THE PEACHES OF NEW YORK

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Title: The peaches of New York

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Release date: November 1, 2014 [eBook #47263]
Most recently updated: October 24, 2024

Language: English

Other information and formats: www.gutenberg.org/ebooks/47263

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[Hand written text:]
Yours sincerly,
A. J. Downing

STATE OF NEW YORK—DEPARTMENT OF AGRICULTURE
Twenty-Fourth Annual Report—Vol. 2—Part II

THE PEACHES OF NEW YORK

BY

U. P. HEDRICK

ASSISTED BY

G. H. HOWE
O. M. TAYLOR
C. B. TUBERGEN

Report of the New York Agricultural Experiment Station for the Year 1916 II

ALBANY
J. B. LYON COMPANY, PRINTERS
1917

NEW YORK AGRICULTURAL EXPERIMENT STATION,

GENEVA, N. Y., *January 31, 1917*.

To the Honorable Board of Control of the New York Agricultural Experiment Station:

GENTLEMEN:—I have the honor to transmit herewith the manuscript of the fifth in our series of fruit-publications, to be known as "The Peaches of New York," and to constitute

Part II of the report of this institution for 1916.

Peach-growing is an important industry in the State of New York. In certain counties the production of this fruit has been a main factor in the well-known prosperity of many owners of peach-orchards. Moreover, the peach, when at its best, is a luscious article of food and adds greatly not only to the enjoyment, but to the healthfulness, of our diet.

The commercial and dietary importance of the peach is, therefore, the justification for the preparation of this volume.

Because the numerous varieties of peaches differ greatly in quality and in their adaptation to varying conditions, a comprehensive study of those varieties which are, or which may be, grown in this State seemed greatly worth while.

It is with a feeling of satisfaction, even of pride, that I submit to you the accompanying manuscript. Its preparation reflects great credit upon Prof. Hedrick and his associates and upon the makers of the plates.

W. H. JORDAN,
Director.

PREFACE

The present volume is the fifth in the plan of the New York Agricultural Experiment Station to make a more or less complete record of all of the different fruits grown in this region. This work differs from the preceding fruit-books but little or not at all in nature and purposes, yet a statement of its contents, even though it be almost identical with that in the prefaces of the preceding volumes, is necessary for those who may not have the other books and may be a

convenience to those who have all of the series.

The title implies that *The Peaches of New York* is written for the confines of a state; but all varieties of the peach grown in North America, as well as many known only in other continents, Europe especially, have been considered, under the supposition that all might be grown in New York and are therefore of interest to the peach-growers of the State. Broadly speaking, then, the design is to make the book as complete a record as possible of the development of the peach, wherever grown, up to this time.

The book contains: An account of the history and uses of the peach; a discussion of the botanical characters of the species of cultivated peaches; an account of the peach-regions and of peach-growing in New York with the most important statistics relating to this fruit; and, lastly and in greatest detail, the synonymy, bibliography, economic status, and full descriptions of all the most important cultivated peaches, with briefer notices of varieties of minor importance and of those appearing in peach-literature which are now no longer grown. In foot-notes running through the text, biographical sketches are published of the persons who have done most in America toward improving the peach. Incidentally, all that was thought would be helpful in breeding peaches was included. So, too, whatever appeared to be of interest to students of ecology has been given a place.

As in the preceding books, color-plates occupy prominent places in this volume. Pains and expense have not been spared in the attempt to make the plates the best possible with the present knowledge of reproduction in colors. All who have seen the plates in this and the first four fruit-books of the series will agree that the reproductions of peaches are more accurate than those of the apples, grapes, plums or cherries, and yet these are not as exact as might be wished. Although most carefully selected, an illustration of one or two fruits does not give an adequate picture of a variety. Neither does the camera take colors quite as the eye sees them nor can the plate-maker quite reproduce what the

camera takes. The illustrations are of life-size as the peaches grow on the grounds of this Station and represent specimens of average size and color. The fruits, as shown in the plates, look small for the reason that a flat picture of a round object minifies size.

In all of these fruit-books it has been difficult to decide what varieties merit color-plates and full descriptions. Briefly, the choice of sorts to be illustrated and described in detail has been determined by the following considerations: (1) By the value of the variety for home or commercial orchards; (2) the probable value if the peach is a new sort on probation; (3) its desirability as a parent in breeding new peaches or to show combinations of varieties, to illustrate new characters, or to show the range in variation—in a word to enlighten the peach-breeder; (4) not a few varieties are described and illustrated to show the trend of peach-evolution—for their historical value; (5) to show relationships of varieties.

The peach is profoundly influenced by soil, climate and culture, and a discussion of its status is not complete without taking full account of the environment in which it is growing. For this reason, chiefly, the peach-regions and peach-growing in New York are discussed as fully as space permits. This part of the book is designed, also, to serve the prospective peach-planter in this State in the selection of locations and soils and in the culture of the peach. Since the cultivation of any plant changes from year to year, though, experiment station bulletins and circulars and treatises on the culture of the peach should supply growers of this fruit with better information on the year-to-year management of the peach-plantation.

The botany of the peach, as compared with its congeners, the plum and the cherry, is simple, indeed, and is well agreed upon by botanical writers, so that this book may be said to be almost wholly a horticultural one. Yet the few pages devoted to the botany of the peach may make plainer, to the horticulturist at least, the botany of this fruit.

The chief contribution *The Peaches of New York* makes to pomology is in the descriptions of varieties it contains. All who grow or use peaches are dependent on descriptions of fruit and tree for the identification of varieties. From a well-written description one should get an exact mental picture of the fruit—we try to present such a pen-picture. With a few exceptions the descriptions of major varieties have been made from peaches growing on the Station grounds, though in many cases fruits from several localities have been compared with those grown at home.

The fruits, it must be said at once, have been described with other ends in view than identification. Chief of these is the effort to set forth the elementary characters, or unit-characters, of the peach. It is now certain that the characters of plants are independent entities thrown into various relationships with each other in individual plants. On this conception of unit-characters the improvement of plants is founded. An important part of the work in describing fruits has been to discover what seem to be unit-characters in peaches, thereby aiding in building a foundation in breeding peaches. To improve the peach we must combine the characters of species and varieties; we must know what these are before we can rearrange them in an improved peach.

In the marked attention paid to the improvement of plants, following the work of Mendel and others, the peach is bound to receive consideration. Never was information more needed in regard to the processes that have brought peaches from their primitive condition to their present perfection. We have done our utmost to give all that could be learned of the origin and history of varieties with the hope that such knowledge may be helpful to those who are trying to improve the peach.

We wish again to call attention to the great value of definite knowledge regarding the soils, climates and other environmental conditions under which species and varieties of fruits thrive. It is obvious to all thinking pomologists and biologists that, when the ecological conditions under which

the several fruits and their many varieties are grown can be accurately specified, valuable generalizations can be made regarding life-zones and plant-distribution. In *The Peaches of New York*, as in the preceding books, we state as accurately as possible the regions in which and the conditions under which, species and varieties of the peach are successfully grown.

So few species have been considered in *The Peaches of New York* that we have had no need to refer to codes of botanical nomenclature. In the use of horticultural names, lacking a better code, we have kept before us the revised rules of the American Pomological Society though in many cases we have not seen fit to follow these rules as the changes required by their strict observance would augment rather than diminish confusion.

The references given are those that have been used in ascertaining the history and the economic status or in verifying the description of the variety that follows. All of the synonyms created by pomologists to whose works we have had access have been noted but in no case have we published synonyms quoted by other writers. The work of reading references and seeking out synonyms is a tremendous one, involving nearly three years' work for several persons. We hope that this work sets straight in high degree the great confusion in the names of peaches, but that we, no matter how painstaking, could bring perfection out of chaos, no one could expect.

Again we call attention to the biographical sketches found in the foot-notes. Some men in every profession surpass their fellows in true greatness. Such men there are in pomology, and a knowledge of their career is indispensable to a full comprehension of the industry of growing fruit. In the conquest of America we have honored, so far, only the men who have expressed their energy in conquering the mines, the forests, the fisheries and to a small degree those who have developed the soils; we have shamefully neglected the great men who have developed our native fruits and vegetables and adapted to the conditions of the

New World the agricultural products of the Old World. The brief biographical sketches in these fruit-books are written in an effort to give in some measure the credit and honor due to those who have improved fruits.

In the preparation of *The Peaches of New York*, besides those whose names appear on the title page, I am indebted to R. D. Anthony, for reading proof; to the Station editor, F. H. Hall, for his assistance; to the Zeese-Wilkinson Company, New York City, for the beautiful color-plates of peaches; and to the J. B. Lyon Company, Albany, New York, for good workmanship in printing the book.

U. P. HEDRICK,
Horticulturist, New York Agricultural Experiment Station.

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THE PEACHES OF NEW YORK

CHAPTER I

HISTORY OF THE PEACH

The history of the peach follows step by step the history of agriculture. The beginning of agriculture, as depicted in the traditions and embellished in the poetry of ancient peoples,

was the creation of useful plants by some Divinity. But, counting unwritten history and poetic fancy as naught and coming to recorded facts—those of history as we now have it—the beginning of agriculture is marked by two recorded events. The first occurred 2700 years B. C. when Emperor Chenming, Ruler of China, instituted ceremonies for the sowing of various vegetables and grains. The second event was the building of the Great Pyramid of Gizeh by some ruler who lorded it over Egypt between 2500 to 2000 years B. C. and who ornamented his handiwork with drawings of figs.

Yet these early records in China and Egypt were not made at the beginnings of agriculture in those countries. Plants were undoubtedly cultivated centuries before it occurred to Emperor Chenming that rice, wheat and other crops deserved ceremonial sowings. The pyramids of Gizeh could only have been built by an organized, civilized people with cultivated fields on which to levy toll for the dormant season and lean years—pyramids could hardly be raised by a people forced to skim a day-to-day existence from wild plants. "Art is long and time is fleeting" in agriculture, and between the obscure beginnings of this ancient art, when naked men following the chase began to vary a meat diet with fruits, grains and roots plucked from the wild, and the regular cultivation of useful plants, as implied by these old records from China and Egypt, there are many steps and thousands and thousands of years.

If, then, the history of the peach begins with the history of agriculture, and the beginnings of agriculture are lost in the obscurity of antiquity, it is useless to speculate as to how long the peach has been cultivated. The statements of the early historians as to the age of the domesticated peach are so at variance that they serve only to confuse. Indeed, were we to attempt to bring into agreement the diverse assertions of historians we should never know even the place of origin of the peach; for it is upon data from botany that we must depend most in determining the habitat of our fruit. This subject we now come to discuss in detail.

THE ORIGIN OF THE PEACH

Names frequently breed misunderstandings and in the case of the peach a fine brood of mistakes as to the origin of the fruit has come from the name. As all know, "peach" and most of its equivalents in the countries of Europe are derived from "Persia" and this has given rise to the supposition that the original habitat of the fruit is Persia. The ancient authors who mention the peach, as Theophrastus, Columella and Pliny, agree that the home of the peach was Persia and, even until our own time, to be written in any of these worthies is proof conclusive. While negative evidence counts for but little, the notion is so firmly fixed that some, at least, of the races of peaches are Persian products that it seems best to clear the way for positive evidence by first proving that the first home of the peach was not Persia.

Persia is pictured as a land of fruits before agriculture had begun in Greece and Rome. The quince and the pomegranate probably originated here and, with the olive, grape, almond, and, to the north at least, the cherry and plum, have been cultivated from three to four thousand years.

At very early times the quince, pomegranate, olive and grape were introduced from Persia, according to De Candolle, still our best authority, into Greece and Rome and even the cherry and plum, from countries to the north if not from Persia, reached southern Europe long before the peach. It seems certain, as De Candolle suggests,[1] that if the peach had been a native of Persia, had it existed there during all time, so beautiful and so delectable a fruit would have been taken earlier into Asia Minor and Greece. As gratifying to all the senses by which we judge fruits as any other product of the orchard, as easily transported and propagated as any—more so than most—it cannot be believed that the other fruits named would have been given preference over the peach by conquerors or travelers carrying Persian luxuries to westward countries.

Moreover, as De Candolle further points out, the several Hebrew and Sanskrit peoples did not speak in sacred or vulgar writings of the peach as they did many times of the olive, quince, grape and pomegranate. Yet these peoples radiated from the valleys of the Euphrates and were at all times in close communication with Persia. Since, according to the authoritative De Candolle, Xenophon, who retreated with the ten thousand 401 B. C., does not mention the peach, this fruit probably did not reach Greece until Alexander's expedition and was first mentioned by Theophrastus 332 B. C. (if the fruit mentioned by Theophrastus is the peach) and did not reach Rome until after the beginning of the Christian era.

The more one examines historical records the more evident it becomes that Greek and Roman writers assumed that the habitat of the peach, which they called the Persian apple, was Persia because it came thence to their countries. Ancient historians very commonly and very confusingly made the assumption that the region from which a plant product came to their country was its first habitat.

The best means of establishing the origin of a plant is to discover in what country it grows spontaneously. This would be a simple matter, indeed, if one could be sure that a given plant found growing wild is not an escape from cultivation. Here is the trouble in the case of the peach. According to the botanists the tree is now growing wild in Persia, as it is in nearby countries, and for that matter in other parts of the Old World and in many places in the New World. The painstaking De Candolle, who has carefully sifted the evidence of the leading botanists until his time of writing, 1882, concludes that the peach has never been truly wild in Persia. An examination of the works of botanists writing since De Candolle's study of the subject does not show that any offers proof that the peach was originally wild in Persia.

Without going into the matter further it seems safe to say that the Greek and Roman writers were at fault in naming Persia as the home of the peach. To summarize: its late

distribution, as compared with that of other Persian fruits argues against such an origin; philology, which usually affords indications touching the habitat of a species, is against the Persian theory of origin since neither Hebrew nor Sanskrit names the peach; lastly, botany, the most direct means of discovering the geographic origin of a plant, offers no positive evidence that Persia is the home of the peach. The fallacy that the peach comes from Persia, written in nearly all horticultural and botanical works for 2000 years, now being disposed of, we may take up the claim of China that the peach is another of its great gifts to the world.

A survey of the subject is convincing that the peach comes from China. Necessarily, such a survey must be brief, yet it is important that no doubt be left as to the origin of the peach, thus freeing pomological literature from the train of misunderstandings following the current opinion that part of our peaches, at least, come from Persia. The terms "Persian peaches" and the "Persian race of peaches" are misleading and should be discarded. Data from botany and history furnish the chief proofs that the fruit of this discussion is of Chinese origin.

Botany and history are a hard team to drive but when the two do travel together in determining the origin of a plant the matter, as a rule, is settled. Does botany accord with history in placing the original peach in China? Botanists and explorers from first to last agree that the peach is, and long has been, wild in China but there is no agreement as to the nature of its wildness. Some say it is indigenous and others that it may be an escape from cultivation. The peach runs wild so quickly in countries to which it is adapted that it is almost impossible to say, from the evidence to be found, whether it is an original or only a naturalized inhabitant of China. But it seems more nearly to approach a truly feral condition in China than in any other country unless it be America and all know that in the New World it is an introduced plant.

Of the botanists and explorers who report finding the peach wild in China, Frank N. Meyer[2] of the United States

Department of Agriculture is most explicit. Meyer, in sending seeds of wild peaches from China, accompanies them with the following remarks:

"40001. Wild peaches having larger fruits than the ordinary wild ones, said to come from near Tze Wu, to the south of Sianfu, but some also probably collected from trees in gardens which were raised from wild seeds. When seen wild this peach generally assumes a low bush form of spreading habit; when planted in gardens and attended to, it grows up into a small tree, reaching a height of 12 to 20 feet, with a smooth trunk of dark mahogany-brown color. The leaves are always much smaller and more slender than in cultivated varieties, while their color is much darker green. They seem to be somewhat less subject to various diseases than the cultivated sorts and they are most prolific bearers, although the fruit is of very little value on account of its smallness and lack of flavor. In gardens around Sianfu this wild peach is utilized as a stock for improved varieties. It is also grown as an ornamental; said to be literally covered in spring with multitudes of shell-pink flowers."

"40002. Wild peaches, occurring in the foothills of the higher mountains at Tsing Ling Kang, Shensi, at altitudes from 2000 to 5000 feet, generally found at the edges of loess cliffs and on rocky slopes. There is a great deal of variation to be observed as regards size and shape of leaves, density of foliage and general habits."

"40003. Wild peaches found on a mountain side, near Pai dja dien, Shensi, at an elevation of 4000 feet; these small trees and bushes had borne such a heavy crop that the ground beneath them was covered with a layer, a few inches thick, of the small, yellowish, hairy fruits. The local inhabitants didn't consider them worth collecting even, and they were rotting and drying up."

"40004. Wild peaches occurring as tall shrubs in loess cliffs, at the Tibetan frontier, Kagoba, Kansu, at elevations of 6000-8000 feet. Save for some children who eat these wild peaches, they are otherwise considered worthless wild fruit.

Local name *Yeh t'ao*, meaning 'wild peach,' and *Mao t'ao*, meaning 'hairy peach.'"

"40005. Wild peaches found on stony mountain slopes in a wild, very sparsely populated country, near Kwa tsa, on Siku River, Kansu. No fruit trees whatsoever are cultivated by the local settlers in the mountains, and the way some of these peach bushes grow excludes them from ever having been brought there by any man or even any quadruped; only birds might have transported them."

In a letter to the author,[3] Mr. Meyer says further:

"Where did I find the peach wild? Well, I first came across it in loess cliffs in southern Shensi at an elevation of about 4000 feet above sea. Later on I found plenty of them in central Shensi, in southern Kansu and in the Tibetan borderland, up to 7000 feet elevation above sea. All the plants I found were freestone types, and according to the natives they all have shell-pink flowers. In the mountains of the Chekiang Province, however, I found a type which seems to be clingstone."

In still another letter sent me from the United States Department of Agriculture, Mr. Meyer says:

"It is about one month ago since I wrote you last, and so far as real distance is concerned, I have not advanced much, but we went over some very interesting territory and I was lucky enough to discover the *real wild peach*, growing in loess ravines some 2-3 days to the East from here, near a village called *Tchao yu*. The plants are of smaller dimensions than our cultivated strains, and the stones are somewhat different as regards shape and grooves, but still on the whole there is little difference between a very poor seedling-peach and this wild one.

These wild peaches are locally cut for firewood, for the fruits are pretty near inedible, being small and having hard, sourish flesh. They grow at the edges of deep loess ravines and on the steep, sloping bottom of such ravines. The

Chinese locally do not call this peach '*yeh tao*' or '*shan tao*' but '*Mao t'ao*,' meaning 'hairy peach.' In the vicinity where they grow, no peaches are cultivated although half a day's journey lower down, one meets with some poor looking trees in gardens.

The elevation I found them was almost exactly 4000 feet above sea. I gathered some fruits, but they are not quite ripe; I am trying to ripen them off, however, so that we may obtain at least a few ripe seeds. As a stock, however, it has not the value the *Davidiana* peach has, not being as vigorous and apparently being attacked by the same pests that infest cultivated peaches. This 'find' is of great interest, however, showing that wild peaches exist much nearer the coast than we suspected, and that the peach naturally is a native of semi-arid regions."

The explorations made by Mr. Meyer cover, of course, but a small part of the vast empire of China. Further search will, no doubt, show many other localities in Central and Eastern Asia where the peach grows naturally and has probably done so from time immemorial.

As all who consult them know, ancient authors are often at fault in matters of history in determining the origin of cultivated plants but they are usually fairly accurate in stating the date of culture of a plant in a country. In the case of the peach the date of culture can be established as so much earlier in China than elsewhere that history alone all but proves its previous existence there in the wild state. In short, the peach was a cultivated fruit in China before there were other agricultural communities from which it could come; for, be it remembered, in China, according to De Candolle, our best authority, agricultural and horticultural arts flourished long before they had even begun elsewhere, unless, possibly, Egypt be excepted, and here the peach, where it may be grown at all, is surely an introduced plant.

A statement of the first known dates of peach-culture in various countries is strong proof that its cultivation began in

China. According to De Candolle[4] the culture of the peach was "spoken of 2000 years before its introduction into the Greco-Roman world, a thousand years before its introduction into the lands of the Sanskrit-speaking race." As we have said, the Bible and other Hebrew books do not mention the peach and there is no Sanskrit name for it. Of the Greeks, Xenophon, 401 B. C., makes no mention of the peach but Theophrastus, a little later, 322 B. C., speaks of it as a fruit of Persia. Coming to the Romans, no mention is made of the peach by Cato, 201 B. C., nor by Varro, 117-27 B. C., but Pliny, A. D. 79, expressly states that the peach was imported by the Romans from Persia not long before.

De Candolle gives no authority for his statement that the peach was spoken of 2000 years before its introduction into Europe and I cannot verify it; but a search through even such Chinese literature as is accessible to one who does not read the Chinese language shows that the peach was commonly spoken of in the literature of China several hundred years before the Christian era. Two examples must suffice, taking those that seem most authentic as to the identity of the peach. In the Shi-King, or book of poetry, a collection of ancient Chinese poems made by Confucius (551-478 B. C.) the peach, in common with the plum, pear, jujube and other fruits, is several times mentioned. According to the translator all of these poems were written before the Sixth Century B. C., the oldest dating back eighteen centuries. Thus in Book I,[5] Odes of Chow in the South, is the following bit of verse:

In Praise of a Bride

"Graceful and young the peach-tree stands;
How rich its flowers, all gleaming bright!
This bride to her new home repairs;
Chamber and house she'll order right.

Graceful and young the peach-tree stands;
Large crops of fruit it soon will show.
This bride to her new home repairs;
Chamber and house her sway shall know.

Graceful and young the peach-tree stands;

Its foliage clustering green and full.
This bride to her new home repairs;
Her household will attest her rule."

Other references to the peach may be found in Book IX,[6] The Odes of Wei, and Book XIII,[7] The Odes of Kwei.

Superstitions and legends throw light on the antiquity of the objects with which they are connected. It is significant that the Chinese alone ascribe miraculous powers to the peach, their traditions of the properties of different forms of this fruit being both numerous and very ancient. M. Cibot, a French missionary among the Chinese, in a series of cyclopedic volumes on China, devotes a chapter to the peach in which, after describing the peaches of the country and giving a full discussion of methods of culture, he mentions numerous Chinese superstitions concerning this fruit. He writes:[8]

"The Chinese have for a long time preserved the history of the first ages either in their books or in their traditions. The oldest of their books have perished. They have saved only a part of their ancient national works on the great wars and general uprisings, and the original traditions, changed in a thousand ways, made into fables, finally corrupted by idolatry, are today only chaos; but this chaos is not without any ray of light. Many of these traditions, although disfigured, bear back too exactly to the marvelous tales of the lost books to be able to mistake the beliefs of the early ages. Thus, there are many traditions referring to the peach. Some call it the tree of life, others the tree of death. Peaches lengthened to a point, of large size, and colored red on one side, are regarded by the Chinese as the symbol of a long life. In consequence of these ancient national superstitions, peaches enter into all the ornaments of painting and sculpture. They are saved for the salute to the new year. Here are several ancient texts on the peach and its fruits:

From Chin-non-King: 'The peach 'Yu' signifies death and eternal life. If one has been able to eat it enough times, it saves the body from corruption till the end of the world.'

From Chin-y-King: 'There is in the Orient a peach whose almond, eaten, makes eternal life.' From Chou-y-Ki: 'Whoever eats this fruit (the peach 'Yu' from the Koue-liou Mountain) obtains immortal life.'

Still other texts could be cited but I will merely remark that in all the peach is connected with immortality. Again we find that certain peaches can not be offered by the ancients in sacrifice, and that the premature blossoming of another peach signifies great calamities. To quote again: From Sin-lin: 'In the garden of Yang was the peach of death; whoever approached it must die.' From Fong-fou-teng: 'It is said in the book of Hoang-ti that two brothers found on a mountain a peach tree under which were a hundred demons to cause death to men.' From Lietchouen, on the subject of the evils which afflict the earth: 'the tree of Knowledge is the peach.'"

Very interesting and illuminating as to the age of the peach in China, is an account given by Dr. Yamei Kin[9] who was asked by a member of the staff of the Office of Foreign Seed and Plant Introduction, United States Department of Agriculture, for information concerning the peach-blossoms. After describing the several kinds of blossoms borne by Chinese peaches, the writer gives some of the superstitions and legends which the Chinese connect with the peach.

"The ordinary name for pink is peach flower color, and notwithstanding the love of Chinese for color, it is used sparingly, in fact, owing to its being associated with the peach blossom, seems to have an unsavory significance, as I found when I came home one day with a pink satin brocade gown that I had just purchased. My people held up their hands in horror, and exclaimed it was a mercy that I did not intend to wear that here, it would only do for outside countries that did not know about peach flowers, which remarks led me to leave it in America when I came back, though it was a very lovely delicate color and one of my prettiest gowns.

The reason for this prejudice is owing to its symbolism. Just as the violet is considered in western lands to be the symbol

of modest worth, so the plum is that of feminine virtue in China and the peach flower the opposite. Not even the beauty of its color, whether delicate pink or deep cerise, redeems it from this fatal significance. In order that there may be no possible opportunity for a 'peach flower heart' to spring up unawares in some girl of respectable family, it is not considered wise to plant a peach of any kind near the bed room windows of the court yards inhabited by the women, yet peach wands are supposed to be especially useful to beat off all evil spirits, only they must be plucked during a solar eclipse and a hole bored through one end for hanging up by, during a lunar eclipse, which perhaps accounts for their fewness, as during those times in the old days the people were generally busily occupied in beating gongs and firing off crackers to drive away the heavenly dogs which were supposed to be devouring those luminaries, and no one had time to think of making peach wands. The lucky possessor of an efficacious peach wand is supposed to be able to sleep at night with it under his pillow in full confidence that no evil spirits can harm him.

Taoism from early days has taken the peach as its particular fruit, signifying longevity, much as the apples of Hesperides were symbolic in the Grecian mythology.

Furthermore peach stones are often made into rosaries which are considered specially fine. There is a collection of tales by one Cornaby to be found in almost every library called 'A String of Peach Stones.' And a host of legends cluster around the tale of Sun, the stone monkey, eating the peaches of immortality stolen from the gardens of the genii, whereby he attains immortality. This theme is seen elaborated in many scenes, that decorate pottery, textiles, and congratulatory scrolls.

I wish that I were not tied down so much by tedious detail in the medical work, as there is a most interesting book that needs to be translated telling much of the folk lore of the peach interwoven with the plot, which is supposed to be the journey of Hsien tsang to bring back the sacred sutras of Buddha from India. It is said that this is an actual historic

occurrence, but this tale is evidently semi-religious and allegorical, as well, combining in itself the characteristics of Bunyan's Pilgrim's Progress, Hans Christian Andersen, and the Arabian Nights, if you can imagine such a mixture, yet giving graphic pictures of Chinese life in various phases that are as true as when the book was written.

One of the most charming legends of peach flower lore is that of the 'Peach Blossom Fountain,' an allegory written by T'ao Yuan Ming between A. D. 365-427, describing how a fisherman got lost one day and penetrating up a river finds himself in a creek bordered with many peach trees full of bloom, at the end of which he comes upon a small mountain in which is a cave which he traverses and enters on a new country where there is every sign of prosperity, every one is courteous to each other, kindliness and contentment prevail, but they wear the garb of the times of the First Emperor some five centuries previous and have been lost to the rest of the country ever since. The fisherman returns after a sojourn with them, and tells his fellow villagers of this wonderful country and stirs up so much interest that finally the governor of the province joins in the search for this wonderful country, but it is all of no avail and at last the fisherman realizes that he will never more see the peach blossom days of his youth with its rosy dreams and ideals that come but once in a lifetime."

Lastly, a significant fact suggesting the Chinese origin of the peach is found in the behavior of this fruit in America. The peach is more at home in North America than in any other part of the world unless it be China. Now, that there is a pomological alliance between eastern Asia and eastern America is well known. The remarkable relationship between the plants of the two regions was first set forth by Asa Gray and subsequent writers have added much to what he told us. The explanation lies, as all agree, in similarities in climate. Now, with this relationship of the wild and cultivated floras of eastern America and China in mind, the rapid acclimation and acclimatization of the peach in the United States are readily understood if we accept China as the habitat of this fruit. On the other hand, the natural

plant-products of Persia find life anything but easy in eastern America.

There is but one further consideration before beginning the history of the peach as a cultivated fruit. Thomas Andrew Knight and Charles Darwin contended that the peach is a modified almond. This hypothesis would scarcely deserve consideration were it not for the high authority of the men who espoused it—the judgments of a Knight and a Darwin cannot be overlooked.

HAS THE PEACH COME FROM THE ALMOND?

In the light of evolution every plant has been preceded by another and since the peach and almond have many characters in common, one may have descended from the other. But as to which, if either, is the parent species it would seem idle to speculate with the shreddy and patchy knowledge we now possess of the descent of plants. Yet Thomas Andrew Knight, the greatest horticultural authority of his time and one of the leading experimenters of all time in this field of agriculture, maintained that the peach is a modified almond. His theory received the support of several of the leading English horticulturists of the last century and Darwin gave it credence to the extent of collecting data for its substantiation.

Knight believed that the almond and the peach constituted a single species and that by selection under cultivation an almond could ultimately be turned into a peach.[10] He sought proof for his theory in hybridization and on a tree raised from the seed of an almond fertilized by peach-pollen produced a fruit with soft and melting flesh and in all characteristics more like the peach than the almond. This experiment, which in the light of our present knowledge of the laws of inheritance does not in the least illuminate the hypothesis with which Knight started, carried on in the medieval days of plant-breeding, convinced not only Knight in his belief that the peach may be bred from the almond but led others, even down to our own time, to accept the

theory.

Thus, a writer, presumably Lindley, in *The Gardener's Chronicle*[11] in 1856 says "we are justified in the conclusion that the Almond bears about the same relation to the Peach that the Crab bears to the Cultivated Apple." Later, in the same article, the descent is pictured as follows:

"1. Almond became more fleshy—Bad clingstone.
2. Bad clingstone became more fleshy—Good clingstone.
3. Good clingstone became more fleshy—Our soft peaches.
4. Soft peach sported, receding toward the original fleshy type and lost its wool—Nectarine."

Another high authority in his time, Thomas Rivers,[12] in 1863, held that peaches, if left to a state of nature would degenerate into thick-fleshed almonds and makes the positive statement that he has "one or two seedling peaches approaching very nearly to that state."

Darwin,[13] in 1868, considers Knight's supposition at length and while he does not positively accept it, yet lends it his support by quoting several authors who put forth proofs in favor of it. His most positive statement in discussing the theory referring to facts regarding the origin of the peach is: "The supposition, however, that the peach is a modified almond which acquired its present character at a comparatively late period, would, I presume, account for these facts."

Carrière,[14] one of the most eminent French pomologists of the last century, is the chief French champion of the theory that the peach came from the almond and devotes several pages in his estimable work, *Variétés De Pêchers*, in demonstrating that the one is a form of the other. His arguments, however, are but amplifications of those of Knight and Lindley though he cites more intermediate forms than either of the English writers—so many that they go far toward convincing one of the correctness of his views. There is the feeling, however, in the case of Carrière, in the light of present knowledge, that his botanical evidence is

pushed a little too far for full credulity.

Knight, Lindley, Rivers, Darwin and Carrière, the men holding the theory whose opinions are most worthy consideration, fell into error, as we think, through attaching too much importance to likenesses in the fruits of the peach and almond and because they became confused in following the behavior of the two fruits under hybridization. As we shall show later in discussing the characters of the peach, this fruit differs from the almond in other characters than those of the fruit—characters not at all likely to be changed by cultivation and selection as would all those of the fruits. Knight's proof from hybridization was purely speculative. The fact that the peach and almond may be crossed, giving intermediate forms, nowadays would not be looked upon as proof that the two necessarily belong to one species. However, in the light of the knowledge in existence at the beginning of the last century regarding the crossing of plants, we need not apologize for the inference that Knight drew from his simple experiment.

Students of heredity would find almost conclusive proof that the peach is not a modified almond—a descendant, say, in this geologic period at least—in the fact that there is no recorded case of a peach fertilized by a peach producing an almond, or *vice versa*. If the relationship were at all close, if the two species had had a common origin even though in rather remote times, if they were nearly enough related readily to hybridize or be hybridized, it would be expected that now and then, as in the case of a nectarine, the peach would produce an almond or the almond a peach.

Geographical botany also opposes Knight's hypothesis, as De Candolle[15] points out, for, as he plainly shows, the almond had its origin in western Asia, it being found truly wild in many parts of south-western Asia and having been cultivated many centuries before the peach was known in these regions. On the other hand, the almond was not known in China before the Christian era whereas the peach had been cultivated there at least 2000 years anterior to the introduction of the almond. With such widely separated

habitats, the two fruits can hardly be considered as parent and offspring.

We cannot close our eyes to the patent relationships of the peach and the almond. That the two constitute but one species, as we now consider species, or that they bear the close relationship of the peach and the nectarine, probably no one now in high authority will concede. But for the weight of the names we have used, and the fact that the theory still finds supporters, Knight's hypothesis, the outcropping of a speculative mind in a speculative age, might have been overlooked or dismissed with a word.

THE PEACH IN ASIA

We must have more knowledge of the peach in Asia than the bare fact that it originated somewhere in the vast empire of China. We want, first, to know what the characters of the prototypal peach were. If we can get some idea of the original wild peach of China we shall know something of how this fruit has been improved by man and, perhaps, something of its future potentialities. Second, though not essential to this study, it will be profitable to peach-growers to inquire whether there are types of peaches still remaining in China that might be improved under western cultivation. If so, we want them, since our cultivated peaches are not free from faults, some of which we might get rid of by the interjection of new blood. It is now about seventy years since Robert Fortune, the adventurous English plant-collector, began dipping into the horticultural treasures of China; and recent explorations make plain that there are still riches in plants in that country—the fact that they can now be brought through the "open door," instead of as spoils to be smuggled out, makes it easier to obtain any new types of peaches that may now be found.

What were the characters of the prototypal peach in China? The few records that have come down through the ages do not enable us to form much of a picture of the primitive

peach. But plants do not change quickly in China, for their orchard-cultivation is not as intensive nor selection as assiduously practiced as in western countries, so that we are warranted in assuming that cultivation for forty centuries has not greatly changed this fruit. Besides, it is probable that the wild forms, whether truly wild or reverted escapes from cultivation, now represent closely the original indigenous stocks of the peach. Luckily, we have trustworthy sources of information in regard to both the wild and the cultivated peaches as they now grow in China. We are at this time concerned, it should be said, only with the common peach, *Prunus persica*.

Fortune began botanical explorations in China in 1844, since which time one enthusiast after another, thirsting for botanical spoils and honors, has brought from eastern Asia and Europe to America, varieties and species of ornamental and agricultural plants. In the accounts of these exploring and collecting expeditions, there are many records of peaches, wild and cultivated, that are now growing in China and from these we may piece out a fair description of the original races of this fruit. The United States Department of Agriculture, through its agricultural explorers, collaborators and correspondents in the Office of Foreign Seed and Plant Introduction, has given special attention to agricultural plants and from the accounts of the workers in this department alone, we can get a good picture of the peach of the Twentieth Century in China which, as we think, will represent very well the original stock from which all peaches have come.

It is now almost the unanimous judgment of scientists that the characters of plants are independent entities which are thrown into various relationships with each other in individuals and groups of individuals as varieties and species. This conception of unit-characters lies at the foundation of botanical and horticultural descriptions and of plant-breeding. It is more important, then, to know what the characters of Chinese peaches were and are than to attempt to describe in full the wild and cultivated peaches of China. In this, a horticultural study, it answers our

purpose to consider chiefly the characters of the fruits.

The fruit-characters that differentiate races and varieties of cultivated peaches in America are ten, as follows: Downy skin; smooth skin; white flesh; yellow flesh; red flesh; flesh clinging to the stone; flesh free from the stone; shape more or less round; shape roundish but decidedly beaked; shape distinctly flat. Let us see by direct quotations from the workers in the United States Department of Agriculture how many of these ten fruit-characters are named in the wild and cultivated Chinese peaches of today.

Downy skin.—A downy skin is the normal condition of the peach. This character is found in all of the peaches to be mentioned in this discussion except those under the next heading.

Smooth skin.—"28963—From Samarkand, Turkestan."[16]

"A small nectarine of very firm flesh and of subacid flavor; red throughout; from a distance resembles a crab apple more than anything else. Said to come from Chartchui."

"29227[17]—From Samarkand, Russian Turkestan. A yellow clingstone nectarine of medium size; meat very firm and of medium sweet taste, not melting."

"30325[18]—From Khotan, Chinese Turkestan. A nectarine called *Dagatch*. Fruits red, of medium size, clingstone."

"30332[19]—From Karghalik, Chinese Turkestan. A nectarine called *Anar-shabdalah*. Fruits rather small, whitish pink in color, and of sweet, aromatic flavor. This is a medium-late ripener and a rare local variety."

"30334[20]—From Shagra-bazar, Chinese Turkestan. A nectarine called *Kizil-dagatch*. Fruits small, red; medium early."

"30335[21]—From Upal, Chinese Turkestan. A nectarine called *Ak-tagatch*. Fruits large, white; a late ripener; of good keeping and shipping qualities."

"30336[22]—From Yarkand, Chinese Turkestan. A nectarine called *Ak-dagatch*. Fruits medium-sized, of white color; clingstone; late in ripening; of good keeping and shipping qualities."

"30341[23]—From Upal, Chinese Turkestan. A nectarine called *Kizil tagatch*. Fruits large, red throughout; meat firm; of good keeping and shipping qualities."

"30359[24]—From Kashgar, Chinese Turkestan. A very large, red, clingstone nectarine; late ripener; can be kept for several weeks after being fully ripe."

"30647[25]—From Khotan, Chinese Turkestan. A nectarine called *Togatch Moneck*."

"30648[26]—From Guma, Chinese Turkestan. A small late variety of nectarine, white in color, of fresh, sweet taste and good keeping qualities."

White flesh.—"27111[27]—Chinese name *Ta po tao*. A large white peach, native in Shantung Province, China (Chefoo district)."

"30324[28]—From Khotan, Chinese Turkestan. A peach called *Ak-shabdalah*. Fruits large, white, juicy, and aromatic; an early ripener."

"30337[29]—From Shagra-bazar, Chinese Turkestan. A peach called *Kok-shabdalah*. Fruits medium large, of greenish-white color; taste sweet; medium late; not a keeper."

"30338[30]—From Yarkand, Chinese Turkestan. A peach called *Taka-shabdalah*. Fruits very large, of whitish color with a slight blush; late in ripening; can be kept for several weeks."

"30339[31]—From Karawag, Chinese Turkestan. A peach called *Ak-shabdalah*. Fruits large, white in color; flavor very sweet and pleasing; early in ripening."

"17167[32]—From Tung-chow. A large, white peach,

considered a fine fruit by the Chinese. Non-melting flesh."

"20239[33]—From Kirin. A pale colored, medium-sized peach. Kirin is the most northern locality where I have as yet found peaches."

"27111[34]—Chinese name *Tah-buy-tower*. A large white peach native in Shantung Province, China."

Yellow flesh.—"30333[35]—From Shagra-bazar, Chinese Turkestan. A peach called *Serech-shabdalah*. Fruits very large, of yellow color throughout; meat very firm; clingstone. Stands shipping well, but does not keep long; late in ripening (October)."

"35201[36]—From Mengtsz, Yunnan, China. Seeds of Mengtsz white peach and yellow free peach. This fruit is grown all over this province and occasionally attains an enormous size, and in that respect could easily compete with the best French peaches.'"

Red flesh.—"6543[37]—From Sai Tseo. Long, rather pointed, red-fleshed, freestone."

"34275[38]—From Soochow, China. This is a mixed lot of peach seeds containing some from red clingstones and some from white freestones."

"17728[39]—From Matou. A peach described to me by the natives as very large, red meated, and juicy."

"21991[40]—From Hangchow, Chehkiang, China. A flat, red-meated peach, not very sweet in taste. Chinese name *Hung pien tao*."

Clingstone.—"30340[41]—From Karawag, Chinese Turkestan. A peach called *Ais-shabdalah*. Fruits large, pinkish-white; meat firm, sweet; clingstone. It is said here that it can be kept for several months."

"21989[42]—From Feitcheng, Shantung, China. The most famous peach of northern China, called the *Fei tao*. The

fruits grow as heavy as one pound apiece and are pale yellowish colored, with a slight blush; meat white, except near the stone, where it is slightly red; taste excellent, sweet, aromatic, and juicy. Is a clingstone. Has extraordinary keeping and shipping qualities. The branches need propping up on account of the weight of the fruits."

"29991[43]—Seeds of a peach from Tsinanfu, Shantung, China. It is a cling and though rather inconvenient for eating, is very large and luscious, coming into market about the middle of September and lasting for a month or more."

Freestone.—"6635[44]—From mountains near Ichang. Flowers late, fruit ripens in September. Freestone. Fruit small and quite hairy."

"30357[45]—From Kashgar, Chinese Turkestan. A large, red, freestone peach, fine flavored; a medium-late ripener, and a most prolific bearer."

"30358[46]—From Kashgar, Chinese Turkestan. A large, pale reddish, freestone peach of very fine flavor; medium-late ripener; not a keeper."

"39428[47]—Amygdalus sp.—Seeds of a wild peach from Sianfu, Shensi, China. Stones of the real wild peach, growing in the mountains, one day's journey south of Sianfu. The fruits are small, hard and sourish, but there is considerable variation in them as regards size and taste. They are apparently all freestones and while some have red flesh near the stone, others are white throughout."

Round peaches.—Roundness is one of the characteristics of the peach and it but labors the argument to give space to show that this character is found in Chinese varieties. All peaches mentioned in this discussion are round or roundish except those coming under the heading "flat."

Round and beaked.—"8331 to 8334[48]—Eagle Beak peach from Canton, China. From orchard trees growing near the Great North Gate of Canton, at Ngau lan Kong, of the *Ying tsui t'o* or Eagle Beak peach. This variety resembles the

Honey closely, except that the pointed tip of the fruit is more curved, according to Dr. J. M. Swan, of the Canton Hospital."

"9805[49]—From Canton, China. *Hung Wat tim.* A variety of the 'Honey' type, reported to be good for preserves and not so sweet as the *Ying tsui* or Eagle Beak variety. It is medium early."

"22650[50]—Shanghai. These peaches are called the *Honey* peach, and I think are very fine."

Flat.—"6541[51]—From Sai Tseo, above Hankow. Flat, freestone, ripens in May."

"6542[52]—From near Sai Tseo, above Hankow. White, fine fleshed, flat, freestone, ripening the middle of May."

"6544[53]—From Sai Tseo. Medium size, flat, freestone, ripening in May."

"6545[54]—From Sai Tseo. Flat, freestone, quality very good. Ripens in June."

"29991[55]—Chinese Flat Peach. From Tsinan, Shantung, China. Called *Feicheng*. It is a cling and, though rather inconvenient for eating, is very large and luscious, coming into market about the middle of September and lasting for a month or more."

"30482[56]—From about 50 miles southwest of Tsinan, Shantung, China. *Feicheng.* Chinese flat peach. This is a large, luscious cling, very much esteemed by the Chinese."

"21990[57]—From Kianchau, Shantung, China. A flat, juicy, white peach of fine taste. Chinese name *Pai pien tao*."

"21992[58]—From near Chiningchou, Shantung, China. A flat, pale-fleshed peach, juicy but somewhat insipid."

"22352[59]—From Shifengtse Temple, west of Peking, Chihli, China. Said to be medium sized, very flat, and of reddish

color. Chinese name *Pien tau*."

White stone.—"8340[60]—From Canton, China. *Pak Wat tim t'o.* A slightly sweet, white stone variety of rather small size, preferred by some to the *Ying tsui t'o*, which, it is said, has too sweet a flavor. It has no beak like the latter, but is a typical south Chinese shape, according to Dr. J. M. Swan, of the Canton Hospital, who very kindly described this variety."

"24915[61]—*Hung wat to* (red-stone peach)."

"24916[62]—*Paak wat to*(white-stone peach)."

"The *Hung wat to* is a new variety and so recognized by the Chinese. From what I can gather they believe the *Paak wat to* to be the best, but have some trees of the *Hung wat to*. The *Hung wat to* seems to blossom much quicker than the *Paak wat to*."

Winter peaches.[63]—"The so-called winter peaches they have here are all clingstones, somewhat watery and not very fine in general."

"30340[64]—From Chinese Turkestan is said locally to keep for several months."

"Cuttings of nectarines from Chinese Turkestan. Among these are some from an altitude of 5000 feet, large, late ripeners, and keeping and shipping well, and one, number 30359,[65] recommended by the British consul, Mr. Macartney, is said to keep for several weeks after being fully ripe."

"30482[66]—Cuttings of the Feitcheng peach from about fifty miles southwest of Tsinan, Shantung, China. It is a late variety, coming into market about the middle of September or October. It is reported to have such unusual keeping qualities, that it can be kept, when wrapped in tissue paper, until February. Though a cling stone it is luscious, sweet and aromatic, and of unusual size, reaching a pound in weight and is so prized by the Chinese that as much as 15

cents apiece is paid for it in the region where it is grown; every year the Feitcheng peaches are sent as a present to the Imperial court in Pekin."

The evidence given encourages the belief that in the native peaches of China may be found all of the characters that distinguish cultivated peaches wheresoever grown. The smooth-skinned peach, or nectarine, from the evidence at my command, is not common in eastern China but in Chinese and Russian Turkestan it is evidently one of the commonest fruits. Neither does yellow flesh appear to be a common character of peaches of eastern China but is now and again mentioned so that it may be put down as existing in the peaches of the region. Bear in mind that the accounts given are but random ones taken by persons not more interested in peaches than in other agricultural products and covering, of course, but a very small part of the vast region under the dominion of China. There is, no doubt, much to be learned about the peaches of Asia in future explorations.[67]

In America, at least, certain characters of peaches, as flatness, smooth skin, red flesh and prolonged beak are looked upon as comparatively new in this fruit. At any rate, varieties having these relatively rare characters are spoken of as sports and pomologists, as we shall see, not infrequently announce the date of birth of one or another of these characters. Now, a careful examination of the evidence, scant though it is, will carry conviction to all that none of the prominent characters of peaches have originated within the period covered by history—all exist in China and probably have so existed since time beyond record.

The size and color of the blossoms are distinguishing characters of races and varieties of cultivated peaches, less valuable in classification than the fruit-characters we have been discussing only because they are less numerous. Peach-blossoms fall into four very distinct kinds: Petals large and pink; petals intermediate in size and pink or red; petals small and red or reddish; and petals large and white.

Through the United States Department of Agriculture, I am in possession of copies of nine letters from Foreign Seed and Plant Introduction correspondents of the United States Department in China who had been asked to report on the size and color of peach-blossoms in the parts of China in which they lived. The information thus obtained is most interesting but space forbids considering it further at present than to say that it indubitably establishes the fact that peaches with the four kinds of blossoms are found in China. This further encourages the belief, just set forth, that the essential characters of peaches are old, of great fixity and originated in China at a time in the past on which it would be idle to conjecture.

It is interesting to note that there are peaches in China with at least two characters not found in any American varieties. Two varieties are mentioned as having "white stones." There is no peach in America with stones that could be described as white though several early white-fleshed peaches have light-colored stones. This character is unimportant and seems, from the brief descriptions of the varieties having such stones, not to be correlated with other especially desirable characters, yet such a peach would, at least, add an interesting novelty to the flora of this fruit. The other character, that of late keeping, appears to have more value. A peach that would "keep for several months" or one ripening in September "that can be kept, when wrapped in tissue paper, until February," is highly desirable. No doubt through the efforts of the workers in the United States Department of Agriculture we shall sooner or later be growing these peaches in America.

As the probable home of the peach, we have given China so much space in this discussion of the peach in Asia that we can now but briefly summarize what is known of this fruit in other Asiatic countries.

The peach in Japan.—From *Fruit Culture in Japan*[68] it is patent that the peach is one of the leading fruits of the country. In number of varieties of the several fruits grown in Japan the peach is exceeded only by the persimmon—

ninety-five peaches and two nectarines being listed, all having Japanese names. The following account gives some idea of the peach-industry as carried on in Japan:

"There are a number of varieties of our native peaches and nectarines. From the extreme south of Formosa to Hokkaido, local forms are cultivated side by side with Western and Chinese varieties, which are all much superior to ours in all respects. During the past twenty years, the growing of introduced peaches has replaced the native one with striking rapidity. Their growing seems to be naturally limited in Hokkaido to the south part up to about 43 degrees N. L. The mid-season and late varieties do not properly ripen there and peach growing consequently does not develop to be a profitable industry in Hokkaido. Peaches are rather easy to cultivate and seem to be less susceptible to the effects of climate, than apples, provided suitable sites and soil be given. Consequently peach orchards are found scattered here and there all over the country. For the peaches there is no difference between the two longitudinal halves of Japan. At present, large orchards of peaches, regularly planted and trained, are found on the alluvial lowlands and hillsides. The heavy rainfall during June and July causes an overluxuriance of growth and considerable portion of the fruits drop down without reaching maturity. To prevent the damage from the parasites our people have learned through experience the important operation of bagging. On the loamy soils, good qualities of fruits may be attained, but the growers are accustomed to prefer light sandy soils to insure success. Sometimes rather dry hillsides give good results."

The peach in Turkestan and Persia.—We shall become too deeply involved if we attempt to trace the cultivation of peaches in all of the countries of Asia. A sentence each suffices for other regions than China and Japan, excepting Turkestan, where the peach seems preeminently at home, and must therefore have more than a word.

The peach is commonly grown in Mongolia and Cochin China.[69] Several kinds of peaches are cultivated in the north

of India.[70] The peach requires the greatest care to ensure success in the north-east of India.[71] A correspondent of the United States Department of Agriculture at Kashgar, British India, describes a nectarine grown there wanting "a hot but only a short summer."[72] Meyer, Agricultural Explorer for the United States Department of Agriculture, found a variety of peach growing at Kirin, Mongolia, not far from Vladivostock, which he says "is the most northern locality where I have yet found peaches."[73] These references might be multiplied but enough are given to show that the peach grows wild or cultivated wherever the climate permits in central and eastern Asia.

The peach seems to be quite as much at home, as highly prized and as commonly grown in Russian Turkestan, northern Persia, Trans-Caucasia and Asia Minor—the countries of western Asia—as in the eastern part of the continent. The Chinese early discovered trade routes over the mountains from the center of Asia to Kashmir, Bokhara and northern Persia. What more probable than that in remote times the seeds of peaches should have been carried westward from China and the peach thus have been introduced into western Asia where it at once found a congenial soil and climate. The peach-tree is so easily raised from the pit that its diffusion along routes of travel must have been very rapid.

Of many accounts of the peaches of this region, long and short, perhaps the following from Mr. Albert Regel gives, in the space to be spared, the best idea of the extent of the peach-region in western Asia and the races represented—races rather than varieties, for of the latter there must be legions since we are told the trees are grown from seed. Regel,[74] a physician by vocation, lived in Turkestan for nine years and collected fruits and flowers as an avocation. He seems to have penetrated every nook and corner of Turkestan and adjacent regions. Of peaches and nectarines he says:

"Next to the pomegranate, the Asiatics prize the peach, and the Oriental poetry compares its lusciousness to the fruits of

Paradise. The culture of the peach reaches its northern limit in the district of the Ili. The young plants, which, as throughout Asia, are grown from the seed, without grafting, suffer greatly there from frost and require careful covering; nevertheless the large, smooth, red and the rough, hairy, yellow fruit of the Chinese varieties develop excellent characteristics. According to the observations of the naturalist Wilkins, there are 40 varieties in the Kokan district, among them some Chinese ones. In the South the peach extends to Afghanistan and Tshotral; its proper home, however, is Northern Persia to the Caucasus. In Darvas the peach forms trees 30 feet high with broad tops. The rough-skinned giant peaches of the garden of Kalaichumb are of unsurpassed lusciousness and aroma, and most inviting bloom (tinting of the cheeks). They attain the size of an average apple. The fruitfulness of this variety is so great that the leaves seem to be concealed by the peaches. The Bokhariots prize the smaller rough skinned, and red cheeked variety at Tchaspak, which is distinguished by strong aroma and firm, almost astringent flesh. The yellow peaches are especially sweet. The number of rough-skinned kinds at Kalaichumb is considerable.

The smooth-skinned nectarines of this region, among which there are smaller, pale yellow varieties and very large red cheeked ones, are of unusually fine flavor and melting flesh; but they are equalled by the nectarines of Samarkand. There are also small sweet yellow kinds, which stand half way between the rough coated and smooth coated peaches. Such an one grows in the exposed region of Paendish. In Jasqulam, a small rough-skinned, red peach with astringent flesh and musky aroma flourishes. Roshan, the district of Barpaendsha, and Surshan on the lower Hund, produce later ripening and less valuable varieties, than the territory of the lower Paendish."

Another quotation shows the intensity of the orcharding in some parts of this favored land of fruits. In his chapter on the Zarafshan Valley, Schuyler says:[75]

"The gardens constitute the beauty of all this land. The long

rows of poplar and elm trees, the vineyards, the dark foliage of the pomegranate over the walls, transport one at once to the plains of Lombardy or of Southern France. In the early spring the outskirts of the city, and indeed the whole valley, are one mass of white and pink, with the bloom of almond and peach, of cherry and apple, of apricot and plum, which perfume the air for miles around. These gardens are the favourite dwelling-places in the summer, and well may they be. Nowhere are fruits more abundant, and of some varieties it can be said that nowhere are they better. The apricots and nectarines I think it would be impossible to surpass anywhere. These ripen in June, and from that time until winter fruit and melons are never lacking. Peaches, though smaller in size, are better in flavour than the best of England, but they are far surpassed by those of Delaware. The big blue plums of Bukhara are celebrated through the whole of Asia. The cherries are mostly small and sour. The best apples come either from Khiva, or from Suzak, to the north of Turkestan, but the small white pears of Tashkent are excellent in their way. The quince, as with us, is cultivated only for jams or marmalades, or for flavouring soup."

West-central Asia, "the cradle of races," is, as well, the cradle of fruits and vegetables and he who would know more of its orchards, gardens and vineyards should read Schuyler's *Turkestan* and Lansdell's *Russian Central Asia*. We have quoted from the first-named book and now close the discussion of peaches in Asia by a few brief quotations from Lansdell, taking a few from many to bring out points worth noting. We usually think of flat peaches as belonging to southeastern Asia, yet Lansdell found them in west-central Asia:[76] "Here we bought our first ripe grapes and nectarines. Apricots ripen at Kuldja at the beginning of July, and we were, therefore, too late for them, but of late peaches, that ripen early in August, we came in for the last, flat in form, about an inch and a half in diameter and half an inch in thickness. They tasted fairly well, but there was little flesh on the stone."

Nectarines, as we have mentioned before, seem to be

especially plentiful in this region:[77] "In the market (Vierny) we also bought grapes, and, still better, small but luscious nectarines, the latter for a halfpenny each, of which, as I sat over my writing at night, I ate so many as to alarm Mr. Sevier, whose medical instincts led him to fear for the consequences. All went well, however, and I never stinted myself from that time onward from Central Asian fruit, and I am thankful to say was not once inconvenienced thereby."

As throwing light on the wild fruits of this region, we have Lansdell's statement that there are whole forests of almond trees and many species of cherries, plums, apples, pears and apricots, but wild peaches are not mentioned.[78]

On another page we are told that peaches in Bokhara are of three varieties, red, white and green, and in a foot-note that they are grown as follows:[79] "When sown, the stone is put in the earth two fingers deep, before the frosts set in; water is then let in and allowed to freeze; after that, earth is put over it and left till the following spring, when the young shoots are transplanted at intervals of four paces. The best peaches are said to come from Samarkand."

One is tempted to enlarge upon fruit-possibilities in these west-Asiatic valleys. Without much strain upon the imagination it is easy to conjure up visions of great fruit-industries in west Asia rivaling those of our own Pacific Coast when communications with European markets are opened and if the people now there or those who may migrate there begin to make use of their opportunities and to take advantage of the best that art and science now offer horticulture. In the event of such a development, peaches, fresh and dried, will not be the least of the products of the region.

THE PEACH IN EUROPE

One finds treasures of experience and inspiration for narrative in the history of the peach in Europe. But to present a systematic record of the peach as it traveled from country to country after its introduction into ancient Greece

would require a volume and a long one, which, interesting and profitable as it might be, could hardly be justified in this work. Present purposes are best served by attempting only to point out the landmarks in the history and development of the peach from the time it left Asia until it reached America. The first landmark is in the introduction of the peach into Greece.

The peach in Greece.—As to the approximate date and the manner in which the peach reached Greece, there is now common accord among those who may be considered authorities on the history of fruits. Theophrastus (332 B. C.) was the first Greek to mention the peach, speaking of it as a "Persian fruit." It may be, of course, that the peach came to Greece from Asia Minor or Persia at an earlier date. One might well suspect that if peaches were growing in Persia at the time of the retreat of the Ten Thousand (401 B. C.), since the army must have traversed the country in which, according to some, the peach is native and at least had probably then been introduced, the taste of so pleasant a fruit would have inspired some soldier of the retreating Greeks to carry seeds to his western home. But Xenophon, historian of the retreat and a writer on agriculture as well as of war, does not mention the peach as he almost certainly would have done had it occupied a prominent place among the agricultural products of his time.

There is another story of the introduction of the peach into Greece that may be mentioned to separate fact from fable. Some of the old writers assert that the peach came to Greece from Persia by the way of Egypt. Such statements are founded on a traditionary tale first printed by Pliny to the effect that this fruit was sent into Egypt by the kings of Persia to poison the Egyptians. Pliny[80] denies that the kings of Persia had the peach transplanted into Egypt from motives of revenge but evidently is under the belief that the peach came from Egypt for he says:

"As to the peach-tree, it has been only introduced of late years, and with considerable difficulty; so much so, that it is perfectly barren in the Isle of Rhodes, the first resting-place

that it found after leaving Egypt."

We would like to amplify the bare statement that Alexander brought the peach to Greece 332 B. C., but this single fact, if it be a fact, seems to constitute the recorded history of the peach in Greece before the Christian era. Dioscorides, about 64 A. D., was the next Greek to mention the peach but he discusses it with reference to its medicinal properties and does not enlighten us greatly as to its horticultural standing. The fact that the several Greek writers whose books have come down to us from the period under consideration do not mention the peach does not argue that this fruit was not then growing in Greece; for classicists, then as now, seldom got down to earth and the things growing in it.

The peach in Italy.—Naturally one goes to the oldest book in Latin literature on agriculture to look for the beginnings of peach-culture in Italy. This, as every student knows, is *De Re Rustica*, a work on farming, gardening and fruit-growing by Cato (235-150 B. C.) on whom posterity has bestowed the appellation "Sturdiest Roman of Them All." Cato mentions most of our common orchard-fruits, as well as our field crops and garden-plants, but the peach is not in his list of fruits; neither does Varro (117-27 B. C.), the next great Roman writer on agriculture, seem to have known the peach though he mentions choice varieties of cultivated cherries, which at his time had but newly been introduced into Rome.

To Vergil (71-19 B. C.), we are indebted for the first reference to the peach in Roman literature. The "Prince of Latin Poets," writing on agriculture, orcharding and gardening, in the Georgics, mentions the peach in these graceful lines:

"Myself will search our planted grounds at home,
For downy peaches and the glossy plum."

Columella, writing in the next generation after Vergil, about 40 A. D., adopts or starts the story of the peach being a poisonous gift sent from Persia to Egypt:

"And apples, which most barbarous Persia sent,
With native poison arm'd (as fame relates):
But now they've lost their pow'r to kill, and yield
Ambrosial juice, and have forgot to hurt;
And of their country still retain the name."

Some hold, however, that Columella refers not to the peach, "persica" but to "persa" a quite different fruit. But unquestionably, according to commentators, Columella has the peach in mind in these lines:

"Those of small size to ripen make great haste;
Such as great Gaul bestows observe due time
And season, not too early, nor too late."

By these tokens do we know that the peach was cultivated in Italy some years before the Christian era.

In Pliny's remarkable compend of the natural history lore that existed at the beginning of the Christian era, we have the first information worthy of note on the peach in Italy. His statements, though they throw more light on what the peach then was than the writings of any one until his time, taking a more utilitarian turn than those of the Greeks, are confusing and do not enlighten us greatly either as to the history of the peach, or as to its pomological standing. Still, Pliny's observations constitute an important landmark in the history of this fruit and we must give them full consideration. First, let us give attention to Pliny's account of the introduction of the peach into Italy. He devotes Chapter 13, Book XV, to "The Peach" confining his observations to historical references but in it so confounds peaches, plums and other trees that we learn but little as to when, whence or how the peach came to the Romans. Since this reference is much quoted, however, despite its indefiniteness, we give it in full.[81]

"The name of 'Persica,' or 'Persian apple,' given to this fruit, fully proves that it is an exotic in both Greece as well as Asia, and that it was first introduced from Persis. As to the wild plum, it is a well-known fact that it will grow anywhere; and I am, therefore, the more surprised that no

mention has been made of it by Cato, more particularly as he has pointed out the method of preserving several of the wild fruits as well. As to the peach-tree, it has been only introduced of late years, and with considerable difficulty; so much so, that it is perfectly barren in the Isle of Rhodes, the first resting-place that it found after leaving Egypt.

It is quite untrue that the peach which grows in Persia is poisonous, and produces dreadful tortures, or that the kings of that country, from motives of revenge, had it transplanted in Egypt, where, through the nature of the soil, it lost all its evil properties—for we find that it is of the 'persea' that the more careful writers have stated all this, a totally different tree, the fruit of which resembles the red myxa, and, indeed, cannot be successfully cultivated anywhere but in the East. The learned have also maintained that it was not introduced from Persis into Egypt with the view of inflicting punishment, but say that it was planted at Memphis by Perseus; for which reason it was that Alexander gave orders that the victors should be crowned with it in the games which he instituted there in honour of his ancestor; indeed, this tree has always leaves and fruit upon it, growing immediately upon the others. It must be quite evident to every one that all our plums have been introduced since the time of Cato."

Our author's discussion of the kinds of peaches and of their market value is somewhat more satisfactory. In Chapter 11, Book XV, entitled "Six Varieties of the Peach," Pliny again discusses several fruits but in the last paragraph confines himself to the peach and puts on record the first account of varieties of this fruit. The chapter follows in full:[82]

"Under the head of apples, we include a variety of fruits, although of an entirely different nature, such as the Persian apple, for instance, and the pomegranate, of which, when speaking of the tree, we have already enumerated nine varieties. The pomegranate has a seed within, enclosed in a skin; the peach has a stone inside. Some among the pears, also, known as 'libralia,' show, by their name, what a remarkable weight they attain.

Among the peaches the palm must be awarded to the duracinus: the Gallic and the Asiatic peach are distinguished respectively by the names of the countries of their origin. They ripen at the end of autumn, though some of the early kinds are ripe in the summer. It is only within the last thirty years that these last have been introduced; originally they were sold at the price of a denarius apiece. Those known as the 'supernatia' come from the country of the Sabines, but the 'popularia' grow everywhere. This is a very harmless fruit, and a particular favourite with invalids: some, in fact, have sold before this as high as thirty sesterces apiece, a price that has never been exceeded by any other fruit. This, too, is the more to be wondered at, as there is none that is a worse keeper: for, when it is once plucked, the longest time that it will keep is a couple of days; and so sold it must be, fetch what it may."

The first of Pliny's six varieties is the "Persian Apple"—"*malum persicum*" in the original text. It is well to note the author's statement that "Under the head of apples, we include a variety of fruits." A literal translation of the Latin word *malum* in Pliny has brought about many misunderstandings. Beside the peach, pear and pomegranate grouped here as "apples," the apricot, orange, citron and no doubt other fruits come "under the head of apples." The "Persian apple," then, must be counted as one of Pliny's "six varieties of peaches." From the name we know whence the Romans had the peach.

The second variety is the duracinus, to which, among peaches, "the palm must be awarded." The name translated literally is "hard-berry" and must refer to the firmness of the flesh. Despite the fact that De Candolle[83] and others hold that Pliny does not mention the nectarine, "duracinus" can hardly be other than the nectarine—at least the name fits the nectarine better than it does any peach.

The third and fourth of Pliny's peaches are the "Gallic" and "Asiatic," "distinguished respectively by the names of the countries of their origin." Can it be possible that there is a peach native to France? We should say at once that this is

but one of Pliny's inaccuracies were it not for the fact that several of the highest French pomological authorities state that certain races of the peach are natives of southern France. Duhamel Du Monceau[84] and Leroy[85] are chief champions of this belief and the latter says that Mayer, Calvel and Carrière, other French authorities, are of the same opinion. These French writers offer no substantial proofs and botanists do not agree with them; it seems, weighing the evidence at this distance, as if they had copied Columella and Pliny too closely. The fact that the peach is a perfectly naturalized denizen of parts of France, of course, gives color to the belief that it is a native and not an exotic in that country. Quite similarly, our early botanists, including so careful an observer as Bartram, were of the opinion that the peach belonged to America for the reason that they found it growing wild in our southern woods—an escape from early Spanish settlers. Pliny's Gallic peach, probably, was a descendant of an early introduction from some outside source. How the "Asiatic peach" of our quotation differs from the "Persian apple" does not appear except in its origin, it probably having come more or less directly from Asia Minor which in Pliny's time seems to have been Asia.

The last two of Pliny's six varieties are those known as "supernatia" which "come from the country of the Sabines" and the "popularia" which "grow everywhere." Whether supernatia, meaning "from above," refers to the fact that this peach grows in the high and mountainous country of the Sabines or to its being a choice variety, cannot be said. Probably, however, it designates choice peaches while the "popularia" which grow everywhere refers to the common run of this fruit.

Peaches were profitable in Rome in Pliny's time, for they sold "as high as thirty sesterces apiece." A sesterce is four and one-half cents so that the possible price of a peach in Rome 1900 years ago was $1.35. The Roman peach-grower was at the mercy of the seasons as are those of nowadays for we read that when once plucked the peach could be kept but a couple of days, "so sold it must be, fetch what it may."

The statement that the peach is a "particular favorite with invalids," reminds us that the ancients ascribe various medicinal properties to nearly all plants and Pliny sets forth those of the peach as follows:[86]

"Peaches, again, are more wholesome than plums; and the same is the case with the juice of the fruit, extracted, and taken in either wine or vinegar. Indeed, what known fruit is there that is more wholesome as an aliment than this? There is none, in fact, that has a less powerful smell, or a greater abundance of juice, though it has a tendency to create thirst. The leaves of it, beaten up and applied topically, arrest haemorrhage: the kernels, mixed with oil and vinegar, are used as a liniment for head-ache."

One other consideration, and we are done with Pliny. In Chapter 13, quoted on page 28, we are told that the peach "has been only introduced of late years." This can hardly mean during the day of the author. The peach had probably been cultivated in ancient Rome for a considerable length of time before Pliny wrote. Vergil and Columella had mentioned it as a planted plant; Pliny, himself, speaks of the "popularia" as being grown "everywhere;" and the facts that it was a common article of food and used in medicine argue an earlier date of introduction than we might be lead to suppose from Pliny's statement "introduced of late years." Indeed, knowing the great length of time it takes in our days of rapid transportation and quick diffusion of knowledge to accustom ourselves to new food-plants and to persuade agriculturists to grow them, we should say that the peach must have been grown in Rome at least two or three centuries to have become so well known as it seems to have been in Pliny's time. The chief point established by these quotations is that the peach was well established in Italy at the beginning of the Christian era.

After leaving Pliny there is a boundless, uncharted waste before we find another landmark in the history of the peach. In all matters relating to agriculture and natural history Roman writers for several centuries but copied the men from whom we have quoted and it was not until the

Sixteenth Century that we have any substantial account of the further progress of this fruit. During this century, curiously enough, about the only books on botany and horticulture were commentaries on Dioscorides, the Greek botanist, who lived and made his reputation in Christ's time and who for 1600 years thereafter was the sole authority on botany. Of the ten or twelve commentaries, that of Matthiolus is most replete with information on the fruits of the times and especially in the matter of varieties, which he describes in greater detail than any other man since Pliny. It must be remembered that at this time, the closing years of the Middle Ages, there was a great awakening in agriculture and horticulture in southern and western Europe. As the second descriptive list of peaches we might well quote what Matthiolus wrote, but, as in Pliny, few of his varieties can be made out, and Gerarde, writing later in English, amplifies the Latin author so well that we shall wait for his account.

The peach in France.—Peach-culture in France probably began about as early as in Italy, for both Columella and Pliny, as we have seen, mention the peaches of Gaul with those of Rome. Introduced thus early, finding suitable soil and climate and easily propagated, so delicious a fruit as the peach must at once have become a prime favorite in the orchards of the monasteries, where, tended by monks who were the most skilled horticulturists of the times, the peach was disseminated throughout France with the spread of Christianity. France was the foster-mother of the peach in Europe—from her nurseries the Belgians, Dutch, Germans and English had their first peach-trees. The history of the peach in France, then, is an important chapter in the history of this fruit.

André Leroy, author of the great French work, *Dictionnaire de Pomologie*, gives in considerable detail the history of the peach in France and from him we briefly summarize the material he has brought together in regard to this fruit up to 1600 after which our purposes are best met by quoting directly from the originals.

According to Leroy[87] only peaches with a downy skin and soft flesh which adhered to the stone came from Asia—all others, in his belief, originated in southern France. That any peach came originally from France we do not agree, for reasons given on a foregoing page. Leaving the statements of origin in dispute, the first records of peaches in France are to be found in the quotations from Columella and Pliny which we have already discussed. Leroy mentions as the second record a reference to the peach by Bishop Fortunat of Portiers in 530; a third from the fourteenth Abbot of the monastery of Saint-Denis near Paris in the year 784; while the great Charlemagne, who in 800 mentions "peaches of different kinds," furnishes the fourth of Leroy's early records; the fifth account is taken from the letters of Lupus, Abbot of Ferrieres, near Amiens, who sent several varieties of peaches to a brother with instructions as to how to plant the pits, the approximate date being 860.

After these Leroy gives several references to show that the peach was commonly cultivated from the Ninth Century on but none of the writers whom he quotes gives a recognizable picture of the kinds of peaches in their day until we come to the epoch-making agricultural book of Olivier de Serres, who, in his *Théatre de Agriculture*, published in 1604, names and describes twelve kinds of peaches. While these descriptions are so incomplete as to be most tantalizing to one trying to recognize varieties, yet Olivier de Serres is one of the outstanding historians of agriculture and his few paragraphs on the peach constitute a prominent landmark in the history of this fruit because he names a considerable number of sorts and makes it plain that the peach is no longer grown as a species but that varieties are receiving recognition, though, sorry to say, we cannot be sure from the fragmentary description whether or not any of his kinds have come down to our time.

From the beginning of the Seventeenth Century the history of the peach in France is common property to students of pomology. Botanists and agriculturists by this time had begun to break away from Dioscorides, Pliny and the other ancients of Greece and Rome; and in France, Germany and

England one herbal after another was beginning to appear in nearly all of which the peach received attention. Perhaps, since France plays so important a part in the development of the peach, a brief recapitulation from French pomological authorities following Olivier de Serres, showing the increase in varieties of this fruit and bringing to mind the men who have written in pomology, may be of interest and profit.

Lectier, agent of the King at Orleans, in a catalog of an orchard in his charge, published a list of 27 varieties of peaches in 1628. Thirty-nine years later, 1667, Merlet in his *Abrégé des bons fruits* names 38 sorts of this fruit. For the next hundred years the increase in number seems to have been small, for in 1768 Duhamel du Monceau in *Traité des arbres fruitiers*, the first great pomological work to be published, describes but 43 peaches. This century, however, was one in which peach-culture increased enormously throughout France. At the beginning of the period peaches began to be grown in the shelter of walls—a method the results of which greatly increased the culture of this fruit. Calvel, in 1805, names 60 varieties; Louis Noisette, 1839, lists 60 sorts; André Leroy, 1852, names but 41 varieties, but in an edition of the same work in 1865, describes 148 peaches; lastly, O. Thomas in *Guide pratique* (1876) publishes a list of 355 peaches.

The peach in Belgium, Holland, Germany and Spain.—In the search for prominent events in the development of the peach, we are absolved from the task of tracing in detail the history of this fruit in the countries named in the heading of this paragraph. These nations have furnished no landmarks in the history of the peach. France has provided all with their varieties of this fruit. Indeed, in none, unless perhaps it be Spain, does the peach find a congenial climate and certainly in none is the crop of any considerable commercial value. Amateurs, too, in all but Spain at least, give their attention to its orchard-associates rather than to the peach. It is true, as we shall see, that the peach first came to America from Spain and a considerable number of our varieties are now grouped in what is called the "Spanish race." But horticulture in Spain, from the few accounts to be

had, is primitive in the extreme—there are no Spanish pomologies and one cannot conceive that this country has aided appreciably in the development of the peach.

It is possible—would that we could know the facts—that Spain may have played an important part in introducing peaches into Europe. For the earliest Spanish gardens were the work of the Moors and since Moorish gardens, wonderful in beauty of design, show a strong resemblance to the gardens of Persia, what more probable than that the Moor, half-Asiatic, early brought the peach from Persia to Spain.

The peach in England.—The peach and the gooseberry do not thrive side by side. England grows the gooseberry to highest perfection, fogs, rains and cloudy weather seemingly ministering to its wants. But the peach loves sun, heat and clear skies and if these come not naturally the peach-tree must be artificially grown. The peach is not, after centuries of cultivation, acclimatized in England. But in all times, and of all people, the English have been most fond of gardens and orchards and so beautiful and delectable a fruit as the peach could not escape their attention. And so, though under the necessity of growing this fruit on walls or under glass, England, since the Middle Ages, has done much toward the development of the peach, the difficulties of culture seeming to stimulate interest. Her pomological literature is particularly rich in references to this fruit. We in America, too, are greatly indebted to England for many varieties of peaches. The history of the peach in England, then, should afford much interesting and profitable material in this discussion.

There seems to be no record of the Romans having brought the peach to England, yet there can be little doubt that they did so. The remains in England of Roman houses, baths, roads, pavements and bridges, very similar if not quite so well built as those of Italy, suggest that there were Roman gardens about these early houses and villas in England just as there were about those in the great Empire on the Mediterranean. Moreover, there was an early Saxon name

for the peach. The Latin is "Persica;" the early Anglo-Saxon is "Persoc treou;" the English, "peach."[88] But gardening in England for most part went as it came, with the Romans, and, during nearly a thousand years of struggling with barbarians after the fall of the Roman Empire, the peach, in common with all other garden-plants needing culture, seems to have disappeared and was not reintroduced until in the Thirteenth Century.

That the peach came to England, as a permanent asset, from France, is so certain from the general history of English horticulture, though there be no authentic record to substantiate the statement, that we need consider no alternative. One looks in vain for a satisfactory date for the beginning of peach-culture in England. In France the monastic orders, as we have seen, were the conservators of horticulture, as they were of all arts excepting war, and we feel sure that, as the Church reached England, some good bishop, father or brother planted peaches in a monastery garden. Yet our quest of a date is rewarded with nothing earlier than 1216, in which year, according to the Chronicle of Roger of Wendover,[89] "King John, at Newark, in the midst of his despair and disappointment, hastened his end by a surfeit of peaches and ale." From this we may certainly say that peach-culture was established in England at least as early as the beginning of the Thirteenth Century.

Two hundred years elapse before we find another reference to the peach in England. Lydgate, English monk and poet (1375-1440?), as quoted by the Hon. Mrs. Evelyn Cecil,[90] mentioned peaches among "the fruits which more common be." Possibly an earlier reference is found in Chaucer's *Romaunt of the Rose*:

"And many hoomely trees there were
That peches, coynes, and apples bere."

English fruit-books commonly accredit the introduction of the peach in England to a certain Wolf, gardener to Henry VIII, and fix the date at about 1524, but the quotations given show that this fruit was probably well established long before the Sixteenth Century. Perhaps it suffices to say that the peach began to be cultivated in England at the close of the Middle Ages—a time sufficiently vague to be convenient in the state of inexactness of our knowledge.

In the Sixteenth Century references to the peach become so numerous that one cannot reckon with all of them. Selecting only a few notable names of writers on plants, we have Turner, one of the first and perhaps the greatest of British herbalists, who mentions the peach in his *Herball* of 1551, though rather disparagingly, for he says: "The peche is no great tre in England that I could se—the apples are soft flesshy when they are rype, something hory without." Tusser, author of *Five Hundred Points of Good Husbandrie*, 1573, the best-known work on farming of the times, gives a list of fruits to be transplanted in January among which are "Peaches, white and red." Lastly, the century ends with John Gerarde's *The Herball or Generall Historie of Plantes*, 1597, in which the peach is treated at greater length and to better advantage than by any previous English author. An improved edition of Gerarde's herbal was brought out in 1633 by Thomas Johnson who adds very materially to the discussion of the peach in the first edition and from this we quote in full all that pertains to varieties:[91]

"There are divers sorts of Peaches besides the foure here set forth by our Author, but the trees do not much differ in shape, but the difference chiefly consists in the fruit, whereof I will give you the names of the choice ones, and such as are to be had from my friend Mr. Miller in Old-street, which are these; two sorts of Nutmeg Peaches; The Queenes Peach; the Newington Peach; The grand Carnation Peach; The Carnation Peach; The blacke Peach; The

Melocotone; The White; The Romane; The Alberza; The Island Peach; Peach du Troy. These are all good ones. He hath also of that kinde of Peach which some call *Nucipersica* or Nectorins, these following kindes; the Roman red, the best of fruits; the bastard Red; the little dainty greene; the Yellow, the White; the Russet, which is not so good as the rest. Those that would see any fuller discourse of these may have recourse to the late work of Mr. John Parkinson, where they may find more varieties, and more largely handled, and therefore not necessary for me in this place to insist upon them.

1. The Peach tree is a tree of no great bignesse: it sendeth forth divers boughes, which be so brittle, as oftentimes they are broken with the weight of the fruit or with the winde. The leaves be long, nicked in the edges, like almost to those of the Walnut tree, and in taste bitter: the floures be of a light purple colour. The fruit of Peaches be round, and have as it were a chinke or cleft on the one side; they are covered with a soft and thin downe or hairy cotton, being white without, and of a pleasant taste; in the middle whereof is a rough or rugged stone, wherein is contained a kernell like unto the Almond; the meate about the stone is of a white color. The root is tough and yellowish.

2. The red Peach tree is likewise a tree of no great bignesse; it also sendeth forth divers boughes or branches which be very brittle. The leaves be long, and nicked in the edges like to the precedent. The floures be also like unto the former; the fruit or Peaches be round, and of a red colour on the outside; the meate likewise about the stone is of a gallant red colour. These kindes of Peaches are very like to wine in taste, and therefore marvellous pleasant.

3. *Persica praecocia*, or the d'avant Peach tree is like unto the former, but his leaves are greater and larger. The fruit or Peaches be of a russet colour on the one side, and on the other side next unto the Sun of a red colour, but much greater than the red Peach: the stones whereof are like unto the former: the pulpe or meate within is of a golden yellow colour, and of a pleasant taste.

4. *Persica lutea*, or the yellow Peach tree is like unto the former in leaves and flours, his fruit is of a yellow color on the out side, and likewise on the in side, harder than the rest: in the middle of the Peach is a wooddy hard and rough stone full of crests and gutters, in which doth ly a kernel much like to that of the almond, and with such a like skin: the substance within is white, and of taste somewhat bitter. The fruit hereof is of greatest pleasure, and of best taste of all the other of his kinde; although there be found at this day divers other sorts that are of very good taste, not remembered of the ancient, or set down by the later Writers, whereof to speake particularly would not bee great to our pretended purpose, considering wee hasten to an end.

5. There is also kept in some of our choice gardens a kind of Peach which hath a very double and beautifull floure, but it is seldom succeeded by any fruit: they call this *Persica flore pleno*, The double blossomed Peach."

In the first edition Gerarde describes but four peaches, but Johnson, 36 years later, says "there are divers sorts besides the foure here set forth by our Author" and then names thirteen "choice ones, such as are to be had from my friend Miller in Old-street," who "hath also" six varieties "of that kinde of Peach which some call *Nucipersia* or *Nectorins*." Either Gerarde neglects the peach or varieties increased greatly in 36 years—probably the former. We have not found the nectarine mentioned before Johnson's revision of Gerarde in 1633 and probably this fruit was not well known in England long before, for Parkinson, discussing them in 1629, says "they have been with us not many years." This brings us to Parkinson's list of peaches, which contains, as Johnson says, a "fuller discourse," than Gerarde. John Parkinson (1567-1650), another British herbalist, who also cultivated a famous garden in London, devotes a chapter to the peach and another to the nectarine. These being short, and every word pertinent, we publish them in full:[92]

"The great white Peach is white on the outside as the meate is also, and is a good well rellished fruit.

The small white Peach is all one with the greater, but differeth in size.

The Carnation Peach is of three sorts, two are round, and the third long; they are all of a whitish colour, shadowed over with red, and more red on the side is next the sunne: the lesser round is the more common, and the later ripe.

The grand Carnation Peach is like the former round Peach, but greater, and is as late ripe, that is, in the beginning of September.

The red Peach is an exceeding well rellished fruit.

The russet Peach is one of the most ordinary Peaches in the Kingdome, being of a russet colour on the outside, and but of a reasonable rellish, farre meaner then many other.

The Island Peach is a faire Peach, and of a very good rellish.

The Newington Peach is a very good Peach, and of an excellent good rellish, being of a whitish greene colour on the outside, yet halfe reddish, and is ripe about Bartholmew tide.

The yellow Peach is of a deepe yellow colour; there be hereof divers sorts, some good and some bad.

The St. James Peach is the same with the Queenes Peach, here belowe set downe, although some would make them differing.

The Melocotone Peach is a yellow faire Peach, but differing from the former yellow both in forme and taste, in that this hath a small crooked end or point for the most part, it is ripe before them, and better rellished then any of them.

The Peach *du Troas* is a long and great whitish yellow Peach, red on the outside, early ripe, and is another kinde of Nutmeg Peach.

The Queenes Peach is a faire great yellowish browne Peach,

shadowed as it were over with deepe red, and is ripe at Bartholmew tide, of a very pleasant good taste.

The Romane Peach is a very good Peach, and well rellished.

The Durasme or Spanish Peach is of a darke yellowish red colour on the outside, and white within.

The blacke Peach is a great large Peach, of a very darke browne colour on the outside, it is of a waterish taste, and late ripe.

The Alberza Peach is late ripe, and of a reasonable good taste.

The Almond Peach, so called, because the kernell of the stone is sweete, like the Almond, and the fruit also somewhat pointed like the Almond in the huske; it is early ripe, and like the Newington Peach, but lesser.

The Man Peach is of two sorts, the one longer then the other, both of them are good Peaches, but the shorter is the better rellished.

The Cherry Peach is a small Peach, but well tasted.

The Nutmeg Peach is of two sorts, one that will be hard when it is ripe, and eateth not so pleasantly as the other, which will bee soft and mellow; they are both small Peaches, having very little or no resemblance at all to a Nutmeg, except in being a little longer than round, and are early ripe."

"Many other sorts of Peaches there are, whereunto wee can give no especial name; and therefore I passe them over in silence."

Agriculture seems to have received a great impetus in England about the middle of the Seventeenth Century, possibly with the beginning of Cromwell's Protectorate in 1653. Toward the end of the century the momentum began to carry pomology with it, the most apparent results of the

movement at this distance, as it affects the peach, being a great output of new varieties and of fruit-books in which the new offerings were described. From this time the progress of peach-culture in England assumed so great proportions that space does not permit following it further in this brief account—a task unnecessary, too, for the pomological works of Lawrence, Switzer, Langley, Brookshaw, Miller, Rea, Hitt, Abercrombie and Forsyth, to select the most prominent names, cover the century well and are still accessible in large libraries. Moreover, by this time the peach was well established in America and we must take up its history there.

THE PEACH IN AMERICA

One of the first fruits of the heroic age of Spanish discovery in America was the naturalization in the New World of animals and plants which the discoverers brought with them. Most notable of these are the wild horses of the western plains and the Indian peaches of southern forests. Long before the English, Dutch, French or Swedes planted colonies in America, peaches, introduced by Spaniards, were common property of the Indians in southeastern and southwestern America. The Spaniards came to the New World to conquer and brought swords more often than fruits, but a cheery note in the long dirge of human woes suffered by the Aztecs is found in the rapid dissemination of the peach, among other domesticated plants, at an early period in Mexico. Which of the Spanish conquerors brought the peach or when it came does not appear but we have record that less than fifty years after Cortez conquered the country the peach was, apparently, commonly grown in Mexico. The beginnings of peach-culture on this continent are, then, to be sought in the region south of the Rio Grande.

The peach in Mexico.—Authority for the statement that the peach was cultivated in Mexico less than fifty years after the Spanish conquest is found in a Spanish book published by Molina in 1571, in which three peaches are described in

Hispano-Aztec compound words as follows: "*xuchipal durazno*, 'red-colored peach,' *cuztic durazno*, 'yellow peach,' and *xocotlmelocoton*, 'peach fruit.'"[93] That the peach is to be found everywhere in Mexico, cultivated and as an escape from cultivation, where climate permits is common knowledge to pomologists, explorers having from time to time brought to light sorts worthy of introduction in our southern states, and frequent mention is made of this fruit by visitors to that country.

These Mexican peaches become of special interest to American fruit-growers because they constitute, with the offspring of early introductions in Florida, what pomologists call the "Spanish Race" of this fruit. "American Race" is a more fitting name, for these peaches are an American product. Four centuries of reproduction from seed, in a climate and soil different from any previously imposed upon them, and abnormally short generations have given to this continent a group of peaches with many characters in common.

Tracing further the history of the peaches that early came to Mexico, we find evidence that in a comparatively short time they had been taken northward into New Mexico, Arizona and the Californias. It is barely possible that from the same source the peach was eventually carried as far eastward as the Mississippi, for early explorers found naturalized peaches in the valley of this great river. No doubt the Jesuit and Franciscan fathers, chief representatives of the Roman Catholic Church in the early settlement of Mexico and southwestern America, early carried the peach from place to place, for, as advance guards of civilization, these men usually planted fruits, grains, vegetables and flowers at the missions they founded. Therefore, it is hardly too much to say that the history of the peach in the southwest follows the establishment, one after another, of the old missions, beginning in America with the settlement of Sante Fe in 1605 and continuing until Spanish rule passed into that of the United States.

That the padres of the early religious orders planted gardens

and orchards as they planted the cross of Christianity among the Indian tribes in the southwest may be seen from such accounts of the mission as the following, written by a Spanish officer traveling in what is now New Mexico in 1799:[94] "The Moquinos are the most industrious of the many Indian nations that inhabit and have been discovered in that portion of America. They till the earth with great care, and apply to all their fields the manures proper for each crop. The same cereals and pulse are raised by them, that are everywhere produced by the civilized population in our provinces. They are attentive to their kitchen gardens, and have all the varieties of fruit-bearing trees it has been in their power to procure. The peach tree yields abundantly."

The antiquity of peach-culture among southern Indians, from Mexico to Florida, is shown by the fact that, among the prominent tribes of this region, there is a distinct name for the peach but the names of other introduced fruits, and of some native ones, are derived from that of the peach. Thus, according to W. R. Gerard,[95] who gave careful study to Indian names of plants in at least four Indian languages, the name of the peach is the radical while that of several plums is the equivalent of "little peach," "deer's peach" and "barren peach" while the cultivated apples and pears were by some Indians called "big peach."

As these Indian peaches have cut a prominent figure in furnishing stocks for American peach-orchards, are the source from which came a number of varieties, and, more than all else, gave inspiration for planting permanent orchards of this fruit on American soil, we may well consider them at greater length.

Indian peaches.—In many parts of the South, from the Ohio to the Gulf and from the Atlantic to the Great Plains, the peach is naturalized and has run into many varieties of a peculiar and well-recognized type. This is the "Indian Peach" of this vast region, the chief distinguishing characters of which are: Trees with long, spreading limbs; young growth with purplish bark; small, flat, comparatively persistent leaves; blossoms large; season sometimes covering several

weeks; fruit small, streaked with red beneath the skin, giving it a striped appearance, heavily pubescent; flesh usually yellow; ripening very late, season long, and of poor or indifferent quality. The trees of these Indian peaches have a smack of wildness which the best of pruning does not wholly subdue. The aborigines undoubtedly obtained peaches from Spaniards settling in both Mexico and Florida. The first source we have discussed. We come now to the second.

No doubt the Spaniards planted peaches in their first settlement of Florida at Saint Augustine in 1565. We have no record of the fact but early Indian traders found the natives of northern Florida and the neighboring states growing peaches in and about their villages in such quantity and with such familiarity as to suggest that the several tribes had long known this fruit. Hilton, an Englishman, who visited Florida a hundred years after the Spaniards established themselves at Saint Augustine, records that: "the country abounds with grapes, large figs and peaches."[96] The besetting sins of our early explorers were hasty generalization and exaggeration, and since the Indian peach, in what is now Florida at any rate, does not "abound" we must believe that Hilton was either farther north or was dissembling. Of the abundance of Indian peaches in the other Gulf States, there can be no doubt, for John Bartram, America's first great botanist, a man of note among all American naturalists, in the account of his travels through this region in 1765-1766 frequently mentions the peach as wild or as having been cultivated by the Indians.

Thus, Bartram says, speaking of the Cherokee town of Sticoe, on or near the Savannah River:[97] "On these towering hills appeared the ruins of the ancient famous town of Sticoe. Here was a vast Indian mount or tumulus and great terrace, on which stood the council-house, with banks encompassing their circus; here were also old Peach and Plumb orchards; some of the trees appeared yet thriving and fruitful." And again, discussing the ruins of a French town near Mobile, Alabama, he says:[98] "I ascended the bank of the river, and penetrating the groves, came presently to old

fields, where I observed ruins of ancient habitations, there being abundance of Peach and Fig trees, loaded with fruit, which affording a very acceptable dessert after the heats and toil of the day, and evening drawing on apace, I concluded to take up my quarters here for the night." And still again, he found on Pearl Island:[99] "Besides the native forest trees and shrubs already noted, manured fruit trees arrive in this island to the utmost degree of perfection, as Pears, Peaches, Figs, Grape Vines, Plumbs, &c."

Bartram in his travels found the peach so widely and abundantly naturalized that he was inclined to believe America to be its habitat. At least Kalm,[100] the Swedish naturalist, who visited Bartram in 1748-1749 reports that Bartram "looked upon peaches as an original American fruit, and as growing wild in the greater part of America."

In 1758 Le Page Du Pratz, who lived on a plantation in Louisiana for several years and wrote a history of the French colony, says that the natives had peaches and figs when the French settled in Louisiana in 1698. He probably errs, however, in stating that the natives got their trees from the English colony of Carolina since the English did not settle in Carolina until 1670. No doubt the Indians had long before had peaches and figs from the Spaniards of Florida or Mexico. The account which this historian gives of early peach-culture in Louisiana is worth printing in full:[101] "The natives had doubtless got the peach trees and fig trees from the English colony of Carolina, before the French established themselves in Louisiana. The peaches are of the kind which we call alberges; are of the size of the fist, adhere to the stone, and contain so much water that they make a kind of wine of it. The figs are either blue or white; are large and well enough tasted. Our colonists plant the peach stones about the end of February, and suffer the trees to grow exposed to all weathers. In the third year they will gather from one tree at least two hundred peaches, and double that number for six or seven years more, when the tree dies irrecoverably. As new trees are so easily produced, the loss of the old ones is not in the least regretted."

There are many indirect references to peaches in the Mississippi Valley most of which can be traced to Father Hennepin's account of peaches in Louisiana. He says:[102] "The peaches there are like those of Europe and bear very good fruit in such abundance that the savages are often obliged to prop up the trees with forked sticks." It turns out, however, that Father Hennepin was the Baron Munchausen of the early French explorers, it being doubtful whether he was ever farther down the Mississippi than the mouth of the Illinois. Probably, therefore, we must put much of what early writers say of the great abundance of peaches in this region to the soaring imagination of this early religious explorer. Yet these reports are credited by so careful a man as Kalm, who writes:[103] "I have been told by all those who have made journies to the southern parts of Canada, and to the river Mississippi, that the woods there abound with peach-trees, which bear excellent fruit, and that the Indians of those parts say that those trees have been there since times immemorial."

A little later we have reliable information that the peach was naturalized in parts of the Mississippi Valley at least, for Thomas Nuttall, leading botanist of his time and a thoroughly reliable reporter, traveling in Arkansas in 1819, writes:[104] "The thermometer towards noon rises to seventy degrees and the peach and plum trees, almost equally naturalized, have nearly finished blooming." And, again,[105] "The peach of Persia is already naturalized throughout the forests of Arkansa." From this we may picture wild peaches as having grown for generations in parts of Arkansas and, no doubt, of the now famous Ozark region, where, we are told, peach-trees in abundance now decorate, with flower and fruit, primeval forests.

Reserving the best description of Indian peaches to the last we now turn from Arkansas to the Carolinas. Here, in 1700, John Lawson, a surveyor, who in his work had ample opportunity to know the country, wrote about the wild and cultivated plants of the region. Lawson, although not a trained naturalist, was a keen observer, a lover of nature and much interested in the agricultural development of the

Carolinas. Moreover, he writes so simply, directly, and in a tone so temperate, in contrast to the declamatory style of the times, that one accepts without question what he says. We feel we are justified in quoting at some length Lawson's description of Indian peaches:[106]

"All peaches with us are standing; neither have we any wall fruit in Carolina, for we have heat enough, and therefore do not require it. We have a great many sorts of this fruit, which all thrive to admiration, peach trees coming to perfection, with us, as easily as the weeds. A peach falling to the ground brings a peach tree that shall bear in three years, or sometimes sooner. Eating peaches in our orchards makes them come up so thick from the kernel, that we are forced to take a great deal of care to weed them out, otherwise they make our land a wilderness of peach trees. They generally bear so full that they break great part of their limbs down. We have likewise very fair nectarines, especially the red, that clings to the stone; the other yellow fruit, that leaves the stone. Of the last I have a tree that most years brings me fifteen or twenty bushels. I see no foreign fruit like this, for thriving in all sorts of land, and bearing its fruit to admiration. I want to be satisfied about one sort of this fruit, which the Indians claim as their own, and affirm they had it growing amongst them before any Europeans came to America.

The fruit I will describe as exactly as I can. The tree grows very large, most commonly as big as a handsome apple tree; the flowers are of a reddish, murrey color, the fruit is rather more downy than the yellow peach, and commonly very large and soft, being very full of juice. They part freely from the stone, and the stone is much thicker than all the other peach stones we have, which seems to me that it is a spontaneous fruit of America; yet in those parts of America that we inhabit, I never could hear that any peach trees were ever found growing in the woods; neither have the foreign Indians, that live remote from the English, any other sort. And those living amongst us have a hundred of this sort for one other. They are a hardy fruit, and are seldom damaged by the north-east blast, as others are. Of this sort

we make vinegar; wherefore we call them vinegar peaches, and sometimes Indian peaches.

This tree grows to a vast bigness, exceeding most apple trees. They bear well, though sometimes an early spring comes on in February, and perhaps when the tree is fully blown, the cloudy, north-east winds, which attend the end of that month, or the beginning of March, destroy most of the fruit. The biggest apricot tree I ever saw, as they told me, was grafted on a peach stock in the ground. I know of no other sort with us, than the common. We generally raise this fruit from the stone, which never fails to bring the same fruit. Likewise our peach stones effect the same, without so much as once missing to produce the same sort that the stone came from."

Peaches in the colonies.—The first peaches in the American colonies must have been planted at Jamestown for, in 1629, Captain John Smith writes of "peaches in abundance."[107] The trees, however, seem to have been neglected for, continuing, Smith says: "Apples, Peares, Apricocks, Vines, figges, and other fruits some have planted, that prospered exceedingly; but their diligence about Tobacco left them to be spoiled by the cattell; yet now they beginne to revive." The settlement in Virginia at that time, so soon after the Indian massacres, was small and there could have been but few trees so that Smith's "abundance" was but as a grain of sand on the seashore with the many thousands of bushels required to make an abundance at the present time.

Despite the neglect of fruit to attend to tobacco which Smith laments, the planting of orchards must have gone on apace, for in 1633 a Dutch sea-captain named De Vries visiting Virginia describes the Menife plantation, famous in the colony at that time, as having a garden containing rosemary, sage, marjoram and thyme, the apple, pear and cherry while the house itself was surrounded by peach-trees.[108] Three years later, 1642, Berkeley became governor of the colony and we are told that about his house at Green Spring there were fifteen hundred apple, peach, apricot, quince and other fruit-trees.[109] Robert Evelyn, writing forty

years after the settlement of Jamestown says: "Peaches better than Apricocks by some doe feed hogs, one man hath ten thousand trees."[110]

Fruit-growing in colonial Virginia was not without promoters and one, a Colonel Norwood, had the persuasive eloquence of the barkers for get-rich-quick orchard-planting concerns of our own times. Colonel Norwood, an Englishman, visited Virginia in 1649 and on his return wrote:[111] "Oranges, Lemons, Pine-aples, Plantanes, Peaches, Apricocks, Peares, Apels, in a word all sort of excellent Fruits will grow there in full perfection: you may sleepe whilst they are growing, after their setting or engrafting, there needes no more labour but your prayers, that they may prosper, and now and then an eye to prevent their casualties, wounds or diseases." No doubt Norwood is over enthusiastic in his praises and yet it is true that there were few pests of the peach at this time, most of these coming, one by one, with the development of the fruit-industry. About all that any fruit needed at this time was, to use a modern political phase, "watchful waiting."

Considering the agricultural efforts that must have been required to produce tobacco, then the medium of exchange at home and abroad, and of corn, which in Virginia was the staff of life, one wonders that fruit received the attention indicated by the following account written in 1656 of a still earlier period:[112] "The Country is full of gallant Orchards, and the fruit generally more luscious and delightful than here, witnesse the Peach and Quince, the latter may be eaten raw savourily, the former differs as much exceeds ours as the best relished apple we have doth the crabb, and of both most excellent and comfortable drinks are made." Perhaps the explanation of the popularity of fruits in Virginia is to be found in the statement that from fruits are made "most excellent and comfortable drinks." On the word of Captain John Smith we have it that "few of the upper-class planters drink any water."[113] Wine was not made in quantity in the colonies and liquors distilled from grains were not known so that thirst, in this case the mother of invention, caused the colonists to turn to peaches and

apples for strong drink.

Prohibition was not preached in the colonies nor in the states until long after the Revolution and King Alcohol dominated every part of the New World. Distilling spirituous liquors from rye and corn seems not to have been practiced, if the art were known, until the beginning of the Nineteenth Century. The upper classes drank wine, but cider, perry, peach-vinegar and similar fermented fruit-juices were in common use by the middle and lower classes while the carousing population of the whole country, and there seems to have been many liberal tipplers, slaked their thirst with rum, apple-jack and peach-brandy. So much on drinking, not to point a moral or adorn a tale, but to bring out the fact that fruit-growing in America had its beginning and for two hundred years had almost its whole sustenance in the demand for strong drink. This is shown in almost every page of the horticultural literature of the times and in the laws of the colonies restricting prices and levying taxes on liquors made from fruits. Peaches were grown in quantities wherever they could be made to succeed in the colonies, not for the fruit itself, but for the making of peach-vinegar, a sort of cider, and peach-brandy, a distilled liquor.

By the end of the first hundred years in America the English seem to have brought orcharding to a fine state of perfection in Virginia, the peach succeeding then, by all accounts, rather better than now. Bruce[114] gives an admirable summing-up of orchard-conditions at the end of the period named: "In the closing years of the seventeenth century, there were few plantations in Virginia which did not possess orchards of apple and peach trees, pear, plum, apricot, and quince. The number of trees was often very large. The orchard of Robert Hide of York contained three hundred peach and three hundred apple trees. There were twenty-five hundred apple trees in the orchard of Colonel Fitzhugh. Each species of fruit was represented by many varieties; thus, of the apple, there were mains, pippins, russentens, costards, marigolds, kings, magitens and batchelors; of the pear, bergamy and warden. The quince was greater in size, but less aciduated than the English

quince; on the other hand, the apricot and plum were inferior in quality to the English, not ripening in the same perfection. Cherries grew in notable abundance. So great was the productive capacity of the peach that some of the landowners planted orchards of the tree for the mere purpose of using the fruit to fatten their hogs; on some plantations, as many as forty bushels are said to have been knocked down to the swine in the course of a single season."

Treasure after treasure of experience and narrative may be found in tracing the history of the peach in Virginia but space permits only the references that best illuminate the development and culture of this fruit in America. Two accounts must serve to give an idea of the peach in Virginia in the Eighteenth Century. Robert Beverly, in his *History of Virginia* gives a good idea of the culture, kinds and uses of peaches in the early part of the Eighteenth Century:[115] "Peaches, nectarines and apricots, as well as plumbs and cherries, grow there upon standard trees. They commonly bear in three years from the stone, and thrive so exceedingly, that they seem to have no need of grafting or inoculating, if any body would be so good a husband; and truly I never heard of any that did graft either plum, nectarine, peach or apricot in that country, before the first edition of this book."

"Peaches and nectarines I believe to be spontaneous, somewhere or other on that continent, for the Indians have, and ever had greater variety, and finer sorts of them than the English. The best sort of these cling to the stone, and will not come off clear, which they call plum nectarines, and plum peaches or clint stones. Some of these are twelve or thirteen inches in the girt. These sorts of fruits are raised so easily there, that some good husbands plant great orchards of them, purposely for their hogs; and others make a drink of them, which they call mobby, and either drink it as cider, or distill it off for brandy. This makes the best spirit next to grapes."

The text for the only other account we have space to publish for the period under consideration is found in

Washington's diary for February 22, 1760. "Laid in part, the Worm of a fence around the Peach orchard." The information in Washington's short statement is inconsequential but from it we form a pleasant picture of peach-growing at Mount Vernon. Washington owned a distillery and in another place we learn that "the distiller made every fall a good deal of apple, peach and persimmon brandy." To supply the needs of the plantation in fruit and brandy, there must have been a considerable number of trees, all seedlings, but set in straight rows, for Washington, the surveyor, would have no botch work in aligning and spacing. The fence, the worm of which Washington was laying on his twenty-eighth birthday, if typical of the times, was of split walnut-rails, laid zigzag. Eventually it became trellised with wild grapes, Virginia creepers, honeysuckles and morning-glories. The corners grew up to sassafras, brambles and other plants of the region. In spring, we picture then, the pink-petalled trees, in the peach-orchard at Mount Vernon, making obeisance to the Father of his Country as he rode the rounds of the plantation; in summer the shady shrub-grown corners of the worm-fence, sweet-scented with honeysuckle or aromatic with sassafras, furnished refreshing resting places as Washington watched his harvest; later, the orchard, voluptuous with fruit, gave gustatory promises of products to eat and drink and dazzled the eye with autumn colors of Virginia creeper, wild grape and sassafras. The peach-orchard not only served the appetite at Mount Vernon but was one of the most picturesque spots on the plantation.

Let the foregoing accounts of Smith, Bruce and Beverly suffice to give status to early peach-growing in Virginia. They apply equally well to Maryland, these neighboring colonies, it will be remembered, being called by one of our authors, "Leah and Rachel or the Two Fruitful Sisters." Of the peach in the states to the south at least a few words ought to be said.

In the discussion of Indian peaches we have had a good account of the early history of the peach in the Carolinas by Lawson. We now show the status of peach-growing in this

region at a later period. In an account of South Carolina and Georgia, said to have been written by General Oglethorpe, printed in London in 1733, we find the following:[116]

"Mulberries, both black and white, are natives of this soil, and are found in the woods, as are many other sorts of fruit trees of excellent kinds, and the growth of them is surprisingly swift; for a peach, apricot, or nectarine tree will, from the stone, grow to be a bearing tree in four or five years' time."

"They have oranges, lemons, apples and pears, besides the peach and apricot mentioned before. Some of these are so delicious that whoever tastes them will despise the insipid, watery taste of those we have in England; and yet such is the plenty of them that they are given to the hogs in great quantities."

A little later, 1740, Mr. Thomas Jones of Savannah wrote to Mr. John Lyde concerning the contents of his town-garden as follows:[117]

"As to our fruit, the most common are peaches and nectarines (I believe that I had a hundred bushels of the former this year in my little garden in town); we have also apples of divers sorts, chincopin nuts, walnut, chestnut, hickory, and ground nuts."

The third writer is Sir John Oldmixon who quotes a Mr. Archdale in regard to the fruits of Carolina. He writes:[118]

"Everything generally grows there that will grow in any part of Europe, there being already many sorts of fruits, as apples, pears, apricots, nectarines, etc. They that once taste of them will despise the watery, washy taste of those in England. There's such plenty of them that they are given to the hogs. In four or five years they come from a stone to be bearing trees."

The same author is worth quoting in regard to the early culture of the Melocoton peach in Virginia.[119] "Here is such plenty of peaches that they give them to their hogs; some of

them, called malachotoons, are as big as a lemon and resemble it a little." The history of the word melocoton, by the way, is interesting. It comes from the Latin *melum cotoneum,* literally, apple-quince. The corruption is of Spanish origin and in Spain "melocoton" is a common name for the peach. The word, however, is now common enough in English, no less than 29 variant spellings being found in the dictionaries and every extensive list of peaches having a number of varieties with melocoton as a prefix or an affix to the name.

Passing now to the northern colonies we find that the history of the peach in Pennsylvania begins with the history of the State. William Penn founded Philadelphia in 1682 and a year later, in describing the new country, names the peach as one of its assets:[120] "There are also very good peaches, and in great quantities; not an Indian plantation without them, but whether naturally here at first, I know not. However, one may have them by bushels for little; they make a pleasant drink; and I think not inferior to any peach you have in England, except the true Newington."

It would be hard to find a part of the earth better fitted in soil and climate for sure and abounding harvests of peaches than the Chesapeake peach-belt extending up through Maryland and taking in Delaware, New Jersey and eastern Pennsylvania. We may be sure, then, that if the Indians were growing peaches in the abundance described by Penn in what is now Philadelphia, peach-orchards were not less common in all of the Chesapeake belt. That the whole region was bountifully supplied with this delicious fruit when settled by whites is further indicated, however, in a letter written by Mahlon Stacy from the "Falls of the Delaware," New Jersey, in 1680, to his brother Revell in England. He says:[121]

"I have travelled through most of the places that are settled, and some that are not; and in every place I find the country very apt to answer the expectation of the diligent. I have seen orchards laden with fruit to admiration; their very limbs torn to pieces by the weight, and most delicious to the

taste and lovely to behold. I have seen an apple tree from a pippin kernel yield a barrel of curious cider, and peaches in such plenty that some people took their carts a peach gathering; I could not but smile at the conceit of it; they are very delicate fruit, and hang almost like our onions that are tied on ropes."

We are told in Watson's Annals of Philadelphia[122] that one of the remarkable characteristics of Germantown, Pennsylvania, in 1700 was that the whole of the main street, one mile in length, "was fronted with blooming peach trees."

An account of peaches in the Delaware region as late as the middle of the Eighteenth Century shows that even then the peach was regarded as indigenous "like maize and tobacco." This quotation, too, is interesting because it gives a glimpse of cultural methods, kinds, uses and danger from frost. The author was a Swedish clergyman, a resident of the region for some years. He writes:[123]

"Peach trees stand within an enclosure by themselves; grow even in the stoniest places without culture. The fruit is the most delicious that the mouth can taste, and often allowable in fevers. One kind, called clingstones, are considered the best; in these the stones are not loose from the fruit as in the others. Many have peach orchards chiefly for the purpose of feeding their swine, which are not allowed to run at large. They first bloom, in March, the flowers coming out before the leaves, and are often injured by the frosts; they are ripe toward the close of August. This fruit is regarded as indigenous, like maize and tobacco; for as far as any Indians have been seen in the interior of the country these plants are found to extend."

Pressed for space, we must conclude the discussion of early peach-growing in this region by quoting an account of the industry as it existed in 1750 when the Swedish naturalist, Kalm, visited the colonies and spent some time in Pennsylvania and neighboring states. Writing of orchards he says:[124] "Every countryman, even a common peasant, has

commonly an orchard near his house in which all sorts of fruit, such as peaches, apples, pears, cherries, and others, are in plenty. The peaches were now almost ripe. They are rare in Europe, particularly in Sweden, for in that country hardly any people besides the rich taste them. But here every countryman had an orchard full of peach trees, which were covered with such quantities of fruit, that we could scarcely walk in the orchard, without treading on those peaches which were fallen off; many of which were always left on the ground, and only part of them was sold in town, and the rest was consumed by the family and strangers; for every one that passed by, was at liberty to go into the orchard, and to gather as many of them as he wanted. Nay, this fine fruit was frequently given to the swine.

This fruit is, however, sometimes kept for winter use, and for this purpose they are prepared in the following manner. The fruit is cut into four parts, the stone thrown away, and the fruit put upon a thread, on which they are exposed to the sunshine in the open air, till they are sufficiently dry. They are then put into a vessel for winter. But this manner of drying them is not very good, because the rain of this season very easily spoils and putrifies them, whilst they hang in the open air. For this reason a different method is followed by others, which is by far the most eligible. The peaches are as before cut into four parts, are then either put upon a thread, or laid upon a board, and so hung up in the air when the sun shines. Being dried in some measure, or having lost their juice by this means, they are put into an oven, out of which the bread has but just been taken, and are left in it for a while. But they are soon taken out and brought into the fresh air; and after that they are again put into the oven, and this is repeated several times until they are as dry as they ought to be. For if they were dried up at once in the oven, they would shrivel up too much, and lose part of their flavour. They are then put up and kept for the winter. They are either baked into tarts and pyes, or boiled and prepared as dried apples and pears are in Sweden. Several people here dry and preserve their apples in the same manner as their peaches.

The peach trees have, as I am told, been first planted here by the Europeans. But at present they succeed very well, and require even less care than our apple and pear trees."

Kalm[125] also gives an account of the colonists' method of making peach-brandy, which, as we have seen, plays so important a part in the peach-industry of the times. Brandy-making, according to Kalm, was simplicity itself and it is not to be wondered that in those days of strong drink peach-brandy was popular. The following is Kalm's description: "They make brandy from peaches here, after the following method. The fruit is cut asunder, and the stones are taken out. The pieces of fruit are then put into a vessel, where they are left for three weeks or a month, till they are quite putrid. They are then put into the distilling vessel, and the brandy is made and afterwards distilled over again. This brandy is not for people who have a more refined taste, but it is only for the common kind of people, such as workmen and the like."

Kalm, travelling from Trenton to Princeton, found the country thickly settled and full of orchards:[126]

"During the greater part of the day we had very extensive corn fields on both sides of the road. * * * Near almost every farm was a spacious orchard full of peach and apple trees, and in some of them the fruit had fallen from the trees in such quantities as to cover nearly the whole surface. Part of it they left to rot, because they could not take it all in and consume it. Wherever we passed by we were always welcome to go into the fine orchards and gather our hats and pockets full of the choicest fruit, without the possessors so much as looking after it."

The soil and climate of Long Island and the lower reaches of the Hudson, similar to those of the Chesapeake peach-belt, are so well adapted to peaches that we may be sure that the early settlers in New York eked out their scanty fare with this fruit soon after settlements were made. Trade with the colonies to the south, where peaches were common before the Dutch were established on Manhattan Island, began

almost immediately after the arrival of the Hollanders in America, and knowledge of the adaptability of peaches to conditions in the New World was no doubt quickly acquired from Virginia, if, indeed, the aborigines were not cultivating this fruit in the region as Penn found them doing on the site of Philadelphia. Yet careful search in the colonial records of New York shows no early accounts of peaches, there being few such accounts, by the way, of any agricultural product, no one having undertaken the task of describing the natural and agricultural resources of this State as was done by several able observers for Virginia and the New England states.

No doubt, however, orchard-planting as a general practice was long delayed in New York because of political and economic conditions. The Dutch came to America as traders and not as home-makers, and almost from the day they landed were in trouble with both their savage and their civilized neighbors so that actual or petty warfare prevented them from planting orchards until in 1647 when the reins of government were taken in hand by Peter Stuyvesant, a farmer as well as a soldier, who at once set about encouraging the planting of fields, gardens and orchards. He brought, we are told, fruits, flowers, farm and truck-crops from the neighboring colonies and Holland and these he not only planted on Manhattan Island but sent to the settlements up the Hudson. The peach may readily be grown in suitable soils from Albany down the river to New York, and, by the end of the Seventeenth Century, we are told by travelers, naturalists and missionaries that this fruit was in common cultivation by the whites and was even rudely tilled by the Indians of the Hudson Valley.

But, in eastern New York, away from the coast, the peach did not find the climate as congenial as in the colonies to the south and then, too, from the following record, the peach-borer early became troublesome. Kalm says:[127] "Peach-trees have often been planted here (Albany, New York) and never would succeed well. This was attributed to a worm which lives in the ground, and eats through the root, so that the tree dies. Perhaps the severity of the winter

contributes much to it." We have another reference to show that winter-killing must have been a discouraging factor in peach-culture in this part of New York in early days as it is now. Cadwallader Colden, appointed first surveyor-general of New York in 1719, and in 1761 lieutenant-governor of the Province, a botanist of note, who had a patent of land in what is now Orange County, wrote in 1737 that cold had killed the peach-trees the previous winter.

The traveler who visits New York today finds many orchards on the Hudson but in them he sees comparatively few peaches. The peach is much more at home two hundred miles west about the Central Lakes and along the shores of Lake Ontario. Here, it is interesting to learn, peaches were grown in considerable quantities long before the region was settled by the whites—how long we have no record nor do we know much of the character of the fruit. John Bartram in his *Travels from Pensilvania to Onondago, Oswego and the Lake Ontario*, an account of a journey made in 1743, mentions apples, peaches, plums and grapes growing about the Indian villages passed through on his route. Whether these peaches came from the white settlements nearer the Atlantic, or at a much earlier date from the Indians to the South, or both, we cannot even surmise.

Sullivan's army, which came to this region in 1779 to chastise the Indians, found and destroyed considerable numbers of fruit-trees, among them many peaches. After Sullivan's raid the region was quickly settled by whites who, following the examples of the Indians, planted apples and peaches, the orchard soon becoming a prominent asset to every farm. Collections of pioneer papers frequently mention the great adaptability of these lake-regions to peaches. In Conover's *History of Kanadasaga and Geneva*[128] there are sixteen references to the peach-orchards about Seneca and Cayuga lakes in and about the year 1800. As in the South, the products seem to have been used chiefly in making peach-brandy.

David Thomas,[129] Aurora, Cayuga County, New York, was the pioneer horticulturist, fruit-grower and nurseryman in

this part of the State and soon after coming to New York in 1805, we learn from several references to his orchards and nurseries in his own writings, began planting peaches. All of the named varieties from the South and East were tried in his orchard and if valuable were propagated and sold from his nursery. According to his son, John Jacob Thomas, the pomological writer, he had in 1830 "the most extensive and valuable collection of bearing trees west of the Hudson." Through him the western counties of the State were stocked with named peaches and other fruits.

Of peaches in the New England colonies, we need say but little. Except in favored parts of Connecticut and Massachusetts, this fruit was little grown in these northern colonies. It is not at all probable that New England Indians ever planted peaches and for a generation after the whites came the struggle for the necessities of life kept them from indulging in so great a luxury as a peach-orchard. Strong drink was as commonly used by the Puritans as by the Churchmen in Virginia and peach-brandy would have been as acceptable but it was easier to produce cider, and rum from the West Indies could be had with little trouble. Still, peaches were sparingly grown in the New England colonies.

The Massachusetts Company in 1629 sent peach-pits, along with seeds of other fruits, to be planted by the colonists.[130] Twelve years later George Fenwick, Saybrook, Connecticut, writes to Governor Winthrop that he is "prettie well storred with chirrie & peach trees."[131] Justice Paul Dudley,[132] who seems to have been the leading horticulturist in Massachusetts in his time, writes in 1726: "Our Peaches do rather excel those of *England*, and then we have not the Trouble or Expence of Walls for them; for our Peach Trees are all Standards, and I have had in my own Garden seven or eight Hundred fine Peaches of the Rare-ripes, growing at a Time on one Tree." From another statement made by Justice Dudley,[133] we learn that peaches were still being grown from the stone and may assume that budding was not known or so careful a horticulturist as our author would have mentioned it. He says: "Our Peach Trees are large and fruitful, and bear commonly in three Years from the Stone. I

have one in my Garden of twelve Years Growth, that measures two Foot and an Inch in Girt a Yard from the Ground, which, two Years ago, bore me near a Bushel of fine Peaches."

SEEDLINGS GIVE WAY TO BUDDED TREES

About the close of the Eighteenth Century the planting of pits for permanent trees began to give way to budding. It does not appear who began budding peaches on this side of the Atlantic but the desirability of budded stock was discussed as early as 1736, for in that year we find the English botanist, Peter Collinson, urging his American colleague, John Bartram, to "graft Plums and Nectarines on Peach stocks."[134] The matter had evidently been under consideration before for Collinson tells Bartram "Pray try; I have great opinion of its succeeding."[135] Bartram is hard to convince and ten years later Collinson is still urging him to bud, for, in a letter of April 26, 1746, he writes, rather impatiently, "Though thou canst not see, yet I have told thee what inoculating a Peach stock may do."[136]

Probably the Princes, pioneer nurserymen in America, in their nursery at Flushing, Long Island, first began to bud the peach, for in their catalog of 1771 they offer 29 sorts though most of these appear to be types rather than varieties. Twenty years later they list 35 varieties with the statement that all "are inoculated." John Kenrick,[137] father of William Kenrick,[138] the pomological author, who for years was Prince's chief competitor, his nurseries being located at Newton, Massachusetts, began business in 1790 by planting a quantity of peach-stones the trees from which he did not bud. Four years later, we are told, he learned to bud and greatly extended his assortment of varieties, making a specialty of budded peach-trees.[139]

Until the middle of the next century, peaches were nevertheless commonly grown from the pits. It is probable that never before nor since, the world over, have seedling peaches been raised on so extended a scale as in America

during the half-century following the Revolutionary war. The country between the Atlantic seaboard and the Mississippi was being rapidly settled and on nearly every farm from the Great Lakes to the Gulf, barring a few in the northernmost parts of this great area, peaches were planted. They furnished food not only for the pioneers but were used in fattening pigs and in the earlier part of the period, at any rate, were, with apples, the chief supply of ardent spirits which every farmer then kept on hand for daily use. There were millions of peach-trees in America before 1825 but until that time there were but few named varieties. Then the art of budding began to spread; nurseries sprang up; this vast collection of peaches was passed through the sieve of selection; local varieties quickly acquired fame; and, as means of communication developed, the new varieties began to be disseminated, until, in 1850, American nurseries were selling over 400 varieties, a number which at the close of the century had increased to over 1000.

THE CARE OF THE PEACH IN COLONIAL TIMES

Peach-growers, in the period under consideration, gave their trees much the same care as is given in the present time except that they did not spray. Pests were fewer and yet some were especially troublesome, notably the peach-borer, the remedies for which were as numerous as today. Curculio, then as now, almost prohibited the culture of nectarines. A rot, the brown-rot, without doubt, did much damage. Peach-yellows, as yet, was not the scourge it now is but, as we shall see, was well in evidence. There were faddists in those days as in these. Thomas Coulter of Bedford County, Pennsylvania, was one of the original "sod-mulchers"—at least year in and year out he inveighed against cultivation. He managed to get himself in all of the publications of the times for a period of a half-century. We find his method discussed in Volume V of the Transactions of the American Philosophical Society, in the *Domestic Encyclopaedia*[140] in 1803 and, as late as 1821, a full account was published in the *American Farmer*.[141] We quote the article in full, as it came out in the three publications

named, as a record of the times and because it contains a number of novel ideas some of which may commend themselves to modern orchardists of the sod-mulch school who want a cheap and easy way of growing peaches.

"Transplant your peach-trees, as young as possible, where you mean them to stand; if, in the kernel, so much the better ... because, in that case, there will be no check of growth, which always injures peach-trees. Plant peach-trees 16 feet apart, both ways, except you would wish to take your waggon through the orchard to carry the peaches away; in that case, give 24 feet distance to every fifth row, one way, after transplanting. You may plough and harrow amongst your peach-trees, for two years, paying no regard to wounding or tearing them, so that you do not take them up by the roots. In the month of March, or April, in the third year after transplanting, *cut them all off by the ground*; plough and harrow amongst them as before, taking special care not to wound or tear them in the smallest degree, letting all the sprouts or scions grow that will grow; cut none away, supposing six or more should come from the old stump; the young scions will grow up to bearing trees on account of the roots being strong. Let no kind of beasts into peach-orchards, *hogs excepted*, for fear of wounding the trees; as the least wound will greatly injure the tree, by draining away that substance which is the life thereof; although the tree may live many years, the produce is not so great, neither is the fruit so good.

After the old stock is cut away, the third year after transplanting, the sprouts or scions will grow up, all round the old stump, from four to six in number; no more will come to maturity, than the old stump can support and nourish; the remainder will die before ever they bear fruit. These may be cut away, taking care not to wound any part of any stock, or the bark. The sprouts growing all round the old stump, when loaded with fruit will bend and rest on the ground in every direction, without injuring any of them, for many years, all of them being rooted in the ground, as tho' they had been planted. The stocks will remain tough, and the bark smooth for 2 years and upwards; if any of the

sprouts or trees from the old stump should happen to split off, or die, cut them away, they will be supplied from the ground, by young trees, so that you will have trees from the same stump for 100 years, as I believe. I now have trees, 36, 20, 10, 5 and down to one year old, all from the same stump.

The young trees coming up, after any of the old trees split off or die, and are cut away, will bear fruit the second year; but this fruit will not ripen so easily as the fruit on the old trees from the same stem. Three years after the trees are cut off by the ground, they will be sufficiently large and bushy, to shade the ground so as to prevent grass of any kind from matting or binding the surface, so as to injure the trees; therefore; ploughing is useless, as well as injurious; useless, because nothing can be raised in the orchard, by reason the trees will shade all the ground, or nearly so; injurious, because either the roots, stocks or branches will be wounded: neither is it necessary ever to manure peach-trees, as manured trees will always produce less and worse fruit, than trees that are not manured; although by manuring your peach-trees, they will grow larger, and look greener and thicker in the boughs, and cause a thicker shade, yet on them will grow very little fruit, and that little will be of a very bad kind generally looking as green as the leaves, even when ripe, and later than those that never have been manured."

None of the varieties that we now grow was then cultivated. Taking the sorts described in 1800 we find that four were red-fleshed; eight, yellow-fleshed; thirty-four, white-fleshed; eighteen, freestones; nineteen, clingstones, and twelve nectarines. There were no flat, or Peento, peaches but a sort known as Venus's Nipple was seemingly a typical beaked peach.

In 1800, Baltimore was the best market for peaches in America and was near the Chesapeake peach-belt. We are fortunate in having a description of peach-growing around Baltimore at about that time. Richard Parkinson, an English farmer and agricultural writer, came to America to rent one

of George Washington's farms in 1798. The two could not agree and Parkinson rented a farm near Baltimore on which was a peach-orchard. He published an account of his experiences in two very readable volumes and from this work we quote in part the story of his peach-orchard. Perhaps allowances should be made, for Parkinson seems to have been soured by failure and some of his expressions are such as might be expected from an opinionated Englishman undergoing new experiences in America just after the Revolution. Parkinson says:[142]

"It would astonish a stranger to see the quantity of fruit in these parts, which makes the country to look beautiful twice a-year, when the trees are in blossom, and when the fruit is on the trees ripe. But the fruit is chiefly for the use of hogs and can be applied to no better purpose.

On my farm at Orange-Hill, only three miles from Baltimore, the last year I was there, I sold all my peaches to two men at four pence per peck, and let them have a cart and a horse to take them into the city to sell, knowing I had only made four pence per peck on the average the year before, and gathered them myself. These men agreed to pick them, and feed the horse in town at their expence. It was the opinion of every one that they had got a great bargain, and many others wished they had had it. They picked about one-half of them, and carried them to Baltimore: but, alas! they gave up the business, saying they could not make wages, although they at first had said that they would certainly take every peach, intending, if the market should not suit, to carry them to the stills, &c. I was in hopes all this exertion would make this bargain successful, as four pence per peck would pay much better than to give them to hogs, as I have no knowledge of what number a hog will eat. Seeing this scheme frustrated, and thinking it a sin and a shame to see such a number of fine peaches rot on the ground, I mounted my horse and rode to the stills, as there were many small ones within three or four miles of me in the country. They have been erected for this use; but many of them are never used after the first year; and I am of the opinion that they will not pay expences. The men at the

stills were civil enough; they offered to lend me the still, and let me find a man to work it, &c. or they would work it for me; but, from every information I could obtain, I found that my peaches would not more than pay the carriage to the stills and hardly that; and after selling them to the owners of the stills, they would not give me so much for my fruit, as would pay me for my trouble; nor will peaches pay the farmer, to be given to the hogs, if they be not so situated that the hogs can run where they are; and that happened not to be my case.

As a striking instance of the little profit of stills, Mr. O'Donnel, at Canton, had planted an orchard, of great extent, of red peaches, for the purpose of making peach-brandy. The red peach is reckoned much superior to any other for brandy. Although Mr. O'Donnel's orchard had grown to bear in great perfection and he had a still and the other necessary apparatus, the profit proved so small, that he suffered the whole to go waste, and his pigs consumed the produce; and, in the winter, rooted up all those fine peach trees, and planted the ground with Indian corn, having previously manured the land with dung from Baltimore for the purpose of an orchard. Now this gentleman had some hundreds of acres of woodlands unimproved in this plantation; therefore, the cause could not be for want of land.

My fine turnips, Indian corn, potatoes, &c. were in the field by the orchard without any fence. Indeed hogs are not allowed to run at large within five miles of Baltimore, by an act of assembly; and mine were too valuable to risk such a misfortune; and especially as I was a great hog-shooter myself, it would have been fine diversion for any of my neighbours to have shot one of my fifty-dollar pigs. Seeing that these plants would not succeed, all that remained was to fatten my own hogs with them. I had but seven hogs; and they would have employed a man with horse and cart half a day to feed them; for, after a short time, they will only eat the best peaches, and refuse the others as a man would. I found this plan would not answer; and the consequence was, that, after every trial and exertion, they rotted on the

ground. Now my farm was so situated that the great road through the heart of the country went through it, five or six stage-coaches, and great numbers of other carriages of all kinds. In all probability some of my own countrymen as merchants (for there begin to be many of these gentlemen to settle their accounts with the American merchants, and I suppose they will increase) seeing this waste committed, would, on returning to England, relate their story in this way—That when at the tavern at Baltimore on the same day, the fruit-people were asking eleven pence apiece for peaches. An Englishman says to himself, 'What idle fools those Americans are! and I think all the English, when they get to America, are as bad: but, when I get there, I will set them the example.' But when there, he finds himself much disappointed, and does not know how it is that he does not increase in riches, while neither himself nor his family enjoys any comfort. He at last finds out that the Americans are not a set of fools as he once thought: and, as he must have a name for them, perhaps he calls them rogues; which, if Lord Chesterfield was right in his observation, pleases a man the best of the two.

When I took this farm, I had not a doubt, that, by some extraordinary exertion, I should be able to make something handsome from peaches, and so near Baltimore. Before I took the farm, when I enquired how peaches sold in the market, perhaps they would tell me eleven pence apiece, and eleven pence a peck on the same day. That used to stagger me very much: but it is so: and the man who offers you a fine Newington peach for eleven pence or a five-penny bit, sells but few each day; and lives, although very poorly, at a very great expence; consequently his profit must be great on each article. The man who sells the peaches at eleven pence each, will not grow rich by his business, any more than the grower. Then we come to the calculation of my profit at four pence per peck, which is the best and greatest price. Could the scheme be put in execution, it will, generally speaking, require two men and one horse and cart each day, to pick thirty pecks and carry them to market; and thirty pecks are more than any white man can sell one day with another. A black man is much

better for this business than a white man; although they are in general ignorant, they are impudent: thirty pecks of peaches, at four pence per peck, is just ten shillings per day for peaches; and the two men's wages are worth, at that season of the year, one dollar per day each, and one pint of whiskey, which will be sixteen shillings for the men: the cart and horse are worth one dollar and a half per day; but you could not hire it for less than two dollars. Now the expences on this business are one pound seven shillings and three pence per day, and the produce is ten shillings. But as I sold them, I made profit each day on thirty pecks of peaches two shillings and nine pence: the reader may plainly see that there could not be any thing done better. This shews in this part of the work where I am on the Eastern Shore, one hundred miles and upwards from market, that the reader will be convinced the cherries and peaches pay the best for hogs."

ADAPTABILITY AND VARIABILITY IN THE PEACH

In the preceding pages our narrative has flitted from continent to continent and country to country in a belt encircling the earth. Few other fruits are found under such varied conditions and over such extended areas. We have seen that peaches are found wild and cultivated over much of Japan; as far north as Vladivostock in Korea; once a wild inhabitant of some part of China it is now cultivated in nearly every section of that vast empire where agriculture is an industry; the trees are so abundant and so much at home in the orchards and forests of the Turkestans and Persia as to have given rise to the belief that they have always grown there. While not so common as in Asia, yet peaches thrive in all of southern Europe and readily submit to artificial culture in pots and on walls in northern European latitudes. Coming to America with the first Spaniards, the peach found such congenial surroundings that it spread rapidly, freely and widely, leading botanists three centuries later to call it a native. In the fruit-areas of the United States, after two centuries of cultivation, though sometimes a luxury and the crop often a speculation, the peach is so perennially

plentiful that it is to be found, fresh, canned or evaporated, in every home in the land and the species is represented in American pomologies by over 1000 sorts which have originated in this country.

However, in tracing the history of the peach from China to America, we have not wholly shown the range of adaptability of this fruit. The peach has become adapted to the clear skies, strong light, long seasons and hot climate of northern Africa, where, under modified cultural treatment, it is a common fruit in Egypt[143] and the other states bordering on the Mediterranean. It thrives on the islands in the Mediterranean and on those of the North Temperate zone almost to the tropics in the Atlantic and the Pacific, as the Azores, Canaries, West Indies and Hawaiian group. As long ago as 1649 the Azores were famous for peaches and Colonel Norwood, author of *A Voyage to Virginia*,[144] in a gustatory reminiscence tells us that they were of so good quality that he "did not fail to visit and revisit them in the dead of night to satisfy a ravenous appetite nature has too prodigally given me for that species." In the sub-tropic climate of Guadeloupe Islands, French West Indies, there is a peach peculiar to the region differing in shape, flavor and in heat-resisting qualities from the common run of this fruit.[145]

The Aryan race has taken the peach across the equator in the pathways of discovery, conquest and civilization, and made it a favorite fruit in the gardens and orchards of the South Temperate as well as in those of the North Temperate zone. In the colonies of South Africa the peach seems to be as common as any deciduous fruit, native sorts being planted with those from Europe and America. Of the Transvaal Yellow Peach, R. A. Davis, horticulturist of the colony, says:[146] "Generally speaking, it is the fruit most commonly grown in the Transvaal, and it may safely be said that where it will not grow no other peach stands much chance of thriving. The writer has seen them flourishing by the side of the railroad amongst granite boulders, the result of a chance pit thrown from the window of a railway carriage. It is also extensively grown as a hedge around

homesteads, having been planted after the primitive method of turning a furrow where the hedge was wanted and simply dropping the seeds in after the plough. It is commonly recognised that the peach hedge should duly appear and bear fruit in two years from planting the seed. The writer has also seen them growing by the side of water-furrows and dams, with the whole of the roots on one side of the tree at least immersed in water."

The Spaniards, no doubt, planted the peach in parts of South America soon after the discovery of the continent and it now runs wild on both coasts. Thus, Darwin in his famous voyage found the islands at the mouth of the Parana River, Argentina, "thickly clothed with peach and orange trees carried there by the waters of the river."[147] Many references to wild peaches on the Pacific Coast may be found, as interesting as any being one from Bertero who says that on Robinson Crusoe's island, Juan Fernandez,[148] "The peach is so abundant that one can scarcely form an idea of the quantity of fruit that it bears. They are in general of good quality despite the state of wildness." According to Oakenfull,[149] in Brazil, "Of all the fruits introduced from abroad, the peach has made itself more at home than any." Wight[150] reports the peach and nectarine in Argentina, Chile, Peru and Bolivia under cultivation and as escapes from cultivation in seemingly all degrees of evolution. The peach-drying industry is important in the province of Coquimbo, Chile. According to Lounsbury the peach is the most common fruit-tree in Argentina. He says:[151] "It grows almost everywhere most luxuriantly, bears heavily and as yet no very serious insect or fungus pest for it has become widespread. Solid blocks of thousands of trees are not uncommon about Buenos Ayres. Most of the choice varieties of Europe and America have been introduced." The culture of this fruit in South America falls short of that in North America only because of the lack of advancement in horticulture—the one continent is a century behind the other in this field of agriculture.

In temperate Oceanica the peach plays as important a part in horticulture as any other of the deciduous tree-fruits. In

early days in New Zealand, "vast groves of peaches existed, sometimes, as in the Waikato, extending for miles, where magnificently grown trees cropped without limit."[152] Both the peach and nectarine are grown in the horticultural regions of the island. Wherever the fruits of temperate climates are cultivated in Australia, there may the peach be found. If one may judge from the attention given this fruit in the agricultural literature of New Zealand and Australia, it holds the same high place in the horticulture of these islands in the Pacific that it has in Europe and America.

The types of peaches are almost as diverse as the regions in which the fruit is an inhabitant. The 2181 varieties described in *The Peaches of New York* attest the variability of the species in America and Europe, many of our sorts having come from the Old World. This great number of kinds can be distinguished by reason of differences in skin, flesh, flavor, aroma, stone and season, the attributes of which have been mentioned several times in foregoing paragraphs. The structure of leaf and tree offers as many more taxonomic characters. It is interesting to note the extreme forms in fruit and tree the peach has taken on in its centuries of world-wide wanderings.

Round, flat, beaked, free or clingstone peaches with smooth or downy skins and red, yellow or white flesh, sweet, sour or bitter, in all combinations, and each often modified by soil and climate, are known to American growers of this fruit. But there are many peaches with less well-known characters. Thus, a peach in China bears fruits as heavy as one pound apiece with extraordinary keeping and shipping qualities;[153] another Chinese peach of the Honey type has a tree with a maximum height of only seven or eight feet;[154] growing in the same locality, Poliping, China, is a variety with extraordinarily long leaves;[155] the *Paak wat to* peach from China is a white-stoned sort;[156] a variety in the French West Indies has fruits that peel easily and withstand a continuous temperature in ripening season of 76 to 90 degrees;[157] from Kashgar comes a peach that will keep for several months;[158] in Chinese Turkestan there is a nectarine "said to keep for several weeks after fully ripe;"[159] even more

remarkable is the Feitcheng peach which ripens in late September and can be kept, if wrapped in paper, until February;[160] as remarkable as any is the Transvaal Yellow of South Africa which we have seen in a foregoing paragraph grows "amongst granite boulders," "as a hedge around homesteads" and "beside water furrows and dams, the roots of one side of the tree immersed in water;" the Fragrant Peach and the Firm Peach from China are not yet known in America;[161] another Chinese peach is a dwarf, "grown in pots indoors, which fruits at a height of fifteen inches and bears peaches on the main trunk though the stem be scarcely larger than a lead pencil."[162] Most of the examples named are from China but others can be found in every distinct region in which peaches have long been grown.

Every well-marked geographical region in which the peach is grown comes, sooner or later, to have a type of varieties of its own; yet the universal stamp of the peach—of cultivated *Prunus persica*—is on them all. These facts imply two important things. First, the peach is an exceedingly flexible fruit, capable of being moulded to fit many conditions of environment; and, under cultivation, training, feeding and culture in unlike regions, soils and climates, may still be greatly improved and the improvements all intensified and augmented by crossing and selecting. Second, the peach, a gift to the world from China, has seemingly, in its centuries of cultivation by the Orientals, taken on sufficient immutability to make it one of the most stable of species, especially in its fruits. The many races and thousands of varieties are all best put in one species; many varieties come true to seed; and peaches from seed seldom "revert" to worthless forms as so many seedling fruits habitually do. Cultivated plants, as all who work with them know, differ widely in variability. Some, as corn, the cucurbits, and grapes and plums with their many species, are so variable as to be almost unmanageable in attempts to improve them; others, as the cereals, are quite too immutable for the best work of the breeder. The peach is neither a stone wall nor shifting sand in the matter of variability.

CHAPTER II

BOTANICAL AND HORTICULTURAL CLASSIFICATIONS OF THE PEACH

PLACE OF THE PEACH IN THE GENUS PRUNUS

The genus Prunus is without peer in the number of distinct, natural, esculent products it furnishes man. Here belong the stone-fruits—peaches, plums, cherries, almonds and apricots, represented by some forty edible species, which, through long domestication, have been broken up into not less than 5000 orchard-varieties, of which at least 3000 are now under cultivation. Of the two-score cultivated species of this genus, *Prunus persica*, the common peach, is easily the most remarkable when judged either by the senses which make foods palatable and pleasant or by the criteria that establish the commercial worth of a product. As virtues which give the peach leading place among stone-fruits, we may specify: Wider distribution and consequently commoner cultivation and a greater number of varieties; larger size, greater beauty, pleasanter and more diversified taste, and more culinary uses than other stone-fruits; and greater productiveness, more rapid growth and earlier fruiting of the trees than most of the species of the genus. The place of the peach in the genus Prunus is thus easily established from a horticultural point of view, but it is a much more difficult matter to make clear its botanical standing among the species with which it is considered botanically related.

The botanical relations of the several stone-fruits to each other have been set forth in the foregoing books of this series on plums and cherries, but, for the convenience of those who may not have these treatises, a summary of the relationships of the species of Prunus is presented. Besides,

greater emphasis on several differences between the peach and its congeners is needed. In particular, since some notable naturalists have held that the peach is a modified almond, the differences between these two fruits must be more clearly set forth.

Nearly every botanist who has done much towards classifying plants has grouped the stone-fruits according to a plan of his own and there are, therefore, many classification schemes and consequently a most confused nomenclature for this genus. Happily, the pitfalls in synonomy dug by botanists need not worry horticulturists; for each of the stone-fruits constitutes a distinct horticultural group. In tree or fruit of peach, plum, cherry, apricot, or almond, who could mistake one for another? For horticultural purposes we accept as best one of the oldest and yet one of the most commonly used classifications which places in one genus all of the stone-fruits. What are the lines of cleavage between the several stone-fruits of common cultivation?

Stone-fruits fall naturally into two distinct groups. In the first the leaves are rolled in the buds—convolute. The plums and the apricots belong to this section. In the buds of the other group the leaves are folded lengthwise along the midrib—conduplicate. To this section belong almonds, peaches and cherries. The two sections seem to be united in this matter of disposition of leaves in the bud, it should be said in passing, by a few species of American plums which are conduplicate in vernation. The second section is further subdivided by very marked differences in the fruits. The fruits of the peach and almond are larger than those of the cherry, less juicy,—in the case of the almond almost dry,—hirsute (except in the nectarine), and are borne without stems; and the blossoms usually appear long before the opening of the leaves. Cherry-fruits are always juicy, usually glabrous, and are borne on more or less distinct stems; and the blossoms appear with the leaves. Botanists who put these fruits in one genus usually redivide according to the characters given so that the plum and apricot stand in one sub-genus (Euprunus), the almond and peach in another

(Amygdalus), and the cherry in a third (Cerasus).

Differentiating more closely, we find that it is not so easy to distinguish between the peach and the almond. The likenesses are so many and so apparent that it is not to be wondered that Knight, whose theory we have discussed on a foregoing page, came to the conclusion that the peach is a modified almond, or that Darwin, with his belief that plants came sooner or later to express their environmental conditions, should be inclined to believe that the peach is an evolution from the almond. It is easy to imagine that countless ages ago—how long since is but an invitation to argue—the two species merged into one. Offspring of the parent-species once established in distinct soil and climatic conditions—the peach in China, the almond in southwestern Asia—differentiation began and in time each region was represented by a species of its own. Such an occurrence is but one of the commonplaces of evolution; but Knight, Lindley and Darwin thought they saw evidence that the separation came after the almond, the supposed parent-species, had been domesticated, the steps being from fleshy almond to bad clingstone, to good clingstone, to freestone, to nectarine. The arguments against such a descent have been given elsewhere.

The chief differences between the two species are to be found in the matured fruits though, at first thought, it might appear that these are not greater than those found in widely separated varieties of either of the two species. The fruits of the peach and the almond are, however, much more widely separated than any of the varieties of either species, inasmuch as the differences are several and have to do with parts not usually affected by cultivation and not the subject of selection by the cultivator. Thus, the fruit of the peach is a delectable esculent; that of the almond inedible; the flesh of the peach, the mesocarp, is soft, fleshy, juicy; that of the almond thin, tough and leathery; the pit of the peach must be removed while that of the almond drops naturally from the hard flesh which splits at maturity. The differences between the pits of the two species are quite as marked as in the flesh of the fruit. The pit of the peach is deeply

sculptured, pitted, and of a bone-like consistency; that of the almond is nearly smooth and in most varieties is much thinner and of softer texture. The differences in the kernels are such as could easily be brought about by selection, some peach-kernels being sweet and edible and some almond-kernels being too bitter to be palatable.

Coming to the tree-characters we find that there are several which differ sufficiently to give each of the two fruits distinct specific rank. The winter aspect of the two trees is wholly different. The almond resembles a young apple tree in color of bark more than it does the peach and has, too, a head much like that of a broad-topped, much-branched apple. In foliage the distant aspect is much the same, but examined closely there are several distinctions that hold in comparing the two species. The leaves of the peach are more broadly lanceolate than those of the almond, coarsely serrate or crenate while the margins of almond-leaves are finely serrate. The glands on the leaf-stalk or leaf of the peach are globose, reniform or mixed; on the almond, the glands are globose. The flowers in the two species are similar but the time of flowering is markedly different. The color of the petals in both varies from pale pink to deep pink with occasional pure white forms; the flowers of true almonds are always large while those of the peach are about equally divided between large and small. The almond, in New York, is out of bloom before flowers of the peach appear, the difference in blooming-time being from one to three weeks.

TREE- AND FRUIT-CHARACTERS OF THE PEACH

Fruit-growers must largely depend on printed descriptions for knowledge of varieties. A well-made description of tree or fruit, to one mentally equipped to interpret it, is second only to having the real objects at hand. But the difficulty is that few excepting professional pomologists know the characters of even the common fruits and their relative importance. Before taking up either botanical or horticultural descriptions of peaches, then, it is necessary to

direct attention to the characters of the peach, differences in which distinguish species and varieties. Be it remembered in this study of the characters of the peach, however, that, as fields and woods offer better facilities for the botanist than the herbarium, so the peach-orchard is a fitter place to study the characters of the peach than a printed page.

The single species of the peach in which we are greatly interested has a very characteristic tree, the variations in which are, however, less well marked than those of the tree of any other of our common fruits. The peach-tree is distinguished by its low, roundish and never pyramidal head. Of its gross characters, size is most important in distinguishing varieties, the several more or less distinct types in the species usually being separable by size alone. In considering size, proper allowance must, of course, always be made for environment. There are no true dwarfs among the varieties of *Prunus persica* cultivated in America.

Habit of growth is nearly as important as size of tree in determining varieties. Thus, a variety may be round-topped, upright-spreading or drooping in habit; the head may be open or dense; the branches long or short, stout or slender; the trunks may be short or long, straight or crooked, much branched or little branched. These habits of growth serve not only to distinguish sorts but often determine whether the tree is sufficiently manageable to make a good orchard-plant.

Hardiness is an important character both in classifying and in determining the orchard-value of a variety. All peaches are tender to cold as compared with other tree-fruits of temperate climates but there is sufficient difference in varieties to permit the designations hardy, half-hardy and tender. In the classificatory scheme in most common use in America, that of Onderdonk and Price, variation in hardiness is the chief determinant of groups.

All peaches come in bearing so early and bear so regularly that varietal differences in these characters scarcely count in classifying, but productiveness varies very

characteristically in different varieties. Environment and care greatly influence fruitfulness yet, notwithstanding, the quantity of fruit borne is often a means of identifying a variety and, of course, must always be considered by the cultivator and the breeder.

Resistance to disease and insects is a taxonomic and an economic character of much importance. Thus there are great variations among varieties in resistance to peach-yellows, brown-rot and leaf-curl, the three commonest diseases of this fruit in New York, as there is also in resistance to San Jose scale, the worst insect-pest of the peach in this region and to the peach-borer, the commonest. These examples are multiplied in the discussions of varieties, pains having been taken in the peach-orchards at this Station to determine the relative resistance of all varieties to the pests of this region.

But little attention need be paid to the old bark on peach-trees, since in all varieties it is much the same and is unimportant to the cultivator. The bark of all varieties varies in color on different soils and is always of a lighter hue in cold than in warm regions, in dry than in wet situations.

The branches and branchlets of varieties are very characteristic. The length, thickness, direction, rigidity and the branching angle are all stable characters of varieties, changing but little with differences in soil and climate. The length of the internode is important as is also color, smoothness, amount of pubescence, size and appearance of the lenticels, and the presence of excrescences,—though all are exceedingly variable.

Both leaf-buds and fruit-buds are used in separating groups of peaches but are too nearly alike in the several groups to be of aid in distinguishing the varieties of any group. Fruit-buds are borne in pairs on the wood of the previous year with a leaf-bud separating the members of the pair. The only characters of buds worth noting are size, shape, color and the angle at which the buds stand out from the

branches.

After the fruits, the leaves offer the best means of determining groups and varieties of peaches. Leaves are variable, it is true, but usually within limits quite easily set, since the conditions causing the variations are easily discovered. The most usual ones are extremes in soil, moisture, light, heat and the age of the wood upon which the leaves are borne. Much care has been taken to illustrate as accurately as possible the leaves of the varieties given color-plates in this text, size and form being reproduced exactly and color as nearly as color-plate printing permits.

Leaf-size and leaf-form are the first characters of the foliage to study in determining varieties. The former varies somewhat in accordance with the conditions named in the foregoing paragraph but the shape of the leaf changes but little. Fortunately for the student of varieties, leaves differ most in relative length and breadth so that the shape may be accurately indicated by figures which are used in most of the descriptions in *The Peaches of New York*. Comparisons of the bases and the apices of leaves of different varieties often show distinguishing marks.

The color of leaves in varieties is very constant for both surfaces. The color of the foliage gives an aspect to peaches whereby a variety may often be distinguished in its summer dress at considerable distance. Unfortunately, the colors of leaves in the color-plates in this book cannot be relied upon to give much help in studying this character. Autumnal tints are uniformly the same in peaches and not to be relied upon in classifying varieties.

Several other characters of the leaves must be studied by the systematic pomologist. The leaves of some varieties are thinner than those of others, hence thickness becomes a distinguishing character. Venation of leaves—size and arrangement of veins—is important. Pubescence of leaves cuts quite a figure in the descriptions of many fruits but in the peach is of minor importance because the leaves are not very hairy and the quantity and character of the pubescence

is exceedingly variable. Some varieties have relatively few leaves—others many. The leaves of some varieties fall early —others relatively late.

The margins of peach-leaves offer valuable evidence in determining varieties. They may be serrate or crenate, doubly or singly divided, glandular or glandless. Both serrations and glands are best studied in the middle of the sides of leaves, those at the base or apex often being crowded or wanting.

Petioles differ in length, thickness, rigidity, pubescence and color, so that this organ is often a substantial help in identifying varieties. Some say the color of the petiole is correlated with that of the fruit, as it certainly is in such extreme sorts as Snowball and Indian Cling, but it is doubtful whether this correlation goes further than groups and even here does not always hold. Stipules offer no distinguishing marks of importance.

Much use is made in classifying peaches of the presence or absence, the size, color, shape, position and number of glands on the base of the leaf or on the leaf-stalk. These glands may be either stalked or sessile. The terms used in describing glands are easily understood and need no definition unless it be a few words in regard to the shape. Globose glands are small globes, reniform glands are kidney-shaped. In determining the form of glands examinations must be made several times in the season, the end of the summer offering the best opportunity and even then care must be taken to secure old leaves. Glands are less variable in adult trees than in trees not yet in bearing. Pomologists for a hundred years have noted the fact that peaches with glandless leaves are very susceptible to mildew. We find this to be the case on the grounds of this Station. This correlation between glandlessness and mildew may account for the fact that peaches with glandless leaves are rapidly disappearing from American peach-lists. Wickson says it has been found that peaches with glandless leaves resist leaf-curl.[163]

Gregory has made a careful study of the glands on peach-leaves.[164] We publish here the most important facts he brings out.

"In a large number of cases the glands are stable and can be safely used to aid in the identification of certain varieties. There are also varieties in which the glands are exceptionally unstable, being on the border line between the two types—reniform and globose—and having what might be termed mixed glands. These mixed glands are of two kinds: one in which the majority of the glands are reniform, with some globose intermingled; the other in which the globose form predominates. It would be quite possible, as Carriere (1867) suggests, to distinguish a third type of glands—the mixed type.

It is important that leaves should be chosen from healthy branches on bearing trees. It is also best to obtain a large number of leaves or to examine the tree carefully before making the final selection of leaves. Mature leaves are best because their glands are full-sized and correctly shaped, while on young leaves the form of the glands is usually obscure. This is particularly true of the reniform glands. On the other hand, old, partly decayed, globose glands frequently have much the appearance of reniform glands.

The structure of the glands shows that they are true glands, having an upper layer of long, rectangular, secretory cells that produce a sweet substance, the function of which is not apparent. After the glands have ceased secreting they begin to decay, becoming brown on the upper surface and slowly disappearing until almost nothing is left. This decaying is a very complicated process, being preceded in every case by a suberization and thickening of the cell walls.

"The spines of the leaf are very similar to the glands in structure, having the same upper layer of long cells, but with much more heavily cutinized walls. A study of the transitional forms indicates that the glands are merely modified leaf spines.

The leaves with reniform glands are apparently the highest type and the glandless leaves the lowest, with the transition through the globose type. In support of this view is the fact that whenever typically glandless leaves become possessed of glands they are always of the globose type.

The serrations of the glandless leaves are very strikingly different from those on a leaf with glands. The former leaves are deeply and doubly serrate, while the margins of the latter are always single and crenate. Almost invariably, when glands develop on a normally glandless leaf, the serrations are transformed to crenations, indicating that there is a very close correlation between the glands and the crenations on the edges of the leaves."

The French pomologists, Poiteau and Turpin,[165] seem to have first made note of the glands in describing peaches, recording their discovery by M. Desprez in the nurseries at the Luxembourg in 1810, after which, for a half-century, French, English and German pomologists regarded them as an infallible means of distinguishing varieties. But, by the middle of the Nineteenth Century, classifiers began to give them up because of their variability on leaves of trees of the same variety or even on the same tree. Even Darwin made note of their insufficiency in taxonomic work.[166] Now, no one familiar with any considerable number of varieties of peaches would attach very great importance to glands in a system of classification.

The flowers of peaches are very characteristic, helping to delineate the groups in the several classificatory schemes of various pomologists and being ample to identify not a few varieties. Peach-flowers differ in time of appearance; in length of blooming-season; they may be large, medium or small; pink, rose and rarely white; borne on pedicels of varying length, thickness, color and pubescence; and both the floral and reproductive organs have modifications of their several structures. The size, color and shape of peach-flowers are well shown in the first six color-plates. In some species of Prunus, as some of the plums, the reproductive organs differ greatly in ability to perform their functions,

but the blossoms of edible peaches are seemingly always self-fertile and there are less often the mal-formations found in the reproductive organs of some plums.

A well-marked correlation[167] between the color in the inside of the calyx-cup and the color of the flesh of the fruit is one of the distinguishing features of peaches. Yellow-fleshed peaches develop from blossoms in which the inside color of the calyx-cup is orange; white-fleshed peaches develop from those in which the color is greenish or greenish-yellow sometimes approaching a very light orange easily distinguished from the dark orange of the other group. Since the discovery of this correlation in the Station orchards by Mr. Charles Tubergen it has been in yearly use and has enabled us to tell a year or two in advance the flesh-color of seedling peaches, since the first peach-blossoms seldom set fruit.

The fruits, however, furnish by far the best characters upon which to found a classification of peaches. The simplest classification of peaches begins by separating them into smooth-skinned and pubescent sorts; each of these divisions is redivided into clingstones and freestones; these four groups may then be separated into yellow-fleshed, white-fleshed and red-fleshed peaches; still further, most, not all, of the twelve groups made in the first three divisions, separate into round, flat or beaked peaches. These are the major characters of the fruits, little influenced by cultivation or environment, after which there are many minor characters such as size, shape, color, quality and season, all very responsive to changed conditions, that help to describe definitely the many varieties of *Prunus persica*. The most variable of the minor characters is shape, all peaches tending to lose rotundity in southern climates and to become oblong and beaked. The length and quantity of the pubescence on peaches vary considerably in different soils—the warmer and lighter the soil, the less pubescence. The skin adheres closely to the flesh in some varieties; in others it is non-adherent.

The characters found in the stones of the many species of

Prunus are of great value in determining species but they help but little in determining the horticultural varieties of any one species. The stones of the peach do vary, however, very materially in size, shape, grooves and ridges, pitting and in characteristics at base and apex. The color-plates in this text illustrate these differences very well. One may generalize and say that the stones of the freestones are more deeply furrowed and that the sides are smoother than in the clingstones.

The characters of the peach are set forth on the opposite page by reproducing a description as made at this Station in describing a variety for *The Peaches of New York*. Such a description is, however, but a skeleton, as dead as dry bones, unless a living picture of the variety be made by filling out and covering the skeleton with ample remarks made as the describer studies the plant in the field.



A more detailed discussion of the horticultural and botanical characters of the peach logically follows here.

PRUNUS PERSICA Stokes.

1. *P. Persica* Stokes *Bot. Mat. Med.* **3**:100. 1812.
2. *P. Persica* var. *vulgaris* Maximowicz *Mel. Biol.* **11**:668. 1883.
3. *P. Persica* var. *necturina* Maximowicz l. c. 669. (nectarine)
4. *P. Persica* var. *laevis* Gray
5. *P. Persica* var. *nucipersica* Dippel *Handb. Laub.* **3**:606. 1893. (nectarine)
6. *P. Persica* var. *platycarpa* Bailey *Cyc. Am. Hort.* 1456. 1901. (Flat Peach, Peento)
7. *Amygdalus Persica* Linnaeus *Sp. Pl.* Ed. **1**:472. 1753.
8. *A. Persica* var. *nucipersica* Linnaeus l. c. 676. (nectarine)
9. *A. nectarina* Aiton *Hort. Kew* Ed. **2**, **3**:194. 1811. (nectarine)
10. *A. Nuci-persica* Reichenbach *Fl. Germ. Exc.* 647. 1832. (nectarine)
11. *A. laevis* Dietrich *Syn. Pl.* **3**:42. 1852. (nectarine)
12. *Persica vulgaris* Miller *Gard. Dict.* Ed. **8**: No. 1. 1768.
13. *P. nucipersica* Borkhausen *Forstb. Beschrb.* 205. 1790. (nectarine)
14. *P. laevis* De Candolle *Fl. Fran.* **4**:487. 1805. (nectarine)
15. *P. platycarpa* Decaisne *Jard. Fr. Mus.* (Pechers) 42. 1872-75. (Flat Peach, Peento)

Tree low, attaining a height of thirty feet, diffuse, open-headed, broad-topped, often without a central leader; trunk at maturity sometimes a foot in diameter; bark dark reddish-brown, in old trees rough and scaly; branches spreading, slender and sometimes drooping; twigs round, rather slender, glabrous, glossy green changing to shades of red, with numerous, large or small, conspicuous, usually raised lenticels.

The leaves are alternate, simple, four to seven inches long, one to two inches wide, broad-lanceolate or more often oblong-lanceolate; upper surface dark green, smooth, dull or shining, some rugose along the midrib; lower surface paler, with little

or no pubescence; apex long-tapering, base abrupt or acute; margins coarsely or finely serrate, or crenate, sometimes doubly toothed, teeth tipped with glands or sometimes glandless; petioles stout, from a quarter-inch to an inch long, grooved, glandless or more often with from one to eight globose or reniform glands, sometimes mixed, a part of which may be on the base of the leaf.

The flowers develop from scaly buds on the wood of the previous season; flower-buds plump, conical or obtuse, free or appressed and usually appearing before the leaves; flowers of two distinct sizes, with some intermediates, the smaller size ranging under an inch in diameter, the larger, an inch and a half or more; the floral color ranges from an occasional pure white through shades of pink to deep red; fragrant and always pleasantly so; pedicels very short, sometimes seemingly wanting, glabrous, green; calyx-tube urn-shaped, usually smooth but sometimes pubescent without, green overlaid with red outside, greenish-yellow or dark orange within; calyx-lobes five in number, short, broad, glabrous within, pubescent without; petals ovate, five in number, rounded at the apex which is sometimes notched, tapering to a claw, sometimes notched at the base; stamens twenty to thirty, about one-half inch long, slender, distinct, usually colored; anthers yellow; ovary sessile, pubescent, one-celled, surmounted by a simple style which is terminated with a small stigma, the whole pistil equaling the stamens in length or longer.

Fruit a fleshy drupe, sub-globular but much

> modified in shape and size under cultivation; suture usually distinct; cavity well marked, abrupt; apex with a mamelon or mucronate tip; color varying from greenish-white to orange-yellow, usually with a red cheek on the side exposed to the sun, sometimes covered with red; very pubescent except in the nectarine; skin adherent or free from the pulp; flesh greenish-white or yellowish, often stained with red at the pit, occasionally red, sweetish, acidulous, aromatic; stone free or clinging, elliptic or ovoid, sometimes flat, compressed, pointed; outer surfaces wrinkled and pitted, inner surfaces polished; ventral and dorsal sutures grooved or furrowed, sometimes winged; the seed almond-like, aromatic, bitter.

The characters given in the foregoing description are those of the cultivated peach—the consummate fruit of *Prunus persica*. The generic name, Prunus, is the ancient Latin name of the plum, *Prunus domestica*, the type species. The specific name, *persica*, commemorates the old belief that the peach came from Persia. The common name, peach, in English, as in most European languages, is a derivative from *persica*. Amygdalus, found several times in the synonomy, is the Syrian name of the almond. The drupe-fruits are put in two, three and sometimes four genera by various botanists but in the fruit-books issued by this Station, following most botanists and pomologists, all are put in a single genus, Prunus. Such lumping of several distinct fruits into one genus has its disadvantages but the several fruits cannot be reasonably separated because outliers closely connect all. Hybridization between the cultivated stone-fruits adds to the perplexities of classification.

Prunus persica is variously divided by botanists and pomologists. Quite commonly two botanical varieties of edible peaches are split off, as shown in the synonomy, to separate the nectarine and the flat peaches from the

pubescent and globular peaches. But these sub-species, originating over and over in the case of the nectarine as a bud or seed-mutation and the flat peaches probably having originated as a mutation, are not more distinct from the parent species than the red-fleshed sorts, the snowball peaches, the Yellow Transvaals from South Africa, the nippled peach, the cleft peach, the beaked peach, the winter peaches of China, or the pot-grown dwarfs from China; in fact, are not more different from other peaches than a clingstone is from a freestone, a yellow flesh from a white flesh or a large-flowered from a small-flowered sort. All constitute merely pomological groups, which, more and more, are becoming interminably confused by hybridization.



ALTON (Large Flowered)



BLOOD LEAF

We name but one sub-species of *Prunus persica*, and that doubtful. Mr. Frank N. Meyer of the United States Department of Agriculture has recently introduced into the

United States cuttings of a wild peach from the province of Kansu, China, which he thinks has horticultural value. The peach is *Prunus persica potanini* Batalin (*Act. Hort. Petrop.* **12**:164. 1892) which Mr. Meyer describes as follows:[168]

"A wild peach of the *davidiana* type, but differing from it in various points. Collected at the base of sheltered mountains at an elevation of 4300 feet. A tall shrub or even small tree, up to 30 feet in height, bark of stem or trunk dark reddish-brown and quite smooth in the younger shoots; leaves like those of *Amygdalus davidiana* but often broader in the middle and always less pointed. Fruits of round-elongated form; skin covered with a heavy down, no edible flesh; stones of elliptical shape, grooves longer than in *A. davidiana*, shells very hard and thick, kernels elongated and relatively small. Found growing at elevations from 4000 to 7000 feet, in side valleys away from the Siku river; thrives especially well in sheltered and warm mountain pockets. Of value especially as a stock for stone-fruits and possibly able to stand even more dry heat than *A. davidiana*; also recommended as an ornamental spring-flowering tree, especially for the drier parts of the United States. Chinese name *Mao t'ao*, meaning 'hairy peach.'"

There are many ornamental forms of the peach-tree—sorts with single or double flowers, white, pink or red in color, normal, red or variegated foliage and standard or dwarf trees. The best-known named ornamental peaches are *camelliaeflora* with large, carmine flowers and its sub-variety, *plena*, with double flowers; *versicolor* with different colored flowers on branches of the same tree; *atropurpurea* with brownish-red foliage; *foliis rubris*, similar or possibly the same as the preceding, the color in both extending to the fruit; *magnifica*, a semi-double with brilliant carmine-crimson flowers; *pyramidalis*, a pyrimidal form; *pendula*, a weeping peach; and still others, of the distinctness of which we cannot be certain, as *dianthi-alba-plena*, *rubro-plena*, and *coccineo-plena*. With these ornamentals we are not to be further concerned.

Of Japanese garden-forms the following varieties have been

described: *P. Persica* var. *densa* Makimo *Tokyo Bot. Mag.* **16**:178. 1902. *P. persica* var. *vulgaris*, f. *stellata* Makimo l. c. **22**:119. 1908. *P. Persica* var. *vulgaris*, f. *praematura* Makimo l. c. **22**:119. 1908.

Species are but convenient groups, their limits reflecting the judgment of the species-maker. Were the authors of this text to divide *Prunus persica*, the cleavage lines would be other than those indicated in the foregoing paragraphs. *Prunus persica* might be divided, though there is no intention of furthering confusion by the addition of new names, into two species. One would include the white-fleshed, clingstone peaches, with large flowers and calyx greenish-yellow inside; the other the yellow-fleshed, freestone peaches, with small flowers and calyx-cups orange inside. Primitive forms in China indicate such a division, the evolution of varieties suggests it and the present disposition of the characters named as separating these theoretical species attest the reasonableness of such a separation. The primitive forms have been described and the descent of varieties may be traced in the last two chapters, so that we need only amplify the statement as to the present disposition of characters.

The characters in the two hypothetical species have been thoroughly shuffled by hybridization but even if there is not correlation, as there certainly is between color in calyx-cup and color of flesh, it might be expected that those associated in the primitive plant, the Adam of the race, would, despite the shuffling, still be most often associated. What are the facts? In the Station orchard are 109 white-fleshed peaches; 40 per ct. of these are semi-cling or clingstones leaving 60 per ct. nearly or quite free (there is constant selection for freestones); 64 per ct. have large flowers; all have calyx-cups yellowish-green inside. There are in this orchard 106 yellow-fleshed peaches; but 17 per ct. of these are cling or semi-cling, the remainder being either quite free or nearly so; 73 per ct. have small or medium-sized flowers; all have calyx-cups deeply colored with orange inside.

Similarities in characters indicate so close a relationship

between the almond and the peach that one might well suspect many hybrids between the two. Yet there appear to be but few clear cases of peach and almond crosses. Knight[169] reports crossing the two, the doubtful results of which led him to believe, as we have seen, that the peach is but a modified almond. Several such crosses are indicated in botanical literature[170] but whether all refer to one or several supposed crosses there is no way of knowing—probably to one. The almond blooms so much earlier than the peach that crosses could hardly occur in nature. A hybrid between the two from which could be evolved a late-blooming almond is a consummation to be wished.



CHINESE FREE (Medium Flowered)



CROSBY (Small Flowered)

THE NECTARINE

The nectarine is a hairless peach. The tree differs in no respect from that of the peach and besides the absence of pubescence the only other distinguishing marks between the

fruits are smaller size, firmer flesh, greater aroma and a distinct and richer flavor in nectarines. Even the varieties of the two fruits correspond in characters. Thus, there are clingstone and freestone sorts of each; both may have red, yellow, or white flesh; the flowers of both may be large or small; nectarine leaves, in one variety or another, show all the variations in glands and serrations known to the peach; and the stones and kernels are indistinguishable. There seem to be no records so far, however, of flat or beaked nectarines, abnormalities each represented in several varieties of peaches. The two fruits are adapted to the same soil and climatic conditions and wherever the peach is grown, the world over, the nectarine is found.

The established history of the nectarine goes back 2000 years and then merges into that of the peach. Despite the fact that De Candolle[171] "sought in vain for a proof that the nectarine existed in Italy in the time of ancient Rome," we are convinced that Pliny's "duracinus" is the nectarine. Matthiolus[172] in 1554 discusses Pliny's statements concerning the kinds of peaches at length and concludes that the author's "duracinus" is the peach. Dalechamp, in 1587, and J. Bauhin, in 1650, both describe nectarines after which botanists and pomologists invariably include this fruit. In the Sixteenth and Seventeenth Centuries the nectarine was called "nucipersica" because it resembled in smoothness and color of the outer skin as well as in size and shape, the walnut. "Nectarine," the meaning of the word obvious, appears first to have been used for this fruit, in the English language at least, by Parkinson in 1629 who describes six varieties[173] and gives us the information "they have been with us not many years." Gerarde, the great English herbalist, 1597, does not mention them. We find the nectarine first mentioned in America in 1722 by Robert Beverly in his *History of Virginia*, who, after discussing the culture of peaches, nectarines and apricots, says (pages 259, 260): "Peaches and nectarines I believe to be spontaneous, somewhere or other on that continent, for the Indians have, and ever had greater variety, and finer sorts of them than the English."

The nectarine is one of the most interesting phenomena in horticulture. It is the classical example of bud- and seed-variation, furnishing more instances of mutation, and these more instructive, than have yet come from any other fruit. Darwin, with the magnificent exhaustiveness which characterized his method, brought together in *Animals and Plants under Domestication*[174] a striking array of facts which leaves nothing to be added as to the manner in which the peach and nectarine are reciprocally reproduced the one from the other. He shows by numerous examples: (1) That nectarines may spring from peach-stones and peaches from nectarine-stones. (2) That peach-trees produce nectarines by bud-variation and nectarine-trees likewise produce peaches, and that either the nectarines or peaches so arising will come true to seed. (3) That either peach or nectarine-trees may produce individual fruits half-nectarine and half-peach. (4) A case is cited of a nectarine tree bearing a half-and-half fruit and subsequently a true peach.



KENTUCKY (Nectarine)



SUMMER SNOW (White Flowered)

It must be noted that in all of the variations so far recorded there are no intermediate forms between the two fruits. The peach produced in these bud-variations is a peach and nothing but a peach; the nectarine, a nectarine and nothing

but a nectarine. Even in those remarkable phenomena, of which several are recorded, in which the fruits are divided into halves or quarters, one or more segments being peach and one or more nectarine, there can be no mistake as to peach and nectarine in pubescence, color or flavor. The nectarine from the peach, thus becomes as clear-cut a case of discontinuous variation as can be. If we accept the mutation theory of the origin of species—new species arising suddenly at a single step—the nectarine is a species in process of birth.

As yet we are entirely ignorant in regard to the conditions under which the peach or the nectarine sports, the one producing the other. It is wholly a natural phenomenon, for no one has been able to cause the peach to produce the hairless form or the nectarine to bring forth a downy fruit. The relations of the two fruits have furnished a fertile field of inquiry for over a century but the problem is one of those mysterious ones in which there are many facts that cannot be fitted into a theory, so that our ignorance is as profound now as ever. There are, however, several theories which, without going into full detail, need to be stated.

The oldest notion is that the production of a nectarine on a peach-tree is due to the direct action of pollen from some nearby nectarine-tree on the ovary of the peach. This theory, wholly at variance with present knowledge, is also discredited by the many instances in which the sports occur when the two fruits are not growing in the same neighborhood or even region. Thus, within ten years, several cases of nectarines on peach-trees have occurred in this State where the nectarine is scarcely known. Besides, crossing these fruits shows no direct effect of pollen—as is true with nearly all other plants. Still further, when a branch of a peach has borne a nectarine it usually goes on year after year producing nectarines; and certainly impregnation of a flower by foreign pollen could not so profoundly modify a branch. There is so little foundation for this belief that it would not be mentioned were it not that many fruit-growers still look to the action of pollen as the explanation of the phenomenon.

Another, and a much more probable explanation, is that every sporting peach or nectarine-tree is a more or less remote hybrid. There is a growing belief that species are fixed and that crossing is the only source of new seed- or bud-forms. Certainly all who have crossed plants in any considerable numbers know that hybridity is at least one cause, and a frequent one, of mutations. It is possible that sometime in the past the peach and the nectarine were crossed, the offspring showing no trace of the cross, and that now there is an occasional disassociation of the characters brought together by such crossing. There are several objections to this hypothesis. One is that two forms sufficiently distinct to induce so striking a variation as a nectarine from a peach, must have differed in tree as well as in fruit-characters and that these differences would crop out just as smoothness of fruit so frequently does. Another, and less potent objection, is that the nectarine has never been found wild, that it never becomes naturalized, that it is shorter-lived and less vigorous and behaves in general like an artificial plant.

The third, and at present the most acceptable theory, is that we have in the nectarine from the peach what De Vries calls a retrogressive mutation. That is, an active character, in this case pubescence on the fruit, becomes latent and appears to be lost—a type of mutation frequent among cultivated plants. The nectarine, then, is a peach with one character subtracted. When the nectarine yields a peach, the character is restored. The one is a negative, the other a positive step; one is retrogressive, the other progressive mutation. The speculations as to what causes these mutations are as yet too vague to be profitable. Probably we can never make use of the cause by which mutations arise or of the conditions leading to them until we can induce these strange variations. That they are due to disturbances in the processes of cell-division is the theory now current—sufficiently comprehensive and sufficiently vague to be a most convenient explanation, at any rate.

Nectarines do not attain the perfection in New York reached west of the Rocky Mountains. The trees, possibly, are a little

less manageable in the orchard, less vigorous and certainly more susceptible to pests. Nectarines, in particular, suffer more than peaches from the scourge of the crescent sign, curculio, a pest which finds all smooth-skinned stone-fruits much to its taste and the nectarine more than others. Then, too, whether fresh, canned or dried, fruit-buyers in America prefer the peach. This discrimination in favor of the peach is largely due to lack of knowledge of the nectarine, which, though different from the commoner fruit, is equally delectable, fresh or preserved, and certainly is a handsomer product preserved either by canning or evaporating. Indeed, the dried nectarine, with its beautiful, translucent, amber hue is the most attractive of all cured fruits. The nectarine-industry, however, belongs to California, where all conditions favor production, canning and curing.



KENTUCKY (Nectarine)



NEWTON (Nectarine)

PRUNUS DAVIDIANA (Carrière) Franchet

P. Davidiana Franchet *Nouv. Arch. Mus. Paris* ser. 2, **V**:255 (*Pl. David.* 1:103). 1883.

Persica Davidiana Carrière *Rev. Hort.* 74. 1872.

Prunus Persica var *Davidiana Maximowicz Bul. Acad. Sci. St. Petersbourg* **29**:81; *Mel. Biol.* **11**:667. 1883.

Tree attaining a height of twenty-five feet on the Station grounds, vigorous, upright, with slight spreading tendency, dense-topped, hardy in tree but not in flower-bud, unproductive; trunk stocky; branches thick, smooth, bronze-colored; branchlets slender —inclined to rebranch, long, with rather short internodes, ash-gray mingled toward the base with dark brown, glabrous, with inconspicuous, small, slightly raised lenticels.

Leaves five and one-half inches long, one and one-eighth inches wide, curled downward, oval to obovate-lanceolate, thick; upper surface smooth, dull, dark green; lower surface grayish-green; margin coarsely serrate, tipped with reddish-brown glands; petiole five-eighths inch long, glandless or with one or two small, globose, reddish glands at the base of the leaf.

Flower-buds tender, small, pointed, plump, appressed, brownish-red; flowers appear very early, a few days earlier than *Prunus tomentosa*, usually on short spurs; blossoms one and five-eighths inches across, whitish, tinged with pale pink near the margins, well distributed, usually singly; pedicels

short, glabrous, green; calyx-tube reddish-green, orange-colored within, obconic, glabrous; calyx-lobes long, narrow, glabrous within and without; petals widely spaced, oval, shallowly dentate, tapering to long, white claws; filaments shorter than the petals; pistil red, heavily pubescent at the ovary, as long as the stamens.

Fruit less than one inch in diameter, nearly spherical; cavity medium in width and depth; suture shallow, deeper toward the base; apex mucronate; color grayish-white turning yellow at maturity; pubescence downy; skin wrinkles and roughens before maturity and soon decays; flesh very thin, rather dry, tasteless and insipid, lacking almost entirely the flavor of the peach; not edible; stone separates from the pulp readily even before ripe, nearly spherical, plump, very blunt at base and apex; surfaces deeply pitted.

Father David's peach, *Prunus davidiana*, has been grown in Europe since 1865 as an ornamental, seeds of it having been sent from China to France in that year by Father David, a missionary traveler.[175] The species is described as flowering in America in the Arnold Arboretum as early as 1888,[176] seeds from which the trees grew having been sent from China. Some ten or twelve years ago the species was distributed by the United States Department of Agriculture, trees being received at this Station in the spring of 1906. Meanwhile, agricultural explorers representing this country in China have discovered that the species is much used by the Chinese as a stock upon which to work other species of Prunus. Whereupon, new distributions were made through seeds and plants to nearly every fruit-growing state in the Union. We are, therefore, now able to speak of the behavior of the Davidiana peach in America with some degree of confidence as to its future as a stock for peaches. But, first, a word as to its habitat and uses in China.

The several importations of seeds recorded by the United States Department of Agriculture seem all to have been made from the province of Chili in China and from the cities of Pekin and Tientsin in the neighborhood of which the tree is commonly found wild. According to Bretschneider,[177] the species was first discovered by Bunge near Peking in 1831 who took it to be an almond. The same authority says that Father David's seeds came from wild trees growing in the mountains near Jehol, and that the species is much cultivated in the gardens of Peking, there being two varieties, one with rose-colored and the other with white flowers. At the time of its introduction into Europe, it was considered, by some, the wild form of the cultivated peach. The fruit of David's peach is not edible and peach-growers would have but passing interest in the species as a very attractive ornamental were it not for the fact that it is a common and most valuable stock, used for centuries in China for several of the stone-fruits.

It is, then, with a view to its fitness as a stock that the Davidiana peach must be discussed. Its characters in several respects indicate that it may make an invaluable stock in America as it has long been in China. For this purpose it seems possible to use it equally well for several stone-fruits.

As it grows on the Station grounds the most experienced fruit-grower cannot guess whether *Prunus davidiana* is a peach, nectarine, almond, apricot or plum. As we shall show later, too, it hybridizes with several other species of its genus. Its similarities to all of these stone-fruits give a clue to its value as a stock—it may be used for all. It is the commonest stock for all of these fruits in parts of China and is sometimes used for the cherry as well. It is reported by the United States Department of Agriculture[178] to have been tried in commercial plantings of peaches, plums, apricots and almonds in California and Texas and for all is "unusually promising."



PRUNUS DAVIDIANA

The trees are vigorous, healthy, hardy, and resistant to drouth. Consorted with any stone-fruit it should impart these qualities in some degree to the resulting tree. On the Station grounds, *Prunus davidiana* is growing with vigor and health despite the fact that in the ten years of its existence here we have had all but record-breaking extremes of cold, heat, drouth and rain—a decade long to be noted for its extremes of weather. It seems to stand the heat of Texas, and in Minnesota has withstood cold as low as forty degrees below zero, a temperature which kills commercial varieties to the ground. It cannot be fruited, however, in cold climates as its buds swell quickly with rises of temperature and succumb to subsequent cold; neither will it fruit in regions of late frost since it is one of the earliest species in the genus Prunus to flower. In Texas and southern California, according to the United States Department of Agriculture, it is proving resistant to drouth and in the latter region to alkali as well. In very dry and exposed places, it is said to lose its tree-characters and to become a thrifty shrub.

Present nursery practices in growing peaches are unsatisfactory in the extreme. More and more, pits from

canneries are being planted for stocks. The pits come from a great diversity of varieties and the resulting seedlings are variable in vigor, health, size and capacity to take the bud. Should no unsurmountable weaknesses appear in *Prunus davidiana* it is almost certain that its seedlings will be more satisfactory as stocks for the peach than those from either cannery pits or from pits grown on southern wild trees. The trees do not fruit well in this climate, even when buds and flowers escape the cold, possibly because of infertility of bloom, and for this reason, the chief objection so far, some favorable region would have to be discovered in which to grow the pits.

As one might suspect from its similarities to the several stone-fruits, *Prunus davidiana* gives promise of being a go-between in hybridization. I. V. Mijurin, a noted Russian hybridist of Kozloo, Russia, has crossed the Davidiana peach and the dwarf almond, *Prunus nana*, with the idea of getting a hardy fruit for central Russia. The resulting offspring, according to Mr. F. N. Meyer,[179] looks in tree like the peach-parent but the fruit is more like that of the almond-parent. The fruit of the hybrid is inedible but the plant is a handsome ornamental. Mr. Mijurin states that while neither of the two parents will hybridize with the common peach, this hybrid does. *Prunus davidiana*, then, like the Sand Cherry of the Western Plains, may prove to be a valuable go-between in hybridizing species of Prunus.

The fruit has no comestible value. It is small, less than an inch in diameter, nearly round, very downy, yellow at maturity, with thin, dry, tasteless flesh which parts readily from the stone even before fully ripe. As if to complete its worthlessness as an edible product, it begins to shrivel as maturity approaches and soon decays. In fruit, even more than in tree, it is an intermediate between the peach and the almond.

A word must be said as to the merits of *Prunus davidiana* as an ornamental. It is the first harbinger of spring in the great family to which it belongs, bursting into a profusion of white or pinkish flowers with the approach of warm

weather even before forsythias are in flower. Its thickly set, erect branchlets are wands of pinkish-white two feet in length, making a handsome tree and furnishing beautiful cut-flowers. If grown for its flowers, however, one must be content in northern climates to have it in bloom only about one season out of three but even so it repays culture. The Chinese cultivate dwarf specimens, possibly a dwarf form, for winter-flowering and the plant, it would seem, would readily lend itself to winter-forcing in American floriculture. The tree, quite aside from its flowers, is handsome at all times. A form with pure white flowers is a very desirable ornamental.[180] On the Station grounds this white-flowering peach has a fastigiate habit of growth and resembles somewhat a small Lombardy poplar.

PRUNUS MIRA Koehne.

P. mira Koehne *Plant. Wilson.* Pt. 2, No. **4**:272. 1912.

Tree thirty feet in height; trunk sixteen inches in diameter; branches very smooth, those of the current year's growth green, the older ones dark reddish-yellow; flowering-season short; stipules lacking or obscure; petioles five-sixteenths to ten-sixteenths of an inch long, with from two to four glands toward the apex, the glands broadly elliptical, disc-shaped; leaf at the base usually roundly lanceolate, two to four inches long, nine-sixteenths to one and one-sixteenth inches broad, gradually narrowing toward the apex; margin broadly crenulate-serrulate, tapering upward without division; teeth crowned with small, soot-colored, mucronate glands; upper surface clear green, glabrous; lower surface paler, villous along both sides of the lower ribs and the rest glabrous; veins on both sides twelve to sixteen, the veinlets somewhat

raised on the under side.

The pedicels of the single or twinned fruits two-sixteenths to three-sixteenths of an inch long, very thick, glabrous; drupes somewhat dry, sub-globose, one and one-eighth inches long, one inch in diameter, densely tomentose, edible; stone ovate, somewhat compressed, dimensions three-fourths by one-half by three-eighths inches; dorsal suture keeled, the ventral surface covered with narrow ridges, the ridges at the base of the keel nearly disappearing, the rest inconspicuous.

Prunus mira is a new peach discovered in China by Mr. E. H. Wilson of the Arnold Arboretum. The foregoing technical description is a translation from the original description by Koehne. Mr. Wilson describes for *The Peaches of New York* the outstanding botanical and horticultural characters of *Prunus mira* as follows:

"*Prunus mira* is a small bushy tree, growing about 6m. tall, with a trunk about 1m. in girth and a crown some 8m. through. The branches are relatively slender and the branchlets twiggy, and these, together with the narrow, lance-shaped, long-pointed leaves, give the plant a very distinct appearance. The fruit is roundish oval, about 4.5 cm. high and 3.5-4 cm. broad, downy on the outside, with white flesh and a free stone. The flavor is the same as that of fruits from the semi-wild plants of the Common Peach (*P. Persica*). The stone is 2 to 2.2 cm. high and 1.3-1.4 cm. broad, and in shape is flattened ovoid and pointed. The flowers are unknown to me.

This plant grows wild on rather barren mountain slopes at about 3000m. altitude north of the town of Tachienlu on the China-Thibetan borderland, where it was first detected by me on July 9, 1908, and from whence I introduced it by means of seeds in the autumn of 1910. I saw only a few trees, but have reason to believe that it is fairly common,

and also that it is thereabouts cultivated for its fruit. In the Arnold Arboretum this species has proved no more hardy than the Common Peach, though from the altitude at which it grows naturally it ought to be the hardier plant. Our largest specimen is 2.5m. high and crown 3m. through. It starts into growth and leafs out much later than the Common Peach, and is therefore much less liable to be affected by late frosts. This is the one advantage so far evident in our experience with this new Peach under cultivation. Undoubtedly it possesses important horticultural possibilities, and especially should it be valuable to the hybridist on account of its small and smooth stone. Indeed, it requires no imagination to realize the advantage to be gained by supplanting in our present day race of garden peaches for the large and deeply furrowed stone one that is quite smooth and small."

Prunus mira is now under cultivation at the Arnold Arboretum near Boston, in the parks at Rochester, New York, on the grounds of this Station and at Brookville, Florida, in charge of the United States Department of Agriculture. No doubt within a few years we shall have positive evidence of its horticultural value.

PUBESCENT-FRUITED SPECIES OF PRUNUS FROM THE UNITED STATES

Seven pubescent-fruited species of Prunus are found in the Southwestern States. From reading the descriptions, it is hard to tell whether these plants, unique in more than one respect, are most closely related to peaches, plums, apricots or almonds. Professor S. C. Mason of the United States Department of Agriculture, who has studied these fruits,[181] thinks that some if not all of them may have horticultural value, at least in the Southwest where fluctuations of heat and cold are great and drought and alkalinity of soil must be endured by plant-life. They deserve brief mention in *The Peaches of New York* because of the possibility that some of them can be used as dwarfing-stocks for the peach and possibly that some may be hybridized with cultivated

peaches. The species, with brief notes taken for most part from Mason, are as follows:

Prunus texana Dietrich, the "wild peach" of Texas, is a plum-like fruit from eastern Texas of which there are already several hybrids with the wild plums of the region. *Prunus andersonii* Gray is the "wild almond" or "wild peach" of Nevada. The species is found in western Nevada and eastern California in a region subject to severe cold in winter and extreme drought and heat in summer. One cultivator of this species suggests it as a good stock for the peach and the almond and thinks it has possibilities for hybridization.[182] The "desert apricot," *Prunus eriogyna* Mason, comes from a very restricted region in southern California. The characters of this species should fit it to endure the environment on the desert slopes of mountains. The "desert almond," *Prunus fasciculata* Torrey, sometimes called "wild peach" and "wild almond," ranges much farther south and east than *Prunus andersonii* in southern Nevada and southern California, crossing into southwestern Utah and northwestern Arizona, and grows in gravels and sands where its roots penetrate to great depth. *Prunus minutiflora* Engelman, the "Texas almond," is found in southwestern Texas, a shrub which, like the former species and the one following, is dioecious, a marked and unique peculiarity of these three species. The "Mexican almond," *Prunus microphylla* Hemsley, is found in the high mountain region of Mexico. *Prunus havardii* Wight, is known only in a restricted region in western Texas. The last two species are so little known that one cannot even surmise whether they may have horticultural possibilities.

HORTICULTURAL CLASSIFICATIONS OF THE PEACH

The opening years of the Nineteenth Century mark the first attempts at classifying peaches. By 1818 as many as three classificatory schemes had been proposed, all being modifications of the same general arrangement. July 7, 1818, John Robertson read a paper on classifying peaches and nectarines before the Horticultural Society of London.

Later, this was printed in the Transactions of the Society[183] together with a classification by M. Poiteau from the *Bon Jardinier* and another by Count Lelieur from his *Pomone Francaise*. In January, 1824, George Lindley read before the same society a classification which was but an extension of the older arrangements.[184]

Robertson separated peaches into true peaches and nectarines and these in turn into Classes, Divisions and Sub-divisions. He founded the two classes on the presence or absence of glands; for each of his classes he made two divisions distinguished by the size and color of the flowers; each of the four divisions is once redivided into a sub-division in which the flesh parts from the stone and another in which the flesh adheres to the stone. The two French writers use the same characters but found their second division on the adherence or non-adherence of the flesh to the stone; their third on the size of the flower but making three partitions as to size; and their fourth on the presence or absence of glands which they divide into globose and reniform. Lindley created three classes dependent on the presence or absence and the character of the glands and the character of the serrations; three divisions of each class in accordance as to whether the flowers are large, medium-sized or small; two sub-divisions of each division to agree with the presence or absence of down; and for each sub-division two sections, one for clingstones and one for melters.

This was the age of the classifier and other classifications, all similar in plan, rapidly followed in England, France, Belgium and Germany. No one at this time seems to have attempted a natural classification of peaches.

Of the nine leading American pomological writers of the Nineteenth Century, Coxe, Prince, Cole, Hooper, Elliott and Barry either do not attempt to classify or make but one or two simple divisions. Kenrick, 1832, follows Lindley in part but makes use of season in his classification. Downing in his first edition, 1845, divides peaches into freestones with pale flesh, freestones with deep yellow flesh and clingstones.

This simple arrangement by Downing is notable only because it is the first time color of flesh is made use of as a distinguishing mark, the Europeans probably not having done so because yellow-fleshed varieties are rare in Europe whereas in America they are as common or more so than white-fleshed sorts. Thomas, in 1846, did not classify but in later editions divided peaches into two divisions, founded on adherence of flesh to the stone; two classes for each division in accordance with color of flesh; and three sections founded on leaf-serrations and glands.

These Nineteenth Century classifications are artificial. That is, they single out a few points of resemblance and difference and arrange varieties in accordance with them, convenience and facility of use being the controlling principles. They are natural to a degree, however, because varieties agreeing in one point of structure commonly agree in other characters. With the peach, more than in the artificial classification of most other fruits, the characters are readily distinguished and are stable. Yet most English pomologies now arrange varieties of peaches alphabetically, while the American texts do the same or use the pseudo-natural system of Onderdonk. His classification we are about to discuss. The early artificial arrangements failed to stand the test of time because classifiers could not agree upon any one arrangement and added confusion by the multiplicity of them; and, because the new varieties of the last half-century, coming in great numbers, are so poorly described that the great majority of them could not be classified from the data at hand.

In 1887 Gilbert Onderdonk,[185] a special agent of the United States Department of Agriculture, published a natural classification of peaches.[186] He put varieties of peaches into five groups which he called races and to which he gave the names: Persian, Northern Chinese, Spanish, Southern Chinese and Peento. He bounded peach-culture in America on the north by the Great Lakes and on the south by the Gulf and divided this great region into five zones to each of which he assigned one of his races. Onderdonk studied peaches in Texas and found there remarkable distinguishing

characters; as, in adaptations to southern climates, in length of the rest-period, in differences in leafing, blooming and fruiting-time, and in the organs of the plants. Professor R. H. Price, working with a large number of varieties at the Texas Agricultural College, verified and greatly extended Onderdonk's observations.[187] Eventually, Price became the pontifical authority in this country on the classification of peaches and in numerous articles and addresses set forth the Onderdonk grouping of varieties so convincingly that it was adopted by practically all American pomologists and at present is in use, to some degree at least, in nearly all of our horticultural literature. It becomes necessary, therefore, to scrutinize closely this natural classification of Onderdonk and Price.

The end to be attained in a classification of peaches, as in classifying natural objects of any kind, is to provide an epitome of the knowledge of the fruits classified. Incidentally, a classification helps in the identification of varieties of peaches. Does the Onderdonk classification serve these purposes? We have not found that it does. In most arduous attempts to arrange the sorts of peaches growing on the Station grounds according to the Onderdonk plan, we have wholly failed. Even the varieties named as types do not fit, as they grow in the north, in the places provided for them by these southern classifiers. Indeed, we have wasted so much time and patience in attempting to group varieties according to Onderdonk and Price, and with so little success, that the Onderdonk classification seems to us to be cursed with the confusion of Babel. Since pomologists so generally accept this classification, these words demand that it be shown wherein this attempt at a natural arrangement of varieties fails.

In the first place the basis of Onderdonk's classification, as the names suggest, is regional variation. Each race stands for a region, the Peento included—for the name is very obviously Chinese. Incompleteness, then, is the first fault of this system for there are other regions in which races of peaches just as distinct as those named have developed: as, for examples, the Bokhara represents a hardy "Russian race;"

Yellow Transvaal belongs to the very peculiar "South African race;" in the rich alluvial lands of Egypt, the "Egyptian race" has developed; still another regional race is found in the evergreen peach of the West Indies. We have no doubt that distinct races of peaches may have originated or will arise in the Canary Islands, Hawaii, New Zealand, Argentina, Chili and Mexico, to mention only countries spoken of in the foregoing pages. The Onderdonk classification can, of course, be extended to take in these new races, most of which are now represented in America, but eventually such a classification would become too cumbersome for use. It must not be overlooked that the Onderdonk classification should be doubled to apply to the nectarine, the other division of *Prunus persica*, which the present classification wholly ignores.

If the variations are stable, and all regions represented, the likenesses and differences brought about by regional environment may well be used by classifiers. But in the Onderdonk classification unstable variations due to climate are too largely used; as, differences in the succession of life-events, in the rest-period, in the capacity to endure heat and drought, and in minor modifications of organs, as color of foliage and shape of fruit. All of these are variations that fluctuate with even slight changes in the climate. We have said that this classification, though constantly referred to by northern fruit-growers, is not satisfactory in New York. Professor Price, too, found as he went northward that his classificatory scheme was less dependable. He says:[188] "Some of the distinctions made in this classification cannot be noticed with decisive clearness a few hundred miles farther north." A further objection to this regional classification of Onderdonk is that, in the numerous distinct peach-regions of America, new regional variations are arising which make it impossible to classify in accordance with characters that appeared before the peach came to America.

These "races" of Onderdonk and Price, then, by leaving out the peach-floras of many regions, are too exclusive, but it is no less true that they are too inclusive. Thus, the many varieties of the historic peach of western countries are put

by the Onderdonk classification in the Persian race. So considered, this Persian race contains types quite as widely separated from each other as are the five "races" of the Onderdonk classification. In one great group are collected early, late, white-fleshed, yellow-fleshed, red-fleshed, globular, oblong, beaked, hardy and tender, vigorous and dwarfish peaches. Persian peaches run the whole gamut of peach-characters, the flatness of the Peento possibly excepted, and from the several hundred sorts a score of "races" might be made. These peaches are noted by Price and Onderdonk as requiring a long period of rest and as succeeding only in northern climates. Yet to this group belong the peaches of France, Spain and Italy; those of the warm parts of Africa, South America and Oceanica; and most of the varieties that thrive at the most northern limits of peach-growing in Europe and America.

The Onderdonk classification, in assigning zones to each of its five races, misleads peach-growers as to the hardiness of varieties. It makes the Peento and honey-flavored peaches much more tender in tree than they are. Varieties of both groups grow as far north as this Station and Waugh reports that one of the Peento varieties "was discovered growing thriftily and fruiting nicely on the grounds of the Massachusetts Agricultural College, Amherst, Massachusetts."[189] Of the score of descendants of the Honey, several are fruiting well on our grounds, four being illustrated and described in *The Peaches of New York*. If there were a demand for honey-flavored peaches, climate would not prevent their culture in New York.

The name used for the Peento group, if it be worth while keeping these peaches in a group, is inapt. It gives the impression that all, like Peento, are flat peaches—in fact Price several times so publishes them—whereas of the twenty-three sorts described by Hume,[190] though nearly all are seedlings of Peento, only Peento is flat. We must look upon the Peento as a peach-monster similar to the cleft peach, *Emperor of Russia*, the nippled peach, *Teton de Venus*, the *Perseque* with its teat-like protuberances, or the more familiar snow-white and blood-red varieties.

We are not able to see where the Peento group leaves off and the Honey group begins in the Onderdonk classification, though, since varieties of the Peentos have not fruited at Geneva and the several Honey-flavored peaches, though both thrifty in tree and fruitful, are possibly not typical, we ought not to be too critical. As we read the descriptions made by others, however, we are struck by the fact that there are more similarities than differences in the two groups and that the differences are rapidly disappearing through hybridization.

But the obstacle which most effectually blocks the use of Onderdonk's classification in the systematic arrangement of peaches is the brood of hybrid seedling peaches annually brought forth by fruit-growers. No doubt the classification is workable, to a degree, with the type-varieties and a few carefully selected progeny but after the practical peach-grower, with a devil-may-care attitude toward classification, crosses and recrosses the types, the several races become hopelessly interlocked. The characters chiefly used by Onderdonk, as has been said, are fluctuating variations and these do not descend according to Mendelian laws. And so the great out-pouring of varieties during the past quarter-century has literally swamped a classification which served only fairly well when it included but the pioneer varieties. In the trituration of the thousand and more varieties of peaches now going on, the Onderdonk classification will be less and less useful.

In dismissing the Onderdonk scheme as having but limited application for classificatory purposes, acknowledgment is made that it serves other purposes very well. It calls attention to the history of the peach; it shows that racial strains of the peach are arising; it brings out valuable information in regard to hardiness and the rest-period of peaches; it offers instances of modification of the peach by climate; and it shows the capacity of the peach to vary. For thus illuminating the natural history of the peach, more especially the climatology of the peach, pomology is much indebted to Onderdonk and Price.

A key to varieties of peaches.—A natural classification of peaches to show the relationships of varieties is seemingly impossible. The deluge of new varieties, which growers continue with cheerful optimism to pour out, overwhelms the classifier with difficulties. About the best that can be done is to arrange varieties, for convenience in identifying, according to some of the artificial systems of a century ago when the cult of the classifier was at its height. These were really synoptical keys rather than biological classifications. If such a key is to be used very generally by fruit-growers, only characters of the fruit are admissible, thereby attaining necessary simplicity and providing that all data can be had at one examination.

The first division of a synoptical key would of course be founded on the absence or presence of pubescence on the skin; these two great divisions would then be separated into freestones and clingstones; these, in turn, divided in accordance to color of flesh—white, yellow, red; the Peento and honey-flavored peaches make necessary a division in regard to shape—globular, flat, beaked; a further separation into early, medium and late sorts could then be made. A great merit in this extremely simple classification is that the language of the layman fits it. As examples: Greensboro would follow the key from bottom to top—an early, round, white-fleshed, freestone peach; or Salwey, a late, round, yellow-fleshed, freestone peach. This key provides for seventy-two groups, fifty-four for the peach and eighteen for the nectarine, the latter having but the globular form. Other characters, of less general application in the key than those so far used, as size, flavor, adherence or non-adherence of the skin, suture, apex, and stone, could be used to carry this classification still further.

CHAPTER III

COMMERCIAL PEACH-GROWING IN AMERICA

Commercial peach-growing began in America early in the Nineteenth Century. About this time, it will be remembered, budded trees began to take the place of seedlings. Named varieties appeared as a consequence of budding and, as nurseries sprang up in the settled parts of the country, varieties multiplied at a rapid rate. After the year 1800 we read less about peaches as food for hogs and less about peach-products for assuaging the thirst for strong drink. As cities and towns built up, market demands increased and money-making began to quicken the charms of peach-growing. With the coming of extensive plantings and intensive culture in commercial orchards, new and menacing pests and other problems began to appear at every turn. Before the middle of the century, commercial peach-growing was in full swing in the Chesapeake peach-belt and in its infancy in several westward regions. Stories of great success now filled the papers, "peach kings" abounded, and, with the return of good times following the Civil War, fruit-growers indulged in a saturnalia of peach-tree planting. The rouge of speculation made the industry doubly attractive. An account of the rise of commercial peach-growing in America cannot help but be of interest and, besides, it is only by the study of the past of the industry that we can draw safe conclusions for the future.

Peach-growing on a commercial scale in the United States began in what is known as the Peninsula, consisting, technically, of the Eastern Shore of Maryland, Delaware and southern New Jersey but horticulturally, because of similitude of soil, climate and products, taking in a bit of Virginia, touching eastern Pennsylvania and running up to Long Island. All of this region, including the southern reaches of the Hudson, may be considered as one commercial territory. The peach began its undisputed supremacy among fruits in the orchards of the Peninsula as early as orchards were planted but, beginning with 1800, the industry pushed ahead with leaps and bounds so that the figures at times remind one of Alice in Wonderland when she drank from the magic bottle and immediately grew to gigantic proportions.

In 1800 an orchard of 20,000 trees was set in Anne Arundel County, Maryland, the product to be used in brandy-making.[191] The last peach-grower to engage in the liquor business seems to have been a certain Mr. Bayley in Accomack County, Virginia, the tip of the Peninsula, who in 1814 planted 63,000 trees which six years later yielded fifteen gallons of brandy per 100 trees, worth $2 per gallon —not profitable unless the seed were sown in rows, as was probably the case, and the seedlings permitted to crowd rather closely.[192] One of the first large orchards planted in this region to supply city peach-markets was that of a Mr. Cassidy who set an orchard of 50,000 trees in Cecil County, Maryland, about 1830.[193] The product of this orchard went to market in sailboats and large wagons. The industry was not in full swing in this region until the fifties when orchards were planted all along the water courses in Cecil, Kent and Queen Anne counties, making a continuous forest of peach-trees two miles back from the rivers.[194]

The peach-industry in Delaware seems to have begun, according to Mr. Charles Wright,[195] in 1832 at Delaware City, when a twenty-acre orchard of budded trees was set by Messrs. Reeves and Ridgeway, which by 1836 had increased to 110 acres. The receipts from this orchard in a single season were as much as $16,000, the fruit bringing in Philadelphia from $1.25 to $3 per three-peck basket. Other notable orchards of these early times mentioned by Mr. Wright are those of Major Philip Reybold and Sons who, beginning in 1835, by 1846 had 117,720 trees on 1090 acres near Delaware City from which 63,344 baskets of peaches were shipped in August, 1845; in Kent County, John Reed began planting as early as 1829 and several years later had 10,000 trees of Red Cheek Melocotons. In 1848 the peach-crop in Delaware was estimated at 5,000,000 baskets, chiefly from New Castle County. Peach-yellows, first a serious pest around Philadelphia about 1800, became epidemic in northern Delaware in 1842 and, little by little, the center of the peach-industry shifted southward from Middletown in the late sixties to Smyrna; a few years later it had reached Wyoming and in the nineties it was as far south as Bridgeville.

It is interesting to follow the ups and downs of the peach-industry in the Peninsula. Epidemics of yellows, a succession of cold winters, over-production, transportation difficulties or expense, San Jose scale, have all been factors powerful enough at various times to make or mar the fortunes of those engaged in growing peaches. Indeed, in following the history of this fruit on the Peninsula, one is forced to declare that peach-growing is gambling pure and simple. Take, for example, the building of the Delaware railroad. Peaches were scarcely planted in the interior parts of the Peninsula, away from water-ways, until the building of this road in the sixties and seventies, when the yield increased so rapidly that 4,175,500 baskets were shipped by rail in 1875, the total yield being 8,782,716 baskets[196]—fortunes followed the completion of the railroad only to be lost in subsequent over-production.

New Jersey, eastern Pennsylvania, and southeastern New York rather slowly followed the lead of Delaware in commercial peach-growing. New Jersey, according to census reports, reached her zenith in peach-growing in 1899 when there were 4,413,568 peach-trees in the State which produced 2,746,607 bushels of fruit giving her third rank among the states of the Union in production. Ten years later the State had dropped to fourteenth. The peach seems to have been neglected in eastern Pennsylvania as a commercial crop, possibly because a good start was never made on account of the early appearance of yellows. In southeastern New York and on Long Island, peach-growers have usually followed the fortunes of their neighbors in New Jersey who have ever grown on a much larger scale.

To show how quickly the peach gives returns and how great the return from the capital invested, the following figures, savoring a good deal of American boastfulness of dollars and cents, are illustrative:[197] "The peach farms in Upper Delaware and Maryland have returned to their owners the most fabulous amounts for their investments far exceeding in profit any other staple crop that has been raised in the Middle States, and on a scale never before heard of in this or any other country. Some of the orchards containing from

1000 to 1300 acres have netted their owners from $20,000 to $30,000 annually. A peach orchard in New Castle county, Delaware, of 400 acres, netted the owner in one crop, $38,000. One in Kent county, Maryland, of some 600 acres, produced a crop paying $31,000, and the same orchard in 1879 yielded $42,000. In 1873, the Delaware Peach Growers' Association reported that there were sent from the Delaware peninsula to the northern markets of Philadelphia and New York 1,288,500 baskets of peaches, or 2577 car-loads by the railroad. Adding the quantity shipped by steamers and sailing vessels, and the amount canned, the actual quantity amounted, in the aggregate, to 2,000,000 of baskets. In 1872, the whole district, comprising the Eastern Shore of Maryland, marketed 3,500,000 baskets. The late Col. Wilkins, on Chester river, Kent county, Maryland, had 1350 acres in with peach trees, numbering 137,000, producing in bearing years from $30,000 to $40,000 annually."

Commercial peach-growing in the South is of recent development—its history is known to all pomologists of the present generation. It began in the seventies, the impetus being given by the introduction of a number of early, bright-colored, very showy peaches that could be marketed in northern cities in May and June. It took years, however, to develop means to send these peaches to market and it was not until in the nineties that the perfection of refrigerator cars and rapid transportation was such that the southern crop cut any figure in the peach-markets. The introduction of the Elberta in the seventies may be said to be another stone in the foundation of the peach-industry in the South. After Georgia became a factor in the culture of this fruit in America in the nineties, the State was followed in lesser degree, by South Carolina, Alabama, Mississippi, Arkansas and Texas. In most of these southern states the peach-orchard is so near the cotton-plantation—often the two are interplanted—that the owners rob Peter to pay Paul in the care of the two crops. But this is not always the case, and at its best the southern peach-orchard is the consummate flower of modern commercial peach-growing.

The peach-industry in Connecticut is a recent development, as in the South. As late as 1880 the crop was negligible in the State; in 1889, 37,295 bushels were grown; 61,775 in 1899; and 417,918 bushels in 1909. This, considering the smallness of the State and the very uneven surface of much of it, is a rather remarkable development. Winter-killing, which takes place about one winter out of four, is the chief drawback but the high prices received from nearby markets make the peach, despite the occasional off-year, a profitable crop. Connecticut peaches are characterized by large size, bright color and good quality. From Connecticut the industry has spread into Massachusetts where all conditions are essentially the same.

Peach-growing in New York has never been spectacular. Along the lower Hudson before the Civil War and again a decade after it there was a thriving peach-industry such as there was in New Jersey and Delaware. A peach-industry is first of all dependent on quick transportation—the fruit must move. This meant in early days that there must be nearby markets and water transportation—western New York had the latter but not the former. Peaches, however, were early grown, in fact, as we have seen, were cultivated by the Indians, in the lake regions of western New York. In 1828 the Domestic Horticultural Society, the third such organization in America, was organized in Geneva, having for its field ten counties in western New York.[198] The Monroe County Horticultural Society was organized in 1830,[199] and in 1831 the *Genesee Farmer and Gardener's Journal* came into existence. These institutions bore fruit, more literally bore orchards, and a taste for horticulture, which, together with the nurseries that by this time were being established in the salubrious climate and excellent soil of western New York, gave a perfection in fruit-growing long unrivalled in America and now equalled only in California.

Of the history of commercial peach-growing in western New York, it can only be said that there has been such an industry since 1800. The product of the orchards of the first quarter-century went, for most part, to the brandy-still, for

the second quarter it was used at home and for local markets and from then on, since 1850, or a little before, the region has been well to the front in the peach-markets of eastern United States. Changes in the commerce of the continent have made great changes in the peach-industry in New York. In 1825 the opening of the Erie Canal made western New York the granary of eastern United States—wheat was more profitable than peaches. Twenty-five years later millions of bushels of wheat from the plains, carried through the Great Lakes and the Erie Canal to the sea, began to drive wheat out of western New York and make the peach more profitable. This is a fine illustration of the fact that transportation is often as important a factor as soil or climate in the profitable production of a crop. Until figures were taken by census enumerators, the history of the peach-industry could be written only by giving innumerable items taken at random from newspapers of the times. The present status of peach-growing in this region is to be discussed in a future chapter.

Another large commercial peach-region is to be found along the shore of Lake Erie in Ohio. The peach has been cultivated very generally in Ohio since the first settlements there more than a century ago and the industry assumed commercial importance in a dozen or more centers as early, at least, as 1867, when the assessors' returns showed a total crop for the State of 1,402,849 bushels.[200] But what is now known as the peach-belt along the shores of Lake Erie is largely a growth of comparatively recent times, much of the land now covered with peach-orchards having been originally planted to vineyards. Possibly the region was at its zenith in the nineties, the plantings here contributing greatly to putting Ohio in third place at this time among the states of the Union in the production of peaches.

Michigan furnishes an interesting chapter in the history of the peach-industry. The industry was started in what is now the Michigan peach-belt by an Indian trader who planted a pit in 1775 near St. Joseph. From this tree sprang seedling orchards, one of which, near Douglas at the mouth of the Kalamazoo River, numbered 300 trees. There were no

budded trees until 1834. A conjunction of several factors now gave peach-growing a tremendous impetus in the State. Chicago, growing with leaps and bounds, demanded peaches; the soil and climate of western Michigan were found to be ideal for this fruit; between the supply and demand was quick and cheap transportation by water. Shipments began in 1834 to Chicago and, as this and other western cities grew, peach-planting in Michigan progressed as probably never before in any other part of the world. In the seventies peach-yellows swept like a wave of fire over the southern portion of what is now the belt, driving the industry northward until at Traverse City the peach reached its highest northern limit in the eastern states. With better control of the yellows, peach-orchards were again planted in the southern parts of the belt and the industry continues to thrive, though with the ups and downs incident to this fruit wherever grown.

Another large peach-growing area lies in southern Illinois extending across the Mississippi into Missouri and Kansas. Westward, in Colorado, Utah, California, Oregon and Washington, are the world's newest peach-orchards, all of which have arisen to commercial importance within recent times. In southern Illinois and Missouri, however, even before the Civil War, peach-growing had assumed sufficient magnitude to be called an industry. The present standing of these later peach-areas may best be compared with that of the older regions by a tabulated report from the United States Census Reports which is herewith printed. In the fluctuating figures of this table one sees the exploitation of the peach. What other tree-crop in the whole world could show more ups and downs in the brief space of thirty years? No state holds first rank two decades in succession; in fifteen states in 1910 there were more trees not of bearing age than there were in bearing; there were more peach-trees in the United States in 1900 than in 1910; the figures most graphically attest the shifting of peach-regions; decreasing numbers represent misfortunes—most often yellows, or San Jose scale, a freeze, or overproduction; increasing numbers stand for a newly discovered advantage. By these tokens we better realize the speculative nature of peach-growing.

Peach-Production in the United States, 1890-1910

States	Number of trees of bearing age—		
	Eleventh Census, 1890	**Twelfth Census, 1900**	**Thirteenth Census, 1910**
New England:			
Maine	1,607	9,592	5,1
New Hampshire	19,057	48,819	57,5
Vermont	1,966	4,993	5,4
Massachusetts	87,004	301,405	154,5
Rhode Island	11,816	48,063	39,3
Connecticut	88,655	522,726	461,7
Middle Atlantic:			
New York	1,014,110	2,522,729	2,457,1
New Jersey	4,413,568	2,746,607	1,216,4
Pennsylvania	1,146,342	3,521,930	2,383,0
East North Central:			
Ohio	1,882,191	6,363,127	3,133,3
Indiana	953,980	2,925,526	2,130,2
Illinois	783,910	2,448,013	2,860,1
Michigan	1,919,104	8,104,415	2,907,1
Wisconsin	387	6,967	4,1
West North Central:			
Minnesota	334	1,626	1,5
Iowa	82,238	516,145	1,090,7
Missouri	1,999,474	4,557,365	6,588,0
North Dakota	.....	2	
South Dakota	78	1,080	1,8
Nebraska	144,701	1,055,959	1,188,3
Kansas	4,876,311	5,098,064	4,394,8
South Atlantic:			
Delaware	4,521,623	2,441,650	1,177,4
Maryland	6,113,287	4,017,854	1,497,7

District of Columbia	1,521	149	3
Virginia	1,218,219	1,939,113	1,585,5
West Virginia	450,440	1,695,642	1,424,5
North Carolina	2,133,004	2,773,788	2,661,7
South Carolina	711,138	1,136,790	1,336,1
Georgia	2,787,546	7,668,639	10,609,1
Florida	235,936	354,208	290,8
East South Central:			
Kentucky	1,205,866	2,884,193	2,245,4
Tennessee	2,347,699	2,749,203	3,163,7
Alabama	1,280,842	2,690,151	3,177,3
Mississippi	878,569	1,856,748	1,726,2
West South Central:			
Arkansas	2,769,052	4,062,218	6,859,9
Louisiana	317,132	758,877	903,3
Oklahoma	206	5,848,808	4,783,8
Texas	4,486,901	7,248,358	9,737,8
Mountain:			
Montana	....	1,670	5
Idaho	13,639	79,757	73,0
Wyoming	....	9	
Colorado	8,204	31,998	793,3
New Mexico	23,081	117,003	136,1
Arizona	24,954	67,073	51,4
Utah	68,121	409,665	544,3
Nevada	3,996	9,136	6,3
Pacific:			
Washington	72,701	226,636	536,8
Oregon	115,244	281,716	273,1
California	2,669,843	7,472,393	7,829,0
Total	53,885,597	99,916,598	94,506,6

NEW TYPES OF PEACHES

The capacity of species to split into types, using types in a broad sense, is, we all agree, one of the greatest assets of cultivated plants. Through diversity of types come

adaptabilities to soils and climates and variety in the crop, to mention but two of the essentials of standard crop-plants. New types afford the material from which greatest progress comes in fruit-growing. In common with all fruit-growing, peach-growing has received impetus from time to time from the introduction of new and distinct types. In the middle of the Nineteenth Century, three previously unknown types of peaches, each divisible into horticultural varieties, were brought to America. All three have had important effects on the peach-industry in America.

North China peaches.—Not very distinct from the Persian peaches at the outset, its outliers running into some of the other groups as well, "North China" is now but little more than a name for a conglomerate lot of varieties grown everywhere in America except in the sub-tropic parts of the Gulf States. The North China race includes varieties characterized by fruits of large size, great beauty, tender skin and flesh, good quality and vigorous trees which bear abundantly and regularly. The group has received careful study at the Delaware Experiment Station, an account of it by G. Harold Powell having been published in the Thirteenth Annual Report from that Station in 1901. Powell prefers to call the group Chinese Cling rather than North China.

The peaches put in the North China group are so nearly akin to those in the Persian group that it is difficult to place varieties. All agree, however, in taking the European Shanghai, the American Chinese Cling, as the type-variety and, though it is probable that travelers or missionaries brought pits of some of these peaches from northern China a century or more ago, the known history of the group begins with the variety just named as the type. It is a pleasure to give Robert Fortune, the indefatigable collector of Chinese plants for the London Horticultural Society, credit for introducing these peaches into western countries. In 1844 Fortune collected a fine, large, delicious peach near Shanghai and in the autumn forwarded pits and a plant in a pot to London. The pits were sown and the seedlings produced fruit in 1852 and from among these a sort was

selected and called Shanghai.[201] Pits from this first collection were probably sent to France, for the name appears in the early fifties in the pomological literature of this country.

The first American reference to the Shanghai is found in 1851[202] when fruits were exhibited at the Massachusetts Horticultural Society in Boston by R. Choate with the statement "peach from a tree imported from Shanghai." More definite are the facts of an importation made by Charles Downing in 1850. Early in that year Downing received potted peach-trees from the British consul at Shanghai under the names "Chinese Cling" and "Shanghai," supposed to be two sorts but proving to be identical. One of these trees was sent to Mr. Henry Lyons, Columbia, South Carolina, and this bore fruit in 1851.[203] From Downing's stock the variety was quickly and widely distributed and the horticultural magazines of the time gave the new peaches wide publicity, so that, from this and other importations which were made from time to time by various persons, these peaches from northern China were universally grown in the peach-orchards of America within a quarter of a century of their introduction.

South China peaches.—Those who have read the descriptions of Chinese peaches in Chapter 1 (pages 14 to 21) recognize at once the beaked varieties of South China, especially those growing about Canton. These peaches, common enough in China and cultivated there for centuries, reached occidental countries only in the middle of the Nineteenth Century. They came to America as seeds from Dr. J. T. Devan, Canton, China, to Mr. John Caldwell, Newburg, New York,[204] and were introduced into Europe probably by M. Montigny, French Consul at Shanghai, who sent seeds to the Jardin des Plantes, Paris, in 1852.[205] In recent years a number of fresh importations of seeds and plants of these honey-flavored, beaked peaches have been made by the United States Department of Agriculture.

A composite picture of South China peaches shows the following characters:

Tree of medium size, upright-spreading; branches leaving the trunk at an angle of about fifty degrees and curving upward; buds quite prominent; flowers always large and very abundant, pale pink, base of petals darker pink; leaves small, long, narrow, pointed, finely serrate, conduplicate, distributed all along the limb, dark green, in fall slightly tinged with red. Fruit small, oval, yellow or white blushed with red, slightly flattened; skin adhering to the flesh; suture very deep in basin, but does not extend more than one-third the way down; apex long and recurved; flesh white or yellow; flavor a peculiar honey-sweet; stone free or cling, long-pointed, generally curved.

As yet these honey-flavored peaches are grown commercially only in the Gulf States, the notion prevailing that they cannot be grown in the North. Quite to the contrary they do exceedingly well as far north as Geneva, though undesirable because of smallness of fruit and lateness in ripening. Of the score of the descendants of the original Honey, several are in bearing on the Station grounds, Climax, Imperial, Pallas and Triana being illustrated in *The Peaches of New York*. All but two or three of the varieties that are put in this group originated in Florida and most of them come from the grounds of G. L. Taber, Glen Saint Mary, of that State. An excellent bulletin, No. 73, from the Florida Agricultural Experiment Station, published in 1904, by F. C. Reimer, gives a full account of these peaches.

Is the beaked character permanent? That regions in time give rise to racial strains must have occurred to all who have read the preceding pages. The peach acquires distinct varietal characters in every great geographical region in which it is grown. Possibly in no other character is the change greater than in the long, pointed, erect or recurved apex in common parlance called the beak. As a rule, the farther south the more pronounced is the beak and the more oblong is the fruit. In this respect, southern peaches, taking them as a whole, are as markedly different from New York peaches as are the long, crowned, angular-topped apples of the Pacific Northwest from the rotund fruits of the Atlantic

Northeast. The four sorts of honey-flavored peaches described and illustrated in *The Peaches of New York*, named in the foregoing paragraph, illustrate this well, none of them being nearly so abruptly conical as specimens coming to us from the South. Peaches in China, evidently, show the same modification, for those discussed in the previous group are as markedly rotund as those in this group are conic and beaked. It is a fair inference, then, that the beaked character of the peach, counting time in generations of the tree, is permanent only in southern climates.

Peento peaches.—Another group of these Chinese peaches, not very different from the South China varieties we have just given an account of, is composed of the score or more sorts showing relationship to the variety, Peento. These may be rather indefinitely described as follows:

Tree large, vigorous, upright-spreading; branches willow-like, branching at an angle of about forty degrees; flowers large, pink, opening early, often at a low temperature and very irregularly; leaves narrow, long, finely serrated, with reniform glands; inclined to be evergreen; fruit sub-globose except in Peento which is flattened endwise; skin white and mottled with carmine, parting readily from the flesh; flesh white or yellow; flavor sweet, with a peculiar almond taste; stone occasionally flattened endwise, either free or cling. This race is adapted to sub-tropical parts of the Gulf States where it ripens from May 1st to June 1st.

The Peento, which gives name to this group, is without doubt a descendant of the flat peaches of China, common enough as we have seen. The first tree, however, came from Java to England where it was first grown by John Braddick under the name Java peach.[206] William Prince,[207] Flushing, Long Island, imported the variety to America some time previous to 1828 and grew it to the number of twenty trees. The peaches from Prince's importation seem to have been lost and the variety did not appear again in America until 1869 when P. J. Berckmans,[208] Augusta, Georgia, brought seed from China, from one of which came the Peento. Peento peaches in America are peculiar to Florida, where all

of the score or more varieties but the Peento have originated. This group of peaches has been well described by H. Harold Hume in Bulletin 62 of the Florida Experiment Station from which the description given above is an adaptation.

PEACH-PRODUCTS

The magnitude of the peach-industry in the United States is better appreciated if figures showing values are given. The value of peaches and nectarines in 1909, for the United States, was $28,781,078, an amount surpassed by only one other fruit, the apple. The highest value for a geographical division is reported for the East North-Central States, the amount being $5,173,000, followed by the South Atlantic States with $4,888,000 and the Pacific States with $4,887,000. Of individual states, California with her enormous area, over most of which the peach thrives, ranks first, the value of the crop in 1909 reaching $4,574,000; the next most important State is Georgia, $2,183,000; the third, New York, $2,014,000; these followed in order of value by Michigan, Arkansas, Pennsylvania, Ohio, Indiana, Missouri, Kentucky, Alabama, Tennessee and North Carolina, each with a crop of more than $1,000,000 in value.

The peach has greater commercial value in the United States than all other stone-fruits combined, the value of the crop in 1909, as we have seen, amounting to $28,781,078 while the value of the plum was $10,299,495; of the cherry, $7,231,160; of the apricot, $2,884,119; of the almond, $712,000. The consumption of peaches is increasing year by year. Until recently the peach has been considered a fruit of luxury, but large plantations, good care, quick and safe transportation and wide distribution now provide peaches for all who can afford to eat fruit.

The profits of peach-growing are occasionally so enormous that the publication of the figures is usually followed by excessive planting, with consequent over-production and low prices, followed, in turn, by scarcity and high prices.

So, too, the peach is more at the mercy of the seasons than any other standard tree-fruit and winter freezes and spring frosts ruin crops in some part of the country every year and often such disasters are widespread. These ups and downs, however, instead of decreasing, seem to stimulate the peach-trade, probably, on the part of the grower, because gambling is a universal vice; on the part of the consumer, because he better appreciates peaches when the blessing is occasionally withdrawn.

The chosen use for any choice fruit is to eat it as it comes from the tree or as prepared fresh fruit for dessert. So the peach is chiefly used the world over. Refreshing and delectable as any other fruit, it has another quality, appreciated by those who sell as well as by those who consume—it does not cloy the appetite. The insatiable longing of the great lexicographer, Johnson, for peaches is common to all lovers of this fruit. Boswell, Johnson's biographer, gives this gustatory reminiscence of his famous patron: "He would eat seven or eight large peaches of a morning before breakfast began, and treated them with proportionate attention after dinner again, yet I have heard him protest that he never had quite as much as he wished, except once, in his life." In America the greater part of the crop is, no doubt, eaten out of hand but peach-pie and peaches and cream, and peach-butter are national dishes, while marmalades, jellies, pickles, preserves and sauces are as common to this fruit as to any other. Besides the innumerable cooked products, several refreshing domestic drinks are made from the juice of peaches, as shrub and peach-wine, or it may be frozen into sherbet or ice cream. Waste peaches are used with more or less success as stock for vinegar. Peaches are canned and evaporated in the United States on an enormous scale, nearly one-half the crop being so utilized.

Canned peaches.—Canning is conservation *in excelsis*. It is modern compliance to the command, "Gather up the fragments that remain, that nothing be lost." Without this method of preserving crops the commercial culture of fruits and vegetables as carried on nowadays would be ruined and

no fruit would suffer as would the peach, since it leads all others in quantity and value of the canned pack. The value of canned peaches in the United States in 1909 was $3,753,698 or nearly one-seventh the total value of the crop and one may roughly estimate the fruit canned at home to be half as much as that canned in the factories. The product was put up in states, named in order of value of the pack as follows: California, $3,013,203; Michigan, $175,386; Maryland, $158,839; Georgia, $156,282; New York, $141,142. These canned peaches go to every part of the world to which they can be cheaply carried and are fit for consumption any time within two or three years after being put up. The canning factory has revolutionized the peach-industry in the United States by giving its products access to the world-market.

Commercial canning is a specialist's business into which we cannot go. The processes, essentially, are the same as those used in domestic canning and consist in destroying all bacteria by heat and then hermetically sealing the product in cans. In canning factories the work is nearly all done by machinery, including peeling, pitting and cutting the fruit, soldering the cans and putting on labels. To purchase proper machinery, hire labor and manage both to secure uniformity and cheapness in the product requires large capital and keen business ability. Peaches are easy to handle in factories and the work can be done so cheaply and the product is so acceptable that the factory-canned fruit is rapidly taking the place of that which a quarter of a century ago was almost wholly put up in the kitchen. The canning industry originated, has been perfected and is now chiefly carried on in the United States and Canada, though rapidly being introduced elsewhere. The aid afforded the peach-grower in this country by the canneries has been a great stimulus and makes the possibilities of profitable production of this fruit in the future certain.

Orchard-canning on a small scale seldom proves feasible, succeeding best, if at all, in a home industry to provide a special product for a fancy or private trade. Occasionally, associations can command capital enough to compete with

the large business enterprises but as a rule the peach-grower's interests are served best by the production of acceptable fruit for those who are engaged in the canning industry.

In the East, New York for example, all surplus peaches of standard varieties go to the cannery, though certain sorts have preference, but on the Pacific Coast where peaches are grown for canning, the trade demands a special type. The choice of varieties differs in different localities so that a prescription of sorts to grow for the canning trade cannot be made. Canners accept only yellow-fleshed peaches and usually prefer clingstones since these stand up better in the can. This preference is well shown in figures from California, where in 1913 only 583,800 cases, 24 cans to the case, of freestones were canned as against 1,630,255 cases of clingstones. Fashion now demands varieties red at the pit. Most cans in the great pack coming from California are labeled "Lemon Cling," but this is really now but a trade name, the old Lemon Cling, the pioneer sort in the canning trade, being little grown, a dozen or more similar but improved peaches having taken its place. The nectarine is canned in California but is not yet popular with consumers despite the fact that the product is most appetizing and very pleasing in appearance. Its smooth skin makes it one of the easiest of all fruits to can.

Evaporated peaches.—In regions distant from the markets evaporation is an even richer resource of the peach-grower than canning. Thus, in California in 1909, the value of the peaches canned was $3,013,203 while the dried product was valued at $2,333,137. The figures are greater for canned peaches, but be it remembered that the canners' profits and the cost of the cans must be deducted, whereas evaporated peaches are almost wholly a home product, the grower receiving all of the proceeds. The dried product is pure peach, almost devoid of water. Peaches may be cured as dry as a bone and as hard as wood so that the product will keep indefinitely in the temperate zone, and in this super-dried state is shipped to the tropics. The apple is evaporated in large quantities but is a by-product while the

cured peach is usually a primary product—a difference worth noting, for, with the apple, the cream of the crop goes to the fresh fruit-market while the cured peach is of the same grade as the dessert and canned fruit.

The dried-peach industry thrives only in regions, as California, where the summers are sunny and rainless. The product is shipped so cheaply that peach-growers in cloudy and humid climates, as in New York, cannot use artificial heat in evaporators and compete with the cured peaches from the Pacific Slope. In times past when communities were more dependent on local resources, the farmer living almost wholly off of his farm, peaches were cured in humid America though the product, in appearance at least, was much inferior to that from regions having favorable conditions for the evaporation of fruit. New York can hardly hope to compete with California in curing peaches but two factors make it barely possible that this State might make a minor industry out of curing peaches. The factors are the enormous production of peaches in the State, over-production being frequent, and the existence of a great number of apple-evaporators which might be utilized in curing the earlier ripening peaches. It seems worth while, therefore, to go rather fully into the details of curing peaches as practiced in California with the hope that their methods may be modified for use in New York evaporators. The subjoined footnote gives the best account we are able to find of the dried-fruit industry in California and of curing peaches in particular.[209]

The most obvious change which takes place in curing peaches is the loss of water but several other important changes occur which even more materially alter the flavor of the product. According to C. F. Langworthy[210], Chief of the Office of Home Economics, United States Department of Agriculture, the carbohydrates which make up the largest part of the solid matter of fruits undergo greatest changes. The crude fibre, too, is reduced in amount or softened. Much of the starch is changed into some form of sugar and the less soluble sugar may be reduced to a more soluble form. Some of the volatile oils and other ethereal bodies, so

important in giving flavor to fruits, pass off or are modified by the curing processes. These changes insure longer keeping in the product, give it greater food value than fresh fruit, pound for pound, leaving it quite as digestible, but not as refreshing and palatable.

Peach-leather was a common dried peach-product in the old domestic epoch before the coming of railroads, steamboats and the establishment of canning and drying industries. Though not now common, peach-leather is still made in many communities in the East, more particularly in the southeastern states. The peaches are peeled, pitted and then mashed into a thin layer which is dried in the sun or an oven, the resulting product taking on the appearance of leather. Peach-leather is said to keep indefinitely, this being its chief merit.

Peach-brandy is still a commercial product of considerable importance though the amount made nowadays, as compared with that made a hundred years ago before prohibition began to be preached, is but a drop in the bucket when the number of bushels raised is considered. According to the Commissioner of Internal Revenue,[211] the quantity of peach-brandy made in 1908, the last year reported, was 13,649.5 gallons, most of which came from California. Peach-brandy is made by converting the sugar of the fruit into alcohol and then distilling. The finished liquor contains about 50 per ct. alcohol. In European countries, peach-kernels are much used in flavoring a liquor called Eau de Noyau.

According to Bulletin 133, Bureau of Plant Industry, United States Department of Agriculture, valuable fixed and volatile oils can be produced from the kernel of the peach. Peach-stones are now burned as fuel by most canneries, excepting small quantities sold to nurseries for propagation. The possibility of producing oils from the kernels seems well worth looking into, since there is now an enormous waste of this part of the fruit by canneries. Oils extracted from peach-kernels may be used for the same commercial purposes as the almond oils; namely, in medicine, for soaps,

cosmetics, perfumes and confections. The processes of extraction and distillation are not complex and establishments equipped with steam would have little difficulty in extracting these oils. It is said, too, that the press-cake from which the oils have been extracted makes valuable stock-foods or fertilizers owing to its high content of nitrogenous matter. It is estimated that in California alone the quantity of peach-pits obtained as a by-products of canneries amounts to 10,000 tons in a normal year; that these would yield from 600 to 1,200 tons of kernels from which 210 to 420 tons of oil could be extracted. The wholesale price of bitter-almond oil, or oils purchased under this name, for which peach-oil could be substituted, is from $3.25 to $4.75 per pound.

Pliny named several medicinal uses for the peach and from his time down the flesh, kernels, leaves, bark and blossoms have had a place in the pharmacopoeia of various countries though nowadays little used except in domestic therapeutics. All of the structures named abound in a bitter and astringent principle and most of them produce hydrocyanic acid upon maceration with water. The peach might have value in medicine for this acid were not the chemical more easily obtained elsewhere. The oils from the kernels, as we have seen, may be used in medicine. Noting the medicinal uses to which peach-products have been put by various peoples in various times we find: The leaves are pounded and boiled in vinegar for a liniment, an eye-wash, a cure for "scurf," a preventive of bald heads, and as an insecticide on the heads of children. The blossoms, treated in various ways, have been used for the same ailments and also as a febrifuge. The burned pits are also used in making lampblack for paints.

For more than two thousand years stories have been rife of the poisonous properties of peach-pits and peach-leaves. In a careful perusal of peach-literature for this period and in several languages we have not found a single case cited of fatal results to man or beast from eating the leaves or kernels of peaches. No doubt these stories arise from common knowledge that parts of the peach, as the kernels

and possibly the leaves, contain prussic acid though in so minute quantities as never to be toxic in any quantity likely to be eaten by humans or animals. No doubt, too, the myth that the Persians sent the peach to the Egyptians as a deadly poison is still perpetuated.

The wood of the peach is fine-grained and takes a beautiful polish and in Europe is used somewhat in cabinet-work and toy-making. Its numerous reddish-brown veins make it a most beautiful wood but the trees seldom attain sufficient size to give the species value as a lumber-product.

The peach is attractive to the eye at all seasons. A tree or an orchard in bloom is a strikingly beautiful sight while a panorama in a peach-country in flowering-time is one of the most beautiful scenes in nature. There is a great difference in the floral beauty of varieties, some sorts having very inconspicuous flowers while others rank with our finest ornamentals when in bloom. Several types of *Prunus persica* are planted for beauty of flower and foliage but the fruit-producing peaches are almost never planted for landscape effect though their peculiarly sunny expression in leaf and flower, one of the best types of cheerfulness among trees, should make them useful either standing alone or in mass for ornamental planting. Those who have seen the wild wayside peaches of Kentucky or Tennessee in bloom will always think of the species as an ornamental as well as a fruit-tree.

PEACH-YELLOWS

Yellows is a disease or malignant condition, it is not known which, virulent and contagious whatever it may be, and is the possession primarily of the region north of the Ohio and Potomac and east of the Mississippi. At one time or another it has been a cause of decline of the peach-orchards in every part of the region outlined. Epidemics of yellows have wholly obliterated thriving peach-industries which in some cases covered counties. The changes wrought by yellows come so quickly and are so final, so complete and so

widespread in their consequences that the disease stands alone among the troubles of plants in the extent of its influence on the crop affected. Under somewhat better control now, its havoc is less than formerly, but in the past it has outdone all other accidents combined that have happened to peaches in America, including frosts, floods, drought, insects, fungi and injuries due to man and quadrupeds. The mystery of yellows in most of its aspects makes its known history all the more significant. We lack knowledge of what it is, or whence it came, nor do we know of any cure; we know only some of the circumstances and the terrible consequences to the peach. Yellows began its siege of the peach in the very beginning of commercial peach-growing in America. Much of the history of the peach is written in the hundred-years-warfare that has ensued.

Judge Richard Peters of Philadelphia first described and gave name to peach-yellows. February 11, 1806, he read a paper "On Peach Trees" before the Philadelphia Society for Promoting Agriculture. In this paper we have the first clear account of yellows:[212]

"About fifty years ago, on the farm on which I now reside, my father had a large peach orchard, which yielded abundantly. Until a general catastrophe befell it plentiful crops had been for many years produced with very little attention. The trees began nearly at once to sicken, and finally perished. Whether by the wasp then undiscovered, or by some change in our climate, I know not. For forty years past I have observed the peach trees in my neighborhood to be short-lived. Farther south, in the western country, and, it seems, in some parts of New Jersey they are durable and productive as they had been formerly here. * * * The worm or grub, produced by the wasp depositing its progeny in the soft bark near the surface of the ground, is the most common destroyer. * * * When trees become sickly I grub them up. I find that sickly trees often infect those in vigor near them by some morbid effluvia. Although I have had trees twenty years old, and knew some of double that age (owing probably to the induration of the bark rendering it impervious to the wasp, and the strength acquired when

they had survived early misfortunes), yet in general they do not live in tolerable health after bearing four or five crops. * * * Fifteen or sixteen years ago I lost one hundred and fifty peach trees in full bearing in the course of two summers by a disease engendered in the first season. I attribute its origin to some morbid infection in the air. * * * The disorder being generally prevalent would, among animals, have been called an epidemic. From perfect verdure the leaves turned yellow in a few days, and the bodies blackened in spots. Those distant from the point of infection gradually caught the disease. I procured young trees from a distance in high health and planted them among the least diseased. In a few weeks they became sickly, and never recovered. * * * After my general defeat and most complete overthrow, in which the worm had no agency, I recruited my peaches from distant nurseries, not venturing to take any out of those in my vicinity. I have since experienced a few instances of this malady, and have promptly, on the first symptoms appearing, removed the subjects of it, deeming their cases desperate in themselves and tending to the otherwise inevitable destruction of others."

In the last few lines of this account, Judge Peters gives the only means so far discovered to check the spread of the disease—the prompt destruction of affected trees—a striking commentary on the baffling nature of yellows when we consider what science has done, since Judge Peters wrote, toward the control of other plant-diseases. In a note of later date, page 23 of the same article, Judge Peters speaks of "the disease I call the yellows," thus giving name to a trouble that until then had been known as "decay" or "degeneracy" in the peach.

Later Judge Peters writes:[213] "I am pursuing my old plan of re-instating my peach trees lost last season (1806 or 1807) by my unconquerable foe, the disease I call the yellows. I obtain them from different nurseries free from this pestiferous affection. The worm or wasp (*Ægeria*) I have in complete subjection. I should be perfectly disinterested in proposing that the society offer a premium for preventing the disease so fatal; for I shall never gain the reward."

And again:[214] "I still think that the disease so generally fatal (more so this year than any other in my memory), called the yellows, is atmospherical. * * * Compare this account (of thrifty orchards in Delaware) with the actual state of the peach in our country, and judge whether we live in a region favorable to its growth. Mr. Heston's attempt at cultivating this tree in the Southern manner begins already to fail. His trees are evidently infected, and many are on the decline. The yellows are universally prevalent this season throughout the whole country (*i. e.*, around Philadelphia)."

We have given but little out of much that Judge Peters wrote on yellows, his observations and experiences covering nearly a generation. We have quoted sufficiently from his accounts, however, indubitably to establish the fact that peach-yellows was rampant about Philadelphia at least as early as 1800. Smith[215] puts the appearance of yellows in this region as probably some time prior to 1791. By this time there was a considerable body of scientific and practical agricultural literature in America, and we may assume, since no trouble that could possibly be identified as yellows had been described as existing elsewhere in America, though the peach-borer is frequently discussed, that the disease at this period, about 1800, was restricted to the neighborhood of Philadelphia.

We now find the yellows gradually extending into neighboring states—Delaware, New Jersey, Maryland and New York. Wm. Coxe of New Jersey who in 1807 wrote Judge Peters, "I am perfectly ignorant of the disease to which you give the name yellows," in 1817 knew it only too well as "a malady which no remedy can cure nor cultivation avert," and devotes nearly two pages in his *Fruit Trees* to a discussion of its nature.[216] References to yellows in all of the states named by this time had become general. Our purpose to show the spread, effects, and early treatment of the disease is fully served by quoting at length from a single author—a keen observer, careful writer and the most notable horticultural and botanical authority of his time, Wm. Prince, of Flushing, Long Island.[217] To Prince, by the way, we are indebted for the first reference to what is now

considered the most certain symptom of yellows—premature ripening of fruit. Prince says:

"This disease, which commenced its ravages in New Jersey and Pennsylvania about the year 1797, and in New York in 1801, and has spread through several of the states, is by far more destructive to peach trees than the worm, and is evidently contagious. This disease is spread at the time when the trees are in bloom, and is disseminated by the pollen or farina blowing from the flowers of diseased trees, and impregnating the flowers of those which are healthy, and which is quickly circulated by the sap through the branches, foliage, and fruit, causing the fruit, wherever the infection extends, to ripen prematurely. That this disease is entirely distinct from the worm, is sufficiently proved by the circumstance, that peach trees which have been inoculated on plum or almond stocks, though less affected by the worm, are equally subject to the yellows—and a decisive proof of its being contagious is, that a healthy tree, inoculated from a branch of a diseased one, instead of restoring the graft to vigour and health, immediately becomes itself infected with the disease. As all efforts totally to subdue it must require a long course of time, the best method to pursue towards its eventual eradication, is to stop its progress, and prevent its farther extension—to accomplish which, the following means are recommended, which have been found particularly successful.

As soon as a tree is discovered to possess the characteristics of the disease, which is generally known by the leaves putting on a sickly yellow appearance—but of which the premature ripening of the fruit is a decisive proof—it should be marked, so as to be removed the ensuing autumn, which must be done without fail, for if left again to bloom, it would impart the disease to many others in its vicinity; care is also necessary, in its removal, to take out all the roots of the diseased tree, especially if another is to be planted in the same place, so that the roots of the tree to be planted may not come in contact with any of those of the one which was diseased.

If your neighbour has trees infected with the yellows in a quarter contiguous to yours, it will be necessary to prevail on him to remove them, that yours may not be injured by them. By being thus particular in speedily removing such trees as may be infected, the disease is prevented from extending itself to the rest of the orchard, and the residue will consequently be preserved in perfect health at the trifling loss of a few trees annually from a large orchard."

The influence of yellows on the peach-industry of the country is shown by indicating when it appeared in the various states in which peaches are grown in eastern America and by noting the effects of epidemics of the disease.

In Pennsylvania, following the first outbreak, peach-growing all but disappeared, to reappear again from time to time in new regions or in old ones following an interval of years after a plague had passed. Periods and places of epidemics are indicated by such quotation as follow: Wm. G. Warren, Centre County, reports in 1851: "A majority of the peach trees have been destroyed by the yellows."[218] In the proceedings of the American Pomological Society for 1852, a Pennsylvanian reports for the State: "Peaches have done but ill with us for some years past. The yellows have swept off thousands of trees."[219] In 1880 in a book on the peach, Rutter devotes many pages to yellows in Pennsylvania and speaks of "thousands of trees dead and dying from the disease in Chester and Delaware counties."[220] The epidemic in the eighties seems to have been particularly severe, there being at the end of the decade but 1,146,342 bearing trees in the State which by 1900 had increased to 3,521,930 trees.

Perhaps of all states, in proportion to area planted, New Jersey has suffered most from yellows. Beginning with the epidemic mentioned by Coxe in 1817, there have been several disastrous irruptions of the disease in that State. A particularly destructive epidemic must have raged in the early forties, for in 1846 W. R. Prince, Flushing, Long Island, says:[221] "Any one who visits the once splendid peach

orchards in various parts of New Jersey will be struck by the desolate aspect of innumerable plantations of dead trees, with only here and there a sprig of verdure amid the mighty mass." Another writer, Colonel Edward Wilkins, says: "Fifty thousand acres in peach trees, in two counties only, had been destroyed by the yellows prior to 1850;" and in 1858, he further states that "at that time nearly the whole of the peach orchards of New Jersey had been destroyed by yellows."[222] He concludes, in the same article, that "in New Jersey the peach belongs to the past." We choose as the last of the many accounts of disaster from yellows in this State two quotations from Professor P. D. Penhallow written in 1882:[223]

"In New Jersey, where the ravages of the disease have been more seriously felt than elsewhere, the southern counties were formerly the center of the peach industry for the entire State, but, owing to the prevalence of the yellows the peach orchards have been gradually moving northward, until at the present time the counties of Morris and Hunterdon have the largest interest involved, and the prospect is that a few more years will see even these localities deprived of the industry."

"The peach growers of New Jersey consider an orchard worth nothing after the age of nine years. At that time they root out all the trees as they would so many corn stumps, and use the land for general crops, planting a young orchard of seedlings each year to make good the loss."

Still passing northward from the first center of infection, we come to New York, where, according to Wm. Prince, in a foregoing quotation, the disease appeared as early as 1801. The son of this writer, W. R. Prince, in the continuation of the article quoted on page 121, written in 1846, says: "In this island the malady became exhausted some years since by the utter destruction of the old orchards, and the determination not to plant new ones until it became extinct. This proved most fortunate as the disease has been for years banished from Long Island, and now new orchards are springing up everywhere, and every garden is becoming

readorned with the finest varieties of the Peach 'redolent with health.'" A. J. Downing,[224] writing in 1849, reports: "Fifteen years ago there was scarcely a tree in the vicinity of Newburgh that was not more or less diseased with the yellows. By pursuing the course we have indicated (destruction by burning), the disease has almost disappeared." Thirty years later, Charles Downing, writing from Newburgh, states: "We have had the yellows here at intervals for over sixty years, some times continuing for five or six years and then several years free from it."

At present, 1916, peaches are freely planted along the Hudson in the region of which the Downings wrote, and, whether from following the method of A. J. Downing in burning the trees, or whether we are in one of the intervals of immunity noted by Charles Downing, peach-yellows, while present, causes but small losses. One might enlarge at length on the vagaries of yellows but we can concern ourselves only with the main facts of its history. We now follow the disease from eastern to western New York.

Looking through the records of the hundred years of peach-growing in western New York, we find little to indicate that yellows has ever been the scourge in this region that it is pictured to have been eastward and southward or even westward in Michigan. The explanation? Growers, as a rule, promptly cut out diseased trees. Here there has been less dilly-dallying and fewer hocus-pocus remedies in treating yellows. Western New York, more than other regions, has been favored in the century past by its many eminent horticulturists, several fruit-growers' societies and by farmers' publications. The result is that there is an enlightened and energetic body of peach-growers, who, instead of catching and catching at every will-o-the-wisp notion about yellows, have prevented its spread by proper orchard-sanitation. Yet the yellows is here and has been since 1824 at least. In that year David Thomas, father of J. J. Thomas, the pomological writer, planted peaches from Flushing, Long Island, on the shore of Cayuga Lake, which developed yellows with the resulting loss of every tree.[225] But in 1844 John J. Thomas records: "In Western New York

it is comparatively unknown, and great care should be used by cultivators that it be not introduced by importations."[226] In New York the depreciation of real estate caused by yellows has not been nearly so marked as in other peach-regions because of the greater diversification of fruit-growing than in other eastern states.

This region not only has not had yellows continuously but has never had the sudden and violent invasions of the disease that have laid waste the orchards in other communities of intensive culture of this fruit. The one exception, possibly, was in the decade running from 1875 to 1885. A. M. Smith,[227] writing in 1878, says that hundreds of bushels of high-colored, insipid, premature peaches were sold in western New York in 1877, that one orchard in Niagara County was destroyed by the disease and that others in the vicinity were badly affected. Charles W. Garfield, a prominent Michigan horticulturist, reported in 1880 that J. S. Woodward of Lockport, New York, had a young orchard of peaches, covering thirty acres, so badly diseased that the trees would have to be taken out before having produced a crop. Later, 1887,[228] Mr. Woodward, speaking for his neighborhood, says that yellows has "nearly finished the orchards."[229] To conclude as to the conditions of orchards at the close of this epidemic, we have from Col. F. D. Curtis[230] the report, in 1887, that yellows had destroyed whole orchards in the western counties of New York especially in Niagara and Ontario. At this writing, 1916, yellows may almost be said to be a minor difficulty in peach-growing in western New York.

Peach-culture has been comparatively unimportant in Connecticut and Massachusetts until recent years but the toll taken by yellows has been proportionately as high as elsewhere in the hundred years of its trespassing. The history of its ravages is told in such statements as follows: "Yellows appeared in the vicinity of New Haven in 1820 and destroyed thousands of trees nearly putting an end to peach growing."[231] "The yellows are destroying our peach trees."[232] "Peaches are infected with yellows and are generally things of the past."[233] "Cultivation of the peach is now abandoned

in consequence of that scourge to that fruit known as yellows."[234] The foregoing accounts apply to Connecticut but reports are much the same for Massachusetts, the following being typical: A writer in 1882 declares that yellows about Boston was unknown in 1837 but that "when it came it swept everything."[235] "Thirty or forty years ago (1842-1852) peaches were grown in great abundance in this vicinity (northeast Massachusetts) but for the last twenty years have been almost abandoned."[236] "In former years (said in 1854) peach trees have rarely suffered from yellows in this neighborhood (Cambridge) where now many trees are affected by it."[237]

Sweeping westward from New York, yellows appeared in Ohio about the middle of the Nineteenth Century, for, in 1851, an orchard of 600 trees at Saint Clairsville was said to have been destroyed by it.[238] In the same year the report came from Richard County: "Our peach trees are somewhat affected by yellows."[239] In the years that follow, down to the present time, the presence of yellows, its symptoms, affects and treatment are discussed in the voluminous records of agriculture in Ohio as a commonplace part in the culture of the peach though the disease seems not to have been quite so virulent nor so often epidemic in Ohio as in other prominent peach-growing states.

Nowhere has the haste and waste of yellows been more apparent than in the peach-belt of western Michigan. The history of the disease is well established in this region, the main facts being: The disease appeared about Saint Joseph and Benton Harbor, Berrien County, in the late sixties of the last century. At first spreading slowly, its movement became more rapid "until by 1877-78 it was destructively prevalent in nearly every orchard in the county."[240] "The peach industry was literally swept out of Berrien County in one decade. There can be no doubt of this. From being the foremost peach county in Michigan, with an acreage more than equal to that of all other counties combined (6000 acres in 1874), it became ninth in order, and could boast of only 503 acres."[241] In 1877, T. T. Lyon declares:[242] "This violent and contagious disease has nearly destroyed the

peach orchards at Saint Joseph." Three years later in the annual report of the State Pomological Society, Charles W. Garfield, secretary, says "there are scarcely any peach orchards left at Saint Joseph."[243] The depreciation of peach-lands at this time, due to yellows, was so great as to threaten the community with bankruptcy.

Pitiful was the case of the growers in Berrien County; pitiful enough that of those in Van Buren County, next on the north, but not so bad owing to the timely and strict enforcement of a "yellows law" early passed by the State legislature. The disease seems to have become established in Van Buren County about 1870 but did not become rampant until four or five years later "when about five per cent of the trees were found diseased and were taken out."[244] Then came such reports as these: "At least 5,000 trees have been destroyed by this disease the past season in this county alone."[245] "That dreaded ravage of the peach-grower, yellows, has made slow but marked progress during the years in this locality."[246] "If the yellows continues to spread, it will be only a question of years when peach-growing will cease on the lake shore."[247] These three reports, out of many such, give the condition of the peach-orchards in western Van Buren. In the eastern part of the county, especially about Lawton where the peach is largely grown, the disease was later in appearing, cutting out was more strictly attended to, and the damage, therefore, was markedly less.

Allegan County, north of Van Buren, along the lake shore at least, suffered from yellows rather less, though nearly as badly as the region to the south. The disease was less and less virulent as the peach-belt extends northward. At Traverse City, the most northern point in the peach-belt, yellows has never been epidemic. Passing eastward, the disease appeared about Grand Rapids, the center of peach-culture in Kent County, in 1883 and in the decade that followed took from peach-growers the toll usual in western Michigan. Eastward from Kent County, however, in the several small and rather isolated cases of peach-growing yellows either has not appeared or has been an unimportant factor.

The lowest ebb in Michigan orchards from yellows was reached in the eighties after which new plantings increased remarkably, the number of bearing trees in 1889 being but 1,919,104 and in 1899, 8,104,415. The disease still persists in Michigan wherever in former times it became established. Yellows seems, however, to have lost much of its old time virulency; or, perhaps, the fact that peach-growers are more prompt and thorough in destroying diseased trees accounts for the decrease of the disease. Then, too, the Michigan peach-belt has had the bitter experience in the last decade or two, of several winter freezes which have wiped out whole orchards, discouraged many planters, and, together with the keen competition of new peach-regions, reduced the size of orchards and scattered the plantations so that, in the lessened communal intensity, yellows has less opportunity.

Going back, now, to the place of first infection and passing southward, we find that yellows, though not more virulent in Delaware than in Michigan, was much more devastating. Destruction is the only efficient method in treating yellows. The necessity of this drastic measure has been proclaimed by every authority from Judge Peters, discover of yellows, down. The strong arm of the law in many states enforces destruction. In Delaware, however, growers were more dilatory in destroying yellows-trees than elsewhere—in fact for the first half-century made little attempt so to check the disease. When the scales fell from the eyes of orchard-owners in this State the industry was already ruined. From hundreds of accounts, the ups and downs of peach-growing in Delaware as caused by yellows may be shown by a few brief statements.

The peach-industry began in Delaware about 1830 and there are few references to peach-yellows until a decade or two after that time, though Dr. John J. Black says that the disease had been known in the State "since the war of 1812."[248] The yellows-sweep really began in the northern part of Delaware in New Castle County, in the early forties, when, according to John Delano, Isaac Reeves' peach-trees were dying of yellows by the score "maugre all his care,

cultivation and circumspection."[249] In 1846, James W. Thompson, in a splendid account of the peach-industry in Delaware, names the borer and yellows as the two devastating enemies of this fruit and speaks of the latter as a "constitutional, consumptive or marasmatic disease for which no other remedy is known or to be practiced, but extirpation and destruction."[250] "By 1855 the yellows had taken possession of nearly all the orchards, and peach culture in this section was at an end."[251] Yet in the same county, about Middletown, but a few miles to the south, the disease though present was not epidemic nor did it become so until twenty years later.

With the passing of the orchards in northern New Castle, the southern part of the county became the center of the industry in Delaware. Here, in the early seventies, there were from 1,000,000 to 1,750,000 trees covering from 10,000 to 17,500 acres.[252] Yellows, according to numerous accounts, became virulent about 1870, was at its height in 1875, after which the progress and outcome of the epidemic is essentially the same as in the northern part of the county —the yellows-sweep was driving slowly but surely southward. Thus, in 1880, the center of the industry was in Kent County, second south of the three counties in Delaware, there being in 1879, according to the census of 1880, nearly 2,000,000 trees covering nearly 20,000 acres in this county. Yellows, present and widespread at an early date in Kent, was not alarmingly destructive until the summers of 1886 and 1887, when in the northern two-thirds of the county the disease "spread like wild fire." At this time and as late as 1890, there was little yellows in southern Kent and northern Sussex, but before the end of the century the whole State had been swept by yellows. There are no census figures for peaches until 1890 when the number of bearing trees in Delaware was 4,521,623. The toll taken by yellows, augmented by San Jose scale, is indicated by the falling off in number of trees in the next decade, at the end of which there were 2,441,650 trees and after another decade, 1909, but 1,177,402 trees.

Beginning late in the last century, however, there was a

revival in peach-planting in Delaware, especially the northern part of the State, and now a new peach-industry seems well started in which, through energetic orchard-sanitation and diversified horticulture, yellows, for the present at least, is held at bay. The palmy days of fabulous prices for peaches and peach-lands, however, are past in Delaware. Here, as in other communities ravaged by yellows, the value of lands has sunk to a half or a quarter of what it would have brought a generation ago in the height of peach-culture. In some cases property, formerly valuable, has lost all value—a peach-farm will not sell at any price. The best peach-lands are seldom fit for other crops, so that in Delaware, New Jersey and Michigan the whole community, including railroads and steamboat lines, suffers to the verge of bankruptcy when yellows exterminates the orchards.

Probably in no other State in the Union is the peach more perfectly at home than in Maryland, it having held undisputed supremacy among fruits in that State for over a century and a half. Yellows, though always menacing, has not been so devastating as in Delaware to the north. Erwin F. Smith thinks that yellows has been present in the northern counties of eastern Maryland for many years—since 1844 or 1845. In his detailed account of the disease in this State[253] he records but one destructive outbreak of yellows, this occurring in the summers of 1886, 1887 and 1888 in the northeastern part of the State where in two counties along the whole length of the Sassafras River it was destructively present. Smith notes that yellows, at this time, "is moving southward on the peninsula." Since Smith's account, 1888, reports from Maryland show that, while the disease is still present and is now in practically all parts of the State, either it is not now so virulent or is kept in check by extirpating diseased trees. Still, however, the great decrease in the number of peach-trees in Maryland in the last twenty years is largely due to yellows, there being 6,113,287 bearing trees in 1889, but 4,017,854 in 1899, and only 1,497,724 in 1909.

In the South, west of the Mississippi, and on the Pacific

Coast, yellows does not exist or if so is not epidemic.

Would that it could be recorded, as we conclude this brief account of yellows and its plague-spots in America, that in the hundred years of conflict some headway had been made in ascertaining from whence the disease came, what its cause and what the cure. Would, too, that we could believe that the final holocaust has passed. But we cannot bandage our eyes against the facts. We are as profoundly ignorant of yellows as at the start. And, while New York at the moment is nearly free from yellows, everywhere the sinister reminders of ancient epidemics, like skeletons at a feast that are never out of sight, bid us be on our guard for new outbreaks.

PEACH-BREEDING

But little effort has been made, as the histories of its varieties show, to breed peaches. All but a very few varieties have come from chance seedlings. Peaches were grown from seed for centuries and many types now come true when seeds are planted. After budded trees became the vogue, until Mendel's great discovery, breeding the peach consisted in selecting an occasional meritorious tree, multiplying it by budding and, if it had pronounced merit, turning it over to a nurseryman for the trade. The art progressed no further because selection was thought to be the fundamental process in improving plants and breeders preferred to work in fields where the harvests were more immediate than in tree-fruits. Now that plant-breeding centers around controlled hybridization, plants propagated vegetatively should receive quite as much attention as those grown from seed. Mendel has opened the door to intimate familiarity with some of the fundamental phenomena of hybridization, and, despite the difficult and complex literature the professionals are imposing on the art, chiefly discussions of methods and disputations about principles, the layman finds Mendelian laws easy to put in practice; and peach-breeding is certain to go forward in leaps and bounds as the irresistible fascination of the subject seizes

peach-growers.

Meanwhile, as a foundation for future work, it becomes highly important to know how the varieties we have came into existence. The known histories of the many diverse kinds of peaches show that this fruit has been improved almost wholly through new varieties by chance hybridization—self-fertilized seed, selection and mutations are almost negligible factors. The following are the data: No case is recorded in *The Peaches of New York* of a variety known to have come from a self-fertilized seed. The seed parent is given for 214 varieties; the seed and pollen parents of 37 varieties. But 4 varieties are reported to have come from bud-mutations. Of chance seedlings, sorts from seed with neither parent known, there are 161. The origins of 1765 of the varieties described in *The Peaches of New York* are unknown. The total number of peaches described is 2181.

CHAPTER IV

PEACH-GROWING IN NEW YORK

The history of the peach, whether narrative or natural, shows that this fruit succeeds commercially only in restricted areas under special soil and climatic conditions. In the United States, as we have seen, the peach-industry has sprung up in a dozen or more distinct geographical regions, three of which are in New York. In discussing peach-growing in New York we must, first, determine the boundaries of its peach-regions; second, show the relative importance of the peach-industry in each; and, third, note the determinants that make favored parts of the State peach-regions.

The three main peach-areas in New York are the Hudson River Valley, the shore of Lake Ontario and the lands

surrounding the Finger Lakes. The relative importance of these areas is shown by the number of trees in the regions. More than half of the peach-trees in New York are along the south shore of Lake Ontario, the total number in bearing for the region in 1909 being 1,271,514. The two counties of the State leading in number of trees are in this belt, Niagara with 591,350 and Monroe with 339,375, while of the other three in the belt there are 166,584 in Wayne, 157,934 in Orleans and 16,271 in Oswego. The Hudson River Valley district is second in importance, with a total of 679,662 trees, of which Ulster County, ranking third in the State, has 313,971, and Orange, with fourth rank, has 212,879, while Dutchess has 63,741, Columbia 51,818, Rockland 21,081 and Westchester 16,172. The Finger Lakes region, with a much smaller area of suitable land, has but 322,179 trees, of which Seneca County has 81,440, Ontario 56,495, Schuyler 51,993, Yates 48,350, Tompkins 34,090 and Livingston, a little to the west of this region proper, 19,251.

Long Island, once the seat of a considerable peach-industry, now has but 34,348 trees, 30,333 in Suffolk County and 4,015 in Nassau. There is a large area on the shore of Lake Erie suitable for peaches but land here is mainly planted with grapes; yet Chautauqua County has 32,377 and Erie 10,987 trees. Beside these main and subsidiary peach-regions there are many localities in which peaches are grown for local markets or home use. Peach statistics for the State emphasize strikingly the fact that the peach is a specialist's crop and that it can be grown only in special environments. Thus, compare the figures given for peach-growing counties with these: In two counties in New York there is not a peach-tree; in six counties there are less than twenty-five trees each; in twenty-two counties there are fewer than five hundred trees or less than five acres in any one; of the sixty-one counties in the State, only twenty-four average more than one hundred acres planted to peaches and but six have more than a thousand acres. There are still, however, acres beyond calculation, fecund for peaches, many lying fallow, upon which peaches can be grown when the markets warrant.

The acreage for the State and its peach-regions may be determined, approximately, by dividing the number of trees by 100. In 1909 there were 2,457,187 bearing trees and 2,216,907 trees not of bearing age, a total of 4,674,094 trees covering 46,740 acres in the State. At this writing, 1916, the acreage is larger. In 1909, along the Ontario Shore there were 12,715 acres planted to bearing peaches; in the Hudson Valley, 6,796; about the Finger Lakes, 3,221; on Long Island, 343; on the shores of Lake Erie, 433. These figures for districts cover bearing trees only, but holding the proportion the same for the districts as for the State, the total acreage for each district should be doubled for 1909 and, we are sure, much more than doubled for 1916. The statement that the number of bearing trees has doubled in the past five years is supported by figures furnished me by F. S. Welsh,[254] Agriculturist of the New York Central Railroad Company. The New York Central handles at least 95 per centum of the peaches grown in New York and shipped to the markets; in 1910 this railroad handled 1,341 carloads of peaches, 4,419 carloads in 1915.

New York ranks third among the states of the Union in the production of peaches, the value of the crop being but a little less than that of Georgia though only about half as much as that of California. The number of bearing trees and the yield in bushels of fruit are given in the census report of 1910 so that the average production per bearing tree in the several peach-belts of the country may be computed, throwing light on the condition of the orchards in the different regions. California leads with an average production of 37.8 quarts per tree; New York follows with 22.6 quarts; after which comes Michigan with 18.5; Pennsylvania, 13.7; New Jersey, 11.6; Ohio, 10.5; Georgia, 7.7; and Delaware, which must have had an off year in 1909, but 5 quarts.

Perhaps it is worth while putting on record an opinion as to the status of peach-growing in the State at present, 1916. The acreage is certainly the greatest yet planted in the State —as has been said nearly or quite double the number of trees bearing in 1909 which the last census gives as

1,014,110. Certainly, too, orchards were never as well cared for as now. Yet the percentage of unprofitable peach-orchards in the State is high—at least fifty per centum—for which several causes can be named; as, competition and over-production with consequent low prices, poor distribution, a series of seasons with much winter-killing, and a succession of cold, wet springs. These are episodes in the industry hard to overcome. Of the avoidable causes of the present high percentage of unprofitable orchards perhaps the most common is the attempt to do too much whereby many eventually come to bankruptcy. Another reason for the many unprofitable orchards of the present is that the peach is a favorite fruit for beginners. Profits in peach-growing are often luring, the peach is an attractive fruit, it seems easy to grow and the fruit-grower plants, to learn by experience that peach-growing is not, as so often pictured, a pleasant and profitable avocation but a most exacting vocation.

Why is the peach so localistic? In particular, what has set the bounds of the three restricted peach-areas in New York? To some extent, of course, man-governed agencies have determined where peaches may or may not be grown in the State. Peaches must move quickly and the carriers must not dip too deeply in the grower's pockets; therefore markets must not be too distant and transportation must be cheap and efficient. Again, peach-growing is a fine art and becomes thus a specialist's business that must be learned in the peach-orchard; therefore, even if soil and climate be favorable, the industry lags if it lacks leaders to teach and to set the pace in orcharding. But, outranking by far the agencies depending on man, are natural conditions, two of which, climate and soil, predetermined where peach-industries were to stand in New York.

CLIMATE

When are plant and climate truly congenial? Perhaps the best test is the degree to which the plant spontaneously accommodates itself to all climatic conditions. Thus, the

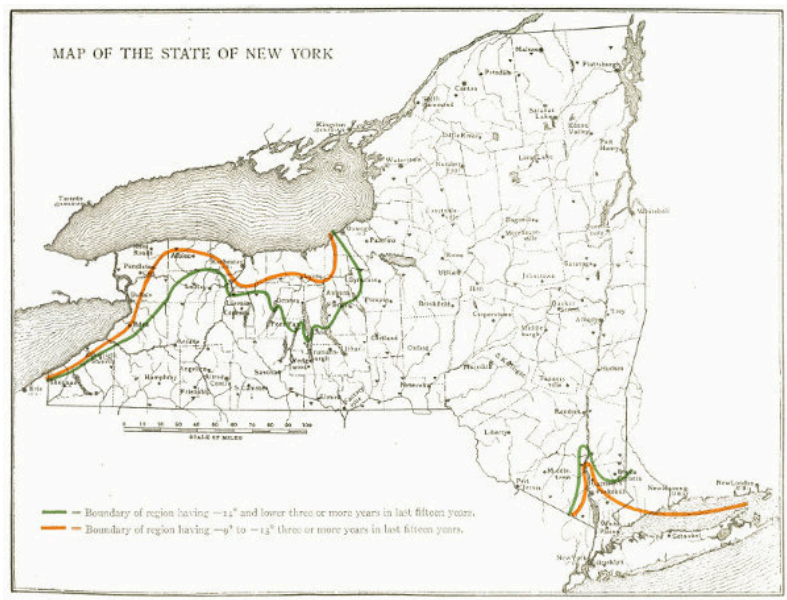
peach is ideally suited to climates in which it maintains itself without the aid of man. The peach is perfectly at home, then, in America only where it runs wild,—in parts of the South. In the North, East and the far West, peaches seldom grow spontaneously; and the cold of winter, the frosts of spring and the drouths of summer, in these regions, yearly remind us that notwithstanding the generations the tree has been grown in America it is still a stranger in a foreign country—an exotic from warm and sunlit Mid-Asia. Yet with a little help from man the peach takes kindly to many climates in which it does not grow spontaneously. Under what climatic conditions does the peach grow spontaneously? And under what climatic conditions can the peach be grown with the aid of man as a commercial success? These questions can be best answered by discussing the two constituents of climate, temperature and rainfall, in relation to the peach.

Of the several phases of temperature only extremes in cold are determinants in peach-growing in New York. The peach stands for all that is tender and effeminate in a fruit-tree and fares so ill in winter's cold that the limits of peach-culture are set in all northern states by the winter climate. The undomesticated peach is at the mercy of the winter wherever the temperature falls below zero and seldom grows spontaneously where the mercury drops even to this point. By selecting hardy varieties and following careful cultural methods, however, peaches may be grown profitably in climates where it is occasionally as cold as ten degrees below zero. An isothermal line passing through points in New York where the thermometer marks -10° in an occasional winter sets the limits of peach-growing in New York. The red line in the accompanying map shows the territory in which peach-growing is reasonably safe in New York while the green line shows the outside limits of the industry as determined by cold.

Even in the favored peach-regions of New York, winter-injury is a matter of vital importance to the peach-industry and growers seek means to avoid or check it. The problem is not an insurmountable one, for here and there are

orchards and varieties which suffer little injury though possibly adjoining others in which trees or buds are wholly or partially killed. There must be reasons for the injury in the one and not in the other. These, the New York Agricultural Experiment Station made an attempt to discover a few years ago in letters addressed to the peach-growers of the State.[255] From the information received, and that gained by observation, we may lay down the following propositions regarding hardiness of the peach in New York.

First.—The soil has much influence on hardiness. The peach must have a warm, dry soil to secure the hardiness inherent in the species. Only in such a soil can trees make a strong, firm, well-matured growth, which is conducive to hardiness. Bottom-heat seems especially necessary to secure a growth that will withstand cold and for this reason gravelly and stony soils, since they hold heat well, make good peach-lands. So, too, a gravelly subsoil seems to provide the proper root-environment for the peach-tree and if this be present it matters little, so far as hardiness is concerned, whether it be overlaid with sand, gravel, loam, a light clay or combinations of these.



MAP OF THE STATE OF NEW YORK

Second.—The amount of moisture in the soil in the winter affects the hardiness of the peach. Either extreme of moisture, excessive wetness or excessive dryness, gives favorable conditions for winter-killing. A wet soil freezes deeply and trees standing in it are sappy throughout the winter. Cold, alternating with warm weather, or accompanied with dry winds, causes excessive evaporation from trees and if the soil be so dry as not to furnish moisture to replace the water evaporated, winter-injury ensues. When twigs and buds shrivel in winter, whether from lack of water or lack of maturity, winter-injury almost invariably follows.

Third.—Fertilizers may have a helpful or a harmful effect as regards hardiness of tree. When fertilizers cause a heavy, rank, soft growth, they undoubtedly make the trees more susceptible to winter-injury. On the other hand, trees suffer as much or more from cold if underfed than if overfed. Nothing is more certain than that vigorous growth in early summer can be made of great service in counteracting cold and that half-starved trees, or those which have been allowed to bear too heavily, suffer most from freezing.

Fourth.—Cover-crops protect trees from cold. Case after case can be cited of orchards with cover-crops surviving a cold winter when nearby orchards without the muffler of vegetation, leaves and snow were killed. Possibly the cover-crop is the most effective treatment of the peach-orchard to avoid winter-killing, acting as a cover to protect the roots from cold, causing the trees to ripen their wood quickly and thoroughly and assisting in regulating the supply of moisture.

Fifth.—Low-headed trees suffer less in both trunks and branches from winter-injury than high-headed trees. Buds, however, often survive on the higher branches and not on the lower ones. The low-headed trees are less injured probably because the wood loses less moisture by the evaporation from the effects of winds than do high-headed

trees; because the trunk at least is better protected from the sun and hence suffers less from sunscald, one of the effects of freezing and thawing; and because, for some reason or other, low-headed trees seem to be more vigorous than high-headed trees.

Sixth.—Wind-breaks furnish small protection against cold to either trees or buds. The value of a wind-break depends largely upon the topography of the land. A wind-break so planted as wholly to check currents of air is detrimental so far as cold is concerned; so planted as to deflect the current of air they may become of value in keeping off frosts. More often than not, however, they seriously check atmospheric drainage and the damage by frost is greater.

Seventh.—Young peach-trees suffer more than old trees, probably because the young trees do not mature their wood as well as the older ones. There are, however, many exceptions to the statement that young trees are less hardy to cold than old ones. Old trees are often forced to produce large quantities of new wood susceptible to winter-killing, while, on the other hand, the superabundant growth of young trees can be kept down by orchard-treatment. Old trees possessing low vitality are less hardy than vigorous, young trees. Thus, trees suffering from the ravages of borers, leaf-curl or other fungus troubles suffer most from cold. While young trees are more susceptible to freezing than old ones, yet they are much more likely to recover, if recovery be possible, and their return to a normal condition is more rapid.

Eighth.—What degree of cold will kill peach-trees? Twenty degrees below zero under the best of conditions kills the peach. Depending upon the condition in which the trees begin the winter, however, the trees may be killed by any temperature between zero and -20°. The following are the conditions unfavorable to withstanding cold, in about the order of importance: Immaturity of wood; lack of protection of roots by snow or cover-crop; poor drainage; overbearing in the preceding year; lack of vitality from ravages of insects, or fungi or from infertility of soil; susceptibility of

variety to cold.

Ninth.—What degree of cold will kill peach-buds? Much depends upon the condition of the buds. Fifteen degrees below zero seems to be the limit that peach-buds can stand even when all conditions are favorable. The chief factors influencing tenderness of buds are maturity of buds, variety, and the time at which buds finish their resting period.

Tenth.—Small-growing varieties with compact heads are hardier than the free-growing sorts with large heads. The following varieties are named as compact in growth and hence hardier than the average: Chili, Crosby, Gold Drop, Barnard, Kalamazoo, Triumph, Wager and Fitzgerald.

Eleventh.—In New York the varieties Crosby, Chili, Stevens, Gold Drop and Elberta are named as most hardy in wood. As most tender in wood Early Crawford, Late Crawford, Chairs, St. John and Niagara are named. Crosby, Chili, Triumph, Gold Drop, Stevens and Kalamazoo are most hardy in bud. Early Crawford, Late Crawford, Chairs, Reeves and Elberta are most tender in bud.

The average date at which the last killing frost occurs in the spring also determines the limit in latitude or altitude at which the peach can be grown. Even in the favored peach-regions of New York, records bring out the fact that killing frosts must be expected occasionally to destroy the peach-crop and there are few years indeed in which frost does not take heavy toll in the State as a whole. In the twenty-five year period beginning with 1881 and ending with 1905, the peach-crop was destroyed or seriously injured over a large part of New York in thirteen seasons.[256] Little or nothing is done in New York to protect the peach from frosts. Truth is, not much can be done. Whitewashing trees delays blooming time and in some seasons might prevent injury from late frosts but it is too uncertain and too costly to be worth putting in practice. Wind-breaks as often favor the frost as the tree. Smudging is too expensive for the extensive system of peach-orcharding practiced in the East. Failure due to frost may be expected, then, when the commonly

recognized precautions in selecting frost-proof sites are not recognized.

The limits of peach-culture in New York are also determined by early fall frosts and by the length of the growing season, though both are less important than the winter-climate and late frosts in the spring. The peach-grower must be able to synchronize three of these phases of climate, spring frosts, fall frosts and length of summer season, with the blooming and ripening of peaches,—to do which he must have weather data and the dates of blooming and ripening of varieties of peaches. The necessary data as to the average dates of spring and fall frosts and the length of the growing season can be obtained from the nearest local weather bureau and in the accompanying table the blooming and ripening seasons of 181 varieties of peaches grown at the New York Agricultural Experiment Station are given for the years 1910 to 1914. Blooming and ripening dates vary in the several peach-regions in the State so that to make use of the data from this Station consideration must be given to the latitude, altitude and local environment of the peach-orchard.

The latitude of the Smith Astronomical Observatory, a quarter of a mile from the Station orchards, is 42° 52' 46.2"; the altitude of the orchards is from five hundred to five hundred and twenty-five feet above the sea level. The soil is a loamy but rather cold clay; the orchards lie about a mile west of Seneca Lake, a body of water forty miles in length and from one to three and one-half miles in width and more than six hundred feet deep. The lake has frozen over but a few times since the region was settled, over a hundred years ago, and has a very beneficial influence on the adjacent country in lessening the cold of winter and the heat of summer and in preventing early blooming.

The blooming period is that of full bloom. The data were taken from trees grown under normal conditions as to pruning, distance apart, and as to all other factors which might influence the blooming period. There is a variation of several days between the time of full bloom of the different

varieties of peaches. These differences can be utilized in selecting sorts to avoid injury from frost.

BLOOMING PERIODS AND SEASON OF RIPENING OF P

	Blooming period					S	
	Very early	Early	Mid-season	Late	Very late	Very early	Ea
Abundance		*					
Admiral Dewey			*				
Ailsworth			*				
Albright Cling			*				
Alexander		*				*	
Alton		*					
Amelia			*				
Ameliaberta				*			
Arkansas			*				
Arp			*				
Athens			*				
Augbert			*				
Banner				*			
Barber			*				
Beatrice			*				
Belle		*					

BLOOMING PERIODS AND SEASON OF RIPENING OF PE

Continued

	Blooming period					S	
	Very early	Early	Mid-season	Late	Very late	Very early	Ea
Berenice			*				
Bilyeu		*					
Bishop			*				
Blood Cling			*				
Blood Leaf			*				
Bokhara			*				

Bonanza			*				
Brandywine			*				
Bray Rareripe			*				
Brigdon			*				
Briggs			*				
Burke			*				
Butler Late		*					
Buttram			*				
Canada			*			*	
Capps			*				
Captain Ede					*		
Carman			*				
Champion			*				
Chairs				*			
Chili			*				
Chinese Cling			*				
Chinese Free		*					
Christiana			*				
Clarissa			*				
Clifton Park		*					
Conkling				*			
Connecticut			*				
Connet			*				
Coolidge			*				
Crosby			*				
Crothers		*					
Davidson		*					
Delaware			*				
Denton		*					
Dr. Burton			*				
Dulce				*			
Early Charlotte			*				
Early Crawford			*				
Early Michigan		*					
Early York					*		
Edgemont			*				

Elberta			*				
Emma			*				
Engle			*				
Eureka		*					
Family Favorite		*					
Fitzgerald			*				
Ford Late		*					

BLOOMING PERIODS AND SEASON OF RIPENING OF PE

Continued

	Blooming period					S	
	Very early	**Early**	**Mid-season**	**Late**	**Very late**	**Very early**	**Ea**
Foster			*				
Fox				*			
Frances				*			
Frederica			*				
Geary			*				
General Lee			*				
George IV			*				
Gold Drop		*					
Gold Dust			*				
Gold Mine			*				
Gordon				*			
Governor Garland			*				
Governor Hogg			*				
Greensboro		*					
Guinn			*				
Hale Early			*				
Heath Cling			*				
Heath Free			*				
Hiley			*				
Honest John			*				
Horton River		*					
Hynds Yellow			*				

Hynes			*				
Illinois			*				
Ingold				*			
Iron Mountain				*			
Jackson				*			
Jennie Worthen			*				
Jennings			*				
Kalamazoo			*				
Klondike			*				
Lamont			*				
Large York			*				
Late Crawford			*				
Late Elberta			*				
Late Rareripe			*				
Levy			*				
Lodge		*					
Lola		*					
Lord Palmerston		*					
Lorentz			*				
McCollister			*				
McKay Late			*				
Mamie Ross		*					
Markham			*				
Mathews			*				
May Lee			*				
Maule Early			*				
Millhiser			*				

BLOOMING PERIODS AND SEASON OF RIPENING OF PE

Continued

	Blooming period					S	
	Very early	**Early**	**Mid-season**	**Late**	**Very late**	**Very early**	**Ea**
Miner Wonder			*				
Moore Favorite				*			
Morris White			*				

Mountain Rose			*				
Munson Free			*				
Niagra			*				
Northboro		*					
Oldmixon Cling			*				
Oldmixon Free			*				
Opulent			*				
Oriole			*				
Orleans				*			
Parsons Early			*				
Pearce Yellow			*				
Pearson	*						
Perfection			*				
Philip Horton					*		
Picquet			*				
Potter				*			
Prolific		*					
Ray			*				
Red Bird			*				
Red Bird Cling			*				
Red Cheek Melocoton			*				
Reeves				*			
Rivers		*					
Rudings Late			*				
Russell		*					
St. John			*				
Salwey			*				
Shumaker		*				*	
Shipley Late			*				
Simmons					*		
Slappey					*		
Smock			*				
Sneed			*			*	
Steadly				*			
Strout		*				*	

Stump			*				
Summer Snow			*				
Surpasse			*				
Surprise			*				
Susquehanna			*				
Switzerland			*				
Thurber			*				
Tiebout			*				
Tilloston				*			
Triumph		*					
Troth			*				

BLOOMING PERIODS AND SEASON OF RIPENING OF PE

Continued

	Blooming period					S	
	Very early	**Early**	**Mid-season**	**Late**	**Very late**	**Very early**	**Ea**
Victor		*				*	
Waddell			*				
Wager			*				
Walker			*				
Ward			*				
Waterloo			*			*	
Weaver			*				
Wheatland				*			
Wilkins			*				
Willard			*				
Willett			*				
Williams			*				
Wonderful				*			
Worlds Fair				*		*	
Worrell				*			
Yellow Rareripe			*				
Yellow Swan				*			

The peach seldom suffers from hot weather in New York.

The fruit is sometimes injured in the full blaze of the sun but the foliage usually furnishes ample protection against such injury. On the other hand, for a finely finished product the peach must have an unclouded sun and ample air, these conditions giving high color and full flavor.

The peach requires less moisture than most other fruits—its original home was on the desert's edge in Asia. In New York the rainfall is usually quite sufficient in all peach-regions for this crop, the exception being, possibly, in the southern part of the Central Lakes region, where, in the lands adapted to the peach, the soil is often thin and drought, season after season, lays heavily on the land. The peach in New York more often suffers from too much rain than too little. Cold, wet weather in blooming time is the fruit-grower's vernal bane in this State and rain not infrequently prevents a set of peaches even in localities where the spring rainfall is light. Monthly and seasonal "means" of precipitation, especially of the month of May, are of considerable importance in determining the desirability of a locality for peaches.

There are several other phases of climate usually of but local application which sometimes become of vital importance to the peach-grower and must receive attention in selecting an orchard-site. The direction, force and frequency of prevailing winds during the blooming and ripening periods; the liability to hail storms; the amount of cloudiness in the summer months; the nature and degree of seasonal variations; the degree of humidity of the atmosphere as related to fungus diseases, especially the dreaded brown-rot; and the frequency of drouths are all problems to be solved before planting the peach.

SOILS FOR PEACHES

After climate, soil has been the next most potent natural influence in determining the location of the peach-regions of the State and of individual orchards in the several regions. The peach, of all fruits, is most particular as to soils; though, and this seems not generally understood, the

physical condition of the land is quite as important as the kind of soil. That is, the peach grows well on a rather wide range of soils if the land be well drained, well aerated and if it hold heat. All subsequent treatment fails, whatever the soil, if the root-run be impeded by water or lack of air and if there be not the stimulus of considerable bottom-heat. These physical conditions modify greatly what is to be said in the next paragraph in regard to the kind of soil.

In New York the peach thrives best on a light, free-working sandy or gravelly loam but there are many good peach-orchards in gravelly and stony clays—gravel and stone furnishing drainage and aeration and holding heat. Perhaps, in this State, the light types of soil are too often chosen on the theory that the peach will grow on any light, sandy soil. Not so, for the peach will not grow on wind-blown, water-washed sands; on sand banks, in sand pits, on quicksands, on old sandbars or on pure quartz sands, though it is to be found planted on all of these. Nor will the peach flourish on sandy soils at all unless there be a fair admixture of clay and decomposed vegetable matter and the whole underlain at a depth of not more than three or four feet with a clay subsoil or stone which must have natural drainage. The clay subsoil must not come nearer to the surface than ten or twelve inches while bed rock ought not, at the very least, be nearer than twenty inches. So qualified, sandy soils are ideal soils for peaches in New York. Some of the best peach-lands in the State are exceedingly stony, the stones being no detriment except in making the land difficult to till.

The peach is conspicuous among fruits for its ability to nourish itself where the food supply is meagre—indeed it is the richest resource of fruit-growers on soils deficient in the most important elements of plant-food. This does not mean that peach-soils are cheap soils. Few other crops thrive on peach-soils, which make them of little value except for this fruit, but good peach-soils are so scarce that once their adaptabilities are discovered they are seldom cheap. Peach-soils, as a rule, are but moderately fertile. When too fertile, especially when rich in nitrogen, the foliage is dense, the wood-growth is great, the season's wood does not mature,

the set of fruit is small, and the peaches lack size, color and flavor. But if not rich, never poor. On a good peach-soil the trees should make a relatively small, compact growth of firm wood which each season ripens thoroughly; and, barring accidents, they should be annually fruitful of large, highly-colored, well-flavored, properly-shaped peaches covered with sparse and short pubescence. The fertilization of peach-soils is to be considered in a separate topic.

We have been generalizing as to the adaptabilities of peaches to soils. Peach-growing, through keen competition and the great pleasure that a finely finished product gives the grower, has become a fine art. Now, in the refinement of the industry, generalizations as to peach-soils are not sufficient. Growers must find out what particular varieties grow best in their particular soil. To be sure, there are cosmopolitan varieties, Elberta for example, which thrive in a diversity of soils, but, for most part, each distinct variety or type of varieties has special soil preferences the discovery of which has often made a man a successful peach-grower. The peculiarities which adapt a soil to a variety are not analyzable but appear to peach-growers through intuition or experiment.

Some fruits are made to grow in uncongenial soils by working them on stocks adapted to the soil. Thus, the peach may be worked on plum-stocks for heavy, clay soils. Little, however, has been done in forcing the peach to adapt itself to a soil by consorting varieties and stocks. There is no doubt, however, but that much may be done when the adaptabilities of cions to stocks and stocks to soil are better known.

LOCATIONS AND SITES FOR PEACH-ORCHARDS

That peach-growing is not capable of equal development in all of the agricultural regions of the country and State appears in page after page of the history of this fruit. Climate and soil, as we have tried to show, are the great determinants of the large geographical peach-areas but

beside these there are several other factors influencing the formation of peach-growing communities; as, transportation facilities, markets, labor, ability to make and dispose of by-products, selling organizations, local climate and so on. The economic factors just mentioned, as they apply to the establishment of peach-belts, have received sufficient notice in the history of the peach-industry in the United States, but these, together with several natural factors, need a few words in their local application to individual plantations under the head of locations and sites for peach-orchards—the location having to do with the general surroundings and the site with the particular piece of land to be planted.

The dominant considerations in placing commercial peach-orchards in the peach-zones in New York seem now to be economic ones. Natural conditions are so favorable in any of the recognized peach-districts of the State and obstacles so easily overcome by those who possess common knowledge of peach-growing, that a crop comes almost as a gift from nature. Natural advantages are more common than man-made ones; so that suitable locations are mostly to be sought for in the centers of peach-growing near a shipping point where the haul is short, the freight service prompt, regular, efficient, with low freight rates and refrigerator service, where labor is abundant, and, lastly and very important, where the markets are so placed that they are not controlled by growers in regions more advantageously situated.

Advantages offered by local markets now determine the placing of a good many peach-orchards in New York. A location where there is a good local market and at the same time ample facilities for shipping to distant markets is ideal, for it enables the grower to dispose of over-ripe and second-rate peaches that otherwise go to the dump. The local consumer, however, usually suffers. Prosperous towns and cities have added much to the prosperity of nearby peach-districts in this State but generally these local markets have not received the attention from growers they deserve. The product sent to the local markets is usually much poorer than that shipped to a distance. On the other hand, growers

maintain that customers in towns in the peach-belts will not pay for good fruit.

Nowhere are the favorable influences of water more admirably illustrated than in the peach-orchards of New York, all of the peach-districts being bounded on one or more sides by bodies of water. The great majority of the orchards are planted on the shores of one of the two Great Lakes, slope toward one of the several Finger Lakes, or are near flowing water in the Hudson. The equalizing effects of bodies of water on temperature—warmer winters and cooler summers—and the effects of the air-currents from bodies of water are so well known that comment is not necessary. It is worth while noting, however, the distance to which the benign influences of water are felt in the New York peach-districts. In the Hudson Valley the peach can be grown only a-mile or two from the river with safety from frosts and freezes. With few exceptions, the peach-orchards about the Central Lakes overlook the water. On the Great Lakes peach-plantations are found from one to six or eight miles from the water, depending upon the height of the land, and the amount and direction of the slope.

Usually the peach-plantations are some distance above the lakes or river, generally from one hundred to three hundred feet. When the altitude is much higher, immunity from frost and winter freezes ceases, probably because the atmosphere is rarer and no doubt drier so that heat radiates from the land rapidly inducing frostiness rather than frostlessness. As the height increases, too, the sweep of the wind increases. But still, one is often surprised to find vigorous orchards perched high above the water, the sport of every wind, so that altitude in peach-growing must be determined by experiment.

The site, as we choose to consider it, is the situation with especial regard to the particular plot of ground set aside for the peach-orchard—altitude, soil, slope, exposure, local climate and all of the natural factors which favor peach-growing. All these have been touched upon in their relation to peach-districts and locations within the districts but we

need to particularize a little more closely to show how some of these factors affect individual orchards.

The best peach-orchards in New York are invariably higher than the surrounding country, such orchards having the two great advantages of soil-drainage and atmospheric drainage. Rolling land seems not to be at all essential, for many splendid plantations are on flat lands which, however, in all cases have an elevation on one or more boundaries above the surrounding country. The more pronounced the elevation, within limits, the better, though sharp declines of a few feet, ten or fifteen, serve for small orchards as do gentle slopes of slightly higher elevation. Ideal spots where the peach never fails are found in bits of tillable land, usually too small for large commercial ventures, in the rough and steep gulches running down from the highlands to the lakes, occasionally on the Ontario and Erie shores, but more often in the more broken country about the Finger Lakes. In such cases the rigors of seasons are seldom felt. We do not recall seeing a single successful peach-orchard in the State shut in on all sides by higher land—frosts and freezes would soon play havoc in such a situation.

The exposure of a peach-plantation is, without doubt, a matter of some importance in choosing a site but the value of particular exposures to avoid frosts and secure early, late, or highly colored fruits has been greatly over-emphasized by horticultural writers if New York orchards be taken as criteria. The theory is most plausible. It runs, in brief: Northward slopes are best for peaches in frosty regions since on such slopes plants remain dormant longest thereby often escaping spring frosts. Southward slopes should be selected for early varieties, the sun and warmth of such an exposure supposedly hastening the ripening time. Now the facts are, as we observe them, the peach blossoms with the first burst of spring warmth whether the slope face north or south; and whether north or south makes little difference in ripening because the intense heat of our New York summers submerges slight differences appearing early in the season because of exposure. About all that shows in the matter of exposure for peach-orchards, in this State is that the best

slopes are toward the water to secure the effects that dictate the location of orchards near water.

One comes across many peach-orchards in New York in the shelter of high hills or heavy forests for which the trees usually show gratitude in vigor and fruitfulness, provided hill or wood does not shade the orchard too much. Hills and woods provide desirable shelter only when so situated as to protect against winter winds and summer storms. A most remarkable example of winter protection by a forest was to be seen a few years ago on the somewhat noted fruit-farm of Mr. Grant Hitchings near South Onondaga where peaches are at the limit as regards temperature. Here was a peach-orchard half of which was terribly injured by winter-killing and the other half, protected by a forest a quarter-mile away, was wholly unhurt. Yet windbreaks have seldom proved satisfactory, usually developing as many or more disadvantages than advantages.

STOCKS AND THE PROPAGATION OF PEACHES

The peach-tree, in common with all other fruit-trees, is a consort of two individuals—a named variety budded on an unnamed seedling. So far, the industry has been carried on with little or no regard to the effects the seedling may have on the variety to which it is budded, yet there can be no doubt but that the fruiting top is influenced by the stock upon which it is worked. The present nursery practice is to buy peach-pits, whatsoever they may be, at the lowest price, sow them in nursery rows and at the proper time bud to named varieties. Time was, in the East at least, when the pits came from the run-wild peaches of the southern states from which grew vigorous, healthy and fairly uniform seedlings but it is to be feared that most of the pits, the country over, now come from the canneries and from varieties so diverse in vigor, habit and season that the resulting seedlings are variable and must make variable the trees grown upon them. It is greatly to be regretted that the practice of growing peach stock from southern wild seed has been departed from though even a better practice might

be to grow trees from some vigorous variety or, possibly, a different species, as *Prunus davidiana*, which is now largely used in China.

Prunus davidiana has, as we have stated in discussing the species, been tried very widely in the United States and seems to have many excellent qualities for a stock. The seedlings are vigorous, healthy, hardy, bud readily and the seeds keep well and sprout very uniformly so that usually there is a good stand. Perhaps the character that commends it most highly at present, however, is the hardiness of the species. It is proving hardy in colder regions than those where the peach is now a commercial crop, so that, wherever this fruit as now grown is at the mercy of the winter, *Prunus davidiana* is a promising substitute for the hit-and-miss stocks now used. The drawbacks to the use of the Chinese species are that it does not bear fruits of any value whatsoever so that the crop would have to be grown for the pits alone and, because of very early blossoming, the trees bear only in most favored situations as regards spring frosts.

Peach-on-peach is now the rule in eastern America but in Europe, and to a lesser extent on the Pacific slope, several other species are used. Thus, the hard-shelled Sweet Almond has long been used in Europe and is found to make a hardy, strong stock in dry soils in California. The Damson and St. Julian plums have been used with varying satisfaction in moist and heavy soils in America; and in Europe, these, with the Muscle and Pear plums, are common stocks for the peach. Peaches are dwarfed somewhat by all plum-stocks. The Myrobalan plum, very commonly used for nearly all cultivated plums, was at one time recommended for the peach but turned out to be very unsatisfactory and is now practically never used. The nectarine, Peento and Honey peaches are budded upon seedling peaches.

A stock greatly desired in peach-growing is one that will dwarf the tree sufficiently so that winter-protection for buds and wood is practicable. The late E. S. Goff of Wisconsin

tried for some years to find such a stock. He reports[257] working several hundred buds on the dwarf Flowering-Almond without a single union. Better success attended efforts with the peach on the dwarf Sand Cherry, *Prunus besseyii*, of the Rocky Mountains. Of the results, as he dismisses the flowering-almond, he says:

"I next tried a form of the Sand Cherry, grown from pits procured in western Iowa. This shrub is quite dwarf, attaining a height of only two or three feet. With this stock I have been more successful. I inserted a few buds in it in 1893, and while I had less expectation of success than with the Flowering Almond, I succeeded much better. The Peach grew vigorously on this stock, and by the second year had attained the height of about five feet. The past season, although the best growing season we have had for some years, the Peach-trees on this stock have scarcely increased in height. They have branched rather thickly, and at present are well filled with flower-buds, from which I infer that they will probably not grow larger than they now are. At this height the trees are readily protected by digging away sufficient earth from the roots, so that the trunk may be bent down readily, when the whole is covered with earth. The trees blossomed the past spring and set some fruit, though the fruit failed to mature."

In the same report, Professor Goff mentions trying *Prunus subcordata* and a dwarf form of *Prunus maritima* as stocks for the peach but with what success does not appear. Dwarf stocks for peaches offer an invitation to experiment which it is hoped some one will accept. Such an experiment requires little more than land, time and material, for it is one of those cases in which nothing succeeds like success and nothing fails like failure so that he who runs would be able to read.

Tied up with stocks is another problem. Much is being said about the necessity of selecting buds from trees having certain characters best developed—as vigor or productiveness; large, handsome or well-flavored fruits; or immunity to some disease. As yet there is no body of facts

to substantiate the claims of those who maintain that fruits can be improved by bud-selection nor does present knowledge suggest that such a procedure is a means of fruit-improvement. Quite to the contrary the histories of varieties of peaches, as they may be read in this text, suggest that, "Like begets like," while in the light of science a plant propagated by buds is essentially complete in its heredity. Yet the whole question is still an open one and fruit-growers are waiting to know whether putting buds through the sieve of selection is worth while. The advocates of improving orchards by bud-selection say little, however, about selecting stocks. There is nothing more certain than that the stock greatly influences the character of the tree. The modifications so brought about probably appear and disappear with the individual—at least we should be the last in the world to hold that peaches could be permanently modified by the stocks. The point is, if buds are selected for the tops, the stocks should be selected also. To do otherwise is to imitate the ostrich—head in the sand, body exposed.

The peach is easy to propagate. Let it be said before going into the matter, however, that practically all of the trees in the peach-orchards in New York were grown in nurseries and that it is probably best to let the propagation of trees continue a business for the specialist. Still, it is well that the grower know in a general way the operations in the propagation of the peach-tree. We wish, too, to put on record the nursery methods used in propagating this fruit at this period in the history of the peach.

In planting peach-pits, art imitates and quickens nature. In nature the seeds are self-sown as they ripen, the succulent coat keeping the hard envelope containing the kernel from becoming stony so that the young plant bursts forth at the proper season. But in cleaning and drying seeds for sale and transportation, they become hard and dry and must be subjected to somewhat special treatment before planting. In mild climates the pits are soaked or kept moist in sand, earth or other medium until softened and are then planted in the fall in rows where the trees are to be grown. In cold climates the stones are subjected to freezing, thereby

cracking them, after which the kernels are sown in the spring. To freeze, the seeds are placed in strata with moist sand, saw-dust, straw or other material supplying an abundance of moisture, and exposed to the freezing weather of winter which usually frees the kernel from its envelope. The kernels are then sifted from the stones and sand and sowed in rows four feet apart. Pits which the frost does not open must be cracked by hand, though this tedious operation is usually omitted by large nurseries.

The seeds are planted in a rich, well-drained soil, preferably a light loam with good bottom. By late mid-summer in New York the stocks are ready to bud, though often the operation extends into September. The peach is universally budded in America, grafting being most difficult, though trees can be grown from root-cuttings. The method of budding is the common T, or shield-bud. The buds "take" in a week or two, but remain dormant until the next spring when the top of the stock above the bud is removed to give the cion right of way. At one year from the bud, two years from the seed, in northern climates, the trees are ready to be transplanted in the orchard. In the South and on the Pacific Slope, budding may be done in June, thereby saving a season. These "June buds," however, excepting under the most favorable conditions, in the East at least, are weaklings not nearly so desirable as "summer buds." Occasionally, more particularly in California, summer-budded stocks are planted in the fall or the next spring as "dormant buds." In New York, trees older than one year from the bud are seldom worth planting though occasionally it is necessary to save stocks until their second season before budding.

In budding, the bud-sticks are cut as needed, after which the leaves are trimmed leaving about a quarter of an inch of the stem as a handle to the bud. After trimming, the sticks are wrapped in damp burlap and are taken to the field—once dried, they are worthless. The buds at the end of the bud-stick are discarded, the plump, hard buds near the middle of the stick being the most vigorous. At the point where the bud is to be inserted a T-shaped incision is made, the transverse cut being secured by a rocking motion of the

knife and the vertical one by lightly drawing the knife upward from a point about an inch below the first cut. Before removing the knife a slight twist of the blade loosens the edges better to receive the bud.

The bud is cut from below upward with a drawing motion of the knife. Nearly the entire thickness of the bark is cut at the point of the bud so that it will not crumple when inserted into the stock. Almost no wood is taken with the bud but on the other hand the bud must not be so thin that the soft growing tissue between the bark and wood is injured. The bud is taken between the thumb and forefinger and lifted free from the wood. With the leaf-stem as a handle the bud is inserted into the T-shaped incision and pushed down until its "heel" is flush with the transverse cut. Waxing is not necessary but the bud must be securely tied.

For this purpose raffia is now almost universally used. It is cut into lengths of eighteen or twenty inches and moistened to make it soft and pliable. The strand is first brought firmly across the upper end of the bud to keep it from working out. Beginning then at the bottom of the slit, the raffia is wound smoothly upward covering everything but the "eye" and is tied in a single square knot. This winding must be tight to hold the bud immovably in place. In from two to four weeks, depending on the growth of the stock, the raffia should be cut to prevent its girdling the tree.

In the nursery trade, peach-trees are graded according to caliper or according to height—rarely both since there is a very definite relation between the two. The common sizes by caliper, or diameter of the trunk, are five-, seven- or nine-sixteenths of an inch. According to height, the grades are "three to four foot," "four to five foot," or "five to seven foot." The medium-sized grade is usually the best since fewer trees die in transplanting, they are much easier to handle and, more important, provide a better opportunity for the grower to form the head as he wants it. The smallest grade often has many stunted trees. A first-class tree is free from insects and fungi or the effects of either. Other things being equal, a short, stocky tree is better than a tall,

spindling one; one with many branches better than one with few. The best stamp on a peach-tree, however, is a well-developed root-system—many-branched, well-distributed, fibrous, fresh roots. Practically all peach-trees in New York are dug in the fall and kept in storage through the winter.

THE PEACH-ORCHARD AND ITS CARE

The peach-orchard is the consummation of modern fruit-growing. It is more than a plantation of peach-trees, for it personifies ideals and reflects the personality of the owner. A glance at a peach-orchard and one knows whether the proprietor is lazy or industrious, slovenly or orderly, procrastinating or prompt. An orchard of dingy, unhappy peach-trees is an odious sight in the eyes of a good fruit-grower accustomed to nurturing and fondling his own trees. Tenants seldom succeed in peach-growing. Here is a case in which Cato, the sturdy old Roman farmer, is surely right: "The face of the master is good for the land." The peach in our climate is least able of all fruits to subsist without the aid of man. The best trees in the best soil, if neglected, have a short, miserable and profitless existence. These considerations, then, must bring us to the conclusion that growing peaches differs somewhat from growing other fruits. If not more difficult it is at least a finer and more delicate affair in which the laborer and craftsman working by rule give way to men of higher degree who put thought, intelligence and taste into their work.

New York is very fortunate in having much land in all of its peach-districts that is easily prepared for planting. Growers are not called upon to profane the peach by planting it in a field of boulders as in New England nor amongst stumps as in some southern peach-regions. Growers in the State long ago learned that it is an up-hill task to grow the peach in land not thoroughly fitted at the start. Usually the land is prepared a year in advance by putting in a hoed crop, after which it is plowed deeply in the fall, pulverized thoroughly in the spring and then planted as promptly as possible. Fall-planting is not practicable because of severe losses following from winter-killing.

The peach-orchard is usually laid out in meridians and parallels in New York at intervals of 18 by 18 or 20 by 20 feet, the former requiring 134 and the latter 108 trees. The

topography of the land sometimes gives preference to the triangular system of setting and rich soils or large growing varieties indicate greater distance while poor soils and small trees suggest closer planting. One thing certain, it is poor orcharding to set the trees too closely. Peaches picked in the pleached alleys of a closely set orchard are few, small and poor in quality. Pride in appearance and convenience in working the trees make perfect alignment imperative. The peach readily self-pollinates so that interplanting varieties is not practiced, but, rather, for convenience in harvesting, varieties are set in solid blocks, growers seldom, nowadays, planting more than three or four sorts. Laying out the land, digging holes, trimming roots, setting trees are all kindergarten operations in fruit-growing, well understood by any one qualified to go into peach-growing.

As to varieties, Elberta is now the mainstay of all the peach-districts, coming in as the mid-season crop. Greensboro, Carman, Champion, and Belle, all white-fleshed; and St. John, Fitzgerald, Niagara and Early Crawford, all yellow-fleshed, the two series named in order of ripening, are standard varieties preceding Elberta in the markets. Standard sorts following are, Oldmixon Free, the only white-fleshed sort, and Crosby, Late Crawford, Kalamazoo, Chili, Smock and Salwey, these also named in order of maturity. A large number of new varieties are on probation in the State of which Arp, Lola, Edgemont, Rochester, J. H. Hale and Frances are now most conspicuous. The peach-flora changes rapidly and many of these favorites of today will be the cast-offs of tomorrow.

In the early life of the orchard, until bearing is well established, an inter-crop is a valuable asset in New York peach-orchards; on the other hand, planted in bearing orchards, any other crop than the peach is a heavy liability. While inter-cropping is not peculiar to New York orchards it is probably more practiced in this State than in any other. Few, indeed, are the plantations in this region that do not sustain themselves for the first three or four years of their existence on the crops grown between the trees. These are, or should be, hoed crops like potatoes, cabbage, beans and

cannery crops. He is a sloven, indeed, who would crop his peach-orchard with grass or grain. Along the Hudson, small-fruits are looked upon as permissible, but are everywhere discountenanced in western New York.

Occasionally the peach itself is planted as an inter-crop in apple-orchards. The custom has little to recommend it and is not as common now as it was a few years ago. The objection to the peach as a catch-crop in the apple-orchard is that serious complications arise in orchard-operations, the two fruits often requiring quite different treatment in their care and, in spraying the apple, the peach is almost certain to be more or less injured.

In the matter of cultivation, peach-growers are not in the fog that envelopes and befuddles apple-growers in New York. The peach so luxuriates under thorough cultivation and, on the other hand, the jaundiced leaves and hectic flush of the fruit speak so plainly of evil days when the trees are in sod or unbroken ground that cultivation is universal. Cultivation, as practiced by the best growers, consists of plowing the land in the spring and then frequently stirring the soil until late July or early August. The tools are as diverse as the kinds of soil. Whatever the details, the surface must be kept level, covered with a dust-mulch and free from weeds. In soils that are light, therefore hungry and thirsty, cultivation in the best orchards is almost continuous. To do full duty in such a soil many men cultivate weekly. Disking is sometimes substituted for plowing but this is usually poor policy for the plow buries the mummied peaches that drop in every orchard to scatter countless myriads of spores of brown-rot and so perpetuate this plague of the peach-grower. Winter retreats so sullenly in New York that it is sometimes difficult to find time and weather for early spring plowing so that increasing numbers of peach-growers are plowing their orchards in the fall.

The cover-crop follows the last cultivation. There is a growing suspicion in the State that the value of cover-crops in orchards has been magnified. Comparative tests do not show that trees or small-fruits respond to cover-cropping to

as great an extent as from theory one might expect them to do. Thus, in several experiments being conducted by this Station, apples and grapes give no very appreciable response to the various cover-crops—at least pay but doubtfully for the expense of seed and seeding. While there are no very satisfactory experiments to confirm the assumption, it would seem, however, that the peach of all fruits would be most benefitted by cover-crops. It is patent to all who have had orchard-experience that land is in better tilth when some green crop is turned under in fall or spring; so, too, all know that a cover-crop sowed in mid-summer causes the peach to mature its wood and thus go into the winter in better condition; it is not unreasonable to assume, though it is impossible to secure reliable experimental data to confirm the belief, that cover-crops protect the roots of peaches from winter-killing. Leaving out, then, the doubtful value of the cover-crop in furnishing plant-food to the peach, at least three sufficient reasons make it a necessary adjunct of a peach-orchard.

Several cover-crops are now in general use in the peach-orchards of New York, in order of frequency of use about as follows: Clover, vetch, oats, barley, cow-horn turnip, rape, rye, buckwheat. Combination cover-crops are less popular than formerly, cost of seed being the deterrent. Yet many years of experience at this Station and wide observation in the State, unsubstantiated, however, by any experimental work, lead to the conclusion that some combination of a leguminous and a non-leguminous crop makes the most satisfactory cover-crop for the peach. A half-bushel of oats or barley plus twenty pounds of winter vetch or twelve pounds of red clover is possibly the most satisfactory of all cover-crops for this fruit in New York. Occasionally a change from oats to barley, and clover to vetch should be made and once in four or five years rape or cow-horn turnip should be worked into the rotation.

In the matter of fertilizers, the peach-grower early learns humility. He is no sooner certain that his trees must be fertilized and that he has at last hit upon the right formula than his check plats or his neighbor's orchard convince him

that he is not getting the worth of his money in fertilizers. In eastern New York, peach-orchards are very generally fertilized and rather heavily, the amounts and formulas being nearly as diverse as the men applying them. In western New York, commercial fertilizers are comparatively little used in peach-orchards. Experiments in fertilizing peaches in progress at this Station are inconclusive and there is nothing to offer from the work here as to what the peach needs in the way of plant-food. In the present state of our knowledge, about the best the peach-grower can do is to assume that, if his trees are vigorous, bearing well and making a fair amount of growth, they need no additional plant-food. If they are not in the condition described, look to the drainage, tillage and health of the trees first and the more expensive and less certain fertilization afterward. More and more, in western New York at least, growers are carrying on simple experiments to obtain positive evidence as to what elements of plant-food their trees need.

The following is an example of such an experiment: (1) Acid phosphate to give about 50 lbs. of phosphoric acid to the acre; (2) phosphate as above and muriate of potash to give 100 lbs. of potash to the acre; (3) phosphate and muriate as above and nitrate of soda and dried blood to give 50 lbs. of nitrogen per acre; (4) six tons of stable manure is applied on a fourth plat; (5) a similar plat is left unfertilized for a check.

No fallacy dies harder than that fertilizers will cure yellows. Nitrate of soda is a great rejuvenator of trees suffering from yellows brought on by sod or lack of tillage but no fact in peach-orcharding has been more thoroughly demonstrated than that neither this fertilizer nor any other will in the least benefit trees suffering from true yellows or from the somewhat similar trouble, little-peach.

Of all fruit-trees, pruning is most used with the peach in regulating the development of the tree. In its early years, we may almost say that the peach "lives by the knife." At all stages of growth the vigorous use of the knife is indispensable in keeping the peach in proper bounds, and

yet, rather paradoxically, knife and saw must be used sometime or other in the life of every peach-orchard to stimulate growth or at least to force out new growths. Indispensable as a certain amount of pruning is in training the peach, there is no question in the minds of those who have studied the subject but that it is much more often overdone than underdone. There are no fixed rules in pruning peaches and to discuss in full the diverse theories and practices is not within the range of this exposition. All that can be attempted is briefly to set down what the present practices are in the State.

In transplanting, the peach suffers severe root-pruning, an operation that it does not bear well. Thus deprived of its roots, the young tree must have its top correspondingly diminished. Two practices are in vogue in New York in this curtailment of the top as the trees go from the nursery to the orchard. The most common practice is to cut the young tree back to a whip and then shorten-in the whip. New branches spring freely from this bare stub but these do not always come where they are wanted and often the new wood comes only from the stock. These objections to pruning to a whip have brought about a modification in which the branches are cut back to stubs of two or three buds. In a series of experiments now in progress on the Station grounds it seems certain that the second method is better than the first.

Two forms of top are open to choice—the vase-form, or open-centered tree, and the globe-form, or close-centered tree. In the first the framework of the tree consists of a short trunk, surmounted by four or five main branches ascending obliquely. In the second the trunk is continued above the branches, forming the center of the tree, and, later being headed in, a globe-like head is formed. In New York the vase-form is nearly always chosen. In neither case is the task difficult since the peach springs almost at once into tree-form with a full complement of branches. Beginning with the second year the main branches are shortened back from one-third to one-half their growth, if heading back seem necessary, cutting to upper and inner buds so that the

oblique ascending vase-form is maintained. The pruning of the third season is much the same, except that some of the interior branches should be removed to open up the heads to air and sunshine. The third season's pruning is repeated from year to year, having in mind that the slow-growing, hardy, productive sorts can be pruned much more severely than the free-growing, tender kinds. Open forks are a serious menace and are carefully avoided to lessen the danger of splitting when branches are heavily laden. About the most common mistake is that of cutting out too much wood, thereby inducing so heavy a growth in the parts that remain that winter-killing takes place; at best it makes necessary continued heavy pruning for several seasons to keep the trees in manageable size and shape.

Heading-in as described in the foregoing paragraphs is necessary because the peach bears the bulk of its crop high up on its branches, which are often broken by the weight so that after a bountiful harvest the orchard looks as if a cyclone had swept through it. As the limbs lengthen, too, it becomes increasingly difficult to pick the peaches. Even with annual heading-in the bearing wood eventually gets too far from the ground and the grower may have to resort to decapitating the trees—an operation commonly known by the inapt term "dehorning." When old trees are thus to be rejuvenated the limbs are sawed off during the dormant season to within two feet or thereabouts of the trunk. The tree will then form a new head which will in a season or two set fruit-buds and bear a crop. The orchard may thus very often be renewed or even re-renewed, lengthening its life by several seasons. In thus decapitating trees, however, one season is always lost, sometimes two, and the writer questions if it is not better to give the peach a "merry life and a short one" rather than resort to decapitation to prolong its days. Most growers may well throw dehorning into the rubbish-heap of the not-worth-while.

Occasionally one sees in the State orchards in which the top is sheared to a level plane. This shearing follows a fashion, now happily going out, as it cannot come from any well-thought-out design. It takes but a moment's study of the

sheared tree to see the faults of the method. Strong shoots are cut back too much, weak ones not enough; superfluous shoots are not removed but, to the contrary, multiplied as in shearing a hedge. Heading-in some or all of the shoots may be very necessary but shearing to a line—never.

Summer-pruning is not practiced in New York peach-orchards. No doubt every grower, however, as he goes about among his trees in the growing season cuts back a branch outstripping its neighbors, removes an occasional unruly member or one out of place, pinches here and rubs there, better to train his trees to the ideal he has in mind. Certainly no harm is done by such summer-pruning when the trees are strong and vigorous.

This record of pruning practices in New York cannot be closed without stating that there are growers who do not prune—not only through neglect but as a matter of principle. Chiefly, these are men more accustomed to the other tree-fruits—most of which make a fair showing without pruning—than to the peach. The peach can go a few years unpruned without becoming an abnormal orchard-specimen but left to itself to the prime of life without the reinvigorating and form-giving knife a peach-orchard becomes a woeful spectacle. The limbs crowd, choke and kill each other, except the strongest or those most fortunately placed, which push aloft, bearing at their extremities sparse-foliaged, parasol-like canopies of jaundiced foliage which furnish no protection from the blaze of the sun to the bare, bark-burned, gum-covered trunk and branches. The tree-tops are populous with dead and dying twigs and do not furnish sufficient nutriment for the normal development of fruit or tree. These unpruned peach-orchards, come to old age, are the saddest sights of the country. After the first few crops, when the flush of vigor has passed, they cannot be profitable and it would seem the sooner the axe lays them low the better for the owner. Not to prune the peach is consummate neglect.

Peaches are thinned to improve the fruit that remains, to save the vigor of the tree, and destroy insect- or disease-

infected fruits. Commendable as these objects are, the practice is all too seldom observed in New York. The objections are scarcity and high cost of labor. Still the best growers always thin, doing the work soon after the summer drop which usually occurs six to eight weeks after the blossoming-time and just as the pits in the embryonic fruits begin to harden. It requires good judgment to tell at the time of thinning what will prove superfluity at the harvest. Vigor of tree, variety, fertility and moisture in the soil, the season, diseases and insects, all must be considered. The common advice is to thin the fruits so that they will not be nearer together than from four to six inches but the skillful growers adjust the size of the crop to the orchard and seasonal conditions. Thinning really begins, it should be said, in the winter when the trees are dormant and redundant branches and superfluous wood on the parts remaining are cut out. By delaying winter-pruning until danger of winter-killing is passed many growers save labor in summer-thinning, since, as early as this, fruit-prospects are fore-shadowed.

It is interesting to record that peach-orchards are never top-grafted in New York though it seems to be a matter of rather frequent practice in the South and far West. There are plenty of occasions for working over peach-trees in this State; as, when poor varieties are substituted, or in changes in fashion in peaches, or on finding a variety poorly adapted to orchard-conditions. But under any of these unfortunate circumstances in New York the axe and the grub-hoe make way for a new planting rather than trust to the skill of the grafter. Old peach-trees can, of course, be either budded over or grafted over to a new variety but we take it that a century of experience has demonstrated that changing the whole tree is better than changing the top.

HARVESTING, MARKETING AND PROFITS

The beginning of the Twentieth Century is marked as a period in which commercial affairs in agriculture are being more highly developed than ever before. Temporarily, the

idea of making two blades of grass grow where one grew before is eclipsed by the idea that success in agriculture is quite as much dependent on business management as on large production. We need, then, in *The Peaches of New York* to set down as precisely as possible, as a record of the times, the business side of peach-growing. This we conceive, so far as the fruit-grower is concerned, consists of matters having to do with growing, picking, grading, packing, cooling and shipping, while the affairs of the several go-betweens from producer to consumer belong to merchanting rather than orcharding. Not that the grower is without interest in the selling of his products—far from it. There is no better ballast to keep the fruit-dealer steady than knowledge of all of his dealings on the part of the fruit-grower.

Among Caucasians green peaches have a bad reputation. Adage, prose and poetry bear witness that any curtailment of the sun's maturing function in this fruit is going against nature and makes an altogether unwholesome product. But in China and Japan the peach is habitually eaten green and hard. Fungi play such havoc with peaches in Oriental countries that the fruit must be devoured green or the crop is lost. A green peach is quite as palatable, nutritious and wholesome as a green olive. The ripe product of the one is just as superior to the green as is the other. All this not to point a moral or adorn a tale but to bring out the fact that the green peach is an edible fruit and that the annual performance of health inspectors in all large markets in condemning carloads of green peaches as unfit for food while green olives, apples, pears, plums, cherries and grapes pass muster, is an unjust discrimination against the peach. The peach is, of course, best when ripe, soft, melting and luscious, but so are all other fruits and all should be accorded the same treatment by consumers and health inspectors.

The peach in western countries is picked for market when it has attained full size and is passing from the hard state of the green peach to the softer mature condition. The picker tells by eye and by pressure of the peach between thumb and finger when a peach is ready for picking. White-fleshed

peaches are green in color when picked but turn to greenish-white or yellowish-white as maturity proceeds; yellow-fleshed turn from yellowish-green to lemon or orange-yellow. The full flavor of the ripe peach develops only when the fruit ripens on the tree but ripe fruit cannot be shipped and peaches are therefore picked at the stage in advance of full maturity that will permit them to reach the market at maturity—one or two days in New York, six or seven in California. Peach-picking is a delicate business for it is equally disastrous to gather the crop before it is ripe enough or to delay a day or two too long.

Few picking appliances are needed for the peach in New York since the trees are trained so low most of the fruit can be picked from the ground or from a short step-ladder. The knack of peach-picking consists of tipping the fruit sidewise with a light twist which releases it from the branch without the bruise of a direct pull. The care in handling depends largely on the temperament of the picker—a coarse, careless ruffian cannot handle the tender-fleshed peach with the consideration it deserves. Women are much employed in picking peaches. Two systems of managing pickers are in vogue: They are employed by the day in charge of a competent foreman; or the picker is supplied with tickets or tally cards and is paid by the basket. The day-system is commonest and most satisfactory. When peach-picking is in full swing a man can pick 100 half-bushel baskets in a day of sorts like Elberta in which the fruits ripen at the same time, but the quantity grows smaller and smaller as the varieties decrease in size and increase in length of ripening-time. Peaches are usually graded and packed indoors, being brought under cover in special picking receptacles into which the fruit is put as it comes from the tree. Packing indoors is a comparatively modern innovation, the method a decade or two ago being to pack in the field as is occasionally done now, more especially for local markets.

Grading peaches is still a matter of local or personal practice in New York as it is the country over. No state seems yet to have regulated by law the grading of peaches, as several have done with the apple. The need is quite as

great for such laws for one fruit as for the other, and no doubt grading peaches in New York will soon be regulated by the strong arm of the law as is grading apples. The essentials in good grading as now practiced are fair or large size for the variety, high and characteristic color, uniformity in size and color, freedom from bruises and insect and fungus injuries, and full and characteristic flavor for the variety. Peaches vary much in shape and pubescence depending on soil and climate—so much that through variations in these characters the identity of varieties is sometimes lost—but grading is not yet sufficiently refined to take note of either character. Good growers sort into at least three grades, counting culls.

Not solely as a matter of record but to inspire further progress as well, we record the fact that New York is behind the times in the package used in sending peaches to market. The antiquated Delaware package, a truncated cone holding a third- or a half-bushel, is now the most popular package with growers. This package is a poor carrier, clumsy and easily tipped over, its sides are so thin that the fruit bruises, it is easily opened by thieves and it is unattractive. The reason for its popularity among growers may be guessed when its sole merit is named—peaches need less sorting and are easily packed in this Delaware package. The grand jury of consumers, the country over, has declared for a smaller package for dessert peaches than the Delaware truncated cone and a larger one for culinary peaches. Better in every way, and more and more used by growers in the State are the several sizes of climax baskets. The best of all peach-packages, the Georgia carrier, is just coming into use in New York. It is a crate holding six four-quart till-baskets. These till-baskets are dainty and attractive, fulfilling well the adage "good goods come in small packages." The Georgia carrier is conceded by all to hold the palm of merit for long-distance shipments of dessert peaches. The bushel and half-bushel, round-bottom, farm type, the substantial cover supported by a stout peg between cover and bottom, are being more and more used for shipping the home canning supply. In western New York the bushel basket, if not now, promises soon to be the most popular of all peach-

packages.

Our common commercial container, the Delaware basket, is seldom a packed package. The peaches are turned in, assorted somewhat as to size, and the top layer faced with the red cheek up. The climax basket requires more care in packing. The fruit must be arranged in layers and tiers according to the size of peach and basket. Skill and not a little ingenuity are displayed in packing the dainty till-baskets for the Georgia carrier, all depending on the size, uniformity and shape of the peach. The peaches are placed in rows and tiers which regularly alternate and cover much as in a box of packed apples. The peach-harvest in New York usually comes in pleasant weather so that the packing house is generally but a screen from the blaze of the sun, put up in the orchard. The packages, both before and after filling, are, of course, kept clean and dry under permanent cover.

The peach is so handsome and delectable, for that matter so pleasing to all of the senses, that every fruit-grower takes special pride in a finely-finished product going to market and more often than with any other fruit advertises his wares with a label. These show original ownership, where grown, often the variety, always the grade and usually advertise the whole farm and its product. Some growers have their labels registered in the United States Patent Office.

New York peach-growers profit more and more from cold-storage. Peaches can be kept for a few weeks in storage at the freezing point or just above but they soon lose texture and flavor on coming out and cannot compete with fresh peaches which reach the markets every day from some source from May until November. Precooling before shipment, now but coming into practice, is of inestimable value in the heat of the summer. The fruit is quickly packed and then cooled to 40° F. in a central station or by forcing cold air through loaded cars, and then goes under refrigeration to destination. In eastern New York peaches go mostly to New York City by night-boat but refrigerator

service is an absolute necessity for western New York and has been very generally installed by the railroads of the region. The precooling station is to be the next step in advance.

DISTRIBUTION OF THE NEW YORK PEACH-CROP

In the past the great problems of peach-growers, as of those who grow other agricultural products, have been cultural in their essential character. Attention to problems of distribution have had to do with the opening up of new regions of production—the expansion of the agricultural domain; with developing means of transportation—railroad lines, steamboat service, canals; and in developing centers of consumption in the cities and towns which have been springing up everywhere in the habitable parts of America. Until recent years, little has been done in studying the commercial disposition of agricultural products. Now, however, studies are being made everywhere of the distributive systems by which products get to market and to determine what share of the consumer's price should go to the producer and what to the distributor. Everywhere the importance of these economic studies is recognized and no producer sees more clearly than the New York peach-grower the need of improvement in handling products to distribute risks, reduce risks, decrease the numbers in the vast armies of middlemen and in every way improve defective distribution. But these questions belong to specialists—economists. We wish here only to furnish a few fundamental data which may be of use to all concerned in the distribution of the peach-crop.

In the economic study of the peach-industry in the State it is essential to know the volume of the product in the State; what proportion of the total different sections produce; how the crop is distributed in consumption; and the movement of the peach-crop from competing peach-states. These data we undertake to furnish for the year 1915, a normal peach-year, taking the figures from the transportation lines handling peaches in New York so far as obtainable. The

volume of the product for western New York is shown by figures taken from the New York Central Railroad[258] and the Lehigh Valley Railroad. Peaches were shipped from towns as follows:

Adams Basin	26	Cars
Albion	41	"
Appleton	108	"
Ashwood	19	"
Barker	261	"
Barnard	72	"
Brice	242	"
Brighton	3	"
Brockport	116	"
Buffalo	2	"
Burt	244	"
Carlton	25	"
Caywood	16	"
Charlotte	88	"
Covert	21	"
E. Williamson	52	"
Elberta	24	"
Elm Grove	1	"
Fancher	17	"
Fruitland	48	"
Gasport	108	"
Geneva	19	"
Greece	14	"
Hamlin	216	"
Hector	28	"
Hilton	314	"
Holley	27	"
Junius	61	"
Kendall	70	"
Lewiston	432	"
Lockport	119	"
Lodi	3	"
Lyndonville	171	"
Medina	76	"

Middleport	36	"
Millers	87	"
Model City	156	"
Morton	188	"
North Rose	2	"
Ontario	43	"
Pittsford	2	"
Ransomville	38	"
Rochester	214	"
Rushville	3	"
Sodus	126	"
Spencerport	91	"
Trumansburg	11	"
Union Hill	1	"
Valois	5	"
Walker	168	"
Waterport	15	"
Waverly	1	"
Webster	3	"
Williamson	371	"
Wilson	126	"
Wolcott	15	"
Total	4568	Cars

These figures include plums but the shipment of plums in 1915 was so insignificant as to be negligible and more than offset by shipments of peaches not accounted for by the carriers named.

In addition to the above the American Express Company took out of this territory about 175 cars, mostly in less than car-lot shipments.

Accurate figures could not be obtained from the Hudson River Valley and Long Island shipping points as so much of the fruit is shipped by water, but, basing the yield in 1915 on the census reports of 1909 as to yields and number of trees as compared with similar data for these years from western New York, a rough approximation of the number of carloads in eastern New York is 600. From reports received

from the chief Hudson River navigation lines it would seem that they probably carried about one hundred carloads.

Practically all of the 600 carloads grown in eastern New York were consigned to New York City or nearby towns. From the above table we may assume that about 5000 carloads were produced in the rest of the State and we are fortunate in having a record as to where 4419 of these were consigned. The New York Central Railroad distributed the number of carloads named as follows:[259]

No. of Cars	*Percentage of Crop*	*Destination*	*No. Towns*
1,628	36	Buffalo and points west, including Pittsburgh	96
906	20	Pennsylvania and points south of Newberry Junction	72
222	5	Points east of Albany	25
986	22.3	Points north of New York City	145
677	15.7	New York City	1
4,419			339

Analyzing these figures we find that the 4,419 carloads reached 339 destinations grouped as follows:[260]

9 cities took 2,378 cars, over one-half of the crop,
21 cities took 3,018 cars, two-thirds of the crop,
59 cities took from 4 to 10 cars each,
231 cities took from 1 to 3 cars each,
62 per cent of the crop went outside of the State,
22.3 per cent went to points in New York north of New York City,
15.7 per cent went to New York City

The nine cities which took over one-half of the crop are:

New York	677	Cars
Pittsburgh	555	"
Philadelphia	418	"
Cleveland	156	"
Boston	135	"

Cincinnati	116	"
Syracuse	109	"
Columbus	109	"
Detroit	103	"
Total	2,378	Cars

While these nine cities took over one-half the 1915 peach-crop, twenty-one cities took 3,018 carloads. In addition to those already named, these cities are as follows:

Newark, N. J	77	Cars
Dayton, O.	69	"
Albany	67	"
Utica	64	"
Baltimore	55	"
Troy	52	"
Wilkes-Barre	50	"
Schenectady	46	"
Watertown	44	"
Indianapolis	43	"
Toledo	37	"
Providence	36	"
Total	3,018	Cars

COSTS IN GROWING PEACHES

Peach-growing is a game of chance from start to finish; advantages and disadvantages in location are exceedingly changeable; risks to tree and crop attendant on weather are many; the trees are beset on all sides by diseases and parasites for two of which in New York, yellows and little-peach, there is no preventive, antidote nor alleviation; transportation is perilous, competition keen, and markets fitful. Add variability in investment and the difficulties in calculating profits in peach-growing are apparent. On the other hand, keeping accounts in peach-growing is not as difficult and complicated as in growing other fruits. The peach is not as long-lived, barring accidents the trees bear more regularly, the crop is quickly disposed of, orchard-

operations among growers are more uniform, and, no doubt, the very fact that the peach partakes so much of speculation makes growers a little keener on striking balances at the end of the season. At any rate there is a great body of material in the reports of the horticultural societies in New York on costs in peach-growing and from these data, together with notes taken for several years, we venture to estimate the present costs per acre of the several items entering into peach-production. To attempt to go further and calculate profits, with all of the inconstant factors of yields and markets, would be guessing pure and simple.

Let us consider the cost of production in a ten-acre orchard. This unit is now, however, rather too small, for more and more growers are giving up general farming, finding peach-growing an exacting, full-time vocation. Often enough it is successfully combined with the growing of other fruits, but less and less so with the growing of farm-crops. The first item in cost of production is interest on investment. What value is to be placed on a New York peach-orchard?

The value must be calculated from the cost of land and trees and the labor and the deferred dividends until the orchard comes into profitable bearing. Selling price is never a safe gauge with the peach, sales usually being made under conditions more abnormal than in almost any other phase of farming and showing great variability in every locality. Suppose we place the value at $400 per acre, a sum sufficiently high to cover, besides the cost of the orchard, the overhead expenses of houses and barns that would fall to ten acres of a New York farm. Interest now runs at five percentum so that the first expense item is $20.00 per acre on investment. Assessment rates on land so valued would bring taxes up to $1.00 per acre.

The equipment needed to care for a peach-orchard is quite uniform the State over and the cost of the several items varies scarcely at all, so that a very close approximation may be made of the total cost. The items run about as follows: Team and harness at present price, $500; spraying

outfit, $250; wagon, plow, harrow, ladders, crates, pruning tools, etc., $250; total, $1,000. These figures are below the mark rather than above but the instances are few in which the equipment itemized would be used exclusively for a ten-acre peach-orchard; in fact, with this equipment thirty acres could be cared for. It is not total cost, however, but depreciation and interest on money with which we are concerned. Setting these at 20 percentum, we have $20.00 per acre to charge to maintenance of equipment.

Year in and year out, tillage is the most costly ingredient in the making of a good peach-orchard. It consists of plowing once a year, fall or spring, and harrowing on the average at least ten times a season. High cost of labor brings this item up to $10.00 per acre which includes seeding the cover-crop but not the cost of seed, for which an additional charge of $2.50 must be made for a combination crop of red clover and oats or of vetch and barley.

It would seem easiest of all to ascertain the cost of fertilizers for the peach but the practices are so diverse and fertilizers are applied so irregularly by those who use them at all that the data at hand are almost worthless. Those who plow under cover-crops regularly, spend little for fertilizers; an occasional dressing of stable manure answers for fertilization with many; still more, so uncertain of results as to feel they are "buying a pig in the poke," spend nothing for fertilizers. We shall enter a charge of $5.00 per acre for fertilizers though this is without question above the average even if only successful orchards be considered.

A more certain charge is that for pruning. The problems in pruning are more of the mind than the hand and once the work is laid out it goes along rapidly. An acre-average of $3.00 is sufficient to cover the expense of pruning and thinning may be done, year in and year out, at the same cost.

The peach-orchard is customarily sprayed but once in New York, an application of the lime-sulphur wash being made to prevent leaf-curl and to destroy San Jose scale. The cost

of this single spray cannot be more than $4.00 per acre but to this must be added a charge for protection against mice and rabbits, destruction of borers and cutting out trees infected with yellows or little-peach, averaging, all told, at least $8.00 for keeping under pests.

The services of a peach-grower are worth more than the time of the men who do the actual labor. It is but fair, then, that an allowance be made for superintending the work. Since a competent orchardist can superintend a farm enterprise of several times the magnitude of a ten-acre orchard, but part can be allowed for superintendence, $300 for the season being a fair price, or $30.00 per acre.

Picking, grading, packing and hauling are all operations that cost no two men the same for any one. Without attempting to segregate these items an approximation of the total cost of all, based on a considerable amount of data, is $30.00 per acre. This sum does not include the cost of packages.

This brings us to a summary of the cost sheet in growing the average acre of peaches:

Interest on investment	$20.00
Taxes	1.00
Depreciation in equipment and interest	20.00
Tillage	10.00
Cover-crop seed	2.50
Fertilizers	5.00
Pruning and thinning	6.00
Keeping pests under	8.00
Superintendence	30.00
Picking, grading, packing and hauling	30.00
	$132.50

Pushing this calculation further, the cost per tree runs at $1.32^1/_2$, there being 100 trees to the acre in the average orchard in the State. Peach-growers expect 150 bushels per acre during the bearing time of the peach, and dividing 132.50 by 150 we have $88^1/_3$ cents as the average cost,

exclusive of the package, per bushel of peaches in New York. In this calculation it is assumed that the peach comes in profitable bearing at five years after setting and that the orchard is on the home stretch in the fifteenth lap, giving ten bearing seasons, at least three of which will be fruitless.

Peach-growers to whom this cost sheet has been submitted say 88 cents is too high a cost for producing a bushel of peaches but asked to consider the several items agree that most of them are too low. No doubt few who figure the cost of production include the item of superintendency which increases the cost for each bushel 20 cents. So, too, the average yield given is considered high. Granting that they may be high, all of the figures are permitted to stand, on the theory that the yield bears a close relationship to the expense of production—increased costs stand for increased yields. In tabulations of this kind much is usually made of the cost of bringing the orchard in bearing. In this calculation the high charge of investment goes to cover the cost of the first five years, the period of incubation, so to speak, and it is certain that this, with the sale of inter-crops, covers all expenditures for the first five years.

DISEASES OF THE PEACH

The peach is attacked by a half-score or more diseases in New York, two of which, yellows and little-peach, have this fruit quite at their mercy, there being no preventive, antidote, nor means of alleviation for either. Two other diseases, brown-rot and leaf-curl, are always present and often bring disaster, their virulency depending on locality, season, weather and variety, but both are amenable to treatment and at most destroy only foliage and fruit, while yellows and little-peach take their toll in trees. The several other diseases to be discussed are either easily controlled or are of minor importance.

Yellows is a malignant disease or condition of the peach, very contagious, usually virulent, of which we know neither cause, origin nor cure. We know only its unmistakable

symptoms, its terrible consequences. The history of yellows, the circumstances of its coming and its effects have been given in a foregoing chapter so that we need to discuss now only the symptoms and means of preventing the direct results of the disease.

In its later stages the symptoms are characteristic enough and cannot be confounded with those of any other malady or condition of the tree. The marks of yellows are: (1) Premature ripening of the fruit accompanied by red blotches over the surface and red streaks running through the flesh; (2) premature unfolding of leaf-buds into willowy growths of tips and the production of shoots upon the trunk or main branches with growths developing into bunchy tufts of yellow or reddish foliage; (3) total discoloration of the foliage.

Prematureness in ripening varies from a few days to several weeks; the earlier it occurs, the smaller the fruit. When diseased fruit ripens near the normal season the peaches may be full size, showy to voluptuousness and marked outwardly only by the hectic red of the disease. The taste indicates the disease—in insipid, mawkish or bitter specimens which show the red color and undersize of prematured peaches. During the first season prematured fruit may show only on particular branches or even on a single shoot which may not differ in appearance from other parts of the tree. Prematureness, unaccompanied by other symptoms of yellows, may be due to borers, drought, neglect, girdling or similar causes.

The second symptom is the opening of winter-buds out of season. This usually occurs a year later than the appearance of prematured, red-colored fruits. The buds may push forth shortly after they have formed in mid-summer while the tree-top is still bearing its fruit and foliage or they may delay until the next spring, to appear a few days in advance of normal leafing-time. Very often these buds begin growth in the autumn after healthy leaves have fallen. Such diseased buds may develop on tips of branches, especially water-sprouts, but feeble, sickly shoots due to the disease

usually appear in considerable numbers on main limbs and on the trunk, no doubt under the influence of the yellows on old resting buds buried deep in the bark of the wood. Sometimes these yellow shoots are unbranched but oftener they are much branched and frequently but bunchy tufts of foliage, stems slender, leaves pale green, small, narrow and standing out stiffly at nearly right angles to the stems.

In the final stage of the disease the trees assume the yellowish leaves which give name to the trouble, though sometimes the yellow is tinged with red. Yellows is an unfortunate name since so many other troubles of the peach cause the foliage to take on the jaundiced appearance of this disease. The third stage marks the beginning of the end —sometimes three years, sometimes five or six, but always death sooner or later, there being no instance on record of a diseased tree having been cured.

This, in brief, is the usual course of yellows, but it follows no invariable rule in its development. Yellows is known to be spread as a contagion by affected buds in nursery stock, by nursery-trees, by orchard-trees, and may even be communicated by pits from affected trees. That it must be caused or transmitted in still other ways is apparent to all who have had experience with the disease. It seems not, however, to linger in the soil, for trees may be set in the very spots from whence diseased plants have been removed without danger to the newcomer. "War to the knife and the knife to the hilt"—absolute extermination, root and branch, by ax and fire, is the only known method of subduing yellows.

Little-peach is possibly a variant of peach-yellows or, at least, is very similar in nature. It seems to have been described first in Michigan in the early nineties of the last century but had attacked orchards in New York before that time so that it is now impossible to say where it first appeared. Be that as it may, the disease is not now the exclusive possession of either state but in the twenty years of its history has become as widely distributed as yellows, covering about the same territory, and seems now to be

equally destructive. Outwardly the disease differs from yellows chiefly: (1) In delayed rather than premature ripening of the under-sized fruits of little-peach; (2) the leaves usually show more green than in yellows and show a decided tendency to droop or roll; (3) little-peach, as a rule, appears later in the season than yellows; (4) the characteristic, sickly, wiry shoots of yellows are seldom present in little-peach. Little-peach is kept at bay, as in yellows, by extermination of affected trees.

Rosette, though distinct in most of its symptoms from yellows and little-peach, is clearly similar in nature, is just as virulent and contagious, is communicated in the same ways and requires the same treatment. On trees affected with rosette the fruits shrivel and drop and tufts or rosettes of leaves develop freely. Rosette is not found in New York nor north of the Potomac and hence is of but passing interest to peach-growers in this State.

Brown-rot (*Sclerotinia fructigena* (Persoon) Schroeter), known also as fruit-mold and ripe-rot, attacks flowers and shoots of the peach, but is most conspicuous on the ripe or ripening fruits. Here its presence is quickly detected by a dark discoloration of the skin which is afterwards partly or wholly covered with pustule-like aggregations of gray spores. The decayed fruits fall to the ground or more often hang to the tree, becoming shriveled mummies, each mummy being a storehouse of fungus threads and spores from which infestation spreads to the next crop. The rot spreads with surprising rapidity on the fruits in warm, damp weather either before the fruit is picked or in baskets while being shipped or stored. Preventive remedies have so far met with but indifferent success; probably the best method of control is to destroy the mummy-like fruits and all other sources of infection either by picking them from the trees, or much better by plowing them under deeply. Even so it is impossible to exterminate all of the countless myriads of brown-rot spores. Spraying with the self-boiled lime-sulphur mixture three times at intervals of three weeks, beginning as the calyxes drop, is the appointed preventive but the results are uncertain, as this is one of the diseases in which it is

difficult to touch the spot in spraying. Varieties of peaches show various degrees of susceptibility to brown-rot.

Peach leaf-curl (*Exoascus deformans* (Berk.) Fuckel) is the best-known and probably the most prevalent fungus disease of the peach in New York. The disease appears in early spring as the leaves unfold and continues until warm, dry, summer weather prevails. The name describes the disease so that all may know it—the leaves curl, then become puckered, distorted and much thickened, turn from normal green to yellow, tinged with red, and finally fall. In severe cases the trees may be defoliated, though a second covering of leaves almost always comes out. Leaf-curl is most prevalent and most virulent in cool, moist weather. The disease is easily controlled by spraying with lime-sulphur, bordeaux mixture or any other good fungicide applied while the trees are dormant.

In common with other species of Prunus the foliage of peaches is attacked by several fungi which produce diseased spots on the leaves, the dead areas usually dropping out leaving holes as if punctured by shot, giving the names "shot-hole fungus," "leaf-spot" and "leaf-blight." Two fungi are in the main responsible for these leaf-troubles, *Cylindrosporium padi* Karsten and *Cercospora circumscissa* Saccardo. The ravages of these fungi are prevented by the use of the self-boiled lime-sulphur mixture. With these, as with other fungi, cultivation has a salutary effect as it destroys diseased leaves which harbor the fungi during their resting period and keeps the trees vigorous enough to resist the fungi.

Peach-scab (*Cladosporium carpophilum* Thüm.) is a common and destructive fungus in peach-growing districts on the Atlantic seaboard and is found rather frequently in New York but seldom does much injury in the State. It appears in sooty, black spots and blotches on the surface of the peach, causing atrophy and hardening of the parts affected which, in severe cases, crack badly. Twigs and leaves may be affected. White-fleshed sorts suffer most and are ruined for the market even in mild attacks. Self-boiled lime and

sulphur, if it does not wholly prevent infections, at least alleviates the trouble.

Peach-growers in New York are much plagued by a mildew yet suffer small loss from it, though the disease greatly injures peach-foliage in some regions. The delicate, white or grayish powder, giving the name "powdery mildew," consists of the spores and mycelium of a fungus (*Sphærotheca pannosa* (Wallroth) Léveillé) which attacks the leaves of several species of Prunus causing them to curl and crinkle and sometimes to drop. It occurs most often when there are sudden changes in temperature. When treatment is necessary, the self-boiled lime-sulphur mixture is used.

In common with all tree-fruits, the peach is attacked by crown-gall (*Bacterium tumefaciens* Smith and Townsend). In New York crown-gall seldom greatly injures old trees but nursery plants are sometimes girdled by the galls, seriously injuring them. Badly diseased young plants, therefore, should not be planted. The galls are tumor-like structures, usually at the juncture of top and root, which vary from the size of a pea to that of a large egg, forming at maturity rough, knotty, dark-colored masses. Neither preventive nor cure is known. Planting diseased trees is not a safe practice, nor should the peach be set in ground known to have recently had trees badly infected. The raspberry is a common carrier of crown-gall and should not be planted as an inter-crop in a peach-orchard.

The peach suffers more or less from an excessive flow of gum. This gumming is usually a secondary effect of injuries caused by fungi, bacteria, insects, frost, sunscald, and mechanical agencies. There is a good deal of difference in the susceptibilities of varieties to this trouble, sorts having hard wood suffering less than those having soft wood. There is less gumming, too, on trees in soils favoring the maturity of wood, under conditions where sun and frost are not injurious, and, obviously, in orchards where by good care the primary causes of the diseases are kept out.

INSECTS ATTACKING THE PEACH

The peach has its full share of troublesome insects, entomologists listing about forty species, at least half of which are either destructive or annoying in New York. The peach cannot undergo hardships and once it is beset by parasites, it does not prosper. No small part of the peach-grower's time, therefore, is spent in combating the insect-pests of his trees. The several pestiferous species vary greatly in importance, the peach-borer probably holding first place in destructiveness.

The peach-borer (*Sanninoidea exitiosa* Say) is probably the commonest and is certainly the most ancient enemy of the peach in America. It is found everywhere east of the Rocky Mountains and, since it is a native, its natural host being the wild species of Prunus, it has been a parasite on the peach from the earliest introduction of this fruit. All in all, it is the most destructive insect-pest of the peach, its presence always endangering the life of the tree. All peach-growers know the peach-borer. It is a white, grub-like caterpillar with a yellowish, shield-like head, which lives and feeds in the trunk of the peach just below the surface of the ground, eating out irregular chambers and galleries underneath the bark, sometimes girdling the trees. The pest is easily discovered through the exudation from the infested part of gum mixed with borings and excreta. The borers are found at all times in the summer, usually very small in late summer and autumn but an inch or more in length in early summer. The borer is a larva of a wasp-like moth which lays its eggs in early summer; these hatch in from seven to ten days and the minute borers work their way into the tree. The moth may be deterred somewhat from depositing her eggs by thorough cultivation, mounding the trees and, according to some, by the use of obnoxious coverings or poisonous washes on the trunk. Preventive measures are seldom sufficiently effective, however, and the borers must be destroyed. This is best done by digging them out with a knife or wire—"worming" in the parlance of the peach-grower.

The lesser peach-borer (*Sesia pictipes* Grote & Robinson) is rather infrequently found infesting the peach in New York.

It usually attacks only old trees or those showing injury from freezing or other causes. The borer is much like the common peach-borer, described in the foregoing paragraph, but is smaller, seldom reaching the length of four-fifths of an inch. Unlike the true borer, it infests the trunks as well as the crowns of peach-trees, feeding in much the same way. Fortunately the pest is not common in the State, for it is rather difficult to control, since not only the crown but the trunk must be reached in worming for the pest.

The plum-curculio (*Conotrachelus nenuphar* Herbst) is sometimes a troublesome pest of the peach. It is a rough, grayish, hump-backed snout-beetle somewhat less than a quarter of an inch in length, an insect so familiar to fruit-growers as hardly to need description. The female beetle pierces the skin of the young peaches and places an egg in the puncture. About this cavity she gouges out a crescent-shaped trench, the puncture and trench making the star and crescent of the Ottoman Empire, hence the common name, "Little Turk." The egg-laying process may be repeated in a number of fruits and from each egg a larva hatches within a week and burrows to the stone, making a wormy fruit. Most of the infested fruits drop. Poisoning with an arsenate is the chief means of combating the pest. Rubbish and vegetation offer hiding places and hibernating quarters for the insects and hence cultivated orchards are most free from curculio. The thin-skinned nectarines are damaged most by the insect but peaches are attacked rather freely. Early peaches suffer much more than late ones from curculio; thus, of standard sorts in New York, Greensboro and Carman are usually injured more or less while Salwey and Chili seldom show a puncture. The plum-orchard is usually the source of supply of curculio and early peaches ought not, therefore, be set with or near plums.

San Jose scale (*Aspidiotus perniciosus* Comstock) is as harmful to peaches as to any other tree-fruit. The insect is now so well known in all fruit-growing regions as scarcely to need description. It is usually first recognized by its work, evidence of its presence being dead or dying twigs—oftentimes the whole tree is moribund. Examination shows

the twigs or trees to be covered with myriads of minute scales, the size of a small pin-head, which give the infested bark a scurfy, ashy look. If the bark be cut or scraped, a reddish discoloration is found. Leaves and fruit as well as bark are infested, the insidious pest, however, usually first gaining a foothold on the trunk or a large branch. Reproduction is continuous throughout the summer in this climate so that the insects multiply by leaps and bounds. The peach, possibly, succumbs more quickly than any other fruit, three years sufficing for the destruction of a young orchard if the pest be brought in on nursery stock. The rougher-barked, older trees resist longer and suffer less injury. Still, old orchards are irretrievably ruined in one or two seasons of unrestricted breeding. Peach-growers, in common with all fruit-growers, find the lime-sulphur solution applied in the dormant season the most effective spray in combating this insect. There are several insect-enemies of the scale that are valuable allies and entomologists say that the insects seem more susceptible to the climatic condition of the country than formerly but still natural checks are far from sufficient and the peach-grower should quickly attack with the spray-nozzle at the first appearance of scale.

Besides the San Jose there are several other scales more or less abundant in New York orchards, two of which make the peach their favorite host. These are the West Indian peach-scale (*Aulacaspis pentagona* Targioni) and the Peach-Lecanium (*Eulecanium nigrofasciatum* Pergande). Neither, however, is very troublesome as far north as New York and both are kept well under control by the treatment for the more common San Jose. The Lecanium is responsible for the discolored, sooty peaches occasionally found in parts of the State; for, though the discoloration is caused by a soot-fungus, the fungus lives in the honey-dew of the scale.

The black peach-aphis (*Aphis persicæ-niger* E. F. Smith) is sometimes a serious pest in light peach-soils in New York but is not nearly as troublesome here as it is in states having a larger proportion of sandy land since it seems to find life easiest in light, warm soils. The insect is an intensely black,

shining louse with brownish legs. It lives underground more than above ground, maintaining itself for most part on the tender roots of newly set or nursery trees, being found only occasionally on shoots and foliage. An expert eye detects the presence of the lice by the sparse and jaundiced foliage of young trees which an untrained eye would say were down with incipient yellows—indeed countless numbers of young trees have been sacrificed to the yellow's pyre when they suffered only from lice on the roots. The pest is easily detected on stock received from nurseries—the chief source of infestation—and the trees may be dipped or fumigated as for San Jose scale, thus completely exterminating the aphids. Good culture and a dressing of some fertilizer will help to carry young orchards through an infestation though treatment to a dose of a pound of ground tobacco stems worked in the soil about the roots may be necessary.

There is, too, a green plant-louse (*Myzus persicae* Sulzer) more or less common on peaches in the State every season. It is very similar in appearance to the green aphis of the apple and other plants and makes its presence known by much the same effect on the leaves. It works on the underside of the leaves along the veins, causing the leaves to pucker, curl and crinkle much as with leaf-curl. This green louse, however, is seldom numerous or harmful enough on peaches to require treatment. Should treatment be required, no doubt nicotine, now the standard remedy for aphids on foliage, would keep the pest under.

The fruit-tree bark-beetle (*Eccoptogaster rugulosus* Ratzeburg), known in New York as the shot-hole borer, is often a serious menace to old or decrepit peach-trees. The beetle is a small, cylindrical insect an eighth of an inch long, one-third as wide, the body uniformly black and the surface closely and deeply pitted and punctured, the punctures on the wing-covers arranged in rows. Injury to the peach by this insect is first indicated by exudation of gum from trunk and branches and later by numerous small, round holes as if the tree had been struck by shot. Healthy, vigorous trees are seldom attacked and if so the larvae do not develop, but a peach-tree suffering a decline from any

cause whatsoever is open to immediate attack and once the pest gains foothold the plant is doomed. Here, indeed, an ounce of prevention is worth a pound of cure, for keeping the orchard constantly in healthy, vigorous condition to avoid accidental introduction, and prompt removal and destruction of infested trees, both preventive measures, constitute the only satisfactory treatment.

The peach twig-borer (*Anarsia lineatella* Zell.) imported from Europe, has at times been a troublesome pest of the peach in parts of the United States but causes little injury in New York. Still, it can be found every year in nearly every peach-district in the State and needs, therefore, to be guarded against since it may some time appear in sufficient numbers to become formidable. The adult is a moth the larva of which is about one-half inch long, pinkish in color. This larva is the borer and in early spring attacks tender shoots boring down into the pith. It passes from one succulent shoot to another so that often many wilted shoots may be examined before the borer is found. Fortunately peach-trees send out shoots about as rapidly as this pest can destroy them so that in New York, at least, unless the tree is much weakened in vitality, not much harm is done. The twig-borer has small chance in a well-kept orchard, but, should it attain headway, prompt treatment with arsenate of lead will at once cut short its career.

Occasionally complaints come that the common rose-bug or rose-chafer (*Macrodactylus subspinosus* Fabricius) is at work on the peach. Leaves, flowers and fruits are eaten. The fuzz on the epidermis of the fruit is a deterrent but once a beetle gets through into the flesh, a dozen more join in the banquet and the peach is quickly ruined. Now and then one hears of a crop destroyed by the beetle. Insecticides seldom avail, for the insects are very resistant to poisons. The insects breed only in waste places and hence they may be looked for in the orchards of the sloven or where slovenly kept fields adjoin. Cultivation and sanitation are, then, the preventives. In New York rose-bugs are abundant only in warm, sandy soils.

CHAPTER V
LEADING VARIETIES OF PEACHES

ADMIRAL DEWEY

1. *Ga. Sta. Bul.* **42**:232. 1898. **2.** *Mich. Sta. Sp. Bul.* **30**:14. 1905. **3.** Albertson-Hobbs *Cat.* 29. 1906.

Admiral. **4.** Budd-Hansen *Am. Hort. Man.* **2**:335. 1903.

Dewey. **5.** *Am. Pom. Soc. Cat.* 36. 1909. **6.** Waugh *Am. Peach Orch.* 201. 1913.

Perhaps the peach most of all desired nowadays by peach-growers is a very early, yellow-fleshed freestone. For years Admiral Dewey and Triumph, both seedlings of Alexander, have been grown to fill this place and both, in the main, fail. Admiral Dewey, while early, yellow in flesh and good in quality, is not always a freestone and has several other defects which make it nearly worthless as a commercial fruit. Thus, though the trees are very productive, the peaches run small, are so heavily pubescent as to be unattractive, are very susceptible to brown-rot and are often disfigured with the peach-scab. The trees, too, suffer much from leaf-curl. With Alexander as the parent, the trees should be hardy, and from behavior elsewhere, must be so rated; but they have not proved exceptionally so on our grounds. While nowhere largely planted, Admiral Dewey is often set, as no doubt it should be, for an early peach in the home orchard. Of the two early sorts, this variety stands shipment rather better than Triumph. The varieties are of about the same season, both coming a week or thereabouts later than the well-known Alexander.

Admiral Dewey was grown from a seed of Alexander by J. D. Husted, Vineyard, Georgia, in the latter part of the Nineteenth Century. It was introduced in 1899 by Mr. Husted and has since been grown commercially east and west, north and south. The American Pomological Society placed the variety on its fruit-list in 1909 as Dewey but the full name bestowed to commemorate the great Admiral should, we think, be retained.



ADMIRAL DEWEY

Tree large, vigorous, upright-spreading, hardy, very productive; trunk thick,

smooth; branches stocky, reddish-brown mingled with light ash-gray; branchlets slender, long, olive-green overspread with dark red, glossy, smooth, glabrous, with numerous lenticels, raised near the base.

Leaves six inches long, one and one-half inches wide, folded upward, oval to obovate-lanceolate, thin; upper surface olive-green, smooth except near the midrib; lower surface light grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-fourth inch long, with one to seven large, reniform, greenish-yellow glands variable in position.

Flower-buds small, short, conical, pubescent, plump, free; blossoms appear in mid-season; flowers pink, one and one-half inches across, well distributed, usually in twos; pedicels short, thick, glabrous, green; calyx-tube dull reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes short, broad, obtuse, glabrous within, slightly pubescent without; petals round-ovate, tapering to short, broad claws red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, equal to the stamens in length.

Fruit matures early; two and one-fourth inches long, two and one-half inches wide, round-oblate, slightly compressed; cavity deep, wide, abrupt, with tender skin; suture shallow, becoming deeper at the extremities; apex roundish or flattened, with mucronate tip variable in size; color deep orange-yellow, blushed with dark red, indistinctly splashed and mottled; pubescence heavy; skin thin, tender,

adherent to the pulp; flesh yellow, tinged with red near the pit, juicy, stringy, tender, melting, sweet but sprightly; good in quality; stone semi-free to free, one and one-fourth inches long, seven-eighths inch wide, oval to obovate, flattened at the base, tapering to a short point, with grooved surfaces; ventral suture deeply grooved along the sides, wide; dorsal suture a deep, wide groove.

ALEXANDER

1. *Cult. & Count. Gent.* **38**:598. 1873. **2.** *Mich. Hort. Soc. Rpt.* 263, 264. 1874. **3.** *Gard. Mon.* **17**:367, 368. 1875. **4.** *Am. Pom. Soc. Cat.* 28. 1877. **5.** *Gard. Mon.* **19**:147, 303. 1877. **6.** Hogg *Fruit Man.* 436. 1884. **7.** *Mich. Hort. Soc. Rpt.* 424. 1886. **8.** *Tex. Sta. Bul.* **39**:809, figs. 5 & 9. 1896. **9.** *Ont. Fr. Exp. Sta. Rpt.* **6**:21 fig. 1899. **10.** Fulton *Peach Cult.* 173. 1908. **11.** Waugh *Am. Peach Orch.* 198. 1913. **12.** *U. S. D. A. Plant Immigrants* **117**:958. 1916.

Alexander's Early. **13.** *Am. Pom. Soc. Rpt.* 75, 76. 1873. **14.** *Horticulturist* **28**:224. 1873.

For nearly a half-century Alexander has been one of the notable early peaches on this continent, hardiness and vigor of tree contributing with earliness to make the variety popular. Unfortunately, there are few fruit-characters to commend Alexander; the peaches run small, the flesh clings to the stone and is so tender that the two can be separated only with difficulty, and the quality is poor. Added to the defects of the fruit the trees have the grave fault of being unproductive. The fruits, too, are very susceptible to brown-rot but to offset this weakness, the trees are more resistant to leaf-curl than those of the average variety. Alexander has been more or less grown in every peach-region on this

continent, sometimes attaining considerable commercial importance, but is now widely cultivated only on the Pacific Slope, and even here it is evidently destined to pass out before many years in the competition with newer and better sorts. It is often confused with Amsden though the two are quite distinct.

Alexander originated soon after the Civil War on the farm of O. A. Alexander, Mount Pulaski, Illinois. Since 1877 it has been on the fruit-list of the American Pomological Society. It has been the parent of a score or more of meritorious extra-early peaches.



ALEXANDER

Tree large, vigorous, upright-spreading, hardy, unproductive; trunk stocky, smooth; branches reddish-brown overlaid with light ash-gray; branchlets medium to long, olive-green overlaid on the sunny side with dark red, smooth, glabrous, with conspicuous, large, raised lenticels.

Leaves six inches long, one and one-half inches wide, folded upward, oval-lanceolate, thin, leathery; upper surface dark green, smooth; lower surface light grayish-green; margin finely serrate, tipped with dark red glands; petiole three-eighths inch long, glandless or with one to four small, usually globose, greenish-yellow glands tipped with red, variable in position.

Flower-buds oblong-conic, pubescent, usually free; blooming season early; flowers pale pink, one and seven-sixteenths inches across, in well-distributed clusters; pedicels very short, thick, glabrous, greenish; calyx-tube dull green, light yellowish within, campanulate, glabrous; calyx-lobes short, broad, acute, glabrous within, slightly pubescent without; petals roundish, often broadly notched near the base, tapering to short, broad claws marked with red; filaments nearly one-half inch long; pistil pubescent at the ovary, equal to the stamens in length.

Fruit matures very early; two and one-eighth inches long, two and one-fourth inches wide, round, slightly compressed, with sides nearly equal; cavity deep, abrupt or slightly flaring; suture shallow; apex depressed, ending in a mucronate or small, mamelon, recurved tip; color greenish-white becoming creamy-white, blushed and blotched with dark red, mottled; pubescence short; skin separates readily from the pulp; flesh greenish-white, juicy, stringy, sweet, very mild; fair to good in quality; stone clinging, one and one-fourth inches long, five-eighths inch thick, oval, plump, faintly winged, abruptly pointed at the apex, with slightly pitted surfaces and

with a few grooves; ventral suture deeply grooved along the sides, bulged; dorsal suture deeply furrowed, faintly winged.

ALTON

1. *Ill. Hort Soc. Rpt.* 181. 1898. **2.** *Rural N. Y.* **60**:726, 774. 1901. **3.** *Am. Pom. Soc. Cat.* 35. 1909. **4.** *N. Y. State Fr. Gr. Assoc. Rpt.* 21. 1912.

Minnie. **5.** *Mich. Sta. Bul.* **118**:30. 1895. **6.** *Tex. Sta. Bul.* **39**:813. 1896. **7.** *Ill. Hort. Soc. Rpt.* 53. 1896. **8.** *Mich. Sta. Bul.* **169**:220. 1899. **9.** Budd-Hansen *Am. Hort. Man.* **2**:351, 352. 1903.

Alton is everywhere held in high esteem as an early mid-season, white-fleshed, semi-free peach. It merits the esteem bestowed upon it by virtue of large size, handsome appearance and high quality of the peaches and hardiness and productiveness in the trees. It ripens a little earlier than Champion, long the favorite white-fleshed peach of its season, does not rot so readily when brown-rot is rife and hangs longer on the tree in good condition. It is not, however, quite so choicely good in quality as Champion, nor, on the Station grounds at least, are the trees quite as productive. Other faults of Alton are that leaf-curl takes heavy toll on unsprayed trees, the blossoms open so early as often to be caught by spring frosts, and the peaches show great variation in size and shape and even in texture and flavor. The accompanying cut shows the beauty of the outside but unfortunately on the grounds of this Station the variety is almost a clingstone so that the stone could not be separated to permit photographing the creamy-white flesh, red at pit, and, all in all, most tempting to the eye. Alton seems to be most at home in the Middle West and South and is not a familiar inhabitant of eastern orchards as a commercial product.

This variety originated with T. V. Munson, Denison, Texas,

a quarter-century ago and was introduced by him under the name Minnie. By some it is supposed to have come from Alton, Illinois, and to have been introduced as Emma but this is an error. Munson's Minnie was tested at the Illinois Experiment Station from which place Stark Brothers Nursery Company, Louisiana, Missouri, received it and propagated it under the name Alton. In 1909 the American Pomological Society placed the variety upon its list of fruits as Alton, a name which usage makes preferable to the first one, Minnie.



ALTON

Tree large, vigorous, spreading, hardy, medium in productiveness; trunk very stocky; branches thick, reddish-bronze overlaid with light ash-gray; branchlets slender, long, olive-green mingled with dull red, smooth, glabrous, with many small, inconspicuous lenticels.

Leaves six and one-fourth inches long, one and three-fourths inches wide, folded upward, oval-lanceolate, broad; upper surface dark green, rugose at the base; lower surface light grayish-green; margin finely serrate, tipped with dark glands; petiole three-eighths inch long, with two to four reniform glands, greenish-yellow, tipped with dull red, variable in position.

Flower-buds small, short, conical, usually appressed, heavily pubescent; season of bloom early; flowers pale pink, nearly two inches across; borne usually singly; pedicels very short, glabrous, green; calyx-tube dull reddish-green, tinged with greenish-yellow within, campanulate, glabrous; calyx-lobes acute to slightly obtuse, glabrous within, heavily pubescent without; petals roundish-oval, with blunt apex, frequently notched near the base, tapering to narrow claws; filaments one-half inch long; pistil pubescent at the ovary, as long as the stamens.

Fruit matures in early mid-season; two and five-sixteenths inches long, two and five-eighths inches thick, round-oblate, slightly compressed, with unequal halves; cavity abrupt or slightly flaring; suture of medium depth; apex roundish, mucronate; color creamy-white overspread with dull red, dotted and splashed with carmine;

pubescence thin, short; skin tough, adhering slightly to the pulp; flesh white, juicy, stringy, tender, pleasantly subacid; fair in quality; stone semi-cling, one and three-eighths inches long, seven-eighths inch wide, obovate, plump at the apex, winged near the base, with pitted surfaces; ventral suture deeply grooved along the sides, narrow; dorsal suture deeply grooved.

ARP

1. *N. Y. State Fr. Gr. Assoc. Rpt.* 24. 1913.

Arp Beauty. **2.** *N. J. Hort. Soc. Rpt.* 100. 1911. **3.** *N. Y. State Fr. Gr. Assoc. Rpt.* 213. 1913. **4.** *N. Y. Sta. Bul.* **364**:183. 1913.

Arp is the earliest good yellow peach. This is the chief reason for its cultivation though it has other good characters beside earliness to give it a place among yellow peaches. At this Station the trees are healthy, vigorous, productive and hardier in bud than the average, the buds having withstood the cold of two test winters. The round-oval shape and shallow suture give it a pleasing appearance of rotundity. To its shapeliness, add a skin creamy-yellow, heavily blushed with red and covered with short, thick pubescence with the sheen of velvet, and you have a beautiful peach—well shown in the color-plate. The flesh is light yellow, firm, juicy, sweet, rich, and of excellent quality, but unfortunately clings rather tenaciously to the stone. The season of Arp is from a month to five weeks earlier than Elberta and for so early a peach is remarkably long. It is somewhat susceptible to brown-rot. We do not know from experience how the fruit will ship but believe it will stand the wear and tear of transportation and markets as well as any of the standard peaches. Arp ought to be in every home orchard. Attention is called to the fact that the June Elberta in the hands of some growers is Arp.

Arp originated with C. P. Orr, Arp, Texas, about 1897. Elberta is supposed to have been one of the parents while the other may have been a peach of the Indian type. The variety was introduced by the originator about 1902.



ARP

Tree rather large, vigorous, spreading, hardy, productive; trunk stocky, intermediate in smoothness; branches thick, smooth, reddish-bronze overlaid with light ash-gray; branchlets with internodes intermediate in length, pinkish-red mingled with green, smooth, glabrous, with many

smallish lenticels.

Leaves six and one-fourth inches long, one and one-half inches wide, folded upward, oval-lanceolate, sometimes inclined to obovate, thin, somewhat leathery; upper surface dark green; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with one to three large, reniform, greenish-yellow or reddish-brown glands usually at the base of the leaf.

Flower-buds intermediate in size and length, plump, oblong-conic, pubescent, appressed; blossoms opening in mid-season; flowers light pink, one and three-fourths inches across; borne seldom in twos; pedicels short, glabrous, green; calyx-tube dark reddish-green, dull orange within, campanulate, glabrous; calyx-lobes long, medium in width, obtuse to acute, glabrous within, heavily pubescent without; petals round-obovate, usually broadly notched on each side of the base, tapering to short, narrow claws; filaments one-half inch long; pistil glabrous, pubescent at the ovary, equal to the stamens in length.

Fruit matures early; two and one-sixteenth inches long, two and one-eighth inches wide, oval to round, compressed, the halves unequal; cavity medium to deep, wide, abrupt; suture shallow, deeper at the base; apex roundish or depressed, with a mucronate tip; color greenish-yellow changing to deep yellow, heavily blushed with red, indistinctly striped, with conspicuous, large dots; pubescence short, stiff, thick; skin thick, tough, adhering to the pulp; flesh light yellow mingled with

faint stripes of red radiating from the pit, juicy, stringy, tender, sweet, highly flavored; very good in quality; stone clinging, one and three-sixteenths inches long, three-fourths inch wide, narrow-oval, plump, with short, acute apex, the surfaces pitted and with few short grooves; ventral suture slightly winged, rather widely furrowed; dorsal suture a deep, narrow groove.

BELLE

1. *Ga. Sta. Bul.* **42**:233. 1898. **2.** *Am. Gard.* **21**:852. 1900. **3.** *Ga. Sta. Rpt.* **13**:308. 1900. **4.** *Am. Pom. Soc. Cat.* 35. 1909.

Belle of Georgia. **5.** *Am. Gard.* **17**:67. 1896. **6.** *Ohio Sta. Bul.* **170**:172, 173 fig. 1906.

Georgia. **7.** *Am. Pom. Soc. Cat.* 33. 1899. **8.** *Del. Sta. Rpt.* **13**:99, 100 fig. 5. 1901.

Belle elicits praise from all who know it because of the great beauty of its fruits. At its best it is one of the glories of the peach-orchard, the fruits being large, trim in contour, creamy-white, with a beautiful crimson cheek—truly voluptuous in form and color. The color-plate—made in a poor season—falls far short of doing the fruits justice in size and art cannot depict the soft tints of red and cream which make Belle so beautiful. The fruits are as enticing to the eye inwardly as outwardly, the white flesh being delicately marbled, tinted with red at the pit and the flesh and pit usually part cleanly. Unfortunately, appearance misrepresents quality; for the variety, while good, falls short in flavor, and the flesh is stringy so that it must be rated as not above the average for its type. The trees are large, open-headed, a little straggling, fast-growing and hardy, though, like most of its type, easy prey to leaf-curl. Belle prefers a southern climate and in the South is often a good commercial sort but in New York is grown only for local

markets and home use, hardly equalling Champion as a white-fleshed peach for distant markets.

Belle came from a seed of Chinese Cling planted in 1870 by L. A. Rumph, Marshallville, Georgia. The other parent is unknown but it is supposed to have been Oldmixon Free, a tree of which stood near the Chinese Cling tree. The variety came to notice about the same time as Elberta and has been thought by some to be a seedling of Elberta. The American Pomological Society listed Belle in its catalog in 1899 as Georgia but in 1909 changed the name to Belle and it is so designated in horticultural treatises but popularly it is "Belle of Georgia."



BELLE

Tree large, vigorous, spreading, open-topped, hardy, very productive; trunk thick; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets thick, medium to long, olive-green overlaid with dark red, smooth, glabrous, with numerous conspicuous, rather small lenticels.

Leaves five and one-half inches long, one and one-half inches wide, folded upward, oblong-lanceolate, somewhat leathery; upper surface dark green, smooth; lower surface light grayish-green; margin coarsely serrate, tipped with dark red glands; petiole three-eighths inch long, with two to six large, reniform or globose, greenish-yellow glands variable in position.

Flower-buds large, long, oval, very plump, strongly pubescent, usually appressed; blooming season early; flowers pale pink but deeper in color along the edges, one and three-eighths inches across, often in twos; pedicels long, thick; calyx-tube dull reddish-green, yellowish within, campanulate, glabrous; calyx-lobes medium in length and width, acute to obtuse, glabrous within, heavily pubescent without; petals roundish-oval, tapering to short, broad claws red at the base; filaments nearly one-half inch long; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in mid-season; two and one-sixteenth inches long, two and one-eighth inches wide, roundish-oval, often bulged near the apex, somewhat compressed, with halves nearly equal; cavity abrupt or somewhat flaring, red, with tender skin; suture shallow, deepening toward the apex; apex roundish to slightly pointed, with a mucronate tip; color greenish-white changing to creamy-white, blushed with red, with faint stripes and splashes of darker red, mottled; pubescence short, fine, rather thick; skin thin, tender, adherent to the pulp; flesh white, tinged with red at the pit and with radiating rays of red, juicy, stringy, tender, sweet, mild; good in

quality; stone semi-free to free, one and one-eighth inches long, thirteen-sixteenths inch wide, oval, bulged near the apex, blunt at the base, with short, sharp point at the apex, with deeply-pitted surfaces; ventral suture deeply furrowed along the sides, wide; dorsal suture a narrow groove.

BEQUETTE FREE

1. *Mich. Sta. Bul.* **118**:32. 1895. **2.** *Am. Pom. Soc. Cat.* 35. 1909.

Bequett Free. **3.** *U. S. D. A. Pom. Rpt.* 41. 1895. **4.** *Am. Pom. Soc. Cat.* 32. 1899. **5.** Budd-Hansen *Am. Hort. Man.* **2**:337. 1903.

Becquette Free. **6.** *Tex. Sta. Bul.* **39**:806. 1896. **7.** *Del. Sta. Rpt.* **13**:91. 1901.

As it grows at this Station, Bequette Free makes a favorable impression because of the flavor and attractive appearance of the fruit. It is not a new variety, however, and the fact that it seems to have been rather widely and well tested without receiving general commendation except on the Pacific Slope is against its having a place in the list of desirable peaches for the Eastern States. The trees are fast-growing, very vigorous, hardy and densely clothed with foliage but cannot be called fruitful and are, possibly, a little too susceptible to leaf-curl. The color-plate shows the fruit to be a little more irregular than it is in nature.

This variety originated about 1860 in a seedling orchard of Benjamin Bequette, Visalia, California. J. H. Thomas of the same place named the sort and first propagated it about 1877. In 1899 the American Pomological Society added the variety to its list of fruits under the name Bequett Free but in 1909 corrected the spelling to Bequette Free.



BEQUETTE FREE

Tree large, vigorous, spreading, open-topped, hardy, rather unproductive; trunk thick, smooth; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets slender, long, olive-green mingled with dark red, smooth, glabrous, with numerous large and small, inconspicuous, raised lenticels.

Leaves very numerous, six and three-fourths inches long, one and three-fourths inches wide, folded upward, oval-lanceolate inclined to broad-obovate, leathery; upper surface very dark green, smooth or slightly rugose; lower surface light grayish-green; margin coarsely serrate, tipped with dark glands; petiole three-eighths inch long, with two to five large, reniform, greenish-yellow glands variable in position.

Flower-buds large, long, oblong-conic, plump, pointed, heavily pubescent, usually appressed; blossoms appear in mid-season; flowers light to dark pink, nearly one and one-fourth inches across, borne in ones and twos; pedicels short, thick, glabrous, green; calyx-tube reddish-green, light yellow within, campanulate, glabrous; calyx-lobes rather short, medium to narrow, nearly acute, pubescent within, heavily pubescent without; petals roundish-oval, slightly notched near the base, tapering to short, narrow claws tinged with red at the base; filaments nearly one-half inch long, shorter than the petals; pistil heavily pubescent at the ovary, longer than the stamens.

Fruit matures in mid-season; two and one-half inches long, two and three-eighths inches wide, round-oval, compressed, often with unequal sides; cavity small, deep, abrupt or flaring, often tinged with red; suture shallow, deepening toward the apex; apex roundish, depressed at the center, with a small, recurved, mamelon tip; color greenish-white mingled with yellow, blushed, splashed and blotched with dark red; pubescence thick, long, coarse; skin thin, tough, separates readily from the pulp; flesh white, slightly tinged with red

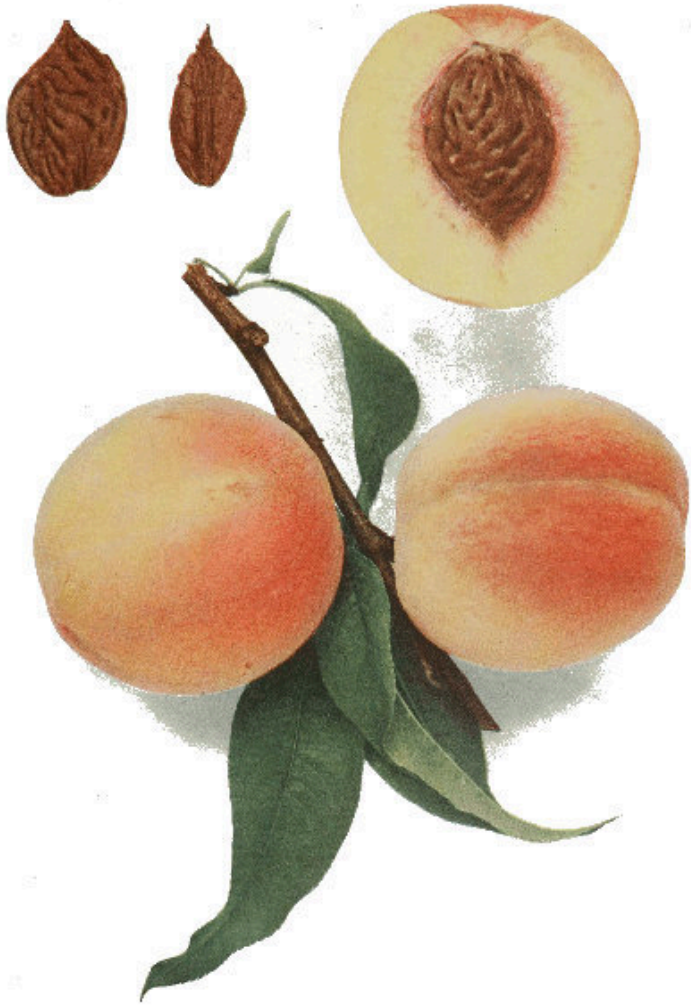
near the pit, juicy, stringy, tender and melting, pleasantly flavored, sprightly; good to very good in quality; stone nearly free, one and three-eighths inches long, seven-eighths inch wide, oval, with a short-pointed apex, medium in plumpness, with deeply pitted and slightly grooved surfaces; ventral suture slightly bulged near the apex, deeply furrowed along the edges, narrow; dorsal suture grooved.

BERENICE

1. *La. Sta. Bul.* **3**:44. 1890. **2.** *Ibid.* **27**:941. 1894. **3.** *Tex. Sta. Bul.* **39**:806. 1896. **4.** *Ga. Sta. Bul.* **42**:233. 1898. **5.** *Del. Sta. Rpt.* **13**:92. 1901. **6.** *Mich. Sta. Bul.* **194**:45. 1901. **7.** Berckmans *Cat.* 10. 1912-13.

When at its best Berenice is hardly surpassed in quality by any other peach but it seems capricious, in the North at least, and this, with the fact that it is none too attractive in coloring, is probably the reason why the variety is not more grown. The trees are about all that could be desired, falling short chiefly in not being as productive as several other peaches of its season and in being a little susceptible to leaf-curl. The variety has been offered to fruit-growers a sufficient length of time to have had its merits well tried as a commercial peach and the fact that it is not now largely grown is presumptive evidence that it has little commercial value. Its high quality makes the variety a good sort for the home collection at least.

Berenice originated some thirty or more years ago with the late Dr. L. E. Berckmans of Augusta, Georgia. It is supposed to have sprung from the pit of a General Lee tree which grew in one of Mr. Berckmans' test orchards. In the Berckmans nursery catalog it is stated of Berenice that after thirty years' trial "there is nothing equal to it in the same season."



BERENICE

Tree large, vigorous, spreading, open-topped, hardy, medium to productive; trunk stocky; branches thick, smooth, reddish-brown mingled with light ash-gray; branchlets with short internodes, dark red overlaid with olive-green, smooth, glabrous, with numerous large and small lenticels raised at the base.

Leaves six inches long, one and five-eighths inches wide, folded upward, oval to obovate-lanceolate, leathery; upper surface dark green, smooth; lower surface light grayish-green; margin coarsely serrate, tipped with dark glands; petiole one-fourth inch long, with two to ten large, reniform, yellowish-green glands variable in position.

Flower-buds large, oblong, slightly pointed, heavily pubescent, usually appressed; blossoms appear in mid-season; flowers one and three-sixteenths inches across, pale pink, tinged darker along the edges, well distributed; pedicels short, glabrous, green; calyx-tube red mingled with dull, dark green, orange-colored within, campanulate, glabrous; calyx-lobes often broad, acute to obtuse, glabrous within, slightly pubescent or heavily pubescent without; petals round-ovate, broadly notched, tapering to short claws red at base; filaments three-eighths inch long, shorter than the petals; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in mid-season; two and five-eighths inches long, two and one-half inches wide, round-oval, with halves often unequal; cavity deep, medium to wide, contracted around the sides, with tender skin, often blushed with red; suture shallow, deepening toward the apex; apex roundish or depressed, with a mucronate or mamelon tip; color greenish-yellow, blushed and splashed with red; pubescence short, medium fine; skin tough, separates from the pulp; flesh yellow, faintly tinted with red near the pit, stringy, tender and melting, sweet, mild, pleasant flavored; good in quality; stone nearly free, one and

three-eighths inches long, fifteen-sixteenths inch wide, oval, plump, drawn out at the ends, usually with pitted surfaces; ventral suture deeply furrowed along the edges; dorsal suture deeply grooved, with sides slightly wing-like.

BLOOD CLING

1. Bridgeman *Gard. Ass't* Pt. **3**:109. 1857. **2.** *Am. Pom. Soc. Cat.* 21. 1897. **3.** Waugh *Am. Peach Orch.* 199. 1913.

Blood Clingstone. **4.** Prince *Treat. Fr. Trees* 17. 1820. **5.** Floy *Am. Fruits* 411. 1825. **6.** Downing *Fr. Trees Am.* 493, 494. 1845. **7.** *Ibid.* 601. 1869. **8.** Fulton *Peach Cult.* 201. 1908.

Blood Peach. **9.** Kenrick *Am. Orch.* 197. 1841.

Indian Blood Cling. **10.** *Am. Pom. Soc. Cat.* 18. 1871.

Indian Blood. **11.** *Ga. Sta. Bul.* **42**:237. 1898.

Blood Cling is the favorite curiosity of the peach-orchard and as such we accord it a color-plate and a full description in *The Peaches of New York*. Unfortunately, the beet-red color of the flesh could not be reproduced with sufficient accuracy to make the attempt satisfactory. It is a pleasant peach to eat out of hand and is much used for pickling and preserving, for which purposes it has real merit. The round-headed, compact tree might make the variety a desirable parent in breeding new peaches.

This peach is an American seedling raised many years ago from the Blood Clingstone of the French. The fruit is much larger than that of the parent sort but otherwise is much the

same. The Blood Free raised by John M. Ives of Salem, Massachusetts, while somewhat of the nature of Blood Cling, is, nevertheless, a different sort. The American Pomological Society listed Blood Cling in its catalog in 1871 under the name Indian Blood Cling. In 1897 this name was changed to Blood Cling.



BLOOD CLING

Tree large, vigorous, round, compact, hardy, unproductive; trunk thick; branches stocky, reddish-bronze, with a light ash-gray tinge; branchlets slender, long, with

short internodes, olive-green overlaid with dark red, smooth, glabrous, with numerous usually small, inconspicuous lenticels.

Leaves five and three-fourths inches long, one and one-half inches wide, folded upward, oval-lanceolate; leaves thin, somewhat leathery; upper surface dark green, varying from smooth to rugose; lower surface light grayish-green; margin finely serrate, with dark brown glands; petiole three-eighths inch long, with two to five reniform, light or dark green glands variable in position.

Flower-buds large, long, plump, oblong-conic, pubescent, free; flowers open in mid-season; blossoms pink, one and three-eighths inches across; pedicels short, glabrous, pale green; calyx-tube dull, speckled, greenish-red, light greenish-yellow within, campanulate, glabrous; calyx-lobes long, narrow, acute, glabrous within, heavily pubescent without; petals oval to ovate, crenate near the base, tapering to short, narrow claws white at the base; filaments three-eighths inch long, shorter than the petals; pistil pubescent, seven-sixteenths inch long, equal to or shorter than the stamens.

Fruit matures very late; one and three-fourths inches long, one and seven-eighths inches thick, compressed, with unequal halves often giving a lopsided appearance; cavity narrow, abrupt, usually white; suture shallow; apex round, with a mucronate tip; color dull greenish-white, entirely overspread with dingy pink mingled with splashes and stripes of darker, clouded red, mottled; pubescence long, coarse; skin

tough, adherent to the pulp; flesh red, becoming lighter colored next the stone, juicy, coarse, stringy, tough and meaty, brisk, pleasantly flavored; fair in quality; stone clinging, one and one-fourth inches long, seven-eighths inch wide, oval to slightly obovate, short-pointed, strongly bulged near the apex, with grooved and pitted surfaces; ventral suture deeply furrowed at the sides, narrow; dorsal suture deep, medium in width.

BLOOD LEAF

1. *Mich. Sta. Bul.* **118**:33. 1895.

Blood-leaved Peach. **2.** *Gard. Mon.* **13**:206. 1871. **3.** *Ibid.* **14**:316, Pl. 1872. **4.** *Ibid.* **15**:142, 183. 1873. **5.** *Horticulturist* **28**:155. 1873. **6.** *Gard. Mon.* **17**:58, 59. 1875.

Blood Leaf is a handsome ornamental. Its beet-red leaves in early spring and its pink blossoms, borne in great profusion, entitle it to esteem for both foliage and flowers. It is worth growing as well for its fruits. The color-plate opposite page 78 shows the flowers and the accompanying illustration depicts the fruit-characters. The peaches are in no way remarkable and yet they please some as a dessert fruit. Seedlings springing up under two trees of this variety in the Station orchard in 1913, furnished interesting data on the inheritance of the blood-red color in the leaves of this peach. Out of 252 young trees, 189 were red-leaved and 63 green-leaved—an exact three-to-one ratio to show that the green color is carried as a recessive.

Several stories are told of the origin of this peach. One is that on the battlefield of Fort Donelson, Kentucky, a southern general, fatally wounded, sucked the juice of a peach and threw the stone into the little pool of blood which flowed from his side. From this pit in its bloody seed-bed sprang the tree with its blood-red leaves. John L.

Hebron, in a letter published in *Gardener's Monthly*, 1873, tells a different tale. According to Hebron the variety was found by P. I. Connor in 1866 at Champion Hills, Mississippi, on the battlefield where General Tilghman was killed, a tree having sprung up close to the spot where the General died. The variety is sometimes called the General Tilghman peach. Leaving fable and coming to facts, we find that the variety originated in Mississippi in the sixties and was introduced to the trade in 1871.



BLOOD LEAF

Tree large, vigorous, upright-spreading, willowy in growth, open-topped, hardy, unproductive; trunk thick, rough; branches smooth, reddish-bronze overspread with

light ash-gray; branchlets slender, long, with short internodes, dull green overlaid with dark red, smooth, glabrous, with numerous small, inconspicuous lenticels.

Leaves four and three-fourths inches long, one and one-fourth inches wide, folded upward, oval-lanceolate with tendency to obovate, thin; upper surface when young purplish-red but changing to green, smooth or rugose; lower surface purplish-olive; margin finely serrate, tipped with small, dark glands; petiole three-eighths inch long, with two to five small, reniform, greenish-yellow, red-tipped glands variable in position.

Flower-buds large, oblong-conic, plump, pubescent, appressed; blossoms appear in mid-season; flowers one and one-half inches across, pale pink, occasionally in twos; pedicels nearly sessile, glabrous, greenish; calyx-tube dark, dull red mingled with green, yellowish within, campanulate, glabrous; calyx-lobes long, narrow, acute, glabrous within, slightly pubescent to heavily pubescent without; petals oval, slightly contracted toward the apex, tapering to short claws; filaments three-eighths inch long, shorter than the petals; pistil equal to the stamens in length.

Fruit matures very late; one and five-eighths inches long, nearly one and five-eighths inches wide, roundish-oval, slightly compressed, with unequal sides, with prominent bulge near the apex; cavity deep, narrow, abrupt, contracted about the sides, marked with narrow, radiating stripes of pale red; suture very shallow, becoming deeper toward the apex; apex roundish or

slightly depressed, with a small, mucronate or recurved, mamelon tip; color greenish-white and pale yellow, lightly washed with dull pink which changes to dull brown, in some cases deepening to a reddish blush; pubescence thick, short, fine; skin thin, tender, adherent to the pulp; flesh white to the pit, juicy, coarse, meaty but tender, sweetish, with some astringency; poor in quality; stone clinging, over one inch long, three-fourths inch wide, oval, very plump, tapering to a short, blunt point at the apex, with grooved surfaces; ventral suture lightly furrowed along the sides, rather wide; dorsal suture with narrow groove, slightly winged.

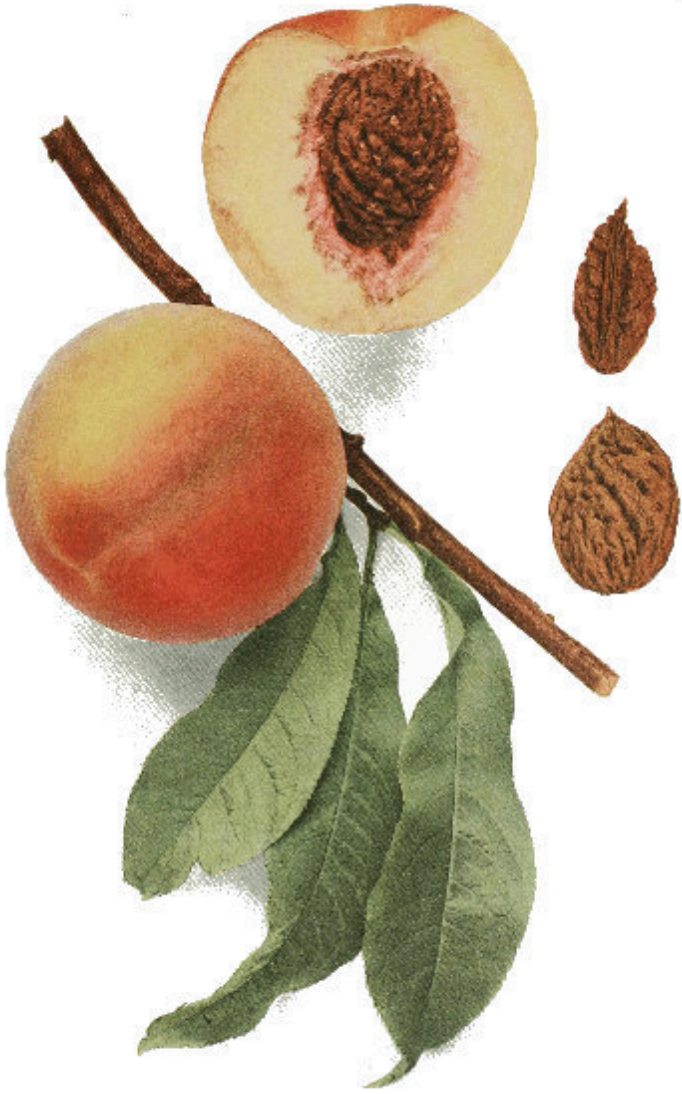
BRIGDON

1. *Am. Gard.* **11**:244, 378. 1890. **2.** *Am. Pom. Soc. Cat.* 32. 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:340. 1903. **4.** Waugh *Am. Peach Orch.* 199. 1913.

Garfield. **5.** *Can. Hort.* **26**:441, fig. 2665. 1903.

Brigdon is a local variety which possibly local pride puts too much in evidence in assigning it a place among the major varieties in *The Peaches of New York*. Still, it belongs with the Crawfords, aristocrats among peaches, and this is enough to give it standing in a home collection at least. In tree and fruit it is similar to and a worthy rival of Early Crawford and has the same two fatal faults to bar it from commercial plantations—the trees are capricious as to soils and are often unproductive. On the other hand, a character of the tree to commend it to the amateur is that it is one of the least susceptible of all peach-trees to leaf-curl. The variety is well known only in western New York and is going out in this region.

Brigdon originated more than a quarter-century ago in Cayuga County, New York, and has been grown since more or less extensively on the shores of Seneca Lake. The name Garfield was given to this peach by some one but why or when does not appear. The variety was added to the American Pomological Society's recommended list of fruits in 1899, a distinction it has since held.



BRIGDON

Tree large, vigorous, upright-spreading, open-topped, hardy, unproductive; trunk thick; branches stocky, rather smooth, reddish-brown overlaid with light ash-gray;

branchlets slender, with tendency to branch, long, olive-green overlaid with dark red, smooth, glabrous, with numerous large and small, inconspicuous, irregularly shaped and often raised lenticels, the expansion of which causes a cracking of the bark.

Leaves five and seven-eighths inches long, one and five-eighths inches wide, folded upward, oval to obovate-lanceolate, thin; upper surface dark green, rugose; lower surface light grayish-green; margin finely serrate, tipped with dark glands; petiole nearly one-half inch long, glandless or with one to four small, globose, greenish-yellow glands variable in position.

Flower-buds oblong-conic, pubescent, somewhat shrunken, usually free; blossoms open in mid-season.

Fruit matures in mid-season; two and one-half inches long, two and three-fourths inches wide, round-oval to cordate, compressed, bulged beak-like near the apex; cavity deep, medium to wide, abrupt or flaring, often colored with red; suture shallow, becoming deep near the apex; apex roundish, with a pointed or recurved, mamelon tip; color greenish-yellow changing to pale orange-yellow, speckled and splashed with dull red which often extends over nearly the whole surface; pubescence long, thick, woolly; skin thin, somewhat tough, separates from the pulp only when fully ripe; flesh yellow, juicy, coarse, firm, tender, sweet, mild, pleasant flavored; very good in quality; stone semi-free to free, one and one-fourth inches long, seven-eighths inch wide, oval, decidedly

bulged on one side, with a rather long and slightly curved point, with pitted and grooved surfaces; ventral suture deeply furrowed along the edges, medium in width; dorsal suture grooved, slightly winged.

CANADA

1. *Mich. Sta. Bul.* **118**:33. 1895.

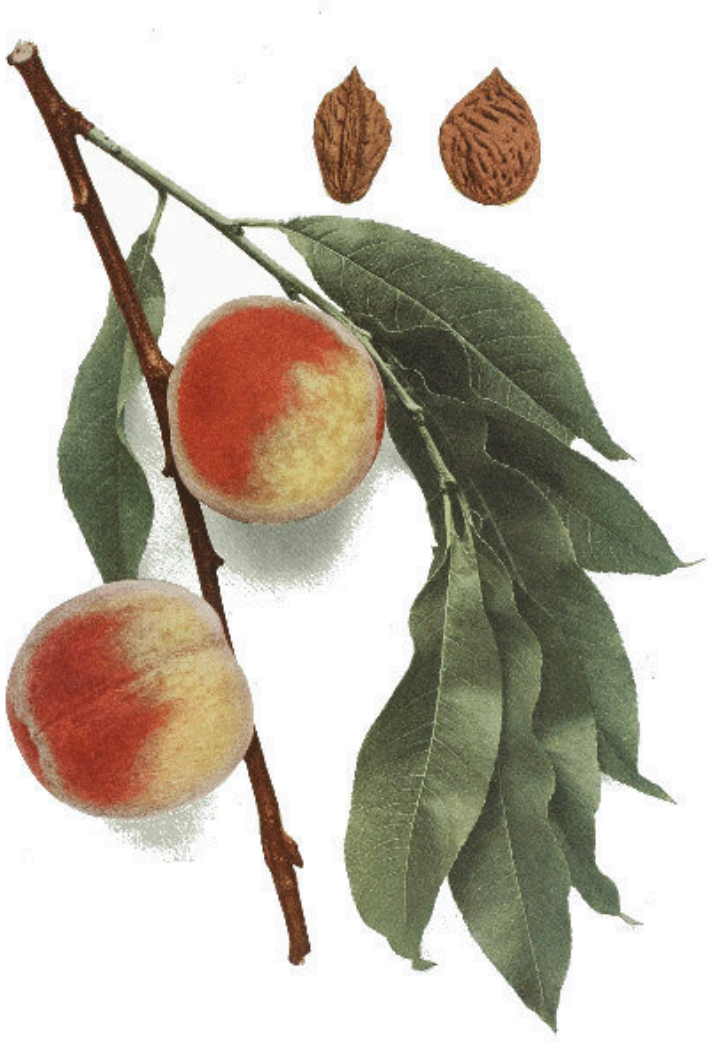
Early Canada. **2.** *Gard. Mon.* **20**:237. 1878. **3.** *Ibid.* **27**:144, 145. 1885. **4.** *Mich. Hort. Soc. Rpt.* 80. 1897. **5.** Bogue *Cat.* 25. 1905.

Canadische Frühpfirsich. **6.** Mathieu *Nom. Pom.* 391. 1889.

Since its introduction some twenty-five years ago, Canada has been a standard early peach in the northern states and more particularly in the peach-growing region along Lake Ontario in Canada where it originated. The variety has few characters to commend it excepting earliness and hardiness though the trees often load themselves with fruit. The peaches, though small, are attractive in color which is bright red on a light background. The red is well shown in the color-plate though the fruits illustrated are rather smaller than usual. Canada is about the poorest of all peaches in flavor. The fruits are firm and ship well for a white-fleshed peach making, so many maintain, a better commercial variety than its rival, Alexander. On our grounds Canada is freer from rot than Alexander and the flesh does not cling as tightly. All agree that the tree is very hardy. However, there ought to be but small place in the peach-lists of nowadays for a variety so poor in quality and with fruits of such inferior size as those of Canada.

The variety originated as a chance seedling more than a quarter-century ago with A. H. High, Jordan, Ontario, Canada. It is often known as Early Canada and is not infrequently confounded with Amsden and Alexander,

varieties of the same season.



CANADA

Tree large, upright-spreading, open-topped, hardy, productive; trunk thick; branches stocky, smooth, reddish-brown overspread with light ash-gray; branchlets with internodes medium in length, dark red, with a slight tinge of green, glossy, smooth,

glabrous, slightly curving, with numerous conspicuous, large, raised lenticels.

Leaves folded upward, six inches long, one and one-fourth inches wide, oval to obovate-lanceolate, medium in thickness; upper surface pale olive-green, smooth or rugose; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-fourth inch long, with one to four small, globose, greenish-yellow glands variable in position.

Flower-buds small, short, narrow, pointed, not very plump, dark colored, appressed; blossoms appear in mid-season; flowers dark pink at the center, bordered with lighter pink, one and one-half inches across; pedicels very short, glabrous, green; calyx-tube reddish-green, lemon-yellow within, obconic, glabrous; calyx-lobes short, obtuse, glabrous within, slightly or heavily pubescent without; petals roundish-ovate, widely notched at the base, tapering to long, broad claws red at the base; filaments one-half inch long, shorter than the petals; pistil equal to the stamens in length.

Fruit matures very early; two inches long, two and one-fourth inches wide, round-oblate, slightly compressed, with unequal sides; cavity wide, flaring; suture shallow to deep; apex ending in a mucronate, recurved tip; color creamy white, blushed with red and mottled and splashed with darker red; pubescence short, thick; skin thin, tender, separates from the pulp; flesh white, juicy, fine-grained, meaty but tender, sweet yet sprightly; fair in quality; stone semi-clinging, one and one-eighth inches long, seven-eighths inch wide, round-oval to

elliptical, plump, abruptly pointed, with small grooves in the surfaces; ventral suture very deeply grooved along the sides, narrow; dorsal suture deeply grooved.

CAPTAIN EDE

1. Lovett *Cat.* 29. 1897. **2.** *W. N. Y. Hort. Soc. Rpt.* 12. 1907.

Ede. **3.** *Ohio Hort. Soc. Rpt.* 183. 1888-89. **4.** *Mich. Sta. Bul.* **169**:212. 1899. **5.** *Del. Sta. Rpt.* **13**:96. 1900. **6.** *Am. Pom. Soc. Cat.* 37. 1909.

Though Captain Ede has been under cultivation forty-six years it has but recently come into prominence and seems now to find favor quite generally as a money-making peach. Those who recommend it say that the trees are vigorous, heavy bearers and that the crop is uniform and always fair, smooth and without culls. The crop matures in a short time, ships well and is in demand in the markets either as a dessert peach or for culinary purposes. On the Station grounds, Captain Ede comes up to the reputation given it in all respects excepting productiveness—here it is a shy bearer. The peaches, as the color-plate shows, are beautiful, the flavor is subacid but rich, with a distinct smack of the almond. Captain Ede ripens with Early Crawford, a week or ten days before Elberta. The tree, as it grows here, can hardly be distinguished from that of Elberta. We should unhesitatingly recommend Captain Ede to New York peach-growers, were it not for the fear that it does not accommodate itself to a diversity of soils and climates. It does rather better farther south.

Captain Ede originated in 1870 as a seedling in the door-yard of Captain Henry Ede, Cobden, Illinois. Later, it was introduced by George Gould and Son, Villa Ridge, Illinois. The parentage of the variety is unknown. By some, Chinese Cling is supposed to have been one of the parents and others give the same credit to Honest John. The American

Pomological Society added Captain Ede to its fruit-list in 1909.



CAPTAIN EDE

Tree large, vigorous, upright-spreading, hardy, not always productive; trunk thick; branches stocky, smooth, reddish-brown overspread with very light ash-gray; branchlets slender, olive-green more or less overspread with dark red, smooth, glabrous, with numerous large or very

small, inconspicuous lenticels.

Leaves five and three-fourths inches long, one and one-half inches wide, folded upward, oval to obovate-lanceolate; upper surface dark green, smooth; lower surface light grayish-green; margin finely serrate, tipped with dark red glands; petiole one-fourth inch long, with two to six, reniform, greenish-yellow glands medium in size and variable in position.

Flower-buds large, long, oblong-conic, plump, usually appressed; blossoms open very late; flowers three-fourths inch across, dark pink; pedicels short, glabrous, pale green; calyx-tube dull, dotted reddish-green, orange-red within, campanulate, glabrous; calyx-lobes short, broad, obtuse, glabrous within, heavily pubescent without; petals roundish-ovate, notched near the base, tapering to short, narrow, white claws; filaments one-fourth inch long, equal to the petals in length; pistil pubescent toward the base, equal to the stamens in length.

Fruit matures in mid-season; about two and one-fourth inches in diameter, roundish-cordate to somewhat oval, very slightly compressed, with nearly equal halves, bulged near the apex; cavity wide, abrupt or flaring, often tinged with red and with tender skin; suture variable in depth, extending more than half-way around; apex roundish, with a prolonged, recurved, mamelon tip; color orange-yellow, with specks and splashes of red, blushed with darker red; pubescence thick, short, variable in coarseness; skin tough, adherent to the pulp; flesh yellow, stained red at the

pit, dry, stringy, tender, somewhat meaty, strongly aromatic, pleasantly flavored; good in quality; stone free, one and one-fourth inches long, seven-eighths inch wide, oval, bulged along the ventral suture, with pitted surfaces; ventral suture deeply furrowed along the edges, narrow; dorsal suture grooved, somewhat flattened.

CARMAN

1. *U. S. D. A. Pom. Rpt.* 25. 1894. **2.** *Rural N. Y.* **54**:235, 619. 1895. **3.** *Ga. Sta. Rpt.* **13**:308. 1900. **4.** *Del. Sta. Rpt.* **13**:92, 93 fig. 3. 1901. **5.** *U. S. D. A. Yearbook* 385, 386, Pl. XLVIII. 1901. **6.** *W. N. Y. Hort. Soc. Rpt.* 11. 1907. **7.** *Am. Pom. Soc. Cat.* 36. 1909.

Among the many white-fleshed peaches of recent introduction, few hold a more conspicuous place than Carman. Possibly its chief asset is a constitution which enables it to withstand trying climates, both north and south, and to accommodate itself to a great variety of soils. Thus, we find Carman a very general favorite in nearly every peach-region on this continent. Besides its cosmopolitan constitution, there is much merit in the fruits especially for a peach ripening so early. While of but medium size (the color-plate does not do justice in showing the size of Carman) the peaches are most pleasing in appearance. The color is a brilliant red splashed with darker red on a creamy-white background. The shape is nearly round and the trimness and symmetry of the contour make the variety, especially when packed in box or basket, one scarcely surpassed in attractiveness of form. Carman is rated as very good in quality for a peach of its season though a smack of bitterness in its mild, sweet flavor condemns it for some. The habit of growth is excellent, peaches are borne abundantly, brown-rot takes comparatively little toll and in tree or bud the variety is remarkably hardy. All in all,

Carman is one of the most useful peaches of its class and season for either home or commercial planting.

Carman grew from a seed planted in 1889 by J. W. Stubenrauch, Mexia, Texas. The tree fruited in 1892 and its earliness and freedom from rot so pleased Mr. Stubenrauch that he at once began propagating the new variety, naming it Pride of Texas. Later, in 1894, the name was changed to Carman in honor of the late E. S. Carman, long editor of the *Rural New Yorker*. In 1909 the American Pomological Society added Carman to its list of fruits as one of its recommended varieties.



CARMAN

Tree large, vigorous, spreading or somewhat upright, open-topped, hardy, very productive; trunk thick; branches stocky, smooth, bright red overspread with ash-gray; branchlets long, olive-green overspread with dark red, glabrous, smooth, glossy, with numerous small, inconspicuous lenticels.

Leaves five and seven-eighths inches long, one and three-fourths inches wide, folded upward, oval to obovate-lanceolate; upper surface dark green, smooth; lower surface light grayish-green; margin finely serrate, tipped with dark red glands; petiole one-fourth inch long, with three to five reniform glands medium in size and variable in position and color.

Flower-buds oval, pointed, plump, heavily pubescent, appressed; blossoms open in mid-season; flowers one and one-fourth inches across, pink; pedicels short, glabrous, pale green; calyx-tube dull reddish-green, speckled, yellowish-green within, campanulate, glabrous; calyx-lobes short, acute to obtuse, glabrous within, heavily pubescent without; petals oval to ovate, with distinct notches near the base, tapering to narrow, white claws of medium length; filaments three-eighths inch long, shorter than the petals; pistil pubescent near the base, shorter than the stamens.

Fruit matures early; about two and one-fourth inches in diameter, round-oval, compressed, with unequal sides, bulged near the apex; cavity abrupt or flaring, tinged with pink and with tender skin; suture shallow, becoming deeper at the cavity; apex roundish or depressed, with a somewhat pointed or mucronate tip; color creamy-white more or less overspread with light red, with splashes of darker red; pubescence very thick, short; skin thin, tough, adherent to the pulp; flesh white, red at the pit, juicy, tender, sweet, mild, pleasant flavored; very good in quality; stone nearly free, about one and one-half inches long, one inch wide, oval, plump,

with thickly-pitted surfaces; ventral suture deeply grooved along the edges, thick, furrowed and winged; dorsal suture deeply grooved.

CHAIRS

1. *Mich. Sta. Bul.* **169**:209. 1899. **2.** *Rural N. Y.* **59**:642 fig. 236. 1900. **3.** Budd-Hansen *Am. Hort. Man.* **2**:340. 1903.

Chairs' Choice. **4.** *N. C. Sta. Rpt.* **11**:108. 1889. **5.** Waugh *Am. Peach Orch.* 200. 1913.

Chair's Choice. **6.** *Col. O. Hort. Soc. Rpt.* 151. 1893. **7.** *Ill. Hort. Soc. Rpt.* 166. 1895. **8.** *Ibid.* 26. 1899.

Chair Choice. **9.** *Am. Pom. Soc. Cat.* 44. 1891.

Chairs is a select fruit in the Crawford group, in its turn the most select of the several groups of peaches. In quality Chairs is unapproachable by varieties outside of its own family and is not surpassed by any within its group. The variety was at one time a standard late, yellow-fleshed, freestone, market peach competing in popularity with Late Crawford over which it often held ascendency because less subject to brown-rot. The coming of the showier and more productive but less well-flavored varieties of the Elberta type has driven the Crawford group from the markets and Chairs is now known only in collections where it will long be treasured for its delectable quality. Unproductiveness and capriciousness in soil and climate, faults of all Crawford-like peaches, are marked in Chairs. The fruits are usually larger than the specimens shown in the accompanying illustration.

Chairs originated about 1880 in the orchard of Franklin Chairs, Anne Arundel County, Maryland. First called Chairs'

Choice, the apostrophe was dropped in 1891 by the American Pomological Society and still later the same organization shortened the name to Chairs. Its horticultural value was early appreciated by all pomologists and it has long been a prime favorite.



CHAIRS

Tree large, vigorous, upright-spreading, hardy, unproductive; trunk stocky; branches thick, smooth, reddish-brown covered with light ash-gray; branchlets inclined to rebranch, short, with long internodes, olive-green overlaid with dark

red, smooth, glabrous, with numerous large and small, raised lenticels.

Leaves five and three-fourths inches long, one and one-half inches wide, folded upward, oval to obovate-lanceolate, thin; upper surface dark green, smooth or somewhat rugose; lower surface light grayish-green; margin coarsely serrate, often in two series, tipped with reddish-brown glands; petiole one-fourth inch long, with two to six small, globose, greenish-yellow glands variable in position.

Flower-buds large, oblong-obtuse, very plump, usually free; season of bloom late; flowers dark pink fading toward the whitish centers, three-fourths inch across; pedicels short, glabrous, pale green; calyx-tube dull, dotted reddish-green, orange-red within, campanulate, glabrous; calyx-lobes obtuse, glabrous within, heavily pubescent without; petals oval or ovate, nearly entire, often notched near the base, tapering to claws of medium width, white at the base; filaments one-fourth inch long, equal to the petals in length; pistil pubescent near the ovary, usually longer than the stamens.

Fruit matures in late mid-season; two and three-fourths inches long, two and seven-eighths inches thick, roundish-oval, irregular, bulged beak-like along one side toward the apex, compressed, with unequal halves; cavity deep, wide, abrupt or flaring; suture shallow, deepening toward the apex and extending slightly beyond; apex roundish, with a mucronate or small, recurved, mamelon tip; color golden-yellow, blushed and splashed with dull red; pubescence short, fine; skin thin, tough,

free; flesh yellow, faintly stained with red near the pit, juicy, stringy, tender, subacid or sprightly, pleasantly flavored; very good in quality; stone free, one and three-fourths inches long, one and three-eighths inches wide, large, broadly oval, bulged along one side, plump, with surfaces deeply pitted and with short grooves; ventral suture wide, deeply furrowed along the sides, winged; dorsal suture a deep, wide groove inclined to wing.

CHAMPION

1. *U. S. D. A. Rpt.* 392. 1891. **2.** *Mich. Sta. Bul.* **118**:33. 1895. **3.** *Ont. Fr. Exp. Sta. Rpt.* **2**:57. 1895. **4.** *Am. Pom. Soc. Cat.* 21. 1897. **5.** *Ga. Sta. Bul.* **42**:233. 1898. **6.** *Mich. Sta. Bul.* **169**:209, 210. 1899. **7.** *Kan. Hort. Soc. Rpt.* 48. 1901. **8.** *Mich. Hort. Soc. Rpt.* 112. 1903. **9.** *Can. Hort.* **27**:97, 98, fig. 2746. 1904. **10.** *U. S. D. A. Yearbook* 478, 479, Pl. XLV. 1908. **11.** Waugh *Am. Peach Orch.* 200. 1913.

Champion is the white-fleshed peach *par excellence* in quality—rightly used as the standard to gauge the quality of all other white-fleshed peaches. The fruits are nearly as attractive to the eye as to the palate but unfortunately run small and off color in all but choicely good peach-soils. The peaches are not only very good in the characters that make up quality—tender flesh, juiciness, pleasant flavor—but there is a peculiar honeyed sweetness possessed by few other peaches which gives the Champion individuality. The color, barring a slight excess in yellow, is well shown in the color-plate but the size as shown is small. The tree of Champion is almost perfect from the ground up, few other varieties surpassing it in height and girt and none, on the Station grounds at least, equalling it in the quantity and the luxuriant green of its foliage. A Champion tree is known by

its foliage as far as the eye can distinguish color. As would be expected from the tree-characters given, in soils to which it is suited, Champion rejoices in vigor and health as do few other varieties. The variety surpasses most of its orchard-associates in productiveness but the peaches are inviting prey to brown-rot and the trees are sometimes defoliated with leaf-curl so that, with its capriciousness as to soils, it has grave faults as a commercial variety. Because of high quality of the fruit and the beauty of the tree, Champion should have a conspicuous place in the orchard of the amateur.

Champion is a seedling of Oldmixon Free supposedly fertilized by Early York. The original seed was planted about 1880 by I. G. Hubbard, Nokomis, Illinois, and the variety was introduced by him and by the Dayton Star Nurseries in 1890. In the early years of its dissemination Champion was confused with an early, semi-cling variety which originated in western Michigan and which was locally sold for a time under the same name. The American Pomological Society added Champion to its fruit-list in 1897.



CHAMPION

Tree large, vigorous, spreading, open-topped, very productive; trunk thick; branches stocky, smooth, reddish-brown covered with ash-gray; branchlets thick, very long, with short internodes, olive-green overspread with dull red, smooth,

glabrous, with numerous large lenticels, inconspicuous except toward the base.

Leaves five and one-fourth inches long, one and one-half inches wide, folded upward, oval to obovate-lanceolate; upper surface dark green, rugose along the midrib; lower surface grayish-green; margin finely serrate, tipped with dark red glands; petiole three-eighths inch long, with two to five small, globose, greenish-yellow glands variable in position.

Flower-buds large, medium in length, plump, conical, pubescent, free; blossoms appear in mid-season; flowers pink, less than one inch across, well distributed; pedicels short, glabrous, pale green; calyx-tube dark, mottled reddish-green, greenish-yellow within, obconic, glabrous; calyx-lobes short, broad, obtuse, glabrous within, pubescent without, slightly reflexed; petals round-oval to ovate, tapering to narrow, short, white claws; filaments three-eighths inch long, equal to the petals in length; pistil pubescent about the ovary, equal to the stamens in length.

Fruit matures in early mid-season; two and one-fourth inches long, two and three-eighths inches wide, round or round-oval, somewhat truncate, with halves usually equal; cavity shallow, narrow, abrupt or flaring, contracted; suture shallow; apex roundish, usually with a slightly recurved, mucronate tip; color pale green changing to creamy-white, with splashes of carmine mingled with a blush of darker red; pubescence short, thick; skin tough, adherent to the pulp; flesh white, tinged red at the pit, very juicy, markedly tender,

sweet, pleasant flavored; very good; stone semi-free to free, one and one-half inches long, about one inch wide, oval, long-pointed, with deeply grooved surfaces; ventral suture furrowed deeply along the sides, wide; dorsal suture deeply furrowed, rather wide, with sides slightly wing-like.

CHILI

1. *Am. Pom. Soc. Cat.* 21. 1897. **2.** Budd-Hansen *Am. Hort. Man.* **2**:340. 1903.

Hill's Chili **3.** *Am. Pom. Soc. Rpt.* 184, 211. 1856. **4.** Elliott *Fr. Book* 298. 1859. **5.** Downing *Fr. Trees Am.* 2nd App. 142, 143. 1872. **6.** *Am. Pom. Soc. Cat.* 28. 1873. **7.** *Mich. Hort. Soc. Rpt.* 483, 484. 1873.

Sugar. **8.** *Gard. Mon.* **11**:148. 1869.

Stanley Late. **9.** *Ibid.* **14**:347. 1872. **10.** *Mich. Sta. Sp. Bul.* **44**:62. 1910.

Jenny Lind. **11.** *Mich. Hort. Soc. Rpt.* 116. 1872.

Cass. **12.** *Mich. Hort. Soc. Rpt.* 14, 15. 1899.

Chili, long familiar to the older generation of peach-growers as Hill's Chili, is now waning in popularity though for nearly a century it was one of the mainstays of peach-growing, having been widely and commonly planted in commercial orchards the country over. Chili, in its day, was one of the notable culinary peaches, being especially desirable for canning and curing because of its firm, dry, but well-flavored flesh, and, besides, it ripened late in the season when cool weather gave storage conditions and made culinary work more agreeable to housewives. The peaches are not at all attractive in size, color or shape, are quite too dry of flesh to eat with pleasure out of hand and

are made even less agreeable to sight and taste by pubescence so heavy as to be woolly. The trees of Chili are about all that could be desired, for, while of but medium size, they are vigorous, very hardy, long-lived and, barring injury from cold or frost, are annually fruitful, though the variety has the fault of ripening its crop unevenly—an asset in home orchards, a liability in commercial plantings.

Chili came into cultivation early in the Nineteenth Century, the first tree probably having appeared in the orchard of Deacon Pitman Wilcox, Chili, Monroe County, New York. It comes almost true to seed and several seedlings have sprung up which are almost indistinguishable from it. Among these are Sugar, Stanley Late, Jenny Lind and Cass. Chili was mentioned by the American Pomological Society in 1856 as a worthy sort under the name "Hill's Chili"; placed under this name on the fruit list in 1873; and changed to Chili in 1897.



CHILI

Tree medium in size, compact, vigorous, upright-spreading, hardy, productive; trunk thick, shaggy; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets unusually long, with spur-like branches near the tips, dark reddish-green, glossy, smooth, glabrous, with conspicuous, raised lenticels.

Leaves folded upward and recurved, six inches long, one and one-half inches wide, long-oval to obovate-lanceolate, thin; upper

surface dark, dull olive-green, smooth; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with two to seven small, usually reniform, reddish-brown glands mostly on the petiole.

Flower-buds small, short, obtuse, plump, pubescent, nearly free; blossoms appear in mid-season; flowers pink, one and one-half inches across, well distributed; pedicels short, glabrous, green; calyx-tube red at the base, orange-colored within, campanulate, glabrous; calyx-lobes short, medium to broad, obtuse, glabrous within, pubescent without; petals oval, faintly notched near the base, tapering to short claws of medium width, tinged with red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent near the base, longer than the stamens.

Fruit late; two and one-half inches long, two and one-fourth inches wide, oblong-conic, somewhat angular, compressed, with unequal halves; cavity uneven, shallow, medium to wide, contracted, abrupt or flaring, the skin tender and tearing easily; suture shallow, sometimes extending beyond the apex; apex slightly pointed; color greenish-yellow changing to orange-yellow, with a dark red blush, splashed and mottled with red; pubescence long, thick, coarse; skin thin, tough, separates from the pulp; flesh stained red at the pit, yellowish, dry, stringy, firm but tender, mild but sprightly; good in quality; stone free, one and one-half inches long, fifteen-sixteenths inch wide, flattened wedge-like at the base, oval to obovate, winged, usually without bulge, long-pointed at the apex, with pitted

surfaces; ventral suture deeply furrowed, wide; dorsal suture deeply grooved.

CHINESE CLING

1. Downing *Fr. Trees Am.* 636. 1857. **2.** *Horticulturist* **14**:107. 1859. **3.** *Am. Pom. Soc. Cat.* 18. 1871. **4.** *Del. Sta. Rpt.* **13**:85, 86, 95, 107, fig. 4. 1901.

Shanghae. **5.** *Mag. Hort.* **17**:464. 1851. **6.** *Gard. Chron.* 693. 1852. **7.** Downing *Fr. Trees Am.* 641. 1857.

Chinese Peach. **8.** *Horticulturist* N. S. **3**:286, 472. 1853.

Shanghai. **9.** Hogg *Fruit Man.* 231. 1866.

De Chang-Hai. **10.** Mas *Le Verger* **7**:211, 212, fig. 104. 1866-73.

Chinese Cling holds a high place in the esteem of American pomologists for its intrinsic value, because it was the first peach in one of the main stems of the peach-family to come to America, and because it is the parent, or one of the parents, of a great number of the best white-fleshed peaches grown in this country. The variety is not now remarkable for either fruit- or tree-characters, being surpassed in both by many of its offspring, except, possibly, in quality. The flavor is delicious, being finely balanced between sweetness and sourness, with sweet predominating, and with a most distinct, curious and pleasant taste of the almond. The fruits are too tender for shipment and very subject to brown-rot. The trees are weak-growers, shy-bearers, tender to cold and susceptible to leaf-curl. Chinese Cling created a sensation in pomology when it was brought to America because it was very different from any other peach then here and was superior to any other in several characters. Its seedlings quickly came into prominence with the result that possibly a hundred or more of the varieties named in *The Peaches of*

New York have descended from it. The attempt to hold it and its seedlings in a distinct group fails, as we have tried to show in discussing groups of peaches, because through hybridization they are hopelessly confused with other stocks. The color-plate is an excellent illustration of Chinese Cling.

Chinese Cling was found growing in the orchards south of the city of Shanghai, China, by Robert Fortune, the indefatigable English botanist, who was sent to China by the London Horticultural Society to collect useful and ornamental plants. Fortune sent the peach to England in 1844 under the name Shanghai, a name which it retains, with variable spellings, in Europe. Chinese Cling was imported as potted plants to America in 1850 by Charles Downing through a Mr. Winchester, British consul at Shanghai, China. Downing forwarded one of the trees to Henry Lyons, Laurel Park, Columbia, South Carolina, with whom the variety first fruited in America. Lyons called the new fruit "Chinese Peach." In 1871 the American Pomological Society placed Chinese Cling on its recommended list of varieties, a place it still holds.



CHINESE CLING

Tree rather weak in growth, upright-spreading, round-topped, not very hardy, medium in productiveness; trunk thick; branches stocky, reddish-brown mingled with light ash-gray; branchlets with short internodes, olive-green more or less overlaid with dark red, smooth, glabrous, with numerous large and very small, inconspicuous lenticels.

Leaves seven and one-half inches long, two

inches wide, folded upward, broad oval-lanceolate, thick, leathery; upper surface dark green, smooth, becoming slightly rugose along the midrib; lower surface light grayish-green; margin coarsely crenate to finely serrate, tipped with dark red glands; petiole one-half inch long, with two to five reniform, greenish-yellow, dark-tipped glands variable in position.

Flower-buds large, long, obtuse, plump, very pubescent, somewhat appressed; blossoms appear in mid-season; flowers pink, one and one-half inches across, well distributed; pedicels short, glabrous, green; calyx-tube reddish-green; calyx-lobes medium to broad, obtuse, glabrous within, heavily pubescent near the outer edges; petals ovate, irregularly notched near the base, tapering to short, white claws; filaments one-fourth inch long, shorter than the petals; pistil pubescent at the base, longer than the stamens.

Fruit matures late; two and five-eighths inches long, two and nine-sixteenths inches wide, round-oval, compressed; cavity deep, contracted, narrow, abrupt, faintly tinged with red; suture deep, extending beyond the apex; apex roundish or flattened, with a mucronate tip; color greenish-white changing to creamy-white, blushed on one side with lively red, splashed and marbled with duller red; pubescence thick; skin tough, adhering to the pulp; flesh white, tinged with red near the pit, juicy, meaty, tender, sweet but sprightly, aromatic; good in quality; stone clinging, one and three-eighths inches long, one inch wide, oval, conspicuously winged, bulged on one side, with pitted surfaces; ventral suture deeply

furrowed along the sides, rather narrow; dorsal suture large, deep, wide, winged.

CHINESE FREE

1. *Ala. Sta. Bul.* **11**:7, 11. 1890. **2.** *Am. Pom. Soc. Cat.* 44. 1891. **3.** *Ga. Sta. Bul.* **42**:234. 1898. **4.** *Del. Sta. Rpt.* **13**:95. 1901. **5.***Am. Pom. Soc. Cat.* 36. 1909. **6.** Waugh *Am. Peach Orch.* 200. 1913.

Perhaps it is enough to say that Chinese Free is Chinese Cling with a free stone—at least it has been so heralded. On our grounds, however, leaves, flowers and fruits are all smaller and the quality of the fruit is not nearly as good while the tree runs a little better in most characters. This, perhaps, is a good example of many of the seedlings of Chinese Cling—the influence of another parent and the stimulus of hybridization are apparent. Chinese Free is surpassed by many other white-fleshed peaches of its season for both home and market. Doubt has arisen as to whether the tree on the Station grounds is the true Chinese Free, yet we think it is the variety now commonly going under this name.

This variety grew from a seed of Chinese Cling in the orchard of W. P. Robinson, Atlanta, Georgia, nearly forty years ago. Mr. Robinson first exhibited it before the Georgia Horticultural Society in 1881 as an unnamed seedling. Thereafter it was sometimes known locally as Robinson but commercially it has always been called Chinese Free. In 1891 the Georgia Horticultural Society formally adopted the latter name. The American Pomological Society listed Chinese Free on its fruit-list in 1891 but dropped it in 1897. In 1909, however, another change in heart caused the Society's officials again to list it in the catalog where it still remains.

Tree above medium in size, vigorous, spreading, the lower branches slightly drooping, open-topped, neither very hardy

nor very productive; trunk thick; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets slender, inclined to rebranch, long, dark red intermingled with olive-green, glossy, smooth, glabrous, with numerous large, conspicuous lenticels raised toward the base.

Leaves five and three-fourths inches long, one and five-eighths inches wide, folded upward, oval-lanceolate, medium in thickness and toughness; upper surface dark green, rugose along the midrib; lower surface dull grayish-green; margin finely serrate, tipped with dark red glands; petiole three-eighths inch long, with two to six rather large, reniform, greenish-yellow, dark-tipped glands variable in position.

Flower-buds usually obtuse, plump, very pubescent, somewhat appressed; blooming season early; flowers pale pink, darker along the edges, one and one-fourth inches across, often in twos; pedicels short, glabrous, green; calyx-tube dull, dark reddish-green, light yellow within, obconic, glabrous; calyx-lobes acute, glabrous within, pubescent without; petals oval or ovate, tapering to small, narrow claws tinged with red at the base; filaments one-half inch long, usually shorter than the petals; pistil pubescent at the ovary, often longer than the stamens.

Fruit matures in mid-season; two and one-half inches long, two and three-fourths inches wide, roundish-oval, bulged at one side, compressed, with unequal halves; cavity narrow, abrupt, tinged with red, with tender skin; suture shallow but deepening at the apex; apex roundish or

pointed, with a mucronate tip; color greenish-white changing to creamy-white, blushed with red, mottled and striped with darker red; pubescence very short, thin; skin thin, tough, separates from the pulp; flesh greenish-white or whitish, stained with red at the pit, juicy, tender, melting, subacid, sprightly; fair to possibly good in quality; stone free, one and one-fourth inches long, fifteen-sixteenths inch wide, oval, plump, abruptly pointed, with purplish-brown, pitted surfaces; ventral suture deeply furrowed along the sides, winged near the base, rather wide; dorsal suture deeply grooved, wing-like.

CLIMAX

1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *Tex. Sta. Bul.* **39**:804. 1896. **3.** Glen St. Mary *Cat.* 11. 1900. **4.** *Fla. Sta. Bul.* **73**:143. 1904. **5.** *Am. Pom. Soc. Cat.* 36. 1909.

Climax is a honey-sweet, freestone peach supposedly adapted only to the far south. The trees on the grounds of this Station seem as hardy as the average and are as productive. Whether or not the peaches are as large and as attractive here as in Florida, where the variety is a commercial sort, we cannot say but certain it is, Climax has no commercial value in New York. The peaches are small, unattractive in color, drop badly, are disfigured by peach-scab and have only honeyed sweetness to recommend them. We figure and describe the variety in full only to show that honey-fleshed peaches can be grown this far north and to call attention to the possibility and desirability of using peaches of this stock in breeding to improve the quality or give new flavors to northern peaches. It would, too, give pleasant variety and add quality to the home orchard.

Climax is a seedling of Honey but neither the date of origin

nor the name of the originator is known. The variety was introduced by G. L. Taber, Glen Saint Mary, Florida, in 1886. The American Pomological Society added Climax to its fruit-list in 1891 but dropped it in 1899. In 1909, however, the variety was replaced in the Society's catalog as a peach of merit for the South.



CLIMAX

Tree small, vigorous, upright-spreading, round-topped, dense, productive; trunk roughish; branches roughened by the lenticels, reddish-brown covered with gray; branchlets very slender, long, with short

internodes, olive-green overspread with darker red, smooth, glabrous, with very few small, inconspicuous, raised lenticels.

Leaves six inches long, one and three-eighths inches wide, flattened, lanceolate, thin, leathery; upper surface dull, medium green, smooth; lower surface olive-green; margin bluntly serrate, glandular; petiole three-eighths inch long, slender, glandless or with one to four small, reniform glands usually at the base of the leaf.

Flower-buds small and short, conical, plump, pubescent, appressed; blooming season late; flowers pale pink, one inch across; pedicels slender, glabrous, green; calyx-tube dotted reddish-green, greenish-yellow within, obconic, glabrous; calyx-lobes acute or obtuse, glabrous within, pubescent without, partly erect; petals ovate or oval, tapering to narrow claws whitish at the base; filaments shorter than the petals; pistil shorter than the stamens.

Fruit matures in mid-season; two and three-eighths inches long, two and one-eighth inches thick, oval, but slightly compressed, with unequal sides; cavity usually shallow flaring, splashed with red; suture shallow, deepening toward the apex; apex conic, with a long, swollen, often recurved tip; color greenish-white or creamy-white, occasionally with a blush or faint mottlings of red toward the base; pubescence short, thick; skin thin, adherent to the pulp; flesh white, stained with red near the pit, juicy, stringy, melting, very sweet, mild; very good in quality; stone semi-free to free, one and one-fourth inches long, thirteen-sixteenths inch wide, oval, plump, bulged

on one side, long-pointed at the apex, with pitted and grooved, reddish-brown surfaces; ventral suture deeply furrowed along the sides, narrow; dorsal suture grooved.

CROSBY

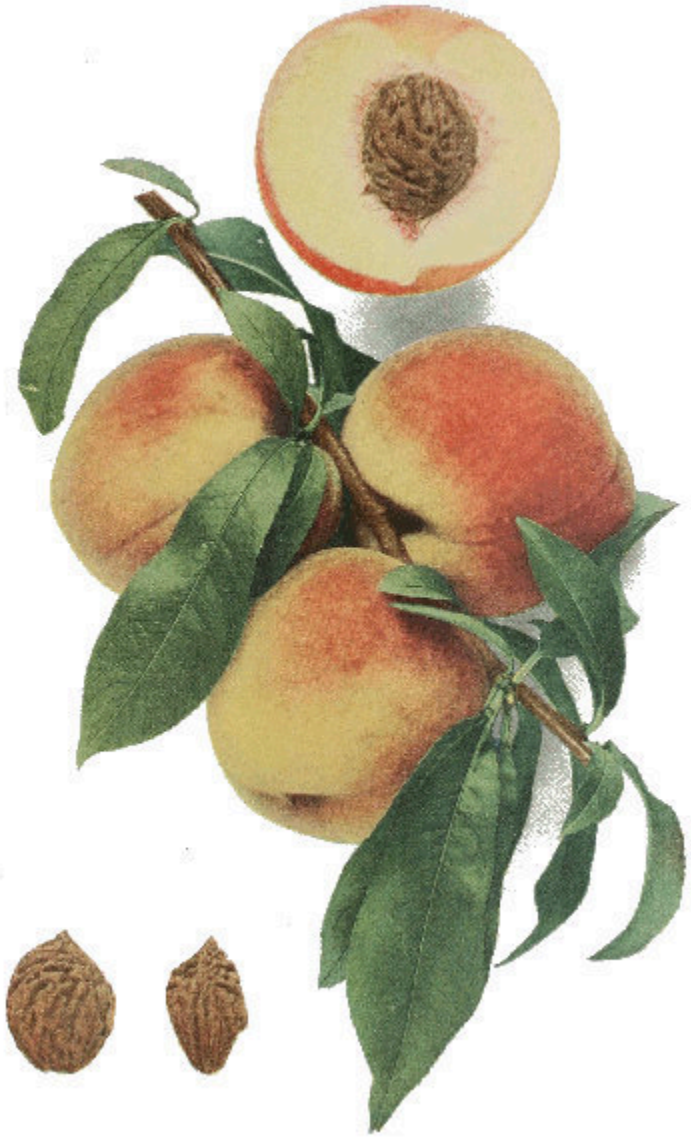
1. *U. S. D. A. Rpt.* 391, Pl. VIII. 1891. **2.** *Ont. Fr. Exp. Sta. Rpt.* **2**:58. 1895. **3.** *Minn. Hort. Soc. Rpt.* 224 fig. 1896. **4.** *Ohio Hort. Soc. Rpt.* 58, 59. 1896-97. **5.** *Am. Pom. Soc. Cat.* 21. 1897. **6.** *Mich. Sta. Bul.* **169**:211. 1899. **7.** *Can. Hort.* **23**:379. 1900.

Excelsior. **8.** *Am. Gard.* **12**:699. 1891. **9.** *Rural N. Y.* **50**:736. 1891. **10.** *Am. Gard.* **13**:47. 1892.

Of the several virtues which entitle Crosby to the esteem of fruit-growers, possibly the most notable is hardiness in tree and bud so marked that it is often called the "frost-proof" peach. It is doubtful, however, whether it is hardier than other peaches of its kind as Chili, Smock and Heath Cling. Besides hardiness, the trees have to recommend them vigor, health and productiveness, the latter character offset somewhat by small size. The quality of the fruit is excellent. The rich, yellow, freestone flesh is delicious to the taste either as a dessert or as a culinary fruit. In these days of showy fruits, however, Crosby falls far short in appearance, the peaches running small, being somewhat irregular and covered with dense tomentum. Still, at its best, in soils to which it is perfectly suited, the peaches are often handsome. But there lies another fault, the variety accommodates itself but poorly to trying soils and climates, failing especially in hungry soils and dark climates. The variety is noted for its willowy growth, small leaves, small flowers, small pits and, as has been said, hardiness. It is an ideal home sort.

Crosby was sent out about 1876 by a Mr. Crosby, a nurseryman of Billerica, Massachusetts. Later the Massachusetts Agricultural College propagated and

distributed it in a small way in northern Massachusetts where it was known as Excelsior. The fact that there was another variety called Excelsior made a change necessary and the peach was renamed in honor of Mr. Crosby. The American Pomological Society placed Crosby on its list of recommended varieties in 1897.



CROSBY

Tree small, vigorous, spreading, open-topped, with lower branches slightly drooping, unusually hardy, very productive; trunk thick; branches of medium size, smooth, reddish-brown overspread with light ash-gray; branchlets slender, inclined to rebranch, long, olive-green almost overspread with dark red, glossy, smooth, glabrous, with numerous large and small, conspicuous lenticels.

Leaves rather small and narrow, five and three-fourths inches long, one and one-fourth inches wide, folded upward, oval to obovate-lanceolate, thin; upper surface dark green, smooth; lower surface light grayish-green; margin finely serrate or crenate, tipped with dark brownish-red glands; petiole three-eighths inch long, with two to seven rather small, reniform, greenish-yellow glands variable in position.

Flower-buds small, short, conical, pubescent, appressed; flowers appear in mid-season; blossoms pale pink, darker near the edges, nearly one inch across, well distributed; pedicels very short, thick; calyx-tube dull reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes short, narrow, acute, glabrous within, pubescent without; petals oval, tapering to long, narrow claws often red at the base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent at the ovary, equal to or sometimes longer than the stamens.

Fruit matures late; two and three-fourths inches long, two and three-eighths inches

thick, roundish or roundish-oblate, slightly compressed, bulged near the apex, with unequal sides; cavity deep, abrupt or flaring, sometimes splashed with red; suture shallow, becoming deeper near the apex and extending beyond; apex roundish, with a sunken, mucronate tip; color orange-yellow, often blushed over much of the surface with dull red, splashed and striped with darker red; pubescence long, thick, coarse; skin thick, tough, adherent to the pulp; flesh deep yellow, stained with red near the pit, juicy, stringy, firm but tender, sweet, mild, pleasant flavored; very good in quality; stone free, one and five-sixteenths inches long, one inch wide, oval, plump, bulged near the apex, with pitted and grooved surfaces; ventral suture with shallow furrows along the sides; dorsal suture deeply grooved, winged.

DAVIDSON

1. Harrison & Sons *Cat.* 16. 1905. **2.** *Mo. State Fr. Sta. Rpt.* 12. 1905-06. **3.** *Mich. Sta. Sp. Bul.* **44**:35 fig., 36. 1910.

Davidson is on probation as an early peach for northern climates with the chances greatly against its ever proving worthy the attention of New York peach-growers. Still, it comes so highly recommended that we give it a place among the major varieties in *The Peaches of New York* hoping that the growers of the State will at least try it out. It is a white-fleshed peach similar to the well-known Rivers, larger in size, but not quite as early. The trees are very hardy, come into bearing early and bear heavily but ripen their crop unevenly. The peaches, as the color-plate shows, are handsome, and for a variety of early season they are particularly good in quality but are very susceptible to brown-rot, peach-scab, leaf-curl and seemingly all the other

ills peach-flesh is heir to.

Davidson originated with G. W. Davidson, Shelby, Michigan, and is supposed to be a sport of Early Michigan, being very similar to that sort in all respects except season, Davidson being two weeks earlier. It is often confused with Eureka.



DAVIDSON

Tree large, upright-spreading, hardy, productive; trunk thick; branches stocky, smooth, reddish-brown covered with ash-gray; branchlets dull red strongly colored with olive-green, smooth, glabrous, with numerous small, conspicuous lenticels

raised toward the base.

Leaves five and three-fourths inches long, one and five-eighths inches wide, folded upward, oval to obovate-lanceolate; upper surface dark green, smooth or slightly rugose; lower surface light grayish-green; margin broadly crenate or coarsely serrate, tipped with dark red glands; petiole one-half inch long, glandless or with one to five small, reniform, greenish-yellow glands variable in position.

Flower-buds conical, pubescent, plump, appressed; blooming season early; flowers pink, one and three-fourths inches across, well distributed; pedicels nearly sessile, glabrous, green; calyx-tube dull reddish-green, yellowish-green within, campanulate, glabrous; calyx-lobes medium in length, narrow, acute, glabrous within, pubescent without; petals roundish-ovate, often broadly notched near the base, tapering to short, broad claws occasionally with a red base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, equal to the stamens in length.

Fruit matures early; two and one-half inches long, two and three-eighths inches wide, roundish, bulged near the apex, compressed, with unequal halves; cavity contracted, deep, narrow, abrupt; suture shallow, becoming deep at the extremities; apex roundish, with a small, mucronate tip; color creamy-white blushed with dull red, indistinctly striped with darker red; pubescence short, thick; skin tough, separates from the pulp; flesh white, juicy, stringy, tender, melting, sweet or with some

sprightliness; fair to good in quality; stone semi-free to free, one and three-eighths inches long, one inch wide, oval, plump, tapering to a short, abrupt point, bulged near the apex, contracted toward the base, with grooved, light-colored surfaces; ventral suture deeply furrowed along the sides, narrow, winged; dorsal suture winged, grooved.

EARLY CRAWFORD

1. Kenrick *Am. Orch.* 184. 1841. **2.** Hovey *Fr. Am.* **1**:29, 30, Pl. 1851. **3.** Waugh *Am. Peach Orch.* 201. 1913.

Crawford's Early Melocoton. **4.** Downing *Fr. Trees Am.* 490. 1845. **5.** Mas *Le Verger* **7**:45, 46, fig. 21. 1866-73.

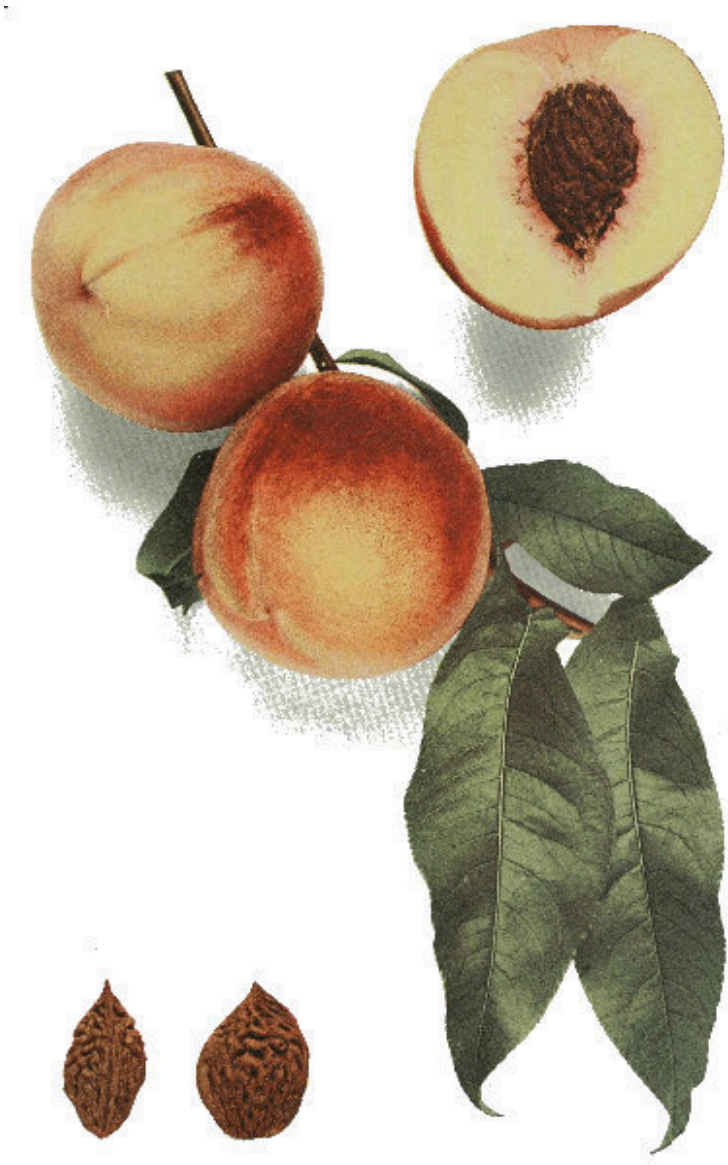
Crawford's Early. **6.** Elliott *Fr. Book* 272, 273. 1854. **7.** *Am. Pom. Soc. Cat.* 211. 1856. **8.** *Am. Pom. Soc. Rpt.* 42, 43. 1856. **9.** Leroy *Dict. Pom.* **6**:104 fig. 105. 1879. **10.** *Fulton Peach Cult.* 192, 193. 1908.

Willermoz. **11.** Carrière *Var. Pêchers* 76, 77. 1867. **12.** *Pom. France* **6**: No. 10, Pl. 10. 1869. **13.** Lauche *Deut. Pom.* **VI**: No. 22, Pl. 1882. **14.** Mathieu *Nom. Pom.* 418. 1889.

Unproductiveness and uncertainty in bearing keep Early Crawford from being the most commonly grown early, yellow-fleshed peach in America. In its season, when well grown, it is unapproachable in quality by any other peach and is scarcely equalled by any other of any season. The peach has all of the characters that gratify the taste—richness of flavor, pleasant aroma, tender flesh and abundant juice. Besides being one of the very best in quality it is one of the handsomest peaches. Unfortunately, this Station is one of the many places in which Early Crawford is

not at home and the accompanying illustration is far from doing the variety justice in size, shape or color. At their best, the fruits are larger, more rotund and more richly colored than shown in *The Peaches of New York*. In soils to which it is well adapted the peach is large, often very large, roundish-oblong, slightly compressed, distinguished by its broad, deep cavity, rich red in the sun, splashed and mottled with darker red, and golden yellow in the shade. The flesh is a beautiful, marbled yellow, rayed with red at the pit and perfectly free from the stone. The trees are all that could be desired in health, vigor, size and shape but are unproductive and uncertain and tardy in bearing. Yet with these faults Early Crawford, for at least a half-century, was the leading market peach of its season giving way finally to white-fleshed sorts of the Belle, Carman and Greensboro type. Fast passing from commercial importance, Early Crawford ought long to be grown in home plantations because of the beauty and unexcelled quality of the fruit.

Early Crawford came into existence in the orchard of William Crawford, Middletown, New Jersey, early in the Nineteenth Century. Its merits were first set forth by William Kenrick in the *American Orchardist* in 1832. The variety in some manner found its way to Europe and came into the hands of Ferdinand Gaillard, a nurseryman at Brignais, Rhone, France, but without a name. Gaillard, believing it to be a new sort, gave it the name Willermoz in honor of M. Willermoz, Secretary of the Pomological Congress of France. Later, French pomologists decided that Gaillard's peach and Early Crawford were identical. The American Pomological Society put this peach on its fruit-list in 1856 under the name Crawford's Early. The name has several times been varied but today the variety is listed as Early Crawford.



EARLY CRAWFORD

Tree large, vigorous, upright-spreading, round-topped, often unproductive; trunk thick; branches stocky, smooth, reddish-brown very lightly tinged with ash-gray; branchlets with internodes of medium

length, pinkish-red intermingled with darker red, glossy, smooth, glabrous, with numerous large and small, conspicuous, raised lenticels.

Leaves six and three-fourths inches long, one and one-half inches wide, folded upward and recurved, oval to obovate-lanceolate, medium in thickness, leathery; upper surface dark green, usually smooth except along the prominent midrib; lower surface light grayish-green; margin finely serrate, often in two series, tipped with very fine, reddish-brown glands; petiole three-eighths inch long, glandless or with one to five small, globose, greenish-yellow glands variable in position.

Flower-buds conical, heavily pubescent, free; blossoms appear in mid-season; flowers pale pink, less than one inch across, well distributed; pedicels very short, thick, glabrous, green; calyx-tube reddish-green, orange-colored within, obconic; calyx-lobes short, medium to narrow, acute, glabrous within, pubescent without; petals oval, broadly notched near the base, tapering to broad claws red at the base; filaments one-fourth inch long, equal to the petals in length; pistil often longer than the stamens.

Fruit matures in early mid-season; two and one-half inches long, two and nine-sixteenths inches wide, round-oval or cordate, bulged near the apex, compressed, with unequal halves; cavity deep, wide, abrupt; suture shallow, becoming deeper near the apex; apex variable in shape, often with a swollen, elongated tip; color golden-yellow, blushed with dark red, splashed and mottled with deeper red; pubescence thick;

skin separates from the pulp; flesh deep yellow, rayed with red near the pit, juicy, tender, pleasantly sprightly, highly flavored; very good in quality; stone free, one and one-half inches long, one inch wide, oval or ovate, bulged along one side, medium plump, with small, shallow pits in the surfaces; ventral suture deeply furrowed along the sides, medium in width, winged; dorsal suture grooved, slightly winged.

EARLY YORK

1. Kenrick *Am. Orch.* 220. 1832. **2.** Downing *Fr. Trees Am.* 475, 476. 1845. **3.** *Horticulturist* **2**:399. 1847-48. **4.** *Proc. Nat. Con. Fr. Gr.* 37, 38, 51. 1848. **5.** Hovey *Fr. Am.* **1**:45, Pl. 1851. **6.** Elliott *Fr. Book* 273. 1854. **7.** Hooper *W. Fr. Book* 221. 1857. **8.** *Mag. Hort.* **23**:518. 1857. **9.** *Flor. & Pom.* 24, Pl. 1862. **10.** Hogg *Fruit Man.* 446. 1884. **11.** Fulton *Peach Cult.* 184. 1908.

Serrate Early York. **12.** Thomas *Am. Fruit Cult.* 290 fig. 1849. **13.** *U. S. Pat. Off. Rpt.* 334. 1856.

York Précoce. **14.** Mas *Le Verger* **7**:115, 116, fig. 56. 1866-73. **15.** Leroy *Dict. Pom.* **6**:308, 309 fig., 310. 1879.

Early York is entitled to a place among the leading varieties of peaches only because of the part it played in the beginning of the peach-industry in America. As the history which follows shows, it was one of the first named varieties to be grown in this country. It is of more than passing interest, too, because it is one of the few sorts with glandless leaves. The fruits of Early York are insignificant, though the color-plate hardly does the variety justice, but the vigorous, healthy, compact trees have much to recommend them so that the variety might be used as a

stepping-stone in improving tree-characters of peaches.

No doubt several distinct varieties have been grown as Early York. Large York, for example, which originated with Prince at Flushing, New York, has probably been more often sold for Early York than any other sort. Early Purple, a very old peach of European origin, was introduced to America about the time Early York came to notice. In some manner this variety has been confused with Early York, the name often being given as a synonym of that variety. The two sorts, however, are distinct and the error of connecting the name has led to much misunderstanding. Early Purple disappeared from American cultivation soon after its introduction and peaches sold under this name today are probably Early York. A controversy has arisen as to the origin of Early York, both America and England having been given as its home. That Early York is of American origin, however, there can be little doubt. Its parentage, the time and place of origin, however, are unknown. It may have come in existence in New York, or possibly New Jersey or, as some have thought, near York, Pennsylvania. The variety was sent to Europe about the middle of the Nineteenth Century where Thomas Rivers grew it at Sawbridgeworth and from it raised several promising seedlings. The leaves of the variety are distinctly serrated, giving rise to the name Serrate Early York. Red Rareripe, another variety having serrated, glandless leaves, has often been confused with Early York. The two are very similar but the fruit of Red Rareripe is larger, broader and ripens about a week later. Early York was placed on the list of recommended fruits at the National Convention of Fruit-Growers in 1848 and since that time has had a place on the fruit-list of the American Pomological Society.



EARLY YORK

Tree large, compact, upright-spreading, unproductive; trunk stocky; branches thick, smooth, reddish-brown tinged with light ash-gray; branchlets very long, dark pinkish-red with some green, glossy, smooth, glabrous, with conspicuous, raised lenticels variable in size, numerous at the base and well scattered along the branches.

Leaves six inches long, one and one-half

inches wide, folded upward, oval to obovate-lanceolate; upper surface dark green, smooth becoming slightly rugose along the midrib; lower surface light grayish-green; margin sharply serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, glandless.

Flower-buds conical or pointed, heavily pubescent, free; blossoms open very late; flowers seven-eighths inch across, pale pink, the edges darker; pedicels short, glabrous, green; calyx-tube reddish-green, yellow within, campanulate; calyx-lobes short, narrow, acute or obtuse, glabrous within, pubescent without; petals roundish-oval, broadly notched, tapering to short claws of medium width, sometimes stained with red at the base; filaments three-eighths inch long, shorter than the petals; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in early mid-season; two inches long, two and one-fourth inches wide, roundish to nearly oblate, somewhat oblique, with unequal halves; cavity shallow, flaring, with tender skin, often tinged with red; suture shallow, extending beyond the tip; apex variable in shape, with mucronate or sometimes mamelon tip; color pale white or creamy-white, blushed and mottled with carmine; pubescence thin, short; skin tough, adherent to the pulp until fully ripe; flesh white, rayed with red near the pit, juicy, stringy, tender and melting, mild subacid; good in quality; stone nearly free, over one inch long, three-fourths inch wide, oval, plump, flattened at the base, short-pointed at the apex, with pitted surfaces marked by few grooves; ventral

suture narrow, with furrows of medium depth along the sides; dorsal suture deeply grooved.

EDGEMONT

1. Harrison & Sons *Cat.* 18. 1901.

Edgemont Beauty. **2.** Barnes Bros. *Cat.* 7. 1910. **3.** *Md. Sta. Bul.* **159**:159. 1911. **4.** Stark Bros. *Cat.* 35. 1913.

In fruit Edgemont is not easily distinguished from Late Crawford, the essential differences being that the fruits of Edgemont are more rotund than those of Late Crawford and the flavor is a little more acid. The trees differ, chiefly, in the greater productiveness of Edgemont and in a little later maturity of the crop. Of the score or more peaches of the Crawford type, in many respects the best of the several types of peaches, Edgemont is distinctly superior to all on our grounds. Compared with Elberta, with which it must compete in the markets, it is several days later, is juicier, less fibrous, much excels that variety in quality and, though the individual peaches are not quite as large, at Geneva the yield of fruit is even greater. If Edgemont proves adapted to as wide a range of climates and soils as Elberta, we shall have a new commercial peach of very great value. Whether it succeeds in commerce or not, Edgemont is well worth planting in home orchards by virtue of the exceptionally high quality and attractive appearance of the fruit.

Edgemont, shortened from Edgemont Beauty, in accordance with the rules of the American Pomological Society, is of rather recent origin, having been introduced by the Miller Orchard Company, Edgemont, Maryland, in 1902.



EDGEMONT

Tree large, vigorous, upright-spreading, productive; trunk stocky, smooth; branches thick, smooth; branchlets medium in thickness, purplish-red mingled with brown.

Leaves large, obovate, medium in thickness; upper surface yellowish-green, somewhat wrinkled; margin crenate; glands globose.

Flower-buds half-hardy, medium in size; flowers appear in mid-season, small, dark pink, well distributed, single; pedicels

short, somewhat slender; petals ovate, entire; filaments long, sometimes longer than the petals.

Fruit matures in late mid-season; large, irregular, roundish-ovate, truncate at the base, with unequal halves; cavity rather deep, medium to narrow, regular, abrupt; suture shallow; apex mucronate; color light yellow or orange-yellow, with a bronze blush often deepening to an attractive carmine blush; pubescence short, medium in thickness; skin thick, somewhat tough, separates from the pulp; flesh yellow, stained red at the pit, very juicy, slightly coarse and stringy, meaty, mild subacid or sprightly; very good in quality; stone free, large, oval, plump, pointed, with corrugated surfaces.

ELBERTA

1. *Am. Pom. Soc. Rpt.* 66. 1881. **2.** *Am. Gard.* **9**:391 fig. 1888. **3.** *Can. Hort.* **11**:281, 282. 1888. **4.** *Am. Pom. Soc. Cat.* 30. 1889. **5.** *U. S. D. A. Rpt.* 382, Pl. 1. 1891. **6.** *Can. Hort.* **17**:305, Pl. 1894. **7.** *Mo. Hort. Soc. Rpt.* 272, 273. 1896. **8.** *Tex. Sta. Bul.* **39**:807 fig. 1896. **9.** *Can. Hort.* **23**:131, 132, fig. 1769. 1900. **10.** *Del. Sta. Rpt.* **13**:97 fig. 98. 1900. **11.** *Rural N. Y.* **60**:54, 1901. **12.** Budd-Hansen *Am. Hort. Man.* **2**:343, 344 fig. 1903.

Elberta leads all other peaches in number of trees in New York and in America. It is, too, the most popular of all peaches in the markets. A study of the variety, though it reveals some shortcomings, justifies its popularity with orchardists and marketmen. The preeminently meritorious character of Elberta is its freedom from local prejudices of

either soil or climate—it is the cosmopolite of cultivated peaches. Thus, Elberta is grown with profit in every peach-growing state in the Union and in nearly all, if not all, is grown in greater quantities than any other market peach. The second character which commends Elberta to those in the business of peach-growing is fruitfulness—barring frosts or freezes the trees load themselves with fruit year in and year out. Added to these two great points of superiority are ability to withstand, in fair measure at least, the ravages of both insects and fungi, large size, vigor, early bearing and longevity in tree, and large, handsome, well-flavored fruits which ship and keep remarkably well.

Elberta, however, is not without faults and serious ones. The trees are not as hardy in either wood or blossom as might be wished. In northern regions peaches of the Crosby, Chili, Smock and Wager type stand winter freezes and spring frosts much better. The blossoms open rather too early in New York. The peaches also fall short in quality. They lack the richness of the Crawfords and the sweetness of the white-fleshed Champion type. Moreover, the pronounced bitter tang, even when the peaches are fully ripe, is disagreeable to some. Picked green and allowed to ripen in the markets, Elberta is scarcely edible by those who know good peaches. The stone is large but is usually wholly free from the flesh. With these faults, the dominance of Elberta is not wholly desirable as growers have a feeling of sufficiency with the one variety and consumers are forced to put up with a peach none too high in quality. Still, since no other variety is so reliable for the trade, this, by the way, being about the only variety suitable for export by reason of shipping qualities, Elberta promises long to continue its commercial supremacy.

Elberta was grown by Samuel H. Rumph, Marshallville, Georgia, from a seed of Chinese Cling planted in the fall of 1870. The Chinese Cling tree stood near Early and Late Crawford trees and trees of Oldmixon Free and Oldmixon Cling. Mr. Rumph believed that the Chinese Cling blossom which produced Elberta was fertilized by pollen from Early Crawford. The seedling was named Elberta in honor of Mr.

Rumph's wife, Clara Elberta Rumph. An interesting coincidence connected with the origin of Elberta is that another stone from the same Chinese Cling tree was given to L. A. Rumph and from this grew Belle, the splendid white-fleshed, freestone peach. Nurserymen and growers frequently produce strains of Elberta which they think superior to the older sort but the several strains which have been tested on the grounds of this Station have not proved to differ a whit from the old variety. From the number of so-called "Early Elbertas" and "Late Elbertas" it may be suspected that occasionally Elberta, because of some local condition, ripens its fruit prematurely, or that ripening may be delayed; when removed from the particular local environment, ripening time seems to occur normally. Elberta was placed on the American Pomological Society's fruit-list in 1889.



ELBERTA

Tree large, vigorous, upright-spreading, dense-topped, hardy, very productive; trunk thick; branches stocky, smooth, reddish-brown intermingled with light ash-gray; branchlets with tendency to rebranch, with long internodes, olive-green lightly overspread with dark red, glossy, smooth, glabrous, with numerous conspicuous lenticels variable in size.

Leaves six and three-fourths inches long, one and three-fourths inches wide, oval to obovate-lanceolate; upper surface dull, dark olive-green, mottled and somewhat rugose; lower surface grayish-green; margin finely to coarsely serrate, often in two series, tipped with reddish-brown glands; petiole three-eighths inch long, with one to six reniform, greenish-yellow glands medium in size and variable in position.

Flower-buds large, pubescent, conical or obtuse, plump, appressed; flowers appear in mid-season; blossoms light pink near the center, darker pink toward the edges, one and one-fourth inches across; pedicels short, glabrous, green; calyx-tube reddish-green, orange-colored within, obconic, glabrous; calyx-lobes acute, glabrous within, pubescent without; petals oval to ovate, bluntly notched near the base, tapering to broad, short claws red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in mid-season; two and three-fourths inches long, two and one-half inches wide, roundish-oblong or cordate,

compressed, usually with a slight bulge at one side; cavity deep, abrupt to flaring, often mottled with red; suture shallow, deepening toward the apex; apex roundish, with a mamelon or pointed tip; color greenish-yellow changing to orange-yellow, from one-fourth to three-fourths overspread with red and with much mottling extending sometimes over nearly the entire surface; pubescence thick and coarse; skin thick, tough, separates from the pulp; flesh yellow, stained with red near the pit, juicy, stringy, firm but tender, sweet or subacid, mild; good in quality; stone free, one and eleven-sixteenths inches long, one and one-sixteenth inches wide, broadly ovate, varying from flat to plump, sharp-pointed, decidedly bulged on one side, with pitted surfaces; ventral suture deeply furrowed along the sides, narrow, winged; dorsal suture deeply grooved, strongly winged.

ENGLE

1. *Mich. Hort. Soc. Rpt.* 192, 296, 299. 1893. **2.** *Mich. Sta. Bul.* **169**:213. 1899. **3.** *Am. Pom. Soc. Cat.* 37. 1909. **4.** *Mich. Sta. Sp. Bul.* **44**:39, 40. 1910.

Engol's Mammoth. **5.** *Ont. Fr. Exp. Sta. Rpt.* **2**:58. 1895. **6.** *Ibid.* **6**:43. 1899.

Engle is almost a counterpart of the well-known Late Crawford from which it differs essentially in earlier ripening fruit and more productive trees. Before Elberta became the vogue, Engle stood high in the esteem of commercial planters in Michigan and its culture was rapidly spreading into other states but the coming of Elberta stopped its career. There seems little doubt but that Engle is more productive than either of the two Crawfords, splendid

peaches which fail because of unproductiveness, and for those who want the best it is as good as any of this group—quite too good to be lost. One of the faults of the two Crawfords is that the trees are tardy in coming in bearing. Engle is said to bear younger. On the Station grounds the fruit drops rather too readily but we do not find this fault mentioned by others.

Engle was grown some forty years ago by C. C. Engle, Paw Paw, Michigan, with a number of seedlings, several others of which proved valuable. Late Crawford may have been the seed parent but of this there can be no certainty. The American Pomological Society added Engle to its list of recommended fruits in 1909.



ENGLE

Tree very large, upright becoming spreading, tall, hardy, medium in productiveness; trunk thick, variable in smoothness; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets long, heavily tinged with olive-green, glossy, smooth, somewhat tortuous, inclined to rebranch, glabrous, with numerous small, conspicuous, raised lenticels.

Leaves six and one-fourth inches long, one

and three-eighths inches wide, irregularly curled, oval to obovate-lanceolate, thin; upper surface rather dark, dull olive-green, rugose along the midrib; lower surface light grayish-green; apex narrow-acuminate; petiole three-eighths inch long, with one to four small, globose, greenish-yellow glands at the base of the leaf.

Flower-buds large and long, conical, plump, pubescent, free; blossoms appear in mid-season; flowers light pink at the center, darker red near the edges, one and one-eighth inches across; pedicels very short, glabrous, green; calyx-tube dull reddish-green, orange-colored within, obconic, glabrous; calyx-lobes narrow, acute, glabrous within, heavily pubescent without; petals oval to slightly ovate, faintly and broadly crenate, tapering to claws with red base; filaments three-eighths inch long, shorter than the petals; pistil pubescent at the ovary, equal to the stamens in length.

Fruit matures in mid-season; two inches long, two and seven-sixteenths inches wide, round-oval to cordate, becoming almost oblate in some specimens, bulged near the apex, compressed, with unequal sides; cavity abrupt to flaring; suture shallow, deepening toward the apex; apex variable in shape; color greenish-yellow changing to orange-yellow, in parts overspread with a bright red blush, splashed with darker red; pubescence short, thick, fine; skin thin, tough, separates readily from the pulp; flesh pale yellow, stained with red near the pit, juicy, tender and melting, sweet or pleasantly subacid, mild; good in quality; stone free, one and five-sixteenths inches long, fifteen-sixteenths inch wide ovate,

bulged on one side, plump, with pitted surfaces; ventral suture very deeply grooved along the edges; dorsal suture grooved, often winged.

EUREKA

1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880. **2.** *Gard. Mon.* **24**:211, 212. 1882. **3.** *U. S. D. A. Pom. Rpt.* 42. 1895. **4.** *Mich Sta. Bul.* **205**:31. 1903.

In the South where Eureka originated, the variety seems to have a very good reputation as an early, white-fleshed, semi-free peach. In New York the variety ripens early, when there are many other good peaches of its type, and it is therefore doubtful if it will ever have a prominent place in peach-growing in this State. As the variety grows on the Station grounds, one quality, in particular, marks Eureka as worthy more attention than it now receives—the peaches are exceptionally uniform in size. The color-plate, by the way, shows shape and color very well but does not give a fair idea of the size, as the peaches grow larger in average years. Though long grown, Eureka is worthy further trial in New York.

Eureka is a seedling of Chinese Cling found nearly half a century ago in Bossier Parish, Louisiana. It was introduced by L. T. Sanders and Son, Plain Dealing, Louisiana.



EUREKA

Tree above medium in size, upright-spreading, round-topped, semi-hardy to hardy, very productive; trunk thick; branches stocky, smooth, reddish-brown overspread with very light ash-gray;

branchlets with long internodes, reddish lightly intermingled with olive-green, glossy, smooth, glabrous, with numerous conspicuous, large lenticels.

Leaves five inches long, one and seven-sixteenths inches wide, folded upward, variable in shape, leathery; upper surface dark green intermingled with olive-green, smooth becoming rugose near the midrib; lower surface grayish-green, with a prominent midrib; margin finely or coarsely serrate, glandular; petiole five-sixteenths inch long, with two to six large, reniform glands variable in color and position.

Flower-buds somewhat tender, small, short, heavily pubescent, obtuse or conical, plump, usually appressed; blossoms open early; flowers one and thirteen-sixteenths inches across, pink, well distributed; pedicels very short, medium to thick, glabrous, green; calyx-tube reddish-green, greenish-yellow within, obconic; calyx-lobes usually broad, obtuse, glabrous within, pubescent without; petals oval or ovate, entire, broadly and shallowly crenate, tapering to long claws reddish at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, as long as the stamens.

Fruit matures early; about two and seven-sixteenths inches in diameter, round or round-oval, bulged on one side, compressed, with unequal halves; cavity shallow, abrupt; suture shallow, deepening at the apex; apex flattened or more or less rounded, with mucronate tip; color greenish-white or creamy-white, often with a distinct, bright red blush overspreading

one-third of the surface, with faint mottlings; pubescence fine, thick, short; skin thin, tender, separates from the pulp; flesh white, tender and melting, very juicy, pleasant flavored, good; stone free, one and one-half inches long, one inch wide, ovate to oval, tapering to a long point, with corrugated and deeply pitted surfaces; ventral suture winged, deeply grooved along the edges, narrow; dorsal suture a narrow groove.

FAMILY FAVORITE

1. *Gard. Mon.* **22**:304. 1880. **2.** *W. N. Y. Hort. Soc. Rpt.* 114. 1880. **3.** *Tex. Sta. Bul.* **39**:807 fig. 7. 1896. **4.** *Del. Sta. Rpt.* **13**:99. 1901. **5.** Budd-Hansen *Am. Hort. Man.* **2**:344. 1903. **6.** *Am. Pom. Soc. Cat.* 33. 1909.

Family Favorite is one of the well-known peaches in the South-Central States but in most respects falls far short of Champion, with which it must compete, in New York. The tree is doubtfully hardy and the fruit scabs badly. The variety has two characters to commend it and to give it standing among commercial peaches in New York: Compared with that of Champion, the fruit stands shipment much better and when brown-rot is rife, does not suffer nearly as much. In selected locations, then, when a mid-season, white-fleshed peach is wanted, this variety is worth trying.

Family Favorite is a seedling of Chinese Cling, possibly crossed with Oldmixon Free. It was raised by the late William H. Locke, Bonham, Fannin County, Texas. The exact date of its origin is unknown. The variety was named and introduced by T. V. Munson, Denison, Texas. The American Pomological Society added Family Favorite to its list of fruits in 1909.



FAMILY FAVORITE

Tree of medium size, spreading, inclined to droop, open-topped, productive; trunk and branches intermediate in thickness; branches reddish-brown with a tinge of very light ash-gray; branchlets rather short, with internodes dark red intermingled with olive-green, glossy, smooth, curving, with

numerous medium to small, conspicuous, raised lenticels.

Leaves folded upward, six inches long, one and one-half inches wide, ovate-lanceolate; upper surface a dull, mottled, dark green mingled with olive-green, rugose along the midrib; lower surface light grayish-green; margin finely serrate, often in two series, tipped with reddish-brown glands; petiole three-eighths inch long, with one to four small, globose, greenish-yellow glands variable in position.

Flower-buds small, obtuse to pointed, very plump, heavily pubescent, appressed; season of bloom early; flowers light pink at the center, darker pink along the edges, one and one-eighth inches across; pedicels short, glabrous; calyx-tube reddish-green, campanulate, glabrous; calyx-lobes broad, obtuse, pubescent within, heavily pubescent toward the edges; petals oval to ovate, usually entire, tapering to narrow claws; filaments one-half inch long, equal to the petals in length; pistil pubescent at the base, longer than the stamens.

Fruit matures in mid-season; two and one-half inches long, two and three-eighths inches wide, roundish-oval to strongly oval, bulged near the apex, compressed, with unequal sides; cavity contracted, narrow, abrupt; suture a line, deepening toward the apex; apex roundish, with a small, mucronate tip set in a depression; color creamy-white, with a few splashes of red showing through a dull and mottled blush; pubescence short, thin; skin thin, tough; flesh greenish-white, strongly stained with red at the pit, very juicy, tender and

melting, sweet or subacid, aromatic; good in quality; stone semi-free to free, tinged with red, one and one-half inches long, one inch wide, flattened near the base, elliptical, plump, winged on one side, with roughish and usually pitted surfaces; ventral suture deeply furrowed along the sides, narrow; dorsal suture grooved, irregular.

FITZGERALD

1. *Can. Hort.* **18**:417. 1895. **2.** *Ont. Fr. Exp. Sta. Rpt.* **2**:57. 1895. **3.** *Mich. Hort. Soc. Rpt.* 235, 236. 1896. **4.** *Am. Pom. Soc. Cat.* 33. 1899. **5.** Budd-Hansen *Am. Hort. Man.* **2**:344. 1903. **6.** *Can. Hort.* **27**:195 fig. 1904. **7.** Waugh *Am. Peach Orch.* 196, 202. 1913.

Compare the color-plates of Fitzgerald and Early Crawford and it is seen at once that the two peaches are almost identical in fruit and foliage. There could be no use in growing Fitzgerald in this State, so similar is it to the better-known Early Crawford, were it not for the fact that the two differ in season a few days and that possibly Fitzgerald is the more productive of the two. Fitzgerald ripens a few days earlier than Early Crawford though in some of the references given it is said to ripen a few days later. Canadian peach-growers claim that Fitzgerald, besides being more productive and extending the season of Early Crawford, is hardier. In the effort to maintain peaches of the Crawford family in commercial plantations it may be worth while to try Fitzgerald.

Fitzgerald originated a quarter of a century or more ago at Oakville, Ontario, but who the originator or what the parentage is not known. The American Pomological Society placed Fitzgerald on its list of recommended fruits in 1899, a place it still holds.



FITZGERALD

Tree of medium size, upright-spreading, round-topped, hardy, not very productive; trunk smooth; branches smooth, reddish-brown covered with light ash-gray; branchlets long, with inclination to develop short, spur-like branchlets, pinkish-red or dark red intermingled with green, smooth, glabrous, with numerous conspicuous, rather small lenticels.

Leaves six inches long, one and one-half inches wide, folded upward but recurved, oval to obovate-lanceolate; upper surface

dark green tinged with olive-green, rugose; lower surface light grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-half inch long, glandless or with one to five small, globose, greenish-yellow glands variable in position.

Flower-buds hardy, conical, pubescent, plump, free; blossoms appear in mid-season; flowers pale pink varying to a deeper red along the edges, seven-eighths inch across; pedicels very short, slender, glabrous, green; calyx-tube reddish-green, orange-colored within, obconic, glabrous; calyx-lobes narrow, acute, glabrous within, heavily pubescent without; petals roundish-oval to ovate, white at the center, tapering to narrow claws often red at the base; filaments one-fourth inch long, equal to the petals in length; pistil pubescent at the ovary, equal to the stamens in length.

Fruit matures in mid-season; two and one-half inches long, more than two and one-half inches wide, roundish-oval to cordate, somewhat compressed, with unequal halves, bulged at one side; cavity medium to deep, wide, abrupt or often flaring, marked with radiating streaks; suture shallow, deepening toward the apex; apex roundish, ending in a recurved, mamelon point; color golden-yellow more or less overspread with a dull red blush, with splashes and mottlings of deeper red; pubescence long, thick; skin thin, tough; flesh yellow, rayed with red at the pit, juicy, rather firm, tender, sweet or mildly subacid, pleasant flavored; very good in quality; stone free, one and one-half inches long, one inch wide, ovate, plump, flattened near the base, with pitted

surfaces; ventral suture very deeply furrowed along the sides; dorsal suture slightly winged.

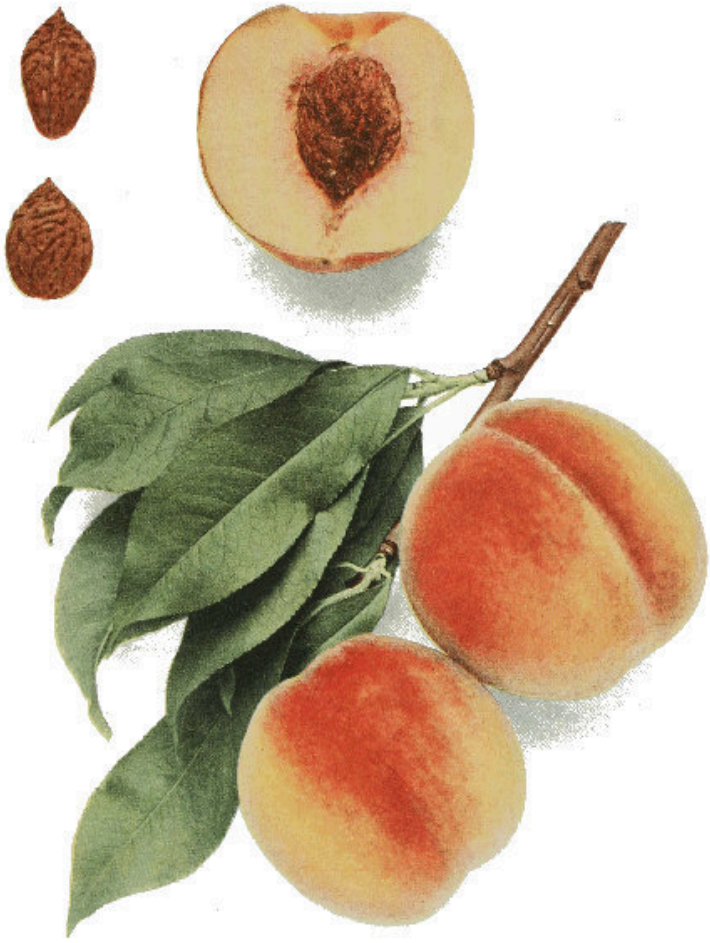
FOSTER

1. *Am. Pom. Soc. Cat.* 32. 1869. **2.** *Am. Hort. Ann.* 82 fig. 39. 1870. **3.** *Gard. Mon.* **12**:371. 1870. **4.** Downing *Fr. Trees Am.* 1st App. 121. 1872. **5.** *Mich. Hort. Soc. Rpt.* 32, 260. 1874. **6.** *Cult. & Count. Gent.* **44**:678. 1879. **7.** Budd-Hansen *Am. Hort. Man.* **2**:345. 1903. **8.** Waugh *Am. Peach Orch.* 202. 1913.

Foster's Seedling. **9.** *Am. Jour. Hort.* **2**:277 fig. 1867.

Foster is another very good peach of the Crawford type and at one time was widely grown in all northern peach-regions. It is so similar to Late Crawford that even experienced growers can hardly tell them apart. Those who grow the two in the same orchard find the essential differences to be: Foster is the larger peach, is more rotund, somewhat more flattened at the base, is a little earlier, possibly handsomer and is even of better quality than Late Crawford; the trees of Foster, however, are hardly as productive as those of either of the two unproductive Crawfords. This unproductiveness is the fault that keeps the variety in the background as a commercial peach. The variety is well worth planting in any home orchard.

Foster originated about 1857 with J. T. Foster, Medford, Massachusetts, from the stone of a peach purchased by him in a Boston market. It was awarded a place on the American Pomological Society's list of recommended fruits in 1869.



FOSTER

Tree very large, vigorous, upright-spreading, hardy, variable in productiveness; trunk thick; branches stocky, smooth, reddish-brown intermingled with light ash-gray; branchlets spur-like, long, dark pinkish-red mingled with olive-green, glossy, smooth, glabrous, with numerous large and small lenticels raised at the base.

Leaves six inches long, one and three-eighths inches wide, folded upward, oval to obovate-lanceolate, intermediate in thickness, leathery; upper surface dark green, smooth becoming rugose near the midrib; lower surface grayish-green; margin finely serrate, tipped with small glands; petiole seven-sixteenths inch long, with one to four small globose glands variable in color and position; flower-buds somewhat tender, conical or pointed, pubescent, free; blossoms appear in mid-season.

Fruit matures in mid-season; two and seven-sixteenths inches long, more than two and one-half inches wide, round-cordate, often bulged at one side, compressed, with unequal sides; cavity deep, wide, flaring or somewhat abrupt, often splashed with red; suture shallow, becoming deeper at both apex and cavity and extending slightly beyond the point; apex roundish or pointed, with a recurved, mamelon or occasionally mucronate tip; color deep yellow overspread with dark red, with a few splashes or stripes of red; pubescence long, thick; skin thick, tough, separates from the pulp when fully ripe; flesh deep yellow, faintly stained with red near the pit, juicy, coarse and stringy, firm but tender, sweet, mild, spicy; very good in quality; stone free.

GENERAL LEE

1. *Gard. Mon.* **29**:271. 1887. **2.** *Am. Pom. Soc. Cat.* 30. 1889. **3.** Budd-Hansen *Am. Hort. Man.* **2**:346. 1903.

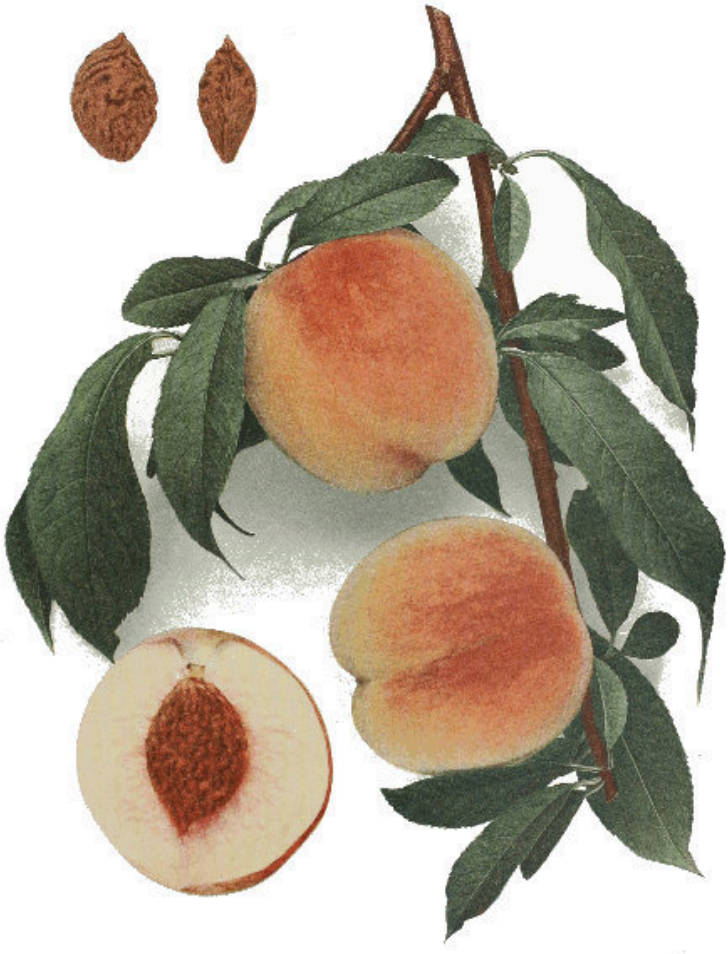
R. E. Lee. **4.** *Ga. Hort. Soc. Rpt.* 21. 1877. **5.**

Gard. Mon. **27**:275. 1885. **6.** *Ga. Sta. Bul.* **42**:240. 1898.

Lee. **7.** *Am. Pom. Soc. Cat.* 22. 1897. **8.** *Del. Sta. Rpt.* **13**:104. 1901. **9.** Budd-Hansen *Am. Hort. Man.* **2**:349. 1903.

General Lee is a white-fleshed clingstone, the fruit none too attractive and surpassed by that of other varieties of its season in quality. It is without value in the North. Southern growers say General Lee is an improved Chinese Cling and as such well worth growing under some conditions. It has the reputation of being quite susceptible to brown-rot. The variety is offered by a good many nurserymen and we discuss it only to condemn it for planting in New York. The variety, as its history shows, really belongs to eastern Asia and thus arouses interest.

General Lee originated with Judge Campbell, Pensacola, Florida, from pits brought from Japan in 1860. In 1864 P. J. Berckmans received buds from R. R. Hunley of Alabama and in 1867 introduced the sort under the name General Lee. The American Pomological Society listed this peach in 1889 as General Lee but in 1897 shortened the name to Lee and so it appears in the Society's catalog at the present time. We prefer the old name since when shortened it loses all significance as a commemorative appellation.



GENERAL LEE

Tree very large, vigorous, spreading, unproductive; trunk thick, rough; branches reddish-brown tinged with light ash-gray; branchlets slender, with internodes dark red mingled with considerable green, glossy, smooth, glabrous, with numerous inconspicuous, raised lenticels variable in size.

Leaves six and one-fourth inches long, one

and one-half inches wide, flat or folded downward, oval to obovate-lanceolate, thick, leathery; upper surface dark, dull green, smooth; lower surface grayish-green; apex acuminate; margin coarsely serrate, tipped with reddish-brown glands; petiole nearly one-half inch long, with one to four large, reniform, reddish-brown glands variable in position.

Flower-buds somewhat tender, large, conspicuous, very plump, conical to obtuse, strongly pubescent, appressed or slightly free; blossoms appear in mid-season; flowers one and thirteen-sixteenths inches across, pink, well distributed; pedicels short, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, obconic, glabrous; calyx-lobes narrow, obtuse, glabrous within, pubescent without; petals narrow-oval, tapering to short, broad claws occasionally with reddish base; filaments seven-sixteenths inch long, shorter than the petals; pistil pubescent near the base, longer than the stamens.

Fruit matures in mid-season; two and five-eighths inches long, two and one-half inches wide, round or roundish-oval, compressed, with halves equal; cavity deep, medium to wide, contracted around the sides, abrupt or flaring, often mottled with red; suture medium to deep, extending beyond the tip; apex mucronate, mamelon; color greenish-white changing to creamy-white, with a dull or lively red blush in which are intermingled a few splashes of duller red; pubescence coarse, long, thick; skin thick, tough, clings to the pulp; flesh white, stained with red near the pit, juicy, stringy, tender, sweet but sprightly,

pleasantly flavored; good in quality; stone clinging, one and five-sixteenths inches long, one inch wide, bulged on one side, broadly oval to ovate, flattened, short-pointed at the apex, with pitted surfaces; ventral suture winged, narrow, deeply grooved along the edges; dorsal suture grooved.

GEORGE IV

1. *Mas Le Verger* **7**:49, 50, fig. 23. 1866-73. **2.** Leroy *Dict. Pom.* **6**:129 fig. 1879. **3.** *Am. Pom. Soc. Cat.* 37. 1909. **4.** Waugh *Am. Peach Orch.* 202. 1913.

George the Fourth. **5.** *Lond. Hort. Soc. Rpt.* **6**:413. 1826. **6.** *Pom. Mag.* **3**:105. Pl. 1830. **7.** Prince *Pom. Man.* **1**:192, 193. 1831. **8.** Downing *Fr. Trees Am.* 478. 1845. **9.** *Mag. Hort.* **13**:120, 121, 122. 1847. **10.** *Proc. Nat. Con. Fr. Gr.* 38, 51. 1848. **11.** Carrière *Var. Pêchers* 70. 1867. **12.** Hogg *Fruit Man.* 447. 1884. **13.** Budd-Hansen *Am. Hort. Man.* **2**:346. 1903.

Once one of the mainstays of American peach-growing, George IV is now of but historical interest. This variety was one of the first named American peaches and had the honor of being placed on the recommended list of fruits at the first meeting of the National Convention of Fruit-Growers, an organization which became the American Pomological Society, in 1848. George IV is not worth planting now and is illustrated and described in *The Peaches of New York* only that fruit-growers may note progress in the development of peaches. It is interesting to note that this old American peach is still widely grown in Europe.

George IV has been confused with several other sorts, particularly Morris Red. Prince, in the *Magazine of Horticulture*, writes that Morris Red is an old Red Rareripe

brought to America from Europe by Huguenot emigrants and that George IV came from buds of the original tree of this variety. The consensus of opinion, however, among those who early knew both peaches, is that Morris Red and George IV are distinct and that both are of American origin. George IV, the best authorities say, sprang up as a chance seedling, about 1821, in the garden of a Mr. Gill, Broad Street, New York City. After fruiting, the variety rapidly grew in favor and within a few years was everywhere grown in eastern America. Taken to Europe, it soon became one of the standard European peaches. From the first it was on the list in the American Pomological Society's fruit-catalog but was dropped in 1897 to be replaced in 1909. We doubt if it now deserves to be recommended on any list of fruits.



GEORGE IV

Tree large, vigorous, upright-spreading, hardy, unproductive; trunk thick; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets dark red, with faint traces of green, glossy, smooth, glabrous, with numerous conspicuous, small lenticels.

Leaves seven inches long, one and five-eighths inches wide, folded upward and recurved, oval to obovate-lanceolate, rather

thick, leathery; upper surface dark green, smooth except near the midrib; lower surface grayish-green; margin sharply serrate, red; petiole three-eighths inch long, glandless or with one to three small, globose, reddish-brown glands usually at the base of the blade.

Flower-buds short, obtuse, plump, heavily pubescent, appressed; blossoms appear in mid-season; flowers pale pink, with white centers and edged with darker pink, nearly one inch across; pedicels nearly sessile; calyx-tube reddish-green, light yellow within, campanulate, glabrous; calyx-lobes medium in length and width, obtuse or acute, glabrous within, pubescent without; petals roundish-oval, tapering to claws red at the base; filaments one-fourth inch long, equal to the petals in length; pistil longer than the stamens.

Fruit matures in mid-season; two and five-sixteenths inches long, two and seven-sixteenths inches wide, roundish-oblate, bulged near the apex, oblique, with unequal sides; cavity slightly contracted, deep, wide, abrupt, with tender skin; suture shallow, becoming deeper at both apex and cavity and faintly showing beyond the tip; apex roundish, with a mucronate tip; color greenish-white changing to creamy-white, with a pink blush and sometimes with faint mottlings of red; pubescence short, thick, fine; skin thin, tough, variable in adherence to the pulp; flesh whitish, deeply tinged with red near the pit, juicy, stringy, tender, mild, pleasantly flavored; good in quality; stone semi-free to free, one and one-eighth inches long, three-fourths inch thick, roundish-oval, very plump, flattened at the

base, tapering to a short, rounded point, with grooved surfaces; ventral suture winged, rather narrow; dorsal suture grooved.

GOLD DROP

1. Kan. Hort. Soc. *Peach, The* 142. 1899. **2.** *Mich. Sta. Bul.* **169**:214. 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:347. 1903. **4.** *Am. Pom. Soc. Cat.* 37. 1909.

Golden Drop. **5.** *U. S. Pat. Off. Rpt.* 298. 1855. **6.** *Mich. Hort. Soc. Rpt.* 243. 1886. **7.** *Ont. Fr. Exp. Sta. Rpt.* **2**:58 fig. 1895. **8.** *Mich. Sta. Sp. Bul.* **44**:42, 43 fig., 44, 45. 1910.

Gold Drop, long a familiar variety in Michigan peach-orchards, is not much grown elsewhere. It is doubtfully worth planting in New York as a peach of commerce but should find a place in every home orchard. The variety has several distinctive peculiarities which make it a pleasing variation in the peach-orchard and add to its merits as a home fruit. Thus, its transparent, golden skin and flesh make it one of the handsomest of all peaches; add to handsome appearance a somewhat distinctive flavor—vinous, rich, refreshing—and the peach becomes one that all agree is very good and one that, were the size larger, would sell in any market. Gold Drop is further characterized by great hardiness in tree and bud and by remarkable productiveness. Indeed, it loads itself so heavily that the peaches invariably run small unless the trees are heavily pruned and the crop thinned—small size of fruit is the greatest defect of the variety. Besides being one of the hardiest of all peaches it is also about the least susceptible to brown-rot and leaf-curl, the two worst scourges of the peach when yellows permits the trees to live. Earliness in coming in bearing is another admirable character. The trees are of but medium size, are dainty in habits with clean,

fresh foliage so that the variety is an attractive ornamental. All in all, Gold Drop is ideal for the home garden and has many good characters which can be used as stepping-stones in breeding peaches.

The origin of Gold Drop is unknown. It is evidently an old sort and some horticulturists believe it to be an old variety renamed. The variety has been cultivated in Michigan orchards for many years under the name Golden Drop given it by George W. Griffin, Casco, Allegan County, Michigan, who introduced it. The variety was at one time supposed to be the peach which is grown in Michigan as Yellow Rareripe but it is not the Yellow Rareripe cultivated today. The American Pomological Society listed it in its fruit-catalog in 1909 under the name Gold Drop.



GOLD DROP

Tree of medium size and vigor, spreading, rather open-topped, hardy, very productive; trunk thick and smooth; branches stocky, smooth, reddish-brown with a covering of light ash-gray; branchlets slender, with internodes dull pinkish-red intermingled with green, smooth, glabrous, with conspicuous, raised lenticels.

Leaves five and one-half inches long, one

and one-fourth inches wide, folded upward and recurved, oval to obovate-lanceolate, leathery; upper surface dark green, mottled; lower surface grayish-green; margin finely serrate, tipped with red along the edge; petiole three-eighths inch long, with two to nine large, reddish-brown or grayish, mixed glands usually on the leaf.

Flower-buds long, conical or obtuse, plump, somewhat appressed, pubescent; season of bloom early; flowers pale pink, one and three-fourths inches across, well distributed; pedicels short, medium to slender, glabrous, green; calyx-tube reddish-green, orange-colored within, obconic, glabrous; calyx-lobes broad, usually acute, glabrous within, pubescent without; petals ovate, notched near the base, tapering to long, narrow claws variable in color at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, equal to or longer than the stamens.

Fruit matures late; two and seven-sixteenths inches long, nearly two and one-half inches wide, roundish-oval, bulged at one side, with unequal halves; cavity deep, abrupt, twig-marked; suture very shallow, extending beyond the apex; apex roundish, with a slightly mamelon or mucronate tip; color greenish or golden-yellow, with a dull blush on one side; pubescence thick, coarse; skin adhering to the pulp; flesh pale yellow to the pit, variable in juiciness, pleasantly sprightly; good in quality; stone free, one and nine-sixteenths inches long, one and one-sixteenth inches wide, broadly ovate, bulged at one side, with a pointed apex and deeply grooved surfaces; ventral suture

deeply grooved at the sides, rather narrow; dorsal suture with a deep groove, wing-like.

GOVERNOR HOGG

1. Brown Bros. *Cat.* 27. 1906. **2.** *Ga. Hort. Soc. Rpt.* 65, 66. 1907. **3.** *Am. Pom. Soc. Cat.* 37. 1909. **4.** *N. J. Hort. Soc. Rpt.* 37. 1912. **5.** Waugh *Am. Peach Orch.* 202. 1913.

Governor. **6.** *Del. Sta. Rpt.* **13**:101. 1901.

Were it not that Governor Hogg must compete with the well-established Greensboro and Carman, we should say at once that it was well worth trying in commercial planting in New York as an early, white-fleshed peach. In the Station orchard, Governor Hogg ripens a few days after Carman, is larger, handsomer and as good in quality. In both appearance and quality, Governor Hogg excels Greensboro, the size, shape and color of the two, as the illustrations show, being much the same though the color of this variety runs more to reds and soft tints of red. The flesh is firm, though tender and delicate, and the peaches ought to stand shipment well. As with all of these early, white-fleshed peaches, Governor Hogg is quite susceptible to both leaf-curl and brown-rot.

The parentage of this peach is unknown. It seems to have originated with a Mr. McClung, Tyler, Texas, about 1892, and was disseminated by Messrs. Sneed and Whitaker of the same place. The American Pomological Society placed Governor Hogg on its fruit-list in 1909.



GOVERNOR HOGG

Tree large, upright-spreading, open-topped, hardy, variable in productiveness; trunk thick, reddish-brown intermingled with light ash-gray; branches slender, with short internodes, brownish mingled with red and ash-gray, glossy, smooth, glabrous, with many conspicuous, large and small lenticels.

Leaves five and one-half inches long, one and one-half inches wide, folded upward and slightly recurved, usually oval-

lanceolate, medium in thickness, leathery; upper surface dark olive-green, smooth; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to five reniform, reddish-brown glands of medium size, variable in position; flower-buds conical, plump, pubescent, appressed; blossoms open in mid-season.

Fruit matures early; two and one-fourth inches long, more than two inches wide, oblong-oval, compressed, oblique; cavity deep, narrow, abrupt; suture shallow, becoming deeper at the cavity; apex depressed, with a mucronate tip; color creamy-white, blushed with red; pubescence short; skin thin, separates from the pulp; flesh white, juicy, stringy, meaty, rather tough; good in quality; stone clinging, one and three-eighths inches long, seven-eighths inch wide, obovate, plump, strongly bulged on one side, conspicuously winged, pointed at the base, with the surfaces grooved and pitted; ventral suture winged, narrow, with furrows of medium depth along the sides.

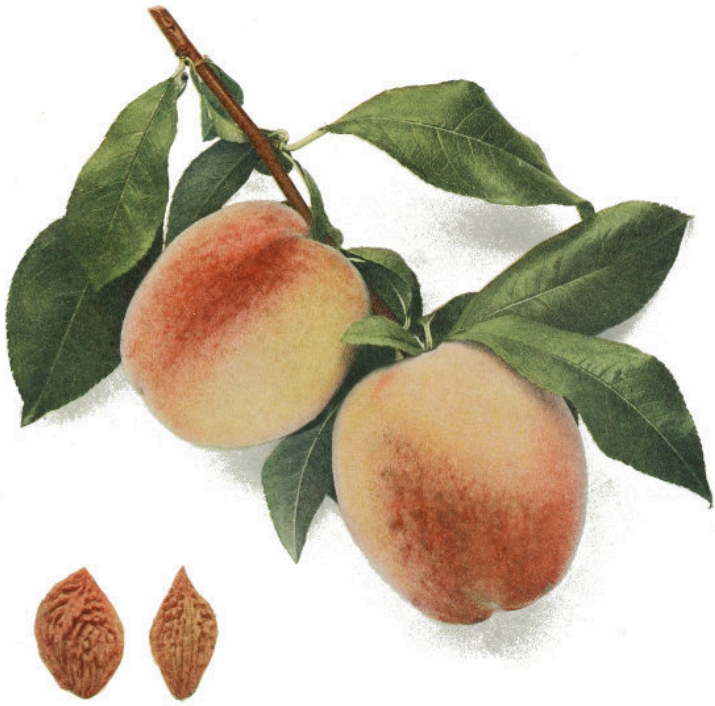
GREENSBORO

1. *Mich. Hort. Soc. Rpt.* 238. 1896. **2.** *Am. Pom. Soc. Cat.* 33. 1899. **3.** Kan. Hort. Soc. *Peach, The* 49, 143. 1899. **4.** *Del. Sta. Rpt.* **13**:101 fig. 6, 102. 1901. **5.** *Ont. Fr. Exp. Sta. Rpt.* **9**:37, 38. 1902. **6.** *W. N. Y. Hort. Soc. Rpt.* 11. 1907. **7.** Waugh *Am. Peach Orch.* 202. 1913. **8.** *N. Y. State Fr. Gr. Assoc. Rpt.* 16. 1915.

Balsey. **9.** *U. S. D. A. Rpt.* 289. 1893.

Greensboro is one of the leading early, white-fleshed peaches. It takes high place because of its showy fruits and its large, vigorous, healthy, early-bearing and prolific trees. In the last character, in particular, Greensboro is almost supreme—year in and year out, barring accidents, its trees are fruitful. Possibly, too, no other white-fleshed peach is adapted to a greater variety of soils than Greensboro which, with fair capacity to stand heat and cold, makes it suitable for wide variations in peach-regions. The peaches, while handsome, as the color-plate shows, are in no way remarkable, the quality, if anything, being rather inferior, so that it is the tree that gives Greensboro its standing. The variety is well thought of by fruit-dealers not only on account of the attractive product but because the fruits carry well and keep long. Possibly the peaches are less susceptible to brown-rot than most other varieties of Greensboro's season but to offset this advantage there are many cracked pits and accompanying mal-formed fruits. Picked green the stone clings; picked at maturity the variety may be called a freestone. All in all, Greensboro is one of the best early, market peaches for New York.

Greensboro is a seedling of Connett grown by W. G. Balsey, Greensboro, North Carolina, about 1891. It was introduced by John A. Young of Greensboro as Balsey, this name being changed to Greensboro in 1894. Greensboro was added to the list of fruits recommended by the American Pomological Society in 1899.



GREENSBORO

Tree very large, spreading, open-topped, hardy, very productive; trunk thick, shaggy; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets slender, long, with short internodes, dark red intermingled with olive-green, glossy, smooth, glabrous, with very small, conspicuous lenticels.

Leaves six and one-half inches long, one and one-half inches wide, folded upward, recurved, oval to obovate-lanceolate, thick, leathery; upper surface dark green, smooth, rugose along the midrib; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-half inch long, with one to five reniform,

reddish-brown glands usually at the base of the blade.

Flower-buds hardy, large, medium to long, conical or obtuse, very plump, strongly pubescent, usually free; season of bloom early; flowers pale pink, one and three-fourths inches across, usually in twos; pedicels very short, glabrous; calyx-tube dull reddish-green, lemon-yellow within, campanulate, glabrous; calyx-lobes very broad, obtuse, glabrous within, pubescent without; petals round-ovate, tapering to short, narrow claws red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the base, equal to the stamens in length.

Fruit matures early; two and one-half inches long, two and three-eighths inches wide, oblong-oval, often oblique, bulged at one side, compressed, with unequal sides; cavity deep, narrow, abrupt; suture shallow, deepening toward the cavity; apex roundish, with a small, mucronate tip; color creamy-white, blushed red, with a few stripes of darker red intermingling; pubescence heavy, nearly tomentose; skin rather tough, separates from the pulp; flesh white, very juicy, tender and melting, mild, sweet, sprightly; fair in quality; stone semi-clinging, one and seven-sixteenths inches long, one inch wide, winged on both sides, ovate, strongly bulged along one side, with short grooves on the surfaces; ventral suture narrow, deeply grooved along the sides; dorsal suture grooved, winged.

HALE EARLY

1. *Mag. Hort.* **27**:65, 66. 1861. **2.** *Am. Pom. Soc. Cat.* 78. 1862. **3.** *Gard. Mon.* **5**:68, 69, 198, 277, 278. 1863. **4.** *Horticulturist* **18**:63, 64, 197, 198, 242, 243 fig., 244. 1863. **5.** Downing *Fr. Trees Am.* 615. 1869. **6.** *Horticulturist* **27**:23, 304. 1872. **7.** *Am. Pom. Soc. Cat.* 37. 1909.

Précoce de Hale. **8.** Mas *Le Verger* **7**:193, 194, fig. 95. 1866-73.

Hale. **9.** *Am. Pom. Soc. Cat.* 44. 1891. **10.** *Mich. Sta. Bul.* **169**:215. 1899.

In the middle of the last century, Hale Early was considered the best peach of its season for home and market. Even now it has several characters to recommend it; as, large, vigorous, hardy, healthy, productive trees, fruits handsome in color, uniform in size and shape, with flesh more than ordinarily free from the stone for an early peach, fair quality for the season and extreme earliness. The chief fault is that the peaches run small in size, scarcely exceeding large marbles, which they resemble in roundness. The variety must be grown in the best of peach-lands, heavily thinned, and the trees severely pruned. The peaches, besides being small, are very susceptible to brown-rot. Nowhere very commonly planted, the variety is still widely distributed, a fact, in view of the competition with many early peaches, which speaks well for a peach introduced more than fifty years ago. It is interesting to note that Hale Early was introduced into Europe many years ago and that European pomologists still speak highly of it.

Hale Early grew from a seed planted in 1850 by a German named Moas at Randolph, Portage County, Ohio. A few years later the attention of a Mr. Hale, Summit County, Ohio, was called to the seedling and he, impressed with its earliness, began to propagate it. About 1859 the variety was introduced by Hale and Jewett, nurserymen in Summit County, as Hale's Early German. In some localities it became known as Early German but finally the name Hale's Early

was adopted. It was so listed in the American Pomological Society's fruit-catalog in 1862 but in 1891 the name was changed to Hale so to remain until 1909 when it appeared in the Society's catalog as Hale Early. The adoption of the last name is warranted, possibly, from the fact that another peach named Hale existed several years before the origin of the present sort.



HALE EARLY

Tree large, vigorous, upright-spreading, hardy, variable in productiveness; trunk

thick; branches stocky, smooth, reddish-brown mingled with ash-gray; branchlets long, dark pinkish-red with a trace of olive-green, glossy, smooth, glabrous, with rather few large, conspicuous lenticels.

Leaves flat or curled downward, six and one-fourth inches long, one and one-fourth inches wide, long-oval to obovate-lanceolate, thin, leathery; upper surface dark green, smooth; lower surface grayish-green; margin finely serrate, often in two series, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four small, globose, reddish-brown glands usually at the base of the blade.

Flower-buds conical or pointed, plump, pubescent, usually free; blossoms appear in mid-season; flowers dark pink at the center, with lighter pink toward the margin and with streaks of light pink along the veins, one and one-half inches across, usually single; pedicels short, glabrous, green, with a few reddish dots; calyx-tube dull green mottled with red, with varying shades of orange within, campanulate, glabrous; calyx-lobes broad, usually obtuse, pubescent within and without, with longer hairs along the edges, erect; petals round or inclined to oval, entire, notched on both sides near the claws which are short, broad and tinged with red near the base; filaments one-half inch long, shorter than the petals; pistil finely pubescent at the ovary, longer than the stamens.

Fruit matures early; one and three-fourths inches long, one and seven-eighths inches wide, round, slightly compressed, with

unequal halves; cavity regular, medium to deep, wide, flaring; suture shallow, with a slight bulge near the apex; apex roundish or flattened, ending abruptly in a short, sharp, recurved point; color creamy-white, with an attractive blush extending over one-half of the surface; pubescence short, thick; skin tough, free; flesh white, juicy, tender, sweet, with some astringency; good in quality; stone semi-free, one and five-sixteenths inches long, fifteen-sixteenths inch wide, ovate or oval, plump, with a short-pointed apex, surfaces marked by short grooves; ventral suture deep along the sides, narrow; dorsal suture deeply grooved, winged.

HEATH CLING

1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Kenrick *Am. Orch.* 234. 1832. **3.** *Proc. Nat. Con. Fr. Gr.* 51. 1848. **4.** *Am. Pom. Soc. Cat.* 78. 1862. **5.** Fulton *Peach Cult.* 197, 198. 1908.

Heath. **6.** Coxe *Cult. Fr. Trees* 228. 1817. **7.** *Lond. Hort. Soc. Rpt.* 97. 1831. **8.** Prince *Pom. Man.* **2**:29, 30. 1832. **9.** Downing *Fr. Trees Am.* 494, 495. 1845. **10.** Floy-Lindley *Guide Orch. Gard.* 187, 188. 1846. **11.** Elliott *Fr. Book* 274, 275. 1854. **12.** Mas *Le Verger* **7**:207, 208, fig. 102. 1866-73. **13.** *Am. Pom. Soc. Cat.* 37. 1909.

White English. **14.** *Horticulturist* N. S. **7**:178, 179. 1857.

Heath Cling is unquestionably the oldest named American peach now under cultivation. Its antiquity constitutes about its only claim to recognition though for its tree-characters and for at least one fruit-character it ought to be retained

for breeding. Few varieties have larger, healthier, hardier trees than Heath Cling, the fact that the oldest of our peaches has from the first retained these characters in pristine vigor confuting the notion that varieties degenerate. In the descriptions of Chinese peaches in Chapter 1, we read of winter peaches—sorts that could be kept for three or four months after picking. Of all American peaches, Heath Cling, possibly, most nearly approaches these Chinese winter peaches. It has been known to keep in good condition from October to December. Its quality, at best, is good but often it runs poor. Well grown, the peach has a sweet, rich, vinous taste but the flesh adheres so tightly to the stone that it is not pleasant eating out of hand though splendid cooked, preserved or pickled, the stone in culinary operations imparting a pleasant flavor of peach-pit bitterness. It is the best of all peaches to preserve or pickle whole. The color-plate shows the blushed sides of Heath Cling and therefore too much red for typical specimens of this variety.

Just how old Heath Cling is no one knows but it probably was grown in the colonies before the Revolution. Two accounts are given of its origin. According to one it originated with Daniel Heath of Maryland from a pit brought from the Mediterranean. Another is that the honor of originating this peach belongs in the Prince family and that the first William Prince discovered the variety growing wild on the farm of Judge Willet, Flushing, New York. The Princes, according to this account, gave it the name Heath because it was found on a barren heath. It seems fairly well established that the variety was in the Prince orchards before the Revolutionary War whether or not it was found and named by them.



HEATH CLING

Tree large, vigorous, upright-spreading, hardy, unproductive; trunk shaggy; branches stocky, reddish-brown covered with light ash-gray; branchlets long, dark red intermingled with olive-green, glossy, smooth, glabrous, with numerous conspicuous, large, raised lenticels.

Leaves six and one-fourth inches long, one and one-half inches wide, folded upward, recurving, oval to obovate-lanceolate, leathery; upper surface dark green, rugose; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-half inch long, with two to seven small, mostly reniform, reddish-brown glands usually at the base of the leaf.

Flower-buds tender, medium to small, short, conical or pointed, plump, pubescent, free; blossoms appear in mid-season; flowers a faded pink, white at the center of the petals, about three-fourths inch across; pedicels short, medium to thick, glabrous, green; calyx-tube reddish-green; calyx-lobes short, broad, obtuse, glabrous within, pubescent without; petals roundish-oval, tapering to short, broad claws occasionally with a red base; filaments one-fourth inch long, shorter than the petals; pistil pubescent near the base, longer than the stamens.

Fruit matures very late; two and one-eighth inches long, two and one-fourth inches wide, round-oval, compressed and somewhat angular, with unequal sides; cavity variable in depth and width, abrupt or flaring; suture shallow, extending beyond the apex; apex ending in a swollen, pointed tip; color creamy-white, blushed with red, splashed and mottled with darker red; pubescence short, thick, fine; skin thin, adhering to the pulp; flesh white, juicy, firm and meaty but tender, sweet or somewhat sprightly; good in quality; stone clinging, one and one-fourth inches long, seven-eighths inch wide, oval, plump, flattened and pointed toward the base,

tapering to a short point at the apex, with dark brown, grooved surfaces; ventral suture deep along the sides, thick, furrowed; dorsal suture grooved.

HEATH FREE

1. *Am. Pom. Soc. Cat.* 37. 1909. **2.** Waugh *Am. Peach Orch.* 203. 1913.

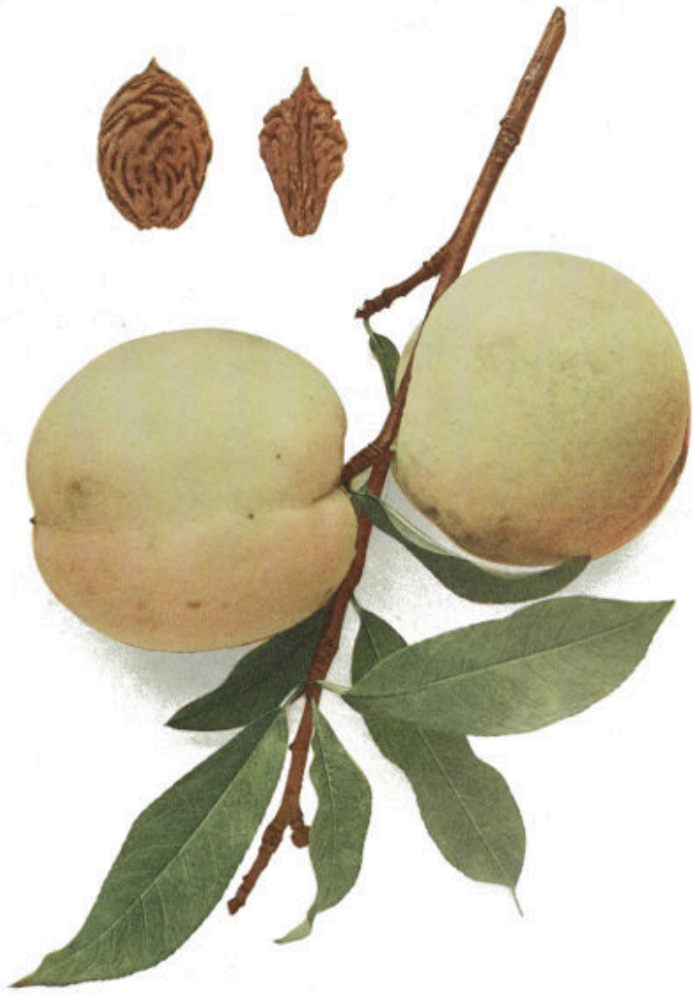
Kenrick Heath. **3.** Prince *Treat. Hort.* 17. 1828. **4.** Prince *Pom. Man.* **2**:30, 31. 1832. **5.** Downing *Fr. Trees Am.* 479. 1845. **6.** *Am. Pom. Soc. Cat.* 78. 1862. **7.** Budd-Hansen *Am. Hort. Man.* **2**:348. 1903.

Heath. **8.** Kenrick *Am. Orch.* 226, 227. 1832.

Heath Free is now rarely planted, being replaced by better sorts—in fact it was out of date a quarter-century ago when the American Pomological Society dropped it from its fruit-list. We can see no justification of the Society's action in restoring the variety to its list ten years later. The tree-characters of Heath Free seem to be, in the main, very good but the peaches are not at all attractive in appearance and none too good in quality—at best it is but a culinary sort. Possibly it is worth growing under some conditions as a late, white-fleshed peach.

Heath Free is another old variety, a native of New England. Kenrick, one of the first American pomologists, received the variety from General Heath, Roxbury, Massachusetts, early in the Nineteenth Century. Later, Kenrick sent it to Prince at Flushing, New York, who is credited with having distributed it. The variety should not be confused with Heath Cling. Ripening at the latter end of the peach-season, the term "Late" is often attached to the name. In 1862 the American Pomological Society put this peach on its fruit-list under the name Kenrick Heath but dropped it from the list in 1899. Ten years later, 1909, the variety was replaced in the

Society's catalog as Heath Free.



HEATH FREE

Tree very large, vigorous, upright-spreading, open-topped, unproductive; trunk thick, somewhat shaggy; branches stocky, smooth, reddish-brown covered with very light ash-gray; branchlets long, with many short, spur-like branches near

the tips, with internodes dark red intermingled with olive-green, glossy, smooth, glabrous, with numerous conspicuous lenticels, raised near the base and tip.

Leaves seven and one-eighth inches long, one and three-fourths inches wide, folded upward, recurved slightly, long-oval to obovate-lanceolate, rather thin; upper surface dark green, smooth becoming rugose near the midrib; lower surface grayish-green; margin finely serrate, with reddish-brown glands; petiole one-half inch long, with two to five reniform, reddish-brown glands usually on the petiole.

Flower-buds half-hardy, conical or pointed, very pubescent, free; blossoms appear in mid-season; flowers dark pink along the margins of the petals changing to white toward their centers, well distributed; pedicels short, glabrous, green; calyx-tube reddish-green, yellow within, campanulate, glabrous; calyx-lobes short, narrow, acute to obtuse, glabrous within, pubescent without; petals small, narrow-oval, often broadly notched near the base, tapering to short, broad claws red at the base; filaments one-fourth inch long, equal to the petals in length; pistil pubescent at the base, longer than the stamens.

Fruit matures in late mid-season; two and one-eighth inches long, two and one-fourth inches thick, roundish-oval to oblong-oval, often strongly compressed, with halves nearly equal; cavity medium to shallow, wide, flaring, contracted along the sides, with tender skin; suture shallow; apex roundish, with a depressed, mucronate tip;

color creamy-white, blushed or mottled with red, with splashes of deeper red; pubescence rather coarse, thick; skin thick, tough, adherent to the pulp; flesh white, bronzed at the pit, juicy, coarse, firm but tender, mild subacid with some astringency; good in quality; stone free, one and three-eighths inches long, one inch wide, flattened near the base, oval, with long grooves deeply sunken in the surfaces; ventral suture deeply furrowed along the edges, wide; dorsal suture grooved, faintly winged.

HILEY

1. *Am. Pom. Soc. Rpt.* 170. 1899. **2.** *Del. Sta. Rpt.* **13**:102 fig. 7, 103. 1901. **3.** *U. S. D. A. Yearbook* 271, 272, Pl. 34. 1903. **4.** *Am. Pom. Soc. Cat.* 37. 1909.

Early Belle. **5.** Budd-Hansen *Am. Hort. Man.* **2**:342. 1903. **6.** *W. N. Y. Hort. Soc. Rpt.* 12. 1907.

In spite of keen competition with many other early, white-fleshed peaches, there seems to be a place for Hiley. Two characters make it notable in its class. It is the earliest commercial freestone, white-fleshed peach and it is rather better in quality than most of its competitors. Well grown, the peaches are large in size and handsomely colored but the fruits are not quite as uniform in either size or color as could be desired for a commercial variety. The trees, while productive, are neither large nor sufficiently hardy and vigorous to make an ideal commercial sort. Still, we must end as we began, with the statement that there is a place for Hiley because of earliness and high quality. The fruits, unfortunately, are easy prey to brown-rot.

Hiley originated with Eugene Hiley, Marshallville, Georgia, about 1886. Seeds of several varieties, including Belle and

Elberta, were planted and from these sprang one tree which bore the fruit under discussion. R. A. Hiley, who seems to have first discovered its value, is of the opinion that this variety is a seedling of Belle crossed with Alexander. The new peach was first named Early Belle and the first crops were shipped under this name. Later the name was changed to Hiley. The American Pomological Society placed the variety on its fruit-list in 1909.



HILEY

Tree medium in size, lacking in vigor,

upright-spreading, open-topped, very productive; trunk thick; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets with short internodes, brownish-red heavily overlaid with olive-green, smooth, glabrous, with conspicuous lenticels variable in number and size.

Leaves six and one-fourth inches long, one and one-half inches wide, folded upwards to nearly flattened, narrow-oval to obovate-lanceolate, leathery; upper surface dull, dark green, mottled, nearly smooth; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to eight small, globose and reniform, greenish-yellow glands variable in position.

Flower-buds tender, obtuse, plump, heavily pubescent, appressed or nearly so; blossoms appear in mid-season; flowers pink, one and seven-eighths inches across, often in twos; pedicels glabrous, greenish; calyx-tube dull, dark reddish-green, greenish-yellow within, obconic, glabrous; calyx-lobes broad, obtuse, glabrous within, heavily pubescent without; petals roundish-ovate, tapering to long, broad claws red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, equal to or often longer than the stamens.

Fruit matures in mid-season; two and three-eighths inches long, two and one-fourth inches thick, roundish-conic to oblong-conic, bulged near the apex, with unequal halves; cavity abrupt, the skin tender and tearing easily; suture shallow, deepening toward the apex; apex pointed; color greenish-yellow with a dull blush often

extending over one-half the surface, more or less mottled; pubescence thick, fine, short; skin thin, tough, separates from the pulp when fully ripe; flesh creamy-white, stained red at the pit, stringy, firm but tender, with a distinct, pleasant flavor, sprightly; good in quality; stone semi-free to free, one and three-eighths inches long, seven-eighths inch wide, elliptical to ovate, pointed at both ends, with nearly smooth surfaces; ventral suture rather wide and with deep furrows along the sides; dorsal suture a small groove.

HYNES

1. *Tex. Sta. Bul.* **39**:812. 1896. **2.** *Am. Pom. Soc. Cat.* 33. 1899. **3.** *Ont. Fr. Exp. Sta. Rpt.* **8**:14 fig. 1901. **4.** Budd-Hansen *Am. Hort. Man.* **2**:348. 1903.

Hynes Surprise. **5.** *W. N. Y. Hort. Soc. Rpt.* 50. 1879. **6.** *Ibid.* 111. 1880. **7.** *U. S. D. A. Pom. Rpt.* 42. 1895.

Coming at a season when there are several very good, white-fleshed peaches, we doubt whether Hynes can establish itself in the peach-list for New York. The peaches are not quite large enough and the stone clings a little too tenaciously for a first-class early peach. The flavor is good for an early peach and when large enough the fruits are attractive, shape and coloring being particularly pleasing. Hynes was at one time highly recommended, widely advertised and largely sold in New York by nurserymen and fruit-growers in this State. We doubt if many are now planting it. The color-plate is an excellent reproduction of the variety.

Hynes was grown about 1877 by E. F. Hynes, West Plains, Missouri. Its parentage is unknown. The variety soon became disseminated as a valuable early, commercial peach. At first it was known as Hynes Surprise but gradually

the name has been shortened to Hynes. The late S. D. Willard, Geneva, New York, grew and recommended this variety for a number of years and by some has been given the credit of having originated and introduced it. The American Pomological Society put Hynes on its fruit-list in 1899.



HYNES

Tree large, vigorous, upright-spreading, open-topped, hardy, medium in productiveness; trunk thick; branches stocky, smooth, reddish-brown with a small amount of ash-gray; branchlets long, with

internodes of medium length, dark red intermingled with olive-green, glossy, smooth, glabrous, with conspicuous, large lenticels.

Leaves six and one-half inches long, about one and one-half inches wide, oval to obovate-lanceolate, leathery, dull, dark green, smooth; lower surface grayish-green; apex tapering to a long, narrow point; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with one to five small, globose, brownish-yellow glands variable in position.

Flower-buds hardy, small, short, obtuse, plump, slightly pubescent, usually appressed; blossoms appear in mid-season; flowers dark pink at the center, light pink near the edges, often in twos; pedicels short, medium to thick, glabrous, greenish; calyx-tube reddish-green, greenish-yellow within, campanulate, glabrous; calyx-lobes short, medium to broad, obtuse, glabrous within, pubescent without; petals broadly oval, irregular in outline, tapering to claws often red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent near the base, equal to the stamens in length.

Fruit matures early; two and one-half inches long, two and one-fourth inches wide, round-oblate, with halves usually equal; cavity wide, flaring; suture shallow, becoming deeper near the tip; apex flattened or roundish, ending abruptly in a short, sharp point; color greenish or creamy-white, with a dull, dark red blush, splashed and mottled with carmine;

pubescence thin, short, fine; skin thin, tender, variable in adherence to the pulp; flesh greenish-white, with a red stain under the skin and often rayed with red about the pit, juicy, stringy, tender and melting, sweet, mild; fair to good in quality; stone nearly free, one and one-fourth inches long, seven-eighths inch wide, bulged on one side, ovate, very plump, with surfaces pitted and with short, narrow grooves; ventral suture furrowed, very deeply grooved at the edges; dorsal suture wide, deeply grooved.

ILLINOIS

1. *N. J. Hort. Soc. Rpt.* 36. 1912. **2.** Stark Bros. *Cat.* 37 fig. 1913. **3.** Waugh *Am. Peach Orch.* 203. 1913. **4.** Stark Bros. *Cat.* 43. 1914.

Illinois is a mid-season, white-fleshed, freestone peach, still on probation with what result as to commercial possibilities we should not like to predict. It has been little tried in New York and growers in other peach-regions are not in accord as to its value. In size, color and shape of fruit, as the color-plate shows, Illinois is one of the beauties of the orchard. Yet, all things considered, the new variety is not as good as Champion with which it would have to compete. Neither tree- nor fruit-characters are quite satisfactory as the variety grows on the Station grounds. It must be apparent, too, to all peach-growers that the industry is overloaded with white-fleshed peaches which at best must be sold in nearby markets or grown for home use.

Illinois originated about 1910 on the grounds of E. H. Riehl near North Alton, Illinois. It is supposed to be a cross between Stark Heath and Washington.



ILLINOIS

Tree medium in size and vigor, upright to spreading, hardy, very productive; trunk thick; branches stocky, smooth, dark reddish-brown overlaid by ash-gray;

branchlets slender, short, with internodes dark red and olive-green, smooth, glabrous, with a few inconspicuous, raised lenticels variable in size.

Leaves five and one-half inches long, one and one-half inches wide, curled under at the tips, ovate-lanceolate, thin, leathery; upper surface dull, dark green, rugose along the midrib; lower surface olive-green; margin deeply and sharply serrate, the serrations often in two series, tipped with small glands; petiole three-eighths inch long, glandless.

Flower-buds medium to large, obtuse or conical, plump, pubescent, appressed; blossoms appear in mid-season; flowers variable in color, over one inch across, often in twos; pedicels short, greenish, glabrous; calyx-tube reddish-green, greenish-yellow within, campanulate, glabrous; calyx-lobes medium to broad, obtuse, glabrous within, pubescent without; petals oval, crenate, often broadly notched near the base, tapering to narrow claws with a tinge of red at the base; filaments one-half inch long, equal to the petals in length; pistil pubescent at the base, as long as the stamens.

Fruit matures in early mid-season; two and one-fourth inches long, two and one-half inches wide, round-oblate, compressed, the halves usually unequal; cavity deep, abrupt, often tinged with red; suture shallow, deepening toward the apex; apex roundish, with a mucronate tip; color creamy-white, blushed with dull, dark red and mottled with splashes of brighter red; pubescence heavy; skin tough; flesh white, stained red

near the pit, juicy, tender and melting, sweet; good in quality; stone semi-free to free, one and one-fourth inches long, fifteen-sixteenths inch wide, oval or obovate, not bulged, slightly elongated toward the base, plump, short-pointed at the apex, with grooved and pitted surfaces; ventral suture winged, of medium width, deeply grooved along the edges; dorsal suture deeply grooved.

IMPERIAL

1. *La. Sta. Bul.* **27**:943. 1894. **2.** *Tex. Sta. Bul.* **39**:819. 1896. **3.** *Am. Pom. Soc. Cat.* 22. 1897. **4.** *Ala. Sta. Bul.* **117**:305. 1901. **5.** *Fla. Sta. Bul.* **73**:148, Pls. 3 & 4. 1904. **6.** *Am. Pom. Soc. Cat.* 37. 1909. **7.** *Ala. Sta. Bul.* **156**:133. 1911.

Of the several honey-flavored peaches fruiting on the Station grounds, Imperial is probably the best. The fruit is not easily distinguished in appearance from that of Climax, at least by those unfamiliar with southern peaches, and is also rather closely allied to Honey in outward character but has a somewhat distinct flavor in which it surpasses Climax and Honey. It differs from both, too, in time of ripening. The peaches of this, as of other honey-flavored sorts, drop badly as they mature. It is doubtful if we shall ever grow pure-bred peaches of the Honey type in New York for the markets, but Imperial, at least, is worth a place in every home orchard where it does not have to brave too great a degree of cold; and peach-breeders should seize the opportunity to cross it with our less richly flavored northern varieties.

Imperial is a seedling of Honey grown in 1890 by G. L. Taber, Glen Saint Mary, Florida. This variety has been much confused with White Imperial, a sort grown in New York many years ago but long since out of cultivation.

Pomologists frequently list White Imperial as a synonym of Imperial, giving the origin as New York, when the variety in mind is the true Imperial of southern origin. Imperial was listed in the American Pomological Society's catalog in 1897 but was dropped in 1899. It appears again, however, in the Society's catalog in 1909 under the name Imperial with White Imperial incorrectly given as a synonym.



IMPERIAL

Tree medium in size or small, upright-spreading, round-topped, productive; trunk thick, rough; branches stocky, roughened, reddish-brown intermingled more or less with ash-gray; branchlets slender, often rebranching, long, with internodes dark pinkish-red mingled with varying shades of olive-green, and with conspicuous,

numerous, raised lenticels.

Leaves six and one-fourth inches long, one and one-half inches wide, flattened, lanceolate, leathery; upper surface dull, dark green; lower surface olive-green; margin finely and shallowly serrate, tipped with glands; petiole three-eighths inch long, with one to four small, reniform glands usually at the base of the blade.

Flower-buds small, medium to short, conical or obtuse, pubescent, plump, usually appressed; blossoms appear in mid-season; flowers medium in size, showy, light pink, usually single; pedicels medium in length and thickness, green; calyx-tube reddish-green, orange-green within, obconic; calyx-lobes acute or obtuse, glabrous within, pubescent without; petals roundish, tapering to claws tinged with red at the base; filaments equal to or shorter than the petals; pistil pubescent.

Fruit matures late; two and one-half inches long, two and three-sixteenths inches wide, oval, with unequal halves; cavity shallow, medium in width, flaring; suture very shallow, often indistinct toward the cavity; apex distinctly elongated; color pale green becoming whitish, with faint mottlings and with a distinct or faint blush; pubescence short, thick; skin tough, adhering to the pulp; flesh white, stained with red near the pit, juicy, fine-grained, tender and melting, very sweet and of a delightful flavor; very good to best; stone free, one and three-eighths inches long, thirteen-sixteenths inch wide, oval or ovate, not very plump, bulged at one side, long and pointed at the apex, with roughish and pitted surfaces, dark

brown mingled with purplish-red; ventral suture rather narrow, often winged, deeply grooved along the edges; dorsal suture grooved.

IRON MOUNTAIN

1. *Mich. Sta. Bul.* **152**:197, 200. 1898. **2.** *Ibid.* **169**:217. 1899. **3.** *Rural N. Y.* **58**:738 fig. 271. 1899. **4.** *Am. Pom. Soc. Cat.* 37. 1909. **5.** Waugh *Am. Peach Orch.* 203. 1913.

Hardiness is the outstanding character which has brought Iron Mountain into prominence. The introducer and many growers claim extreme hardiness of wood and bud for the variety—others say that it is surpassed by Crosby, Wager and other varieties of their type. The trees on the Station grounds turned out not to be true to name so that we can offer no data as to hardiness. Iron Mountain is a very late, white-fleshed, freestone peach well adapted for extending the commercial limits for this fruit in regions where fall frosts hold off sufficiently long for the fruit to ripen. The tree-characters are reported by most growers as very satisfactory and the peaches serve very well for culinary purposes but are not sufficiently attractive for a dessert fruit though the quality is excellent. There seem to be two varieties, much alike in fruit, passing under this name; one is large-flowered, the other small-flowered. This variety might well be planted in New York for some markets; as, for example, near towns and cities where it is desirable to extend the local market as late as possible.

Iron Mountain seems to have originated in New Jersey about a quarter-century ago but nothing is known of its parentage or by whom grown. The variety was introduced by J. H. Lindley, Whitehouse, New Jersey. It was put on the fruit-list of the American Pomological Society in 1909.



IRON MOUNTAIN

Tree large, vigorous, upright-spreading, open-topped, not always productive; trunk thick; branches smooth, dark ash-gray mingled with reddish-brown; branchlets medium to slender, with internodes of medium length, greenish-brown, smooth,

glabrous, with numerous small, raised lenticels.

Leaves six inches long, one and one-half inches wide, folded upward and recurved, oval to obovate-lanceolate, medium in thickness, leathery; upper surface dark green, smooth; lower surface light green, with a prominent midrib; margin glandular, finely serrate; petiole three-eighths inch long, with one to six reniform glands of medium size, usually on the petiole; flower-buds medium to small, conical, free; season of bloom late; flowers small.

Fruit matures very late; two and three-fourths inches long, two and five-eighths inches thick, oblong-oval, often bulged on one side, compressed; cavity contracted, below medium in depth, flaring; suture shallow, extending only to the tip; apex distinctly mucronate or roundish, sometimes tapering; color pale greenish or creamy-white, occasionally with a light blush; pubescence heavy; skin medium to thin, tender, adherent to the pulp; flesh white, stained brown next to the pit, juicy, tender, sweet, mild; quality good; stone semi-free one and five-eighths inches long, more than one inch wide, somewhat wedge-like at the base, obovate, plump, long-pointed at the apex, winged, with large, wide and deep grooves in the surfaces; ventral suture with wide, deep furrows; dorsal suture grooved deeply, winged.

J. H. HALE

1. W. P. Stark *Cat.* 45-55. 1913. **2.** Waugh

Am. Peach Orch. 203. 1913.

Of many new peaches, J. H. Hale is now the leading aspirant for pomological honors. Indeed, it is one of the sensations of the pomological world, the variety having many merits to commend it and the name and fame of the originator and of the introducers, together with extensive advertising, helping much to bring the peach to the attention of fruit-growers. Elberta is now the standard commercial peach and, since J. H. Hale must make its way in competition with the variety in command of the markets, we can best set forth the characters of the new sort by comparing it with Elberta with which all are familiar. The comparison is easy to make, for the two peaches are of the same general type, Elberta, probably, being one of the parents of J. H. Hale.

In size of fruit, J. H. Hale averages larger—all things considered a trifle too large when the trees are at their best. The flesh of J. H. Hale is firmer and heavier and the peaches will ship and keep longer than those of Elberta. In shape, the fruit is almost a perfect sphere, its symmetry being scarcely marred by the suture so that it is more shapely than the oblong Elberta and can, of course, be packed to better advantage. The color-plates of the two peaches show the differences in shape very well. In color of fruit there is no choice—both peaches are voluptuously handsome. The skin of J. H. Hale is less pubescent and possibly a little firmer and tighter, characters adding to the appearance and shipping qualities of the fruit. It is but an invitation to argument to say which is the better in the characters that go to please the palate—flavor, aroma, texture and juiciness. Neither, in comparison with many other peaches, can be rated as extra good.

Unfortunately we cannot be as certain of the merits of the trees of the two varieties as we are of the fruits. This much we know, J. H. Hale is a few days earlier than Elberta and its trees and buds are hardier than those of Elberta. Which is the more productive is not certain and this can be ascertained only when data can be had from a large number

of growers since productiveness in both is bound to vary with the soil. The greatest asset of Elberta is its ability to adapt itself to diverse soils; whether J. H. Hale is equally elastic in constitution remains to be seen. The variety is still on probation in New York with the chances growing stronger each year that it will take high place among commercial peaches. We do not expect it to drive Elberta from the markets but the markets will be shared between the two, J. H. Hale reaching the fruit-stands several days in advance of Elberta. Would that there were as good a commercial variety to follow Elberta.

This remarkable variety is a chance seedling found by J. H. Hale, South Glastonbury, Connecticut. From its characters, one sees at once that it is either an offspring or is very closely related to Elberta—at first many thought the two were identical. After having thoroughly tested the new variety in commercial orchards in both Connecticut and Georgia, Mr. Hale decided that it was worth introducing and sold the new peach to the William P. Stark Nurseries, Stark City, Missouri. The distribution of the variety was begun in 1912 and possibly no other tree-fruit has ever been so rapidly propagated and so widely distributed as has the J. H. Hale in the past four years.



J. H. HALE

Tree vigorous, upright-spreading, open-topped, productive; trunk of medium thickness, smooth; branches smooth, ash-gray overspread with dark reddish-brown; branchlets medium in thickness and length, with long internodes, olive-green overspread with red, smooth, glabrous.

Leaves six and three-fourths inches long, one and three-fourths inches wide, folded upward, recurving at the tip, lanceolate, thin, leathery; upper surface dark green, smooth becoming rugose along the midrib;

lower surface olive-green, with prominent midrib; margin singly or doubly serrate; petiole five-sixteenths inch long, thick, with one to five reniform, dark brown glands of medium size; flowers appear in mid-season.

Fruit matures in mid-season; three inches long, three and one-fourth inches wide, regular, