In Tex. Agr. Exp. Sta. 1st Ann. Rpt., 1888, p. 35–45.

- (10) BURNETTE, F. H.
 - 1894. Sweet potatoes. La. Agr. Exp. Sta. Bul. 30, p. 1050–1089, fig. 1–35, A–C.

(11) -----, WATSON, EUGENE, and STUBBS, WILLIAM C.

1896. Horticulture. Results of the year 1895. La. Agr. Exp. Sta. Bul. 42, p. 1501–1544.

(12) CARVER, GEORGE W.

- 1906. Saving the sweet potato crop. Ala. Tuckegee Exp. Sta. Bul. 10, 14 p., 6 fig.
- (13) 1915. Possibilities of the sweet potato in Macon County, Alabama, Ala. Tuskegee Exp. Sta. Bul. 30, 22 p., 8 fig.

(14) CLUTE, O.

1897. Report of the director. In Fla. Agr. Exp. Sta. Ann. Rpt., 1896, p. 5–17.

26

(15) CRAIG, JOHN.

1900. Notes on vegetables. Iowa Agr. Exp. Sta. Bul. 47, p. 306–337, 18 fig.

(16) CROW, CLINTON.

[1915] Sweet Potato Culture for the Southern Planter . . . 103 p., 2 fig., 12 pl. Seville, Ga.

(17) DEBAUN, R. W.

- [1919] Sweet potato culture and storage in New Jersey. N. J. Agr. Exp. Sta. Circ. 114, 31 p., 18 fig.
- (18) DUGGAR, J. F.
 - 1897. Sweet potatoes: culture and uses. U. S. Dept. Agr., Farmers' Bul. 26, 30 p., 4 fig.
- (19) 1892. Methods of keeping sweet potatoes. S. C. Agr. Exp. Sta. Bul.
 5, 8 p.

(20) EARLE, F. S.

1896. Fruits and vegetables on the Gulf coast. Miss. Agr. Exp. Sta. Bul. 37, p. 109–134.

(21) FAILYER, G. H., and WILLARD, J. T.

1891, Composition of some feeding stuffs. In Kans. Agr. Exp. Sta. Bul. 32, p. 225-228.

(22) FITZ, JAMES.

1886. Sweet Potato Culture . . . with a Chapter on the Chinese Yam. New and enl. ed. 86 p., 2 fig. New York.

(23) FORBES, R. H.

1908. A lesson in diversified farming. Ariz. Agr. Exp. Sta. Timely hints for farmers 69, 8 p. Reprinted in Bul. 60, p. 417–426. 1909.

(24) GARCÍA, FABIÁN.

- 1908. Report of the horticulturist. In N. Mex. Agr. Exp. Sta. 18th Ann. Rpt., 1906/07, p. 31–46.
- (25) 1909. Sweet potato culture. N. Mex. Agr. Exp. Sta. Bul. 70, 35 p., 8 fig.

(26) GROTH, B. H. A.

1911. The Sweet Potato. 104 p., 54 pl. New York. (Contrib. Bot. Lab. Univ. Penn., v. 4, no. 1.)

(27) HARDIN, M. B.

1895. Chemist's report. In S. C. Agr. Exp. Sta. 8th Ann. Rpt., [1894]/95, , p. 51–63.

(28) HESTER, C. E.

1918. North Louisiana experiment station. *In* La. Agr. Exp. Sta. 30th Ann. Rpt., 1917, p. 17–21.

(29) HIGGINS, J. E.

1911. Report of the horticulturist. In Hawaii Agr. Exp. Sta. Ann. Rpt., [1909]/10, p. 25–40, 4 fig., pl. 1–2.

(30) HUNN, C. E.

- 1890. Report of acting horticulturist. In N. Y. State Agr. Exp. Sta. 8th Ann. Rpt., 1889, p. 298–336.
- (31) 1891. Report of acting horticulturist. In N. Y. State Agr. Exp. Sta. 9th Ann. Rpt., 1890, p. 257–308, 15 pl.

