CONTEST FOR THE BEST PAWPAWS

1916 JOURNAL OF HEREDITY

100 YEARS OF EXPLORATION
Pawpaws – wild and in the sun
A Treatise
ON THE
PAWPAW
BY
JAMES A. LITTLE
Carterburg, Indiana
Price 25 Cents

Yours truly,
James A. Little
David Faichild and Paul Popenoe (or is it Wilson Popenoe) sponsors of the contest - editors of the Journal of Heredity
James Little -
Cartersburg, IN
(suburb of
Indianapolis)
selected Uncle Tom

David Fairchild
and the hdqtrs of
the Journal of
Heredity,
Washington, DC
WHERE ARE THE BEST PAPAWS?

American Genetic Association Offers $100 for Information about Them—A Native Fruit That Has Been Long Neglected But Contains Much Promise

Of all the important native fruits of the United States, the least known is probably the papaw, which grows in the forests from the Gulf of Mexico to the Atlantic, west to Oklahoma and as far north as New York and Michigan. As an ornamental tree or shrub, it is occasionally grown even beyond these limits.

Belonging to the family of Annonaceae or custard-apples, the papaw has a good deal in common with those delicious fruits. Its creamy pulp is of exquisite texture in the mouth, while its distinctive flavor and its aroma, often too pungent, give it a decided individuality. The shiny black seeds occupy more space than is desirable, in most speci-

removed by intelligent breeding. With this idea a number of individuals have undertaken during the last few years to improve the papaw; but there is still plenty of room for work, and the American Genetic Association therefore feels the desirability of calling attention to the papaw, and pointing out the attractiveness of the problem it offers.

Best Seedlings Wanted

Among the wild trees along the creeks and in the underbrush of the river bottoms, there must be many a seedling which combines superior quality with a tougher skin and greater firmness than usual. Probably farmers have picked out some of these trees and transplanted
THE BEST PAPAWS
Superior Fruit Found as the Result of Association's Offer—The Largest Trees
—Importance of Proper Maturity of Fruit—Choice Varieties
Merit Wide Dissemination

THAT the North American papaw
(Asimina triloba; not related to
the Central American papaya,
which is sometimes called papaw)
is a more promising fruit than even
its admirers have believed, is the opinion
of all those who have seen the
material sent to the American Genetic
Association during the past fall. Better
fruits have been discovered than most
horticulturists thought possible, and
no great difficulty has been found in
shipping them. It is hoped that the
discovery of these superlative varieties
of papaw will lead to their widespread
propagation and dissemination.

It will be recalled that the associa-
tion last spring was enabled, through
the generosity of one of its members,
to offer a reward of $50 for the photo-
the eight fruits weighed 10, 10 and 12
ounces. The latter is the largest size
reached by any fruit which the associa-
tion has received. Numerous reports
have been made of fruits that weighed
a pound, or even more, but none such
was seen by this association. All corre-
respondents agree that the past summer
was particularly unfavorable to the
development of the papaw in the mid-
dle west, because of the long drought,
and this may be responsible for the
fact that no fruit larger than 12
ounces in size could be secured.

CHARACTERS OF A GOOD FRUIT

Mrs. Ketter's fruit, packed in excels-
sior, arrived in perfect condition, and
had matured very evenly. The skin
is comparatively tough and thick and
PRIZE WINNING FRUIT

Mrs. Frank Ketter, Ironton, Ohio, 1st Place

E. Oswald, Hagerstown, MD

J. Cheatwood, Gallia, OH

S. C. Martin, Springfield, OH
Farmingdale, Illinois - Benjamin Buckman

TWELVE VARIETIES
(c. 1900-1910)
Arkansas Beauty
Cheeley
Cox’s Favorite
Early Best
Early Cluster
Endicott
Hann
Hope’s August
Hope’s September
Hope’s September
Propst Early
Uncle Tom
Fig. 1. Pawpaw cultivar development and major lines of descent, 1900 to 1950.
35 Extinct Cultivars from the Early 20th Century

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncle Tom</td>
<td>1896</td>
</tr>
<tr>
<td>Cheely</td>
<td>1900</td>
</tr>
<tr>
<td>Hahn</td>
<td>1900</td>
</tr>
<tr>
<td>Early Best</td>
<td>1900</td>
</tr>
<tr>
<td>Arkansas Beauty</td>
<td>1900</td>
</tr>
<tr>
<td>Scott</td>
<td>1900</td>
</tr>
<tr>
<td>Endicott</td>
<td>1900</td>
</tr>
<tr>
<td>Hope’s August</td>
<td>1900</td>
</tr>
<tr>
<td>Hope’s September</td>
<td>1900</td>
</tr>
<tr>
<td>Cox Favorite</td>
<td>1900</td>
</tr>
<tr>
<td>Early Cluster</td>
<td>1900</td>
</tr>
<tr>
<td>Propst Early</td>
<td>1900</td>
</tr>
<tr>
<td>Ketter</td>
<td>1900</td>
</tr>
<tr>
<td>Cheatwood</td>
<td>1900</td>
</tr>
<tr>
<td>Martin</td>
<td>1900</td>
</tr>
<tr>
<td>Rees</td>
<td>1900</td>
</tr>
<tr>
<td>Oswald</td>
<td>1900</td>
</tr>
<tr>
<td>Potter</td>
<td>1900</td>
</tr>
<tr>
<td>Roach</td>
<td>1900</td>
</tr>
<tr>
<td>Fairchild</td>
<td>1925</td>
</tr>
<tr>
<td>Long John</td>
<td>1930</td>
</tr>
<tr>
<td>Taylor</td>
<td>1930</td>
</tr>
<tr>
<td>Tiedke</td>
<td>1930</td>
</tr>
<tr>
<td>Shannondale</td>
<td>1930</td>
</tr>
<tr>
<td>Osbourne</td>
<td>1930</td>
</tr>
<tr>
<td>Buckman</td>
<td>1930</td>
</tr>
<tr>
<td>Schriber</td>
<td>1930</td>
</tr>
<tr>
<td>Holtwood</td>
<td>1938</td>
</tr>
<tr>
<td>Hengst</td>
<td>1938</td>
</tr>
<tr>
<td>Gable</td>
<td>1940</td>
</tr>
<tr>
<td>Jumbo</td>
<td>1940</td>
</tr>
<tr>
<td>Betty Wirt</td>
<td>1960</td>
</tr>
<tr>
<td>Mudge</td>
<td>1960</td>
</tr>
<tr>
<td>Lawvere</td>
<td>1960</td>
</tr>
<tr>
<td>Kercheval</td>
<td>1960</td>
</tr>
</tbody>
</table>
WHY DID THIS HAPPEN?

