February 16, 1943:

Morrison Field (West Palm Beach) 37.3
Delray Beach 32.0
Homestead 25.7
Perrine 28.2
Sarasota 26.8
Iona (Ft. Myers) 31.3

In this area we have a drainage and irrigation set-up comprising 123,000 acres with 600 miles of canals and a yearly average rainfall of 66.47 inches for the past 14 years. In addition to the rainfall we have an irrigation pumping capacity of 160,000 gallons per minute. In this warm sandy loam area there 11,869.74 acres in winter vegetables, and 20,000 acres in dairies, groves, pineapples and other uses. It may readily be seen we still have a few acres in this warm, and water-controlled, area for the expansion of the Tropical Fruit Industry.

In conclusion, another factor which no doubt plays an important part in the temperature benefit enjoyed in this locality is directly attributable to soil characteristics. This territory, without exception, is made up of mineral soils that radiate heat much faster during cold weather than the organic Everglades soils.

Under the guidance of our able County Agent, "Red" Mounts, and occasional visits by Johnnie Lynch from the Sub-Tropical Experiment Station at Homestead, you may expect in the near future to hear more about this area and enjoy some of the fruits that meet every desire of a king.

A KEY TO FLORIDA MANGO VARIETIES

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One of the most interesting fruits which Florida produces on a commercial scale and which can hardly be produced elsewhere in the continental United States is the mango. While there are only a very few varieties which are of commercial importance, there are many varieties which have been introduced during the past half century from other lands, and many other varieties which have originated here as seedlings. These fruits appear on local markets all over the southern end of the state and also are often found on markets of northern Florida.

Nearly all Floridians know a mango when they see one, but most of them have heard only of the Haden or the common Turpentine seedlings, while the existence of other much superior varieties is practically unknown to them. Quite often an unfamiliar variety is found by a layman who wishes to know what it is. The purpose of this study is to present a means by which these interested people may be able to identify these fruit.

This study takes into consideration all varieties which are commonly grown in Florida or give promise of being widely grown in the near future. As more varieties come into prominence it is hoped that they can be added to this list and key. There are many seedling trees in gardens over the southern part of the state which have been named by their owners or their friends, but which exist as only a single specimen tree or a few specimens. It has been necessary to limit this key to varieties of wide distribution or of proven worth for propagation. It has also been impossible to
include any varieties not now found in Florida, regardless of their importance in other mango growing regions. A few varieties not known outside the Palm Beach areas are included because of the senior author's intimate acquaintance with that area.

Only fruit characters have been used in constructing this key, in order that it may be of widest possible usefulness. It should be stressed, however, that it is impossible to make any key which will cover all the possible variations which may occur in the fruit on even a single tree. Several fruit specimens, which seem to be fairly representative of the variety in question, should be used if possible in "keying out" varieties.

Some of the main characters used in this key are as follows: relationship between the length and width of the fruit; coloration of the ripe fruit—whether there was or was not developed any red color; presence or absence of a beak; conspicuousness of a nak; size (length); shape; presence or absence of fiber; aroma; quality; presence or absence and size of dots; character of apex; smoothness of skin; and whether the stem was on a raised button or sunken.

These characters are self-explanatory with the possible exception of the terms "beak" and "nak". The "nak" (see Fig. A, Plate I) is the stigmatic point; that is, the remnant of the spot on the ovary where the pistil of the flower was attached. This may be conspicuous or inconspicuous, on a raised protuberance, level or sunken. It also may vary in position from being on the apex of the fruit to being at a point about one-third the way from the apex to the shoulder. If a beak is present the nak is on the tip of the beak. The "beak" itself is a lateral protuberance more or less on a level with the apex and making the apical end of the fruit very broad. In many cases there is no question about the presence or absence of a beak, but in other cases there is. For this study a fruit has been considered to have a beak if the stigmatic point ("nak") is on a lateral protuberance on a level with the apex or if this protuberance, although small, is the end of a curve forming the dorsal edge of the fruit and passing by the apex without experiencing a sharp change in direction (see Fig. B, Plate I) and with the presence of a definite concavity above this point.