(32) INGERSOLL, C. L.
 1891. Farm notes for 1891. Nebr. Agr. Exp. Sta. Bul. 19, 12 p., 3 pl. Also in 5th Ann. Rpt. 1891, p. 203-214, 1892.
(33) JAFFA, M. E., and CURTIS, MARVIN.
1894. California sweet potatoes. In Calif. Agr. Exp. Sta. Rpt. of Work, 1892/94, p. 219-225.
(34) JOHNSON, T. C., and ROSA, J. T., jr.
1916. Sweet potato culture. Va. Truck Exp. Sta. Bul. 19, p. 385–415, fig. 87–99. Literature, p. 415.
(35) Keitt, T. E.
1909. Sweet potato work in 1908. S. C. Agr. Exp. Sta. Bul, 146, 21 p.
(36) 1912. Sweet potato investigation. S. C. Agr. Exp. Sta. Bul. 165, 43 p.
(37) KINMAN, C. F.
1918. Report of the horticulturalist. In Porto Rico Agr. Exp. Sta, Rpt., 1917, p. 20–24, pl. 2–3.
(38) LEE, JORDAN G.
 1889. Report of the North Louisiana experiment station at Calhoun, La. for 1889. La. Agr. Exp. Sta. Bul. 27, p. 455–497. (39) 1891. Results of 1890 obtained on the North Louisiana Experiment
Station, Calhoun. La. Agr. Exp. Sta. Bul. 8, ser. 2, p. 167– 214.
(40) 1892. Results of 1891 obtained on the North Louisiana Experiment Station, Calhoun. La. Agr. Exp. Sta. Bul. 16,, ser. 2, p. 425– 484.
 (41) 1893. Report of results for 1892, at Calhoun. La. Agr. Exp. Sta. Bul. 21, ser. 2, p. 607-656.
(42) MCDONNELL, C. C.
1908. The manufacture of starch from sweet potatoes. 'S. C. Agr. Exp. Sta. Bul. 136, 50 p., 5 fig., 4 pl. (in text)
(43) [MCKAY, A. B.]
1889. Horticultural work. Sweet potatoes. In Miss. Agr. Exp. Sta. 1st Ann. Rpt., 1888, p. 47–49.
(44) MASSEY, W. F.
1890. The work of the horticultural division. In N. C. Agr. Exp. Sta. Bul. 72, p. 3–10.
 (45) 1890. Tests of garden vegetables. In N. C. Agr. Exp. Sta. Bul. 74, p. 3-17.
(46) 1895. Trucking in the South N. C. Agr. Exp. Sta. Bul. 112, p. 27–95.
(47) MOORING, D. C.1914. Sweet potatoes. Okla. Agr. Exp. Sta. Circ. 25, 12 p., 2 fig.
 (48) MORGAN, H. A., and BURNETTE, F. H 1893. Report of the horticulturist. In La. Agr. Exp. Sta. Bul. 22, ser. 2, p. 679-720.
(49) — and Ross, B. B.
1892. Sweet potatoes. La. Agr. Exp. Sta, Bul. 13, ser. 2, p. 311-342, 16 fig.
(50) NEAL, J. C.1893. Sweet potatoes. In Okla, Agr. Exp. Sta. Bul. 4, p. 7–8.

