

*This Book is not to be taken
mailing Room.*

UNIVERSITY OF TENNESSEE

Agricultural Experiment Station

BULLETIN



VOL. IX.

MAY, 1896.

No. 1.

APPLES OF TENNESSEE ORIGIN.

Bulletins of this Station will be sent, upon application, free of charge,
to any Farmer in the State.

KNOXVILLE, TENNESSEE, U. S. A.

KNOXVILLE, TENN.

BEAN, WARTERS & GAUT, Printers and Blankbook Manufacturers.

1896.

Bulletins of this Station will be sent, upon application, free of Charge, to any Farmer in the State.

THE AGRICULTURAL EXPERIMENT STATION

OF THE UNIVERSITY OF TENNESSEE.

CHAS. W. DABNEY, JR., PRESIDENT.

EXECUTIVE COMMITTEE :

O. P. TEMPLE,	JOSEPH W. ALLISON,
JAMES MAYNARD,	T. F. P. ALLISON,
	HUGH G. KYLE.

TREASURER :
JAMES COMFORT.

SECRETARY :
J. W. GAUT.

THE STATION COUNCIL IS COMPOSED OF ITS OFFICERS :

DR. CHAS. W. DABNEY, JR., President.
CHAS. F. VANDERFORD, Secretary.
R. L. WATTS, Horticulturist.
J. B. MCBRYDE, Chemist.
S. M. BAIN, Botanist.
C. E. CHAMBLISS, Entomologist.
CHAS. A. MOOERS, Assistant Chemist.
CHAS. H. WHITE, Librarian.
J. L. SPINKS, Farm Manager.

The Station has facilities for analyzing and testing fertilizers, cattle foods, milk and dairy products; seeds with reference to their purity or germinating power; for identifying grasses and weeds, and studying forage plants; for investigating the diseases of fruits and fruit trees, grains and other useful plants.

The Station Bulletins and Reports will be sent, free of charge, to any farmer within the State.

Packages by express, to receive attention, should be *prepaid*.

All communications should be addressed to the
SECRETARY OF THE

AGRICULTURAL EXPERIMENT STATION,
KNOXVILLE, TENN.

 The Experiment Station building, containing its offices, laboratories and museum, and the plant-house and horticultural department, are located on the University grounds, fifteen minutes walk from the Custom House in Knoxville. The Experiment farm, stables, milk laboratory, etc., are located one mile west of the University, on the Kingston pike. Farmers are cordially invited to visit the buildings and experimental grounds.

Bulletins of this Station will be sent, upon application, free of charge, to any Farmer in the State.

HORTICULTURAL DIVISION.

APPLES OF TENNESSEE ORIGIN.

R. L. WATTS.

Early in 1894 our attention was called to a number of Tennessee seedling apples which were reported to be valuable, but unknown out of the immediate vicinity of their origin. Upon request specimens of the fruit from these trees were sent to the Experiment Station for examination. We were more than pleased with the merit of some of the apples received, and instituted an investigation at once, the results of which have been very gratifying. Circular letters were sent to a thousand or more farmers and fruit growers inquiring as to new seedling apples. In response to these circulars and many personal letters written during the past two years, we have ascertained the location of probably a hundred trees reported to be seedlings of more or less merit. The favorable season of 1895 afforded an excellent opportunity to collect specimens. Apples of both new and old varieties were forwarded to the Station. The wide range of specimens studied, described and photographed, enabled us to draw conclusions regarding the comparative value of well known standard sorts; to ascertain with considerable accuracy the districts in the State best adapted to apple culture; and to determine the merit of seedling fruits in comparison with known standard varieties.

This bulletin is only a partial report of our work. Nothing is said concerning well known varieties, and many supposed seedlings which have been studied are not considered herein. It has not been possible to determine with certainty the history of some apples reported to be seedlings. In other instances we were unable to obtain fruit from reported seedling trees. Therefore our friends, who have so kindly co-operated in this investigation, should not be disappointed if the specimens they have furnished are not reported in the following pages. The absence of such reports is due to an incomplete study of the specimens or of the

history of the trees from which they were procured, or the specimens were not considered worthy of public mention.

It is our purpose to continue a study of Tennessee seedling apples. We urge all who may be interested in the fruit industry to inform the horticultural division of any seedlings in their neighborhood that are considered valuable. These will be investigated, and reported in a future bulletin if they are of sufficient merit.

Every seedling reported in this bulletin is doubtless valuable for planting in the vicinity of its origin. It will require several years of testing, however, to determine their value for general orchard use in other sections of the State or country. We predict an extensive propagation and a wide dissemination of some of the new varieties described, but do not consider it safe to recommend them as freely as we would the Paragon, Transparent or York Imperial, without their being submitted to as fair a trial as these apples. It is the duty of nurserymen and orchardists to thoroughly test their vigor of growth, hardiness, productiveness and fruiting characteristics under varying soil and climatic conditions. Of the new seedlings which the Experiment Station has located and described, we have merely given facts concerning the trees and fruit as found where originated. All of these varieties are susceptible to improvement or degeneration when grown under conditions unlike those of their origin.

Most of the new seedlings described have not been introduced—a few having been propagated locally. It is hoped that the originator in each case will bear in mind that our apple investigation has been conducted for the prime benefit of Tennessee farmers and fruit growers, and that it would scarcely be fair to the Experiment Station which has been the means of bringing the seedlings before the public, to sell the exclusive right for their propagation and dissemination to nurserymen conducting business in other States, unless such nurserymen have a large patronage in our own State. We would much prefer a disposition of limited quantities of cions to several prominent Tennessee nurserymen, and then to those residing in other parts of the country. Such a distribution of stock would result in a most thorough test.

An endeavor has been made to name the seedlings described in accordance with the rules of the American Pomological Society. This has been difficult in some instances. It is hoped, however, that the names will be satisfactory to the originators.

It has been possible in only a few cases to accept the names suggested by the originators, as they had been previously bestowed upon other apples. This has also been true with better known seedlings described in nursery catalogues, as McKinley Green and Jones' Seedling. Neither of these names would be accepted by the American Pomological Society; hence, they have been inserted as synonyms and new names given to the varieties. Rules 3 and 4 of the American Pomological Society are as follows:

Rule 3. The name of a fruit should, preferably, express, as far as practicable by a single word, a characteristic of the variety, the name of the originator, or the place of its origin. Under no ordinary circumstances should more than a single word be employed.

Rule 4. Should the question of priority arise between names for the same variety of fruit, other circumstances being equal, the names first publicly bestowed will be given precedence.

In several instances, neither the name of originator nor the place of origin being acceptable, in accordance with Rule 4, the name of a prominent public benefactor of the county or State has been employed.

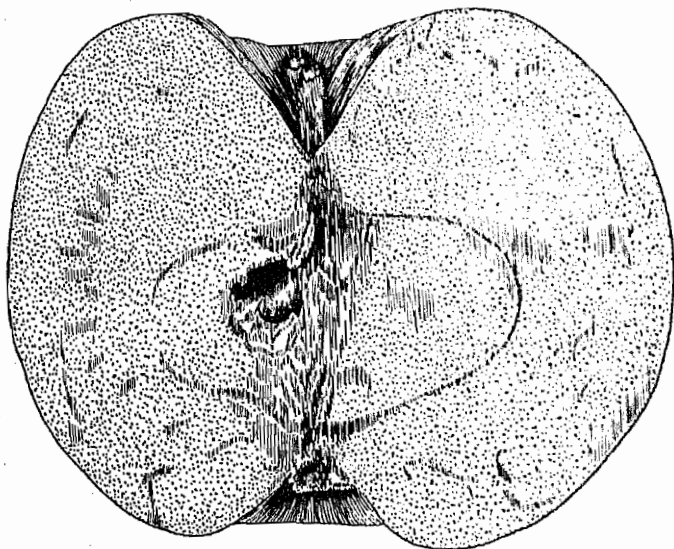
The illustrations of apples described are from original photographs made by the horticultural division of the Experiment Station, showing the natural size of the specimens received for examination. Drawings of the photographs were made for reproduction by Prof. Chas. E. Ferris, instructor of drawing in the University of Tennessee.

We cannot close this introductory chapter without grateful acknowledgment to all who have contributed in any way to the study of Tennessee apples; to many faithful correspondents who have rendered efficient service; to those who have made sacrifices in sending specimen fruits; to the Monroe Horticultural Society and the East Tennessee Horticultural Society for valuable assistance; and to Prof. S. B. Heiges, Pomologist of the United States Department of Agriculture. We are especially indebted to Prof. Heiges. Through his kind co-operation, duplicate descriptions of specimens of many varieties sent the Pomological Division were furnished the Experiment Station, which formed a check on our work, and his assistance in identifying varieties was of inestimable value.

ALLISON—Synonym, Jones' Seedling.

Origin, Williamson county, Tenn. Received from W'm. Hy. Smith, Leiper's Fork, Williamson county, in whose catalogue it has been described for several years.