Several other characters, themselves quite plain, may need some explanation in regard to their use in this key and these descriptions. The "spots" occurring on the surface of the fruit are in connection with lenticels (air holes) in the skin of the fruit. These lenticels are present in the skin of all mango fruits, but their presence is conspicuously marked with these spots in some varieties. These marks may vary in size from very small "flecks" to quite sizable "spots", and in color from almost pure white to a yellow and sometimes even with brown centers. The number of these spots may be few or it may be many. The "bloom" of a plum is familiar to everyone, but its presence on the mango is less noticed. This "bloom" is a slight "dusty" or "waxy" substance which can be easily rubbed from the skin of the fruit. In many cases where this condition does occur it is rubbed off by handling or in transit before it reaches the market. Nevertheless, it is a character often overlooked in the description of mango fruits. The "blush" or "over-color" on mangos is influenced to some extent by the exposure to sunlight. A fruit which has hung in the shade has nowhere near the bright color that a fruit which has hung exposed to full sunshine has. In many cases there will be fruit on the same tree which vary from absolutely no blush to a very bright blush extending over most of the fruit. The "aroma" is another variable character. Almost every mango fruit has a certain amount of aroma in its make-up, but there are varieties such as the Amini which have so much aroma that one fruit left overnight in a room will fill the room with its fragrance. A fruit with such a strong aroma as this can be keyed out from other less fragrant fruits on the basis of this character alone. When in this key a fruit is mentioned as having
PLATE I

A - nak
B - ventral shoulder
C - stem
D - dorsal shoulder
E - apex
F - length
G - width
H - beak
I - depression above beak
J - basal cavity
a decided aroma, this latter condition is meant. When a fruit is mentioned as being "heart shaped" it does not refer to the conventional "valentine" heart shape, but to the shape of an animal's heart (a chicken heart for example) in which the base is broad and flattened, the ventral shoulder is fairly high and full, the apex is rounded, and the ventral sides slope in a fairly even curve from the shoulder to the apex without a noticeable depression.

This key is grouped in pairs. A pair of contrasting characters is given and each time a question is to be settled, one of these characters is accepted as being true while the other is discarded as being false. The instruction after the true statement is followed and another pair of contrasting characters is then under consideration. The procedure for using the key may best be explained by taking an example. Suppose we have a Haden mango which we do not recognize, but we have this key by which we want to trace it down. We take the key and read couplet No. 1 which gives two statements: "Length of fruit 1½ times its width or shorter" and "Length of fruit greater than 1½ times its width." Upon examination of our fruit we find that it is less than 1½ times its width, therefore it will agree with the first statement in couplet No. 1. After this true statement we find the number "2"; we therefore move on to couplet No. 2 which also has two statements "Fruit much shorter than its width" and "Fruit as long as it is wide or longer." Upon examination of our fruit we find that it is less than 1½ times its width, therefore it will agree with the first statement in couplet No. 1. After this true statement we find the number "2"; we therefore move on to couplet No. 2 which also has two statements "Fruit much shorter than its width" and "Fruit as long as it is wide or longer." We accept the second statement as being true and move on to couplet No. 3, which we are referred to after our true statement. Couplet No. 3 also has two statements, "Fruit yellow or green when ripe, showing no red" and "Fruit with some red or pink in color when ripe." As the Haden (our sample) has a definite color we accept the second statement as being the one to follow and move on to couplet No. 19, following the directions after this statement. Couplet No. 19 has the following choices: "Fruit with a definite beak" and "Fruit with no beak or an inconspicuous one, may or may not have a prominent nak." As our fruit has no beak we look for the directions after the second statement and thus move to couplet No. 27. Couplet No. 27 has the statements, "Fruit with a prominent nak" and "Fruit with no nak or an inconspicuous one." As our fruit has a very inconspicuous nak we decide on the second statement and move on to couplet No. 30. The statements which we find in couplet No. 30 say, "Fruit with many fibers, turpentine flavor, poor quality, smaller than four inches long" and "Fruit with few or no fibers (or longer than four inches) and of fairly good quality." As the second statement better fits our fruits we proceed to couplet No. 31 where we find the statements, "Fruit elongated, almost 1½ times as long as it is wide" and "Fruit chunky, about as wide as it is long." As our fruit is fairly chunky we accept the second statement and move on to couplet No. 33. Under couplet No. 33 we find the statements "Fruit rounded through shoulder" and "Fruit with definite lateral compression." Our fruit is rounded through the shoulder and has no lateral compression so we take the first statement as being true. Our instructions tell us to proceed to couplet No. 34 where we find the statements "Fruit greater than four inches" and "Fruit less than four inches long." Our fruit is greater than four inches long therefore we take the first statement as being true. Instead of finding a number after this statement as being true, we find the notation "Haden." This means that the fruit which we have been "keying-out" is a Haden. Variety descriptions may be found in Popenoe's "Manual of Tropical and Subtropical Fruits" for many of the old standard varieties, and in the 1942 Proceedings of this Society for several new ones. These will serve as a check on the correctness of the determination.

In some cases a character is rather arbitrary, as in the case of color. Fruit grown in the shade may develop no red color while on the same tree fruit hanging in the sun
will have a nice red blush. In these cases
the key will include both possibilities, so that
whichever choice is made, the correct solu-
tion may be reached.

Two new variety names are proposed, and
descriptions of them follow here. In addi-
tion it may be noted that Earle is very
similar to Cecil, but is slightly larger, lighter
in color and perhaps better in quality; while
Martin is a Sandersha seedling of large size
better for cooking than for table use, rather
triangular in shape and slightly fib-
rous.

Edward

*Origin* — Presumably one of the series of
crosses made between Haden and Carabao
by the late Edward Simmonds about 1928.
It has been grown in the Palm Beach area
to a limited extent under the name “Sim-
monds X,” but this name is liable to con-
fusion with the variety Simmonds.

*Description* — Form oblong, fairly plump;
size medium to large, weight 370 to 480 g.,
length 10.0 to 12.5 cm., width 7.5 to 10 cm.,
thickness 6.0 to 9.0 cm.; base rounded, the
rather slender stem inserted obliquely in a
basal depression with radiating grooves;
ventral shoulder higher and fuller than dor-
sal; apex rounded, without beak, the nak
small but prominent about 2.5 cm., above
the apex; surface smooth, orange-yellow
with a light pink blush in the sun, and with
numerous greenish-brown dots; flesh golden
yellow, firm and meaty, moderately juicy,
fiberless except next the seed, of mild, pleas-
ing flavor; quality very good; seed filling
only upper third of the stone, monoem-
bryonic. Midseason.

Samini

*Origin* — This is another of Mr. Sim-
monds’ crosses from hand pollination, this
time of a Saigon seedling with Amini.
Hitherto it has been known as “Saigon x
Amini,” and this cumbersome name is here
reduced to “Samini.” It has been propaga-
ted somewhat in the Palm Beach area.

*Description* — Form oval to subreniform,
with marked lateral compression; size small
to medium, weight 225 to 375 g., length
7.5 to 10.5 cm., width 7.5 to 9.0 cm.,
thickness 6.2 to 7.5 cm., base flattened;
shoulders about equally developed; apex
broadly rounded, the curve ending in a
pointed beak which is hardly above the apex
level; nak inconspicuous on tip of beak; sur-
fACE smooth, orange-yellow without blush,
with many small white dots; flesh firm,
golden yellow; mild and sweet in flavor;
fiberless; quality very good; stone slightly
beaked; seed filling stone, polyembronic.
Midseason. The variety looks like a large
Amini, and has the pronounced aroma of
that parent.

**Key to Mango Varieties Commonly
Grown In Florida**
— based on characters of the fruit alone

1. Length of fruit 1½ times its width or
shorter — 2.
   1. Length of fruit greater than 1½ times
   its width — 37.
2. Fruit much shorter than its width —
   Itamaraca.
   2. Fruit as long as it is wide or longer
   — 3.
   3. Fruit yellow or green when ripe, show-
ing no red — 4.
   3. Fruit with some red or pink color
   when ripe — 19.
   4. Fruit with a definite beak — 5.
   4. Fruit with no beak or an inconspicuous
   one (may or may not have a prominent
   nak) — 9.
   5. Fruit greater than five inches long
   — 6.
   5. Fruit less than five inches long — 7.
   6. Fruit lumpy with uneven skin, early to
   mid-season maturing — Langra Benarsi.
   6. Fruit with a smooth even skin, late
   maturing — Gola.
   7. Fruit oblong, beak recurved — Toto-
fari.
   7. Fruit chunky to squarish, beak even
   with apex (or slightly higher), not recurv-
ed — 8.
   8. Fruit with a very pronounced aroma
   — Samini.
   8. Fruit with a slight aroma — Paheri.
9 Fruit with an unconspicuous nak — 14.
10 Fruit heart-shaped with a broad base and shortened broadly rounded apex, nak about an inch up the ventral side of the fruit from the apex — 11.
10 Fruit tapering more to the apex, nak a fairly pointed protuberance less than three-fourths of an inch above apex — 12.
11 Nak on a stubby protuberance — Mulgoba.
11 Nak on rounded bump about one inch above apex or in depression below bump — 18.
12 Fruit laterally compressed, greenish to butter-yellow skin — Cambodiana.
12 Fruit thick and rounded through the shoulders, deep to golden-yellow skin — 13.
13 Apex of fruit pointed, characteristic cryptic markings prominent on the skin — Simmonds.
13 Apex of fruit rounded, and blunt, above markings lacking — Edward.
14 Fruit greater than four inches long — 15.
14 Fruit less than four inches long — 16.
15 Fruit oblong in shape — Brooks.
15 Fruit heart-shaped and covered with large white spots when ripe — Singapur.
16 Fruit very fibrous and of poor quality — 17.
16 Fruit fiberless or moderately fibrous, good quality — 18.
17 Fruit with a strong turpentine taste — Peach.
17 Fruit with little or no turpentine taste — Apple.
18 Fruit butter- to golden-yellow, fibrous — Bombay Yellow.
18 Fruit creamy to greenish-yellow, fiberless — Bennett.
19 Fruit with a definite beak — 20.
19 Fruit with no beak or an inconspicuous one (may or may not have a prominent nak) — 27.
20 Fruit oblong to elongate in shape — 21.
20 Fruit chunky to squarish — 22.
21 Fruit very fibrous — Number 11.
21 Fruit with very little or no fiber — Totofari.
22 Fruit greater than 4\(\frac{1}{2}\) inches long, ventral side bulged to make fruit triangular, both shoulders tapering rapidly from stem — Martin.
22 Fruit less than 4\(\frac{1}{2}\) inches long, one or both shoulders as high as or higher than point of stem attachment — 23.
23 Fruit chunky with broad base, dark red color, stem on raised button — Borsha.
23 Fruit laterally compressed — 24.
24 Fruit almost rectangular; irregular and angular in appearance — Julie.
24 Fruit almost sub-reniform in shape, gracefully curved — 25.
25 Fruit with a very pronounced aroma — Amini.
25 Fruit with only slight aroma or none — 26.
26 Fruit greenish-yellow to light yellow with a ruddy blush on exposed cheek, surface dull — Paheri.
26 Fruit a rich golden yellow, well covered with a ruddy bright crimson-red blush, surface shiny as though polished or waxed — Zili.
27 Fruit with an inconspicuous nak — 27.
27 Fruit with an inconspicuous nak — 30.
28 Fruit heart-shaped and chunky with a broadly rounded apex — 29.
28 Fruit elongated with a rounded or medium pointed apex — 13.
29 Fruit with many long fibers, turpentine flavor, poor quality — Peach.
29 Fruit lacking fibers, no turpentine flavor, excellent quality — Mulgoba.
30 Fruit with many fibers, turpentine flavor, poor quality, smaller than four inches long — Peach.
30 Fruit with few or no fibers (or longer than four inches) and of fairly good quality — 31.
31 Fruit elongated, almost 1\(\frac{1}{2}\) times as long as it is wide — 32.
31 Fruit chunky, about as wide as it is long. — 33.
32 Fruit orange-yellow in color with a
light crimson blush, early maturing — Fragrance.

32 Fruit greenish to bright yellow with a pinkish-red blush if in the sun, late maturing — Brooks.

33 Fruit rounded through shoulders — 34.

33 Fruit laterally compressed — 36.

34 Fruit greater than four inches long — Haden.

34 Fruit less than four inches long — 35.

35 Rounded base, bright yellow color with a crimson blush — Fernandes.

35 Broadly flattened base, greenish to creamy-yellow color with rarely a small dull red blush on exposed cheek — Bennett.

36 Broad ventral shoulder with a pronounced depression above apex — Faisanson.

36 Ventral side tapering in an even slope to the apex — Faiscell.

37 Fruit with a definite beak — 38.

37 Fruit with no beak or an inconspicuous one (may or may not have a prominent nak) — 41.

38 Fruit broad and plump with undulating skin — Langra Benarsi.

38 Fruit narrow or recurved with smooth skin — 39.

39 Both shoulders of the fruit tapering rapidly from stem — Sandersha.

39 One or both shoulders as high as or higher than the point of stem attachment — 40.

40 Greatest curvature of ventral side almost half way down from base, ventral shoulder even with point of stem attachment, exposed cheek with only a pinkish blush at the most — Totofari.

40 Greatest curvature of the ventral side almost one third distance down from base, ventral shoulder as high as or higher than point of stem attachment, exposed cheek with a crimson or garnet red blush — Ameeri.

41 Fruit with a conspicuous nak — 42.

41 Fruit with an inconspicuous nak — 44.

42 Fruit fairly wide through shoulder — Cambodiana.

42 Fruit narrow through shoulder — 43.

43 Light yellow skin with creamy yellow flesh — Earle.

43 Butter-to golden-yellow skin and flesh — Cecil.

44 Stem on raised button — 45.

44 Stem level or sunken — 45.

45 Fruit dark red on exposed side and covered with large white dots when ripe, early to mid-season — Springfels.

45 Fruit yellow to yellow-green when ripe, sometimes with a crimson blush, small white dots, late — Brooks.

46 Ventral shoulder rising slightly above stem attachment and falling rapidly but still fuller than dorsal — Thora.

46 Ventral shoulder definitely higher than stem attachment and full with an even curve — Ameeri.