(51) NESBIT, D. M.1901. Sweet potatoes. U. S. Dept. Agr., Farmers' Bul. 129, 40 p.
(52) NEWMAN, C. L.
1902. Sweet potato experiments. Ark. Agr. Exp. Sta. Bul. 72, p. 33-43.
 (53) NEWMAN, J. S. 1887. Experiments with sweet potatoes and sugar cane, 1876 [i. e. 1886]. Ala. [Col.] Exp. Sta. Bul. 5, 12 p.
(54) PRICE, J. C. C.
1917. Harvesting and storing sweet potatoes. Ala. [Col.] Agr. Exp. Sta. Bul. 197, p. 85–102, 15 pl.
(55) PRICE, R. H.
1893. Sweet potatoes. Tex. Agr. Exp. Sta. Bul. 28, p. 327–346, 25 fig., 1 pl.
(56) 1895. Sweet potatoes. In Tex. Agr. Exp. Sta. Bul. 36, p. 609–629, 15 fig.
(57) [1896] Sweet Potato Culture for Profit vii, 107 p., 62 fig. Dallas, Tex.
(58) RICHMOND, E. S., and CORY, A. F.
1890. Horticultural department. In Ark. Agr. Exp. Sta. 2nd Ann. Rpt., 1889, p. 82–104, 14 fig.
(59) ROBINSON, JAMES S.
 Small fruits, vegetables and field corn. Md. Agr. Exp. Sta. Bul. 33, p. 115–134.
(60) ROIG, JUAN T., and FORTUN, GONZALO M.
1916. Las variedades cubanas de boniato. Cuba Estac. Exp. Agron. Bol. 33, 76 p., 32 pl.
(61) Scott, John M.
[1909] Report of animal industrialist. In Fla. Agr. Exp. Sta. Rpt., [1908]/09. p. xv-xxiv, 3 fig.
(62) [1910] Report of animal industrialist. In Fla. Agr. Exp. Sta. Rpt., [1909]/10, p. xiv-xxiv.
(63) 1915. Report of animal industrialist. In Fla. Agr. Exp. Sta. Rpt., [1913]/14, p. xviii–xxix.
(64) SHINN, CHARLES H.
1894. Southern California station In Calif. Agr. Exp. Sta. Rept. of Work, 1892/94, p. 415–424, 1 pl.
(65) SHIVER, F. S.
1897. The sweet potato as a starch producer. S. C. Agr. Exp. Sta. Bul. 28, 15 p.
(66) 1897. The determination of starch in the sweet potato. S. C. Agr. Exp. Sta. Bul. 30, 11 p.
(67) 1901. Sweet potato S. C. Agr. Exp. Sta. Bul. 63, 37 p.
(68) SMITH, JARED G.
 [1890] Field experiments for 1889. Nebr. Agr. Exp. Sta. Bul. 12, 63, p. Also in 4th Ann. Rpt. [1890], p. 267–329, 1891.
(69) SMITH, LONGFIELD.
1920. Sweet potatoes. In Virgin Isl. Agr. Exp. Sta. Rpt. 1919, p. 16, fig. 2 on pl. 2.

30 BULLETIN 1021, U. S. DEPARTMENT OF AGRICULTURE.

(70) SPETH, GUSTAVE.

1891. Experiments in the culture of sweet potatoes, tomatoes, cabbage, etc. In Ga. Agr. Exp. Sta. Bul. 11, p. 22-46.

 (71) 1892. [Irish potatoes, sweet potatoes, tomatoes, forage plants.] Ga. Agr. Exp. Sta. Bul. 17, p. 165–198.

(72) STARNES, HUGH N.

1894. Sweet potatoes. Ga. Agr. Exp. Sta. Bul. 25, p. 127–161, 35 fig., 1 pl.

(73) STRAHAN, C. MORTON.1889. Analyses of cattle foods. Ga. Agr. Exp. Sta. Bul. 4, p. 62–71.

(74) STUBBS, WILLIAM C., BURNETTE, F. H., and WATSON, EUGENE.

1895. Horticulture. Results of the year 1894. La. Agr. Exp. Sta. Bul. 36, ser. 2, p. 1237–1286, 1 fig.

- (75) 1898. Report for 1896 and 1897 of the horticultural department of State experiments stations. La. Agr. Exp. Sta. Bul. 52, ser. 2, p. 283-332.
- (76) STUCKEY, H. P.
 - 1914. Sweet potatoes. Culture, storing, and studies in fertilizing. Ga. Agr. Exp. Sta. Bul. 107, p. 83–112, 24 fig.
- (77) TENBROOK, JOHN W.

- 1860. The Sweet Potato Culturist . . . 96 p., 3 fig. Rockville, Ind. (78) VOORHEES, E. B., and STREET, JOHN P.

1895. Experiments with fertilizers upon sweet potatoes. In N. J. Agr. Exp. Sta. 15th Ann. Rpt., 1894, p. 102–114.

(79) WATROUS, FRANK.

1889. Report of Arkansas Valley experiment station. In Colo. Agr. Exp. Sta. 2nd Ann. Rpt., 1889, p. 113–128.

(80) WHITE, H. C.

- . 1891. Analyses of feeding stuffs. In Ga. Agr. Exp. Sta. Bul. 13, p. 61-65.
- (81) WICKS, W. H.

1915. Sweet potato culture in Arkansas. Ark. Agr. Exp. Sta. Bul. 124, 31 p., 21 fig.

> ADDITIONAL COPIES OF THIS PUBLICATION MAY BE PROCURED FROM THE SUPERINTENDENT. OF DOCUMENTS GOVERNMENT PRINTING OFFICE WASHINGTON, D. C. AT

> > 30 CENTS PER COPY

 \bigtriangledown