Fruit large, roundish oblate, inclining to conical, sometimes angular; surface moderately smooth, yellow, shades and stripes of pale red; cavity irregular, broad, deep, with heavy russet



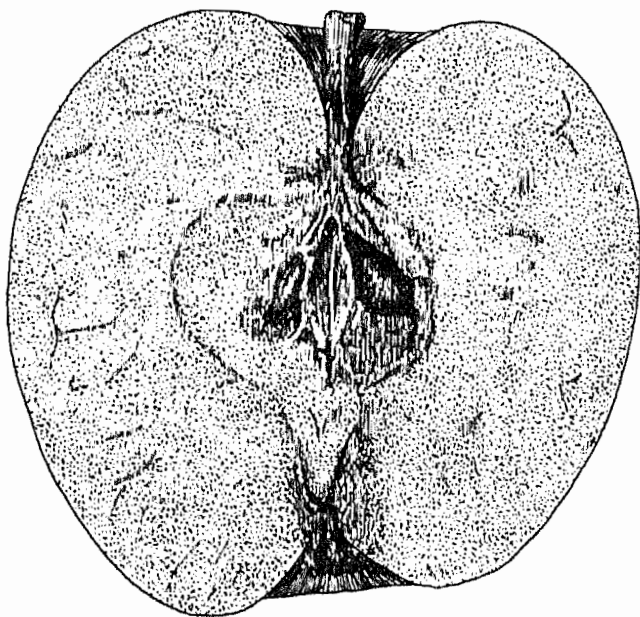
ALLISON.

markings; stem short, stout; basin wide, irregular, medium depth; calyx open, large. Skin thin; core large; seeds few; flesh medium fine, yellowish, tender, juicy; flavor rich, pleasant, spicy, subacid; quality very good. A valuable winter apple.

Mr. Smith reports that the tree resembles Red Limbertwig, and that it is thought to be a cross between Red Limbertwig and Pearmain. The tree is a good bearer and blooms late. It requires a good grade of limestone soil, and will not succeed on high, poor freestone lands.

BEN DAVIS.

Many readers of this bulletin will doubtless be surprised to find the Ben Davis apple placed with those of Tennessee origin. There is a difference in opinion as to its history. A prominent Kansas fruit grower claims that it was first found in Virginia, the cions taken to Kentucky, and there propagated. Downing states that its origin is unknown, but that old trees are found growing in a Kentucky orchard. A prominent Tennessee fruit grower gives a very concise history of its origin in this State, and the conveying of cions to Kentucky. The accounts are at least very



BEN DAVIS.

interesting, and it is hoped that the publication of the following notes will result in additional facts from others who may know something concerning the history of the apple in question.

We are indebted to Prof. S. B. Heiges, Pomologist of the United States Department of Agriculture, for the first account, which is copied from Proceedings of American Pomological Society for 1869, page 40.

Mr. Howsley, of Kansas, said the Ben Davis was one of their most profitable apples; he handed the Secretary his knowledge of its history as follows: "In the year 1799, Wm. Davis and John D. Hill emigrated to Kentucky and settled in that part of Logan

county now called Butler county. They located near Capt. Ben Davis, the brother of Wm. Davis, and the brother-in-law of Hill. A few years afterwards, Hill returned to Virginia, on business; and, when he returned to Kentucky, he brought some apple grafts with him. Hill and Wm. Davis raised fruit from these grafts. Capt. Ben. Davis, finding the apple a desirable one, grafted the same for himself, as well as raised a young nursery of it. These trees were sold throughout the country: and, for want of knowing any other name, the people called it the Ben Davis apple. The Davis family, however, call it the Virginia Pippin."

From Downing's Fruits and Fruit Trees of America: "The origin of this apple is unknown. J. S. Downer, of Kentucky, writes that old trees are there found from which suckers are taken in way of propagating."

A personal letter to the writer from J. C. Hodges, Morristown, Hamblen county, Tennessee, who is Vice President of the East Tennessee Horticultural Society, and well known as a prominent and thoroughly reliable fruit grower, contains the following account: "During most of the first half of the present century and up to 1860, or thereabout, there lived on Nolichucky river, within this (Hamblen) county, a wealthy farmer whose name was Ben Davis. His son, R. A. Davis, resides now at White Pine, Jefferson county, Tennessee. On the farm owned by Ben Davis originated the apple in question. From the original tree others were propagated, and for many years before the death of Ben Davis he raised and harvested large quantities of these apples. The house of Ben Davis was on the great stock route from Kentucky to the Carolinas. Many drovers made it a point to stop with him in going and returning from the South. It was his custom to supply their saddle bags with these apples, especially on their return trips. There was no name for the apple known to them, so they called it the Ben Davis. Grafts or cions were taken to Kentucky and the apple was propagated and disseminated there before it was in Tennessee. I have obtained these facts on personal inquiry from the son of Ben Davis above mentioned. And besides, these facts are well known in the neighborhood among the older people."

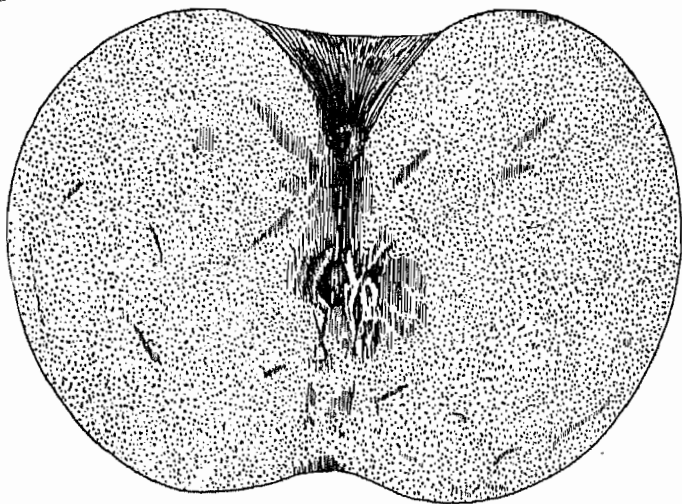
We will leave the reader to decide for himself as to the most probable origin of the Ben Davis. It is hoped that additional facts may be obtained which will affirm the account of Mr. Hodges.

This variety is extensively grown throughout the State. In reports from correspondents it is mentioned more frequently than any other apple. Specimens were received by the Experiment Station from various sections of the State. They differed greatly in appearance and quality. The most perfect and highly colored specimens were sent by M. Curtis, Capling, DeKalb county; we have not seen handsomer specimens from any state than these. Excellent specimens were also received from W. H. McGuffey, Walden's Ridge, near Chattanooga; I. H. Roberts, Knoxville; James Lackey, Eaton's Cross Roads.

Most farmers are familiar with the characteristics of both tree and fruit. It is a rapid, vigorous grower, begins to fruit early and bears heavy crops. The fruit is not first class in quality; its symmetrical form and bright color when grown under favorable conditions, secure for it, however, a ready sale.

CRADDOCK.

Specimens forwarded to the Agricultural Experiment Station by B. A. Craddock, Curve, Lauderdale county, Tennessee. Originated with A. Davis, Woodville, Haywood county, Tenn.



CRADDOCK.

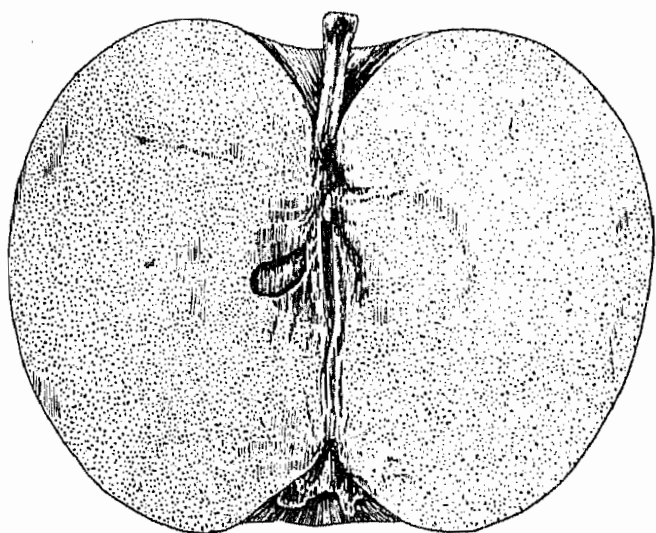
Roundish oblate, large; whitish yellow, overspread with brownish gray; surface moderately smooth, containing some russet patches; dots conspicuous, brown; cavity large, deep, with gradual slope, very dark russet markings; stem short, stout; basin medium size, regular, medium depth, gradual slope, marked with

furrows and mamuiform lumps; calyx segments long, converging and reflexed; eye medium size, nearly closed. Skin thin, tender; core large, wide, nearly closed, clasping the eye; seeds few, medium size, plump, brown; flesh whitish, medium fine texture, tender, juicy; flavor rich, subacid; quality good. Season August and September. A promising apple for late summer and fall.

DABNEY.

Originated with S. H. Stepp, Dry Creek, Carter county, Tenn. Sent to the Agricultural Experiment Station in September, 1896.

Fruit large, roundish oblate, surface moderately smooth, greenish yellow, washed red, striped crimson, overspread with russet; dots conspicuous, yellow or brown, some indented; cavity



DABNEY.

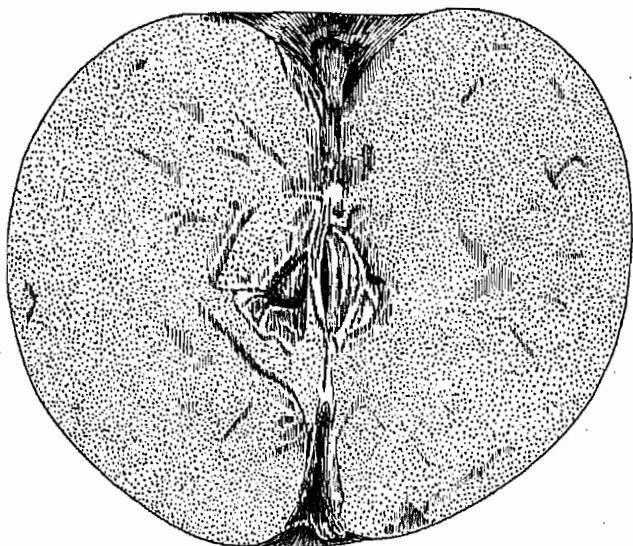
large, rather wide, medium depth, gradual slope, marked with russet; stem of medium length, stout; basin large, deep, regular, slope abrupt; calyx segments wide, stout, generally deciduous; eye large, open. Skin thick, tender; core conical, large, clasping the eye, partially open; seeds numerous, imperfect, medium size, brown; flesh yellowish satiny, texture medium, fine, tender, juicy; flavor subacid, rich, sprightly; quality very good. Season September. Tree very productive.

Mr. Stepp has originated a number of valuable seedling apples from seed selected from varieties of special merit. A liberal

quantity of the Dabney apple was sent to the Station, which made it possible for a large number of friends to pass judgment upon this variety. Perhaps some of the testimonials concerning its appearance and quality were slightly extravagant, but in justice to Mr. Stepp, who has labored so persistently in the improvement of Tennessee apples, we do not hesitate to say that no specimens of old or new varieties that have come to us during our investigation has received so many worthy compliments from officers and friends of the Experiment Station as this apple. Its symmetrical form and delicious flavor would make it a most popular market variety.

DEADERICK.—Synonym, Ozark Pippin and Ben Ford.

Originated with Benjamin Ford in Washington county, Tenn. Sent to the Experiment Station by several orchardists.



DEADERICK.

Fruit large, roundish conical; surface smooth, lemon yellow, with a few fungous clouded spots; dots brown, many with white or green bases; cavity regular, large, deep, gradual slope, marked with down and furrows; stem short, stout; basin small, regular, shallow, gradual slope; calyx segments wide, short, converging, reflexing at point; eye small, closed or partially open. Skin of medium thickness, tough; core conical, clasping the eye, large, partially open; seeds numerous, medium size, plump, brown; flesh

yellowish, medium fine, breaking, juicy; flavor mild, rich, pleasant subacid; quality good to very good. Season late fall and early winter. Very productive.

It was first disseminated by a Mr. Barnes as Ozark Pippin, and is reported as highly satisfactory by the following: Eli Marshall, Rheatown, Greene county; David P. Sherfy, Johnson City, Washington county; M. Curtis, Capling, DeKalb county; J. E. Crowder, Lenoir, Loudon county; R. J. White, Swanay, Greene county; J. B. Pence, Limestone, Morgan county; Irenius Keicher, Conkling, Washington county. Some of these persons have kept the fruit until January. We consider the Deaderick a very valuable early winter apple.

DODGE'S CRIMSON.—Synonym, Cumberland Black. (Description from Downing's Fruits and Fruit Trees of America).

Originated with J. W. Dodge, Pomona, Tenn. Tree a free grower, making a round or spreading head, with slender limbs, which droop with the weight of the fruit. Young shoots very dark brown; an annual and great bearer.

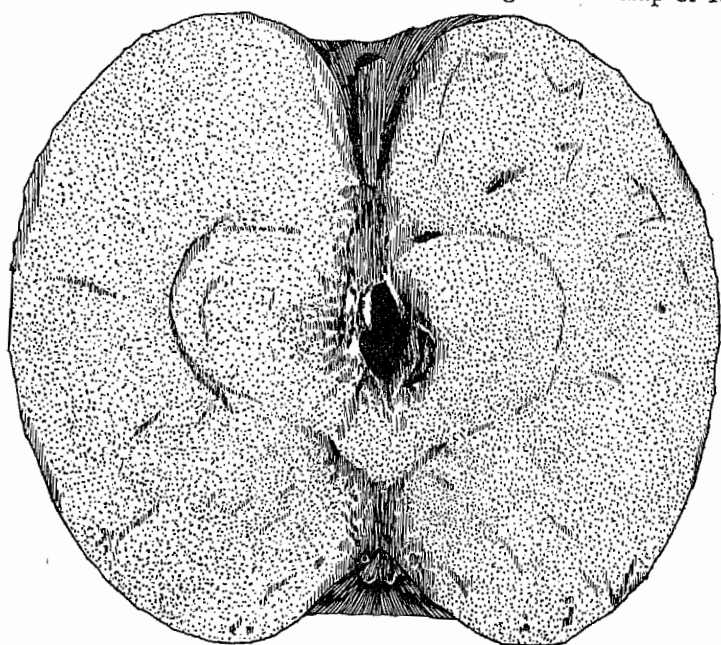
Fruit medium, roundish conical, deep rich red, almost purplish, few small light dots. Flesh white, sometimes stained a little next the skin, firm-grained, tender, juicy, sprightly, vinous. Good to very good. December, January.

GLENLOCH.

Originated on the farm of H. M. McCroskey, Glenloch, Monroe County, Tenn. Sent to the Agricultural Experiment Station by the originator in January, 1896.

Fruit large, roundish truncate; surface moderately smooth, yellow, washed red, indistinctly striped dark crimson, with a very thin spreading of gray-like bloom; dots numerous yellowish gray; cavity regular, very deep, large, abrupt slope, marked with russet gilding; stem medium length, stout; basin wide, large, deep, abrupt slope, containing corrugations and leather crackings; calyx segments small, converging, one-half reflexed; eye large, closed or partially opened. Skin of medium thickness, tough; core medium size, partially open, conical, clasping the eye; seeds numerous, large, plump, brown; flesh yellowish, fine, breaking, juicy; flavor subacid; quality good. Season early winter. Very productive. Closely resembles York Imperial,

but the originator, who makes a specialty of growing seedling apples, states that the Glenloch is a seedling of Winesap or Red



GLENLOCH.

Limbertain. This variety is worthy of a careful trial in different parts of the State.

HARPER. — (Description from Downing's Fruits and Fruit Trees of America.)

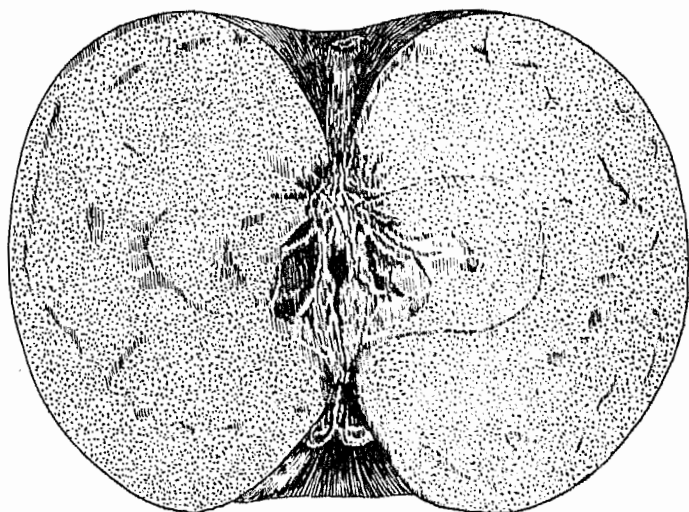
Of unknown origin, supposed to be Tennessee; tree vigorous, round head; bears moderate crops annually, and popular where known.

Fruit medium to large, oblate, slightly conic; skin whitish yellow, shaded, striped and splashed with light and dark bright red nearly over the whole surface, with many large and small light dots, a portion being areolar; stalk rather short, slender; cavity large, deep, yellowish; basin rather large, slightly wrinkled; flesh whitish, half fine, tender, juicy, mild, pleasant subacid; core small. October, January.

HARWELL. — Synonym, Ball's Choice.

Originated with S. A. R. Swan, Pulaski, Giles County, Tenn. Fruit large, roundish oblate; surface moderately smooth, some russet patches; color yellowish green, with a few dull red stripes;

dots variable, numerous, brown; cavity medium in size, regular, medium depth, gradual slope, marked with russet nettings; stem medium length, stout, slightly curved, downy; basin large, regular, deep, slope abrupt, marked with shallow furrows and leather crackings; calyx segments wide, short, converging; eye



HARWELL.

closed, or partially open. Skin containing numerous clouded fungous spots; core oblate, medium size, clasping the eye, very slightly open; seeds angular, imperfect, light brown; flesh greenish yellow, medium fine texture, breaking, juicy; flavor subacid; quality good. A promising winter apple.

HATCHER.—Synonym, Hatcher's Seedling. (Description from Downing's Fruits and Fruit Trees of America.)

Originated on the farm of the late O. C. Hatcher, near Franklin, Tenn. Tree an upright thrifty grower, not an early bearer, but produces good crops annually; a late keeper and one of the most popular apples in Middle Tennessee.

Fruit medium, roundish inclining to conic, slightly angular; skin very dark rich red, sometimes almost purplish, a few light dots; stalk short, small; cavity medium, often slight russet; calyx open; basin medium, slightly plaited; flesh yellow, fine, rather compact, juicy, mild, pleasant rich subacid, almost sweet; very good; core small. January, March.

KEICHER.—Synonym, Pleasant Garden.

Received from I. Keicher, Conkling, Washington county, Tenn. Origin, Pleasant Garden, Washington county. Examined by the Experiment Station in September, 1895.

Fruit small, roundish conical; color greenish yellow, with a covering of dull red stripes; surface smooth, numerous yellow dots; cavity medium in size and depth, regular, abrupt, russet markings; stem short, straight, rather thick; basin medium size, regular, medium depth, abrupt, russeted, with straight irregular furrows; calyx segments short, converging; eye small, partially closed. Skin thin, tough; core small, roundish, partially open; seeds few, medium size, plump, dark brown; flesh yellow, firm, moderately fine, tender; flavor mild, very pleasant subacid; quality very good. An autumn apple. Especially valuable for dessert purposes.

KEY'S RED.—(Description from Downing's Fruits and Fruit Trees of America.)

A new variety which originated with the late Martin Key, of Clay Brook, Madison county, Tenn., and is said to be an acquisition for the locality of its origin. Tree hardy, a strong, vigorous grower, spreading, and bears good crops annually.

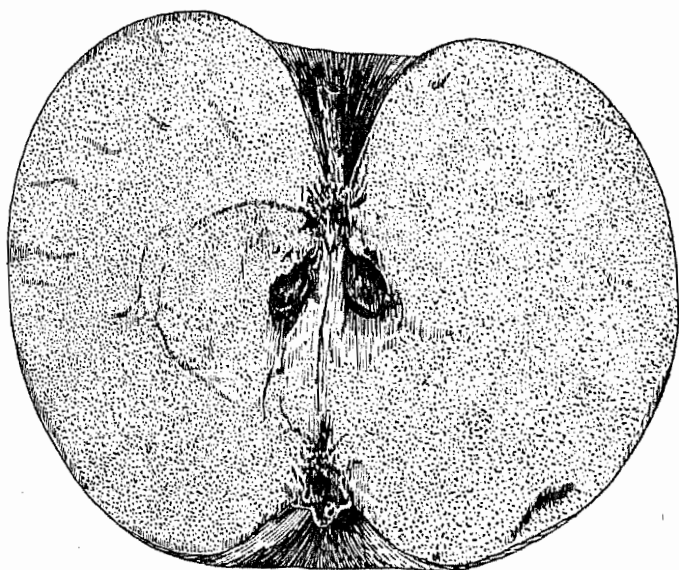
Fruit medium, roundish oblate, slightly conical, sometimes a little oblique; skin pale greenish yellow, nearly covered with dark red, and many rather large yellowish areole dots; stalk short, small; cavity medium, rather deep, russeted; calyx open; basin rather large, deep, slightly plaited; flesh whitish, a little coarse, juicy, subacid, slightly aromatic; core small. Ripens from October to February.

KINNAIRD.—Synonym, Kinnaird's Choice.

Specimens of this variety have been sent to the Station by several growers. It is a well known and highly popular apple of Tennessee origin, and extensively cultivated not only in this but in other States.

We can not do better than give the description, in a slightly modified form, found in "Downing's Fruits and Fruit Trees of America," First Appendix, page 18. Originated on the farm of Michael Kinnaird, of Franklin, Williamson county, Tenn. Tree a thrifty, vigorous grower, not very upright or regular, similar to Winesap; an early and annual bearer, producing heavy crops alternate years.

Fruit large, oblate, inclining to conic, slightly angular or obscurely ribbed, sides sometimes unequal; skin yellow, almost covered with dark rich red, many small light dots near the crown, and larger ones and less number near the base; stalk short, small, sometimes by a lip; cavity wide, deep, russeted; calyx closed; basin large, deep, furrowed: flesh yellowish, half fine, crisp, tender, juicy, mild, rich subacid, slightly aromatic; core small. Very good, January.



KINNAIRD.

Growers seem to differ in reports as to the season of the Kinnaid. Some simply state that it is a fall apple, while others write that they have kept specimens in a perfect state until February and March. It can certainly be classed as a medium winter apple.

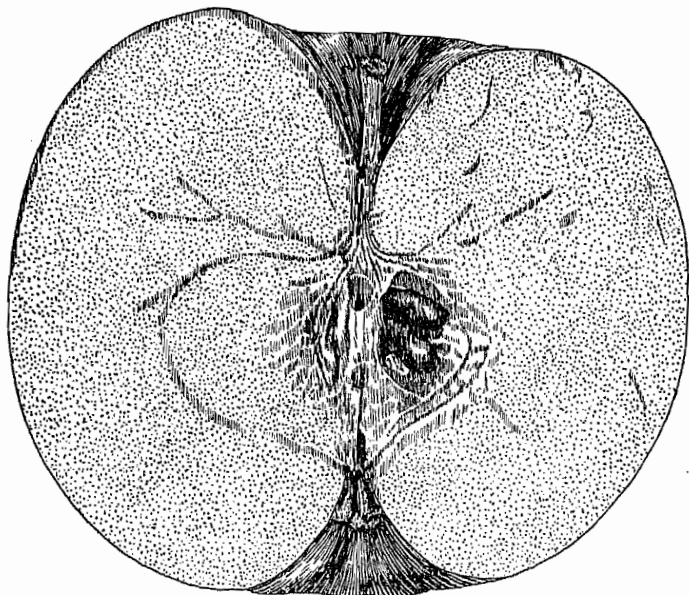
A large number of correspondents have reported this apple one of the most satisfactory grown in their respective localities. The addresses of these persons are given below, who will doubtless answer inquiries made by any contemplating planting orchards, and who reside in the counties named, or in other counties the soils and climatic conditions of which are quite similar to those in the counties named: M. M. Harpole, Summitville, Coffee county; I. O. B. Richardson, Normandy, Bedford county; B. A. Craddock, Curve, Lauderdale county; D. D. Cate, Grady, Hickman county; M. Curtis, Capling, DeKalb county; John C. Chilton,

Otto, Pickett county; R. Baker, Spring City, Rhea county; T. W. Merritt & Son, S. Wolf, Graham Higby, Grandview, Rhea county; J. G. Moore, Woodbury, Cannon county; A. M. Ezell, Sumac, Giles county; J. F. Fisher, Apison, James county; Adam Gurleny, Gap Run, Carter county; I. W. Bradley, Thornton, Sumner county; I. W. Smith, Chanute, Pickett county.

Wm. Hy. Smith, a prominent nurseryman and fruit grower of Leiper's Fork, Williamson county, states that it is the finest apple grown in Middle Tennessee. A recent report of the Missouri Horticultural Society contains the following: "We recommend Kinnaird's Choice, a very high colored, red apple of medium size and first quality. We cannot say too much for this variety. Should the tree prove a good grower, hardy and prolific bearer, it will take a prominent place among the apples of Missouri."

LANGDON.—Synonym, Morgan.

Received from R. J. White, Swanay, Greene county, Tenn., in September, 1896. Generally known in the locality where originated as the Morgan apple. This name should be dropped as it has been applied to several varieties previously described in standard works.



LANGDON.

Fruit roundish oblate, large; surface smooth; color yellowish, with clouded fungous spots; dots variable, brown; skin medium,

thick, tender; cavity regular, large, deep, with gradual slope, marked with russet and furrows; stem small, basin small, regular, medium depth, abrupt slope, with furrows and russet markings; calyx segments narrow, short, converging, reflexing at point; eye very small, closed; flesh yellowish, fine grained, tender, juicy; flavor rich, sprightly, subacid; quality good; core wide, open, clasping, medium size; seeds medium size, plump, brown. Season early winter. Reported a vigorous grower and a heavy bearer. Mr. White wrote last fall, "My Morgan trees are loaded with fine fruit, while most of my other trees contain few specimens."

MARSH.

Specimens of this variety have not been examined by the Experiment Station, but it is described in the 1893 report of Wm. A. Taylor, the Assistant Pomologist of the United States Department of Agriculture. The following description is copied from this report: Forwarded to the Division of Pomology by G. W. Walker, Friendsville, Tenn. Apples nearly round, of medium size; surface smooth, a little angular, dull green, modified by dull red striping and clouding; dots gray, numerous near apex; cavity medium, somewhat irregular, of medium depth, rather abrupt slope, marked with slight knob on one side, stem $\frac{5}{8}$ inch long, uniform, rather stout; basin quite large, round, shallow, with a broad saucer-like slope. Skin of medium thickness, firm; core small, round, slightly open at the center, clasping; seeds numerous, broad, shaded brown and black; flesh greenish white, moderately tender, very juicy, mild subacid; quality good; season winter. Tree healthy, prolific; leaf large, leathery, light green above, gray beneath; broad obovate, with deep serrations. A seedling of North Carolina Buff planted 16 years ago by Mr. Marsh, of Blount County, Tenn. It fruited at five years from planting and has borne every year since.

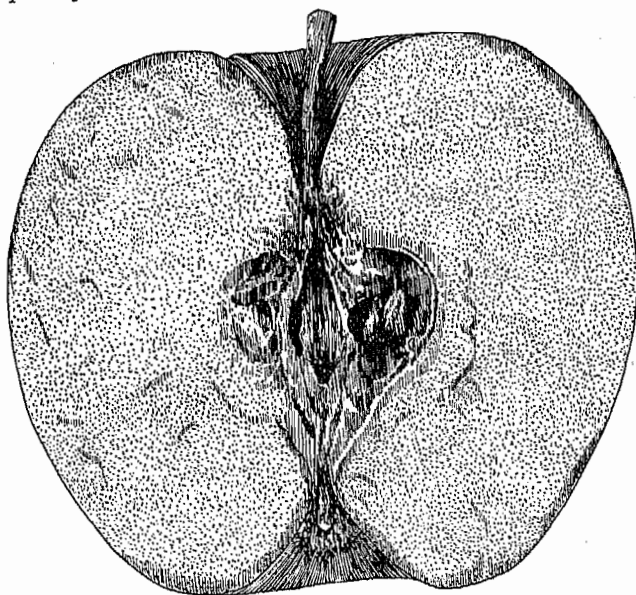
MCCROSKEY.

Originated with H. M. McCroskey, Glenloch, Monroe County, Tenn. Sent to the Agricultural Experiment Station by the originator.

Fruit medium size, roundish, very symmetrical; surface smooth, regular, yellow, washed over nearly the entire surface with bright red; cavity regular, medium size, deep, abrupt slope, containing some russet; stem rather long, moderately slender; basin regular, medium size, deep, abrupt slope, slightly corrugated; calyx segments broad, short, reflexed; eye medium size,

open. Skin thick; core medium size, oval, clasping the eye, open; seeds pointed, oval, medium size, brown, two in a cell; flesh yellowish, crisp, very juicy; flavor mild subacid; quality good. Season late winter.

We consider this the most valuable new seedling winter apple that has been brought to our notice in the State. It is reported to be a seedling of the Winesap. Well preserved specimens were sent to the Experiment Station as late as May 1st. It will doubtless become prominent as a winter market apple in this and perhaps adjoining States. Its main points of merit are, productiveness, vigor in growth, symmetry and beauty of fruit, and good quality.



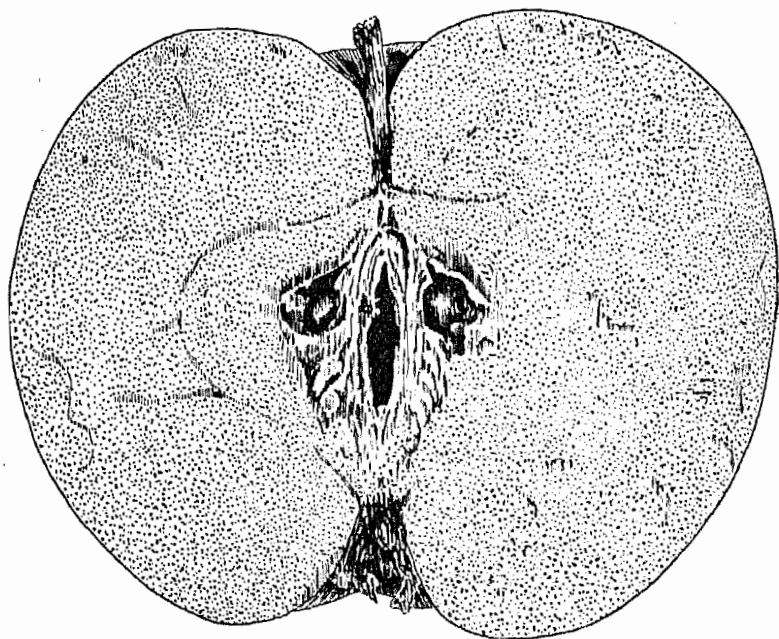
McCROSKEY.

Prof. S. B. Heiges, Pomologist of the United States Department of Agriculture, writes the following concerning the McCroskey: This is one of the finest apples that you have sent to the Division of Pomology; it bears a close resemblance to a highly colored York Imperial but is far superior in quality to that variety. We have yet (February 3rd) a specimen of it in so fine a condition that it promises to keep until March. This variety ought to be a very late keeper if grown in the North. I should be pleased to receive a few cions for testing in my own orchard in Pennsylvania.

McMILLIN.—Synonym, McKinley.

Supposed origin Putnam County. Sent to the Experiment Station by R. B. McKinley, Pekin, Putnam County, Tenn.

Fruit large, roundish; surface smooth, greenish yellow with suggestion of blush on exposed side; dots brown or gray, some areole; cavity medium size, regular, medium depth, gradual slope, russet markings; stem medium length, rather slender; basin medium size, regular, medium depth, gradual slope, with shallow furrows; calyx segments wide, short, converging or



McMILLIN.

slightly reflexed; eye medium size, open. Skin thick, tough; core conical, just clasping the eye, large, open; seeds numerous, medium size, plump, brown; flesh greenish yellow, rather coarse in texture, tender, juicy; flavor subacid, rich, very pleasant; quality good. Season late winter.

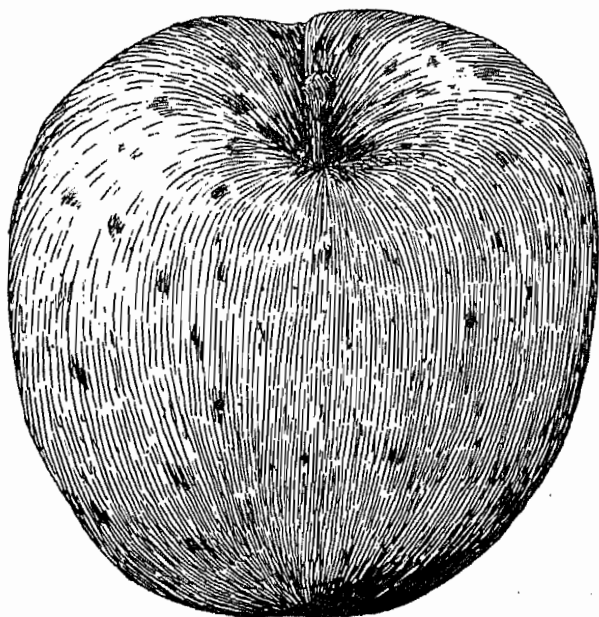
R. B. McKinley writes as follows in regard to its history: I do not know where the McKinley apple originated. It has been here since I can remember. A very old gentleman in the community says the trees were here when he was a young man. Tree grows very large, apples fine flavored, bears more or less

every year and I have kept them until the first of June. Under careful treatment the fruit will always keep until late spring.

As several other apples have been previously described under the name of McKinley, it is not desirable to continue the use of this name. The apple is highly recommended by Wm. Hy. Smith and others. It is said to be a rapid and vigorous grower, and a heavy bearer.

MILBURN.—Synonym, K's Seedling.

Originated on the farm of John K. Beale, of Greene County; sent to the Agricultural Experiment Station by Eli Marshall, Rheatown, Greene County, Tenn. Fruit large, oblong, flattened



MILBURN.

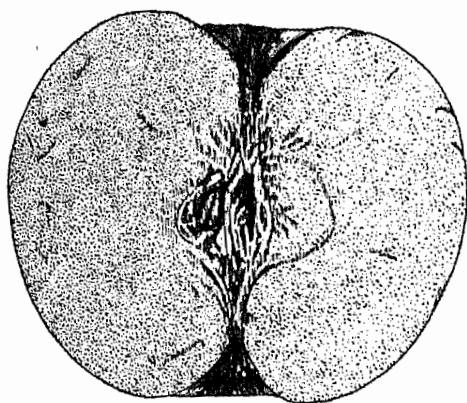
at ends; surface moderately smooth, containing numerous fungous spots; color bright yellow; cavity medium in size and depth, abrupt slope, regular in form; stem medium length, rather slender; basin regular, depth medium. Skin thin; flesh white, fine, tender, juicy; flavor mild subacid; quality very good. Season late winter.

Mr. Marshall, proprietor of the Rheatown Nursery writes: Quite a number of trees over the county bore fruit last year and it is giving general satisfaction. Many say that it is the best

keeper they ever saw and a profuse bearer. I have one of the apples in a good state of preservation at this date (April 21,) although it has been handled a great deal and treated rather roughly during the winter.

NASH.—Synonym, Nash's Seedling.

Originated on the farm of Arthur Nash, Union county, Tenn., forty or more years ago. Specimens received from Bird, Dew & Hale, Treeville, Tenn. Fruit round oblate, ribbed; surface smooth, greenish yellow, covered or washed with dull red, striped bright red at apex; cavity narrow, deep, regular, marked with



NASH.—($\frac{3}{4}$ actual diameter).

russet spreading out over surface; stem medium length, slightly curved; basin irregular, medium width, deep, abrupt slope, green, ribbed; calyx slightly converging, reflexed, broad, pointed; eye open, large. Skin thin, tough; core oblate, conic, clasping, rather small, closed; seeds few, round, plump, medium size, dark brown; flesh yellow, greenish at core, rather fine; flavor subacid, pleasant; quality good.

M. V. Nash, the son of the originator, states the following concerning it: We know it to be propagated in Kansas, and is the favorite apple in Union County, Tenn. It ripens in September, remains mellow two or three months, then literally dries up, resembles brown sugar. It is a constant bearer, and has not entirely failed for thirty years. It is good for dessert purposes, cooking or drying.

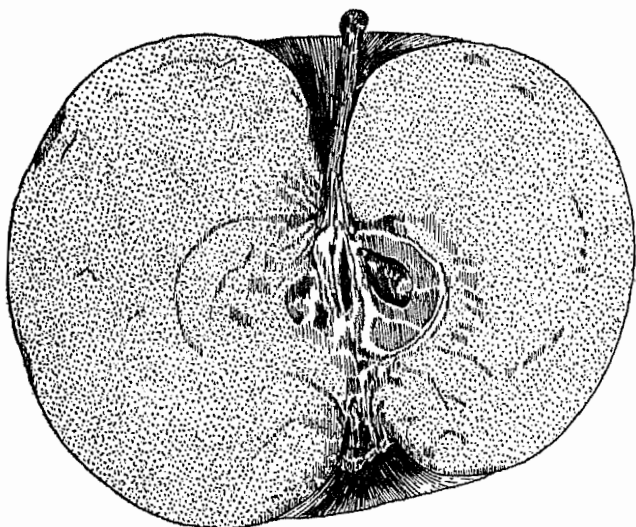
Bird, Dew & Hale consider it of special value. The firm

writes that quite a number of people have fruited it throughout East Tennessee and that it is a success wherever tried. The original tree is still alive, as we understand, and is a splendid bearer.

OOLTEWAH.

Originated with Mrs. Jennie Fowler. Specimens sent to the Agricultural Experiment Station by I. F. Fisher, Apison, James county, Tenn., August 1895.

Fruit large, roundish, oblate; surface moderately smooth, some russet patches and veinings; color greenish yellow, ripening to

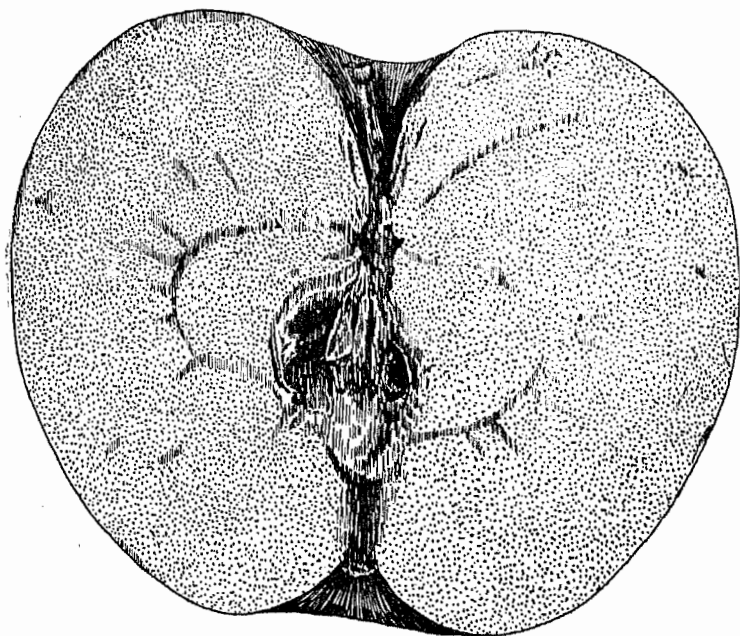


OOLTEWAH.

golden yellow; dots numerous, variable, russeted; cavity large, deep, regular, abrupt, marked with heavy russet; stem of medium length, slender at the base; basin small, regular, medium depth, gradual slope, marked with shallow furrows; calyx segments long, narrow, converging closely or reflexing; eye medium size, closed or partially open. Skin thick, tough; flesh yellowish, coarse grained, tender, juicy; core large, conical, closed, clasping the eye; seeds medium size, long, pointed, dark brown; flavor rich, spicy, subacid; quality very good. Season August. The one sided appearance shown in the accompanying illustration is not characteristic of this variety.

PARAGON.—Synonyms, Twitty's Paragon, Black Twig, Mammoth Black Twig.

Specimens sent to the Experiment Station by a number of fruit growers. The history of this apple is very interesting. Several prominent horticulturists of the country conducted a lively discussion as to its real origin through the columns of "American Gardening," during the early months of this year. The discussion disclosed the following facts: That a very large seedling apple tree now stands in Arkansas which has been



PARAGON.

propagated and disseminated as Paragon, Mammoth Black Twig, Black Twig and Arkansas; that a seedling has also been originated in Tennessee and disseminated under the same name; that both of these trees are doubtless seedlings of the Winesap; that the trees are very similar in habit of growth; that the fruit from each bears a very close resemblance, and considered identical by some; that trees from both sources have been extensively propagated, and that some of the largest orchards in the South, East and West contain a good percentage of the Paragon. The fruit from each source is said to bear such a close resemblance that

there is no means of determining the proportion of trees that have been grown from stock originally obtained from the two States named. The fact having been quite firmly established that there are two seedling Paragon apples, we shall confine our remarks to the one of Tennessee origin.

The name Paragon should be generally adopted for the apple of Tennessee origin, and all other synonyms dropped. The synonyms Black Twig and Mammoth Black Twig are sometimes applied to the Winesap, which is also a mistake. Some distinct name will very probably be given to the Arkansas apple.

In the Third Appendix of "Downing's Fruits and Fruit Trees of America" the following is said concerning the "Black Twig": The exact origin of this tree is unknown, but supposed to be in the northern portion of Lincoln county, Tenn. It is said to be one of the most valuable and profitable apples grown in that section. Tree very vigorous, spreading, rather an open head, not an early bearer, but giving good regular crops annually.

Fruit medium, oblate, very little conical, slightly angular; skin bright yellow, shaded with light red (dark crimson in sun), some obscure stripes and splashes on the shaded side, and rather thickly sprinkled with yellowish and brown dots; stalk short, rather stout; cavity medium, rather russet; calyx closed; basin medium, roundish, regular; flesh pale yellow, half fine, tender, juicy, mild subacid, rich; very good; core rather small. October to February.

Dr. W. L. Moores, of Cyruston, Lincoln county, Tenn., gives an interesting account of the origin and history of the Paragon apple, which was published on page 146 of "American Gardening." The following paragraphs are extracts from this article:

"The discovery and introduction of Paragon are both unique and interesting. In 1885 I was casting about for varieties of apples better than the old ones, with which to set a new orchard, and, learning that Mr. P. L. Twitty, a local nurseryman, claimed to have a superior Black Twig apple, I procured from him a specimen, which I found to be a very different apple from the Black Twig I had known all my life. (The reader should here bear in mind that the Winesap is sometimes called the Black Twig.) I so wrote Mr. Twitty and asked him for a history of the apple. He wrote that fifteen years previous he was endeavoring to procure the stock of the true Black Twig apple, and being informed by the late Judge Cowan, that he could find it in the orchard of Major Rankin Toole, six miles west of Fayetteville, Lincoln

county, Tenn., he visited Major Toole's place, but found him absent. His daughter told him she knew all about the apple trees and could point out the Black Twig trees. Reaching the orchard hard by, she remarked: 'We have two kinds of Black Twigs, the little Black Twig and the big Black Twig.' Paying no attention to this information, Mr. Twitty proceeded to cut cions from all the trees indicated, and mixed them. There the fatal mistake was made, and mischief that has caused all the subsequent confusion and wrangling among fruit men.

"These mixed cions Mr. Twitty grafted in his nursery, and in due time set a number of the trees in his orchard; he also supplied Mr. Heikes, manager of the large Huntsville nursery, with the mixed cions.

"When his trees fruited, he found that all except four of the trees bore apples which he had always known as Winesap. The four trees bore a large, beautiful and finely flavored apple he had never before seen, and being ignorant of the fact that the Winesap apple in this section was known by the name of Black Twig, he at once concluded that the strange apples on the four trees were the true Black Twig, and so entered it in his catalogue and set the matter right in his nursery row as regarded its mixed condition.

"After receiving this statement, I at once rode over to the Toole place. Again the Major was absent, but his daughter pointed out the row of so-called Black Twig trees and the one Big Black Twig tree, as she did to Mr. Twitty fifteen years before. The Big Black Twig tree was standing on a miniature clay knoll, formed by the washing away of the soil from around the tree, leaving the roots bare. It had suffered much from the ravages of time and storm, but showed a vigorous growth, despite the poverty of the soil, by throwing out numerous thrifty and very black twigs from body and main limbs. In answer to my question, Miss Toole said that was the only tree of the kind they had ever had. The tree was thought to be fifty years old, and had been a sure bearer, and it was the carrying of the large and beautiful apples in his pocket by the old Major in order to exhibit them to his neighbors that brought them to the attention of Judge Cowan. The Major called them Black Twig.

"I cut off a few twigs and rode away, still much puzzled, but had not gone a mile when it flashed upon my understanding as if by inspiration, the old tree is a seedling! It had doubtless

been set as a Black Twig, and been broken off at the grafted point, and sent up a sprout that made the future tree from the root grown from a seed taken from a Winesap apple that had been pollenized by the bloom of a Limber Twig, or vice versa, as the apple is evidently a cross of these two varieties.

"I at once wrote Mr. Twitty again, stating that I had investigated the matter, and was sure he had a new apple, and he was doing it and the public an injustice in calling it Black Twig. I suggested the name "Paragon," which after some hesitation he accepted. Feeling that the merits of this new apple now christened Paragon should be advertised over a wider section, I published in a Louisville, Ky., journal of agriculture an article describing it and giving its unique history. This article served in a great measure to pave the way to the immense popularity the Paragon has attained—a popularity beyond the wildest dream of its introducer."

Wm. Hy. Smith, of Leiper's Fork, Tenn., who has had a vast amount of experience with the Paragon, writes: "I regard this as our most valuable sort. I thought this from my first acquaintance with it in the winter of 1895-'96, but did not feel so confident of it as now. All who have fruited the Paragon are delighted with it. There are many strong points. It is a vigorous, stocky grower, making twice the root growth in the nursery of its parent, the Winesap. The leaf is double the size of that of the Winesap, is much thicker and remains fresh later in the season, which is a valuable feature, as such a heavy and dense foliage affords an excellent protection for the fruit from the rays of the sun. This protection causes the fruit to ripen more gradually in our climate, thus making the Paragon a better keeper than the Winesap. But the most important point is that the trees of this variety make their own roots above the union of cion and stock. I am certain that nine-tenths of my Paragon trees in the nursery are on their own roots. This fact is now generally conceded by practical fruit growers to be a matter of the greatest importance. In harmony with the superior excellence of the trees, we have an apple better than the Winesap in every respect, except one, namely, that it is not more highly flavored, but it is fully equal and practically the same. I am fully convinced that it will retain its flavor longer."

W. W. Twitty, Blanche, Lincoln county, Tenn., says concerning it: "This is one of the most valuable and profitable winter apples grown. Keeps well until May. Specimens have been

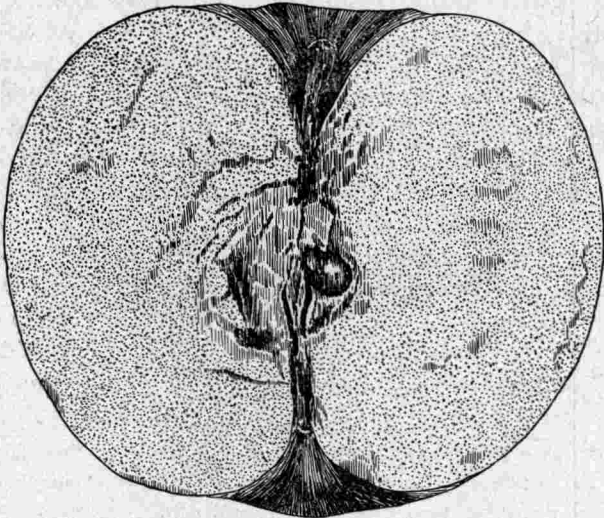
kept in this southern climate until June in a perfect state of preservation. Tree an upright grower with spreading head, and succeeds well on all soils, making a growth over other varieties equal to LeConte pear over other varieties of pears. Bears heavy crops every year. Fruit large and handsome in appearance. Color dark red when exposed to the sun, slightly striped in shades; flesh yellowish, crisp and juicy; flavor equal to or better than Winesap."

The Paragon is quite extensively grown in our State. It is gaining popularity every year.

SEVIER.

Originated with J. M. Bell, Mynatt, Knox county, Tenn., and received by the Agricultural Experiment Station in August, 1895.

Fruit medium to large, roundish, ribbed; surface smooth except for a few russet knobs, creamy white, washed red, striped and splashed crimson; dots medium size, russeted; cavity irregular, large, deep, abrupt, with russet markings; stem rather short, quite



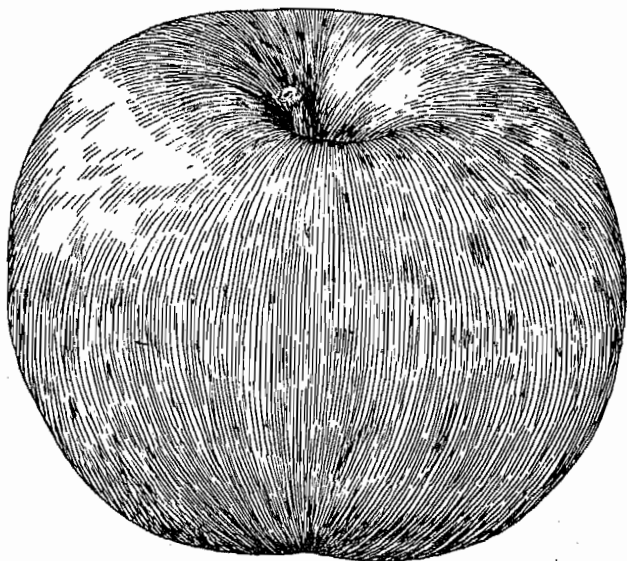
SEVIER.

slender; basin regular, medium depth, medium size, abrupt slope, shallow furrowed; calyx segments short, wide, converging; eye small, closed. Skin thin, tough; core wide, oval, medium size, partially open, clasping the eye; seeds few, above medium size, plump, brown; flesh yellowish, of medium texture, juicy; flavor acid to subacid; quality good.

This is a handsome apple and should be a valuable acquisition. We understand that it is a prolific bearer.

SHEDDAN.

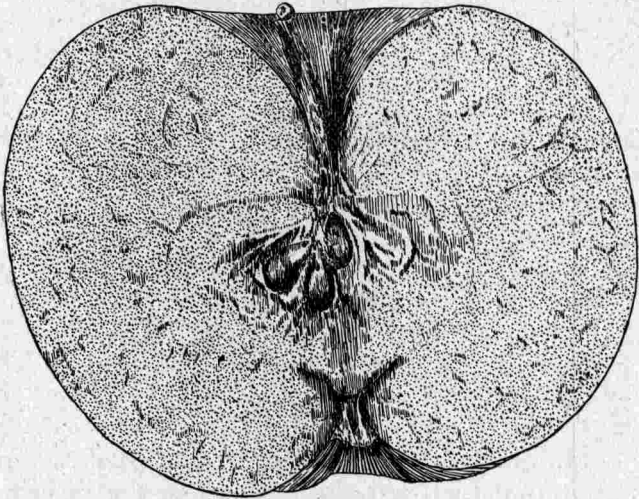
Originated with John E. Sheddan, Friendsville, Blount county, Tenn. We call special attention to this apple as it is certainly one of more than usual promise. Our attention was first called to it while attending a meeting and winter exhibit of the Monroe Horticultural Society in February, 1894. Specimens of this seedling were shown by the originator, and they so far



SHEDDAN.

excelled apples of the well known standard winter sorts grown in Blount and adjoining counties, that the Sheddan received the unreserved praise of all who examined it. The fruit is large, roundish oblate, a few specimens slightly oblique, as shown in the accompanying illustration; surface smooth, regular, containing some fungous spots; color greenish yellow, golden yellow when fully ripe, slight reddish blush on some specimens; cavity rather large, deep, regular, with abrupt slope; stem long, fairly stout, curved; calyx small. Skin thin, separates readily from the flesh; core medium size, oblate; seeds rather numerous, plump, pointed, brown; flesh yellowish, tender, fine, juicy; flavor mild, pleasant, subacid; quality very good. Season late winter.

In a personal interview with Mr. Sheddan the following information was obtained: The tree was found growing on his farm, which is located about one mile from Friendsville. It is now about fourteen years old and probably grew from a seed of the Green Crank, a tree of which stands near it. The Sheddan tree is ten inches in diameter and about thirty feet high. It is a thrifty grower, bears very heavy crops on alternate years, and



SHEDDAN.

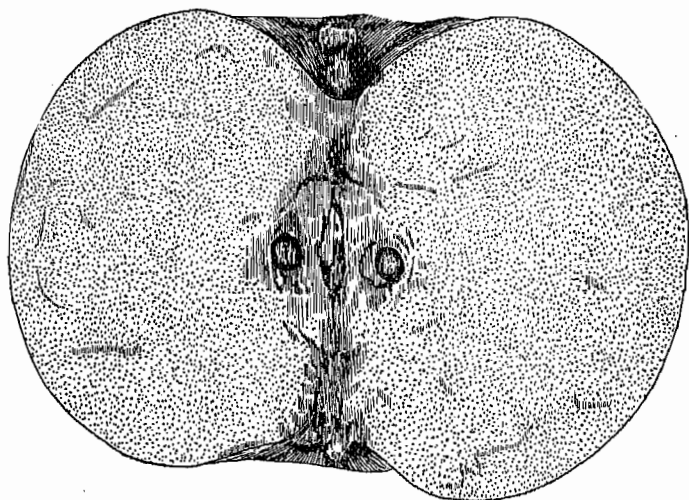
some fruit annually. It has received very little attention in the way of pruning, fertilizing and cultivating, and would doubtless have yielded better crops every year had proper attention been given. The fruit has been preserved until May. When first picked, it is rather sour, hard, and of a green glossy appearance, becoming later in the winter mellow, rich subacid in flavor, and golden yellow in color. The tree is an upright grower, and forms a compact head.

STEPP.

Originated on the farm of S. H. Stepp, Dry Creek, Carter county, Tenn. Specimens sent to the Station by the originator in September, 1895.

Fruit large, roundish oblate; surface moderately smooth, yellowish green, washed dull red and striped with crimson; dots conspicuous, brown or russet, some areole; cavity large, deep, regular, gradual slope, with slight russet markings; stem short,

stout; basin large, quite regular, deep, abrupt slope, with shallow furrows; calyx segments wide, short, converging or reflexed; eye large, open. Skin of medium thickness, tenacious; flesh yellow-



STEPP.

ish, fine, tender, juicy; flavor mild subacid, rich, excellent; quality good to best; core large, conical, clasping the eye; seeds rather numerous, medium size, plump or imperfect, brown; Season autumn. A good bearer. Equal to the Dabney apple except in form which is not quite so symmetrical. A very promising variety.

STRIBLING.

Description from "Downing's Fruits and Fruit Trees of America." Originated with the late William Stribling, Medon Madison county, Tenn. Tree a good grower, rather upright, forming a regular round head; an early annual and abundant bearer; young shoots reddish brown.

Fruit medium, oblate, slightly angular; skin whitish, nearly covered with stripes and slashes of light and dark rich red, some of the slashes almost purplish, with rather conspicuous yellow dots; stalk short, small; cavity medium; calyx half open; basin rather small, slightly corrugated; flesh white, tender, moderately juicy, mild pleasant subacid; good to very good. July at the South.

SWEET MARY.

Description from "Downing's Fruits and Fruit Trees of America." Originated with J. W. Dodge, Pomona, Tenn. Tree a vigorous, upright grower, and a great bearer. Young shoots dull grayish brown.

Fruit above medium, roundish conical, whitish yellow, very smooth, sprinkled with a few light brown dots. Stalk very short; calyx closed; flesh yellowish white, tender, juicy, sweet. August, September.

WESTMORLAND RAMBO.

History and description from "Downing's Fruits and Fruit Trees of America." Grown from seed of the Common Rambo, by Joseph Kern, Greensburg, Tenn. Tree vigorous and a rapid grower, makes a large, spreading, open head, requiring very little pruning; it bears annually fair crops of large fruit of very good quality, and evenly distributed over the tree. There are several varieties of the Large Rambo raised from seed of the Old Rambo, which are much larger in size, more vigorous in growth; most of them ripen earlier, but do not quite equal it in quality.

Fruit quite large to very large, oblate, somewhat flattened at the ends; skin pale greenish yellow, shaded, striped and splashed with light and dark red over nearly the whole surface, with a few brown dots; stalk short, rather small; cavity large, deep, a little greenish; calyx closed, or nearly so; basin large, deep, slightly corrugated; flesh whitish, a little coarse, juicy, tender, pleasant subacid; quality good or very good; core small. September, October.

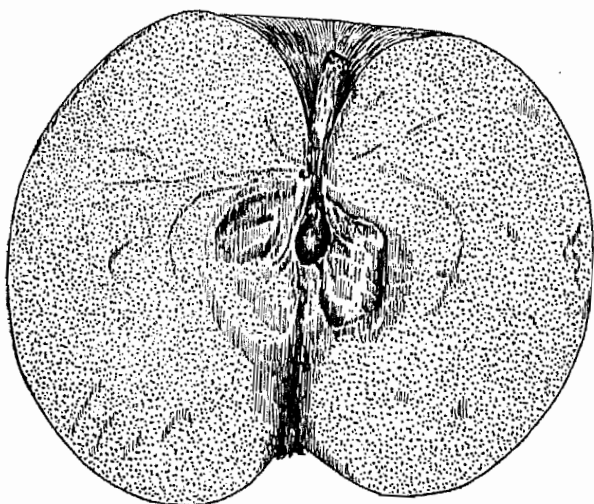
WETMORE.—Synonym, Foster.

Originated in Rhea county, Tenn. Sent to the Experiment Station by E. F. Wetmore, Ogden, Rhea county, Tenn. Generally known as the Foster apple but this name would not be accepted by the American Pomological Society, hence its use should be discontinued. Downing describes an apple known as the Foster Sweet which bears no resemblance to the Wetmore apple.

Fruit medium to large, roundish oblong; surface moderately smooth, some patches of russet, greenish yellow, washed dull red and indistinctly striped crimson; dots medium size, conspicuous, light gray; cavity regular, medium size, deep, abrupt slope,

russet markings; stem medium length, rather slender; basin large, regular, deep, abrupt slope, marked with russet; calyx segments small, reflected against basin; eye large, open. Skin of medium thickness, tenacious; core conical, medium size, closed; seeds numerous, medium size, plump, brown; flesh yellowish white, fine grained, tender, juicy; flavor subacid; quality good; season winter.

The Wetmore is propagated to a considerable extent in East Tennessee, especially in Rhea county. It is considered a valuable winter variety. Mr. Wetmore writes the following concerning its history and merits: "I have the Foster apple which is a native seedling, and the original tree still stands a monument to



WETMORE.

be seen in an old field near my home where, about the year 1830, a cabin was built and the tree planted. The facts were obtained from old residents, and from the county records showing when the entry was made of the lands. James Lee is said to have purchased some fine apples from a flat boat that floated down the Hiwassee river, his wife saving and planting some of the seeds. When the trees were a year old this family moved to the farm where the Foster now stands, taking the little trees with them. These were transplanted, one of which proved especially valuable and derives the name it generally bears from Robert Foster who purchased the farm from James Lee. The Foster apple is known about here

and adjoining counties. Many cions have been taken from the original tree and also numerous trees grown from the seed of fruit. None of the seedlings, however, possess the qualities of the original tree. This old tree has never failed to bear large crops every year since I have known it, as many as forty bushels being picked from it some years. The fruit is medium in size, though, on young trees, it is above medium ; red, subacid, crisp, tender and juicy, with a tough skin. Quality very good, unusually productive. Fruit has been kept until the middle of May, but is good to use from November. In growth it is fair, though not so rapid as some kinds, but the roots are very strong. It seems to produce more root than top, which is a great point in its favor. Apples were a general failure here last year (1893), but this one old tree has supplied my family all the fall and up to the present writing, February 3."

A letter from J. D. Ellis, Dayton, Rhea county, states: The original Foster tree is about sixty years old. In 1890 it yielded 30 bushels of fruit; in 1891, 40 bushels; in 1892, 15 bushels; in 1893, 40 bushels. Fruit on old tree is mostly small, while that on young trees is of good size and keeps until spring.