No institutional backing and continuity

An industry was not developing

Propagation was by grafting – tops live ~40 years

Basically when the amateur dies, his work dies with him.
The American papaw (*Asimina triloba*) is the largest native fruit found in North America. It has only been casually utilized, and has remained unimproved by hybridization and selection prior to the experiments reported herewith. This is remarkable because the fruit is liked by many people, and the plant is inviting to the plant breeder, showing great variation in size, flavor, ripening time of the fruit. The papaw is a relative of a tropical genus which has pushed into temperate regions. The fruit has a flavor somewhat resembling its tropical relatives, the custard apple and the sweetsop.
G. A. Zimmerman
near Harrisburg, Pennsylvania

The Blandy Experimental Farm,
Boyce, Virginia
The Blandy Experimental Farm

Orland E. White
director 1926-55
Fig. 1. Pawpaw cultivar development and major lines of descent, 1900 to 1950.
The backwoods at Blandy – 30 years later

the woods where I discovered BEF-53 and BEF-32
the mothers of Potomac, Susquehanna, Rappahannock & Wabash
W. B. Ward (aka Pappy) – discoverer of Overleese 1950, in Rushville, IN – 60 miles from Cartersburg
Corwin Davis – Bellevue, Mich. – explorer & breeder

Wild Selections / Seedling Selections

Davis
Taylor
Taytwo

Convis
IXL
Lynn’s Favorite
Prolific
Tollgate
Sibley
Fig. 3. Pawpaw cultivar development and major lines of descent, 1985 to 2000.
The Wye Research & Education Center, & WMREC the Western Maryland REC, University of Maryland

Roughly 1500 seedlings in all, at both orchards
Variables included in selection index - Peterson

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Variable</th>
<th>Measurement</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigor</td>
<td>Rate of growth</td>
<td>Vertical meters of new growth per year</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Total yield</td>
<td>kilograms of fruit</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Yield density</td>
<td>grams of fruit per meter of tree height</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Fruit set</td>
<td>Percent of blossoms setting clusters</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Cluster size</td>
<td>Number of fruit per cluster</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Fruit size</td>
<td>grams</td>
<td>High</td>
</tr>
<tr>
<td>Yield</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit quality</td>
<td>Fruit size</td>
<td>grams</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Seed fruit ratio</td>
<td>Seed weight as percent of fruit weight</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Fleshiness</td>
<td>grams of flesh per seed</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Seed number</td>
<td>Number of seeds per fruit</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Seed size</td>
<td>grams</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Appearance</td>
<td>Subjective scale from 1 to 3</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Fresh aroma</td>
<td>Subjective scale from 1 to 3</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Cut aroma</td>
<td>Subjective scale from 1 to 3</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Sweetness</td>
<td>Subjective scale from 1 to 5</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Bitterness</td>
<td>Subjective scale from 1 to 5</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Resinousness</td>
<td>Subjective scale from 1 to 5</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Texture</td>
<td>Subjective scale from 1 to 3</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Overall flavor</td>
<td>Subjective scale from 1 to 5</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Aftertaste</td>
<td>Subjective scale from 1 to 3</td>
<td>High</td>
</tr>
</tbody>
</table>
From my two orchards I chose **18 Advanced Numbered Selections.**

Of those, **6 cultivars** have been chosen. These are commercially available in the US and soon will be available in Europe and Japan.

Names: Allegheny, Potomac, Rappahannock, Shenandoah, Susquehanna, and Wabash
OTHER CULTIVARS SINCE 1980

NC-1
Collins
Mango
Wilson
Convis
Davis
IXL
Lynn’s Favorite
Prolific
Taylor
Taytwo
Tollgate
Sibley

Greenriver Belle
Mary Foos Johnson
Sunflower
Glaser
PA-Golden 1 (2, 3, and 4)
SAA-Overleese
SAA-Zimmerman
Mitchell
Kirsten
KSU-Atwood
KSU-Benson
Rebecca's Gold
Wells
GOALS

• continued breeding (all crops have this)
• thicker skins
• color break, to facilitate picking
• less perishable fruit
• institutional support of research
• processed pulp – ice cream, etc.
• market cooperation - match supply & demand
• high grading – bring high quality fruit to market – low quality can turn off new consumers forever
Potomac River – the Paw Paw Bends

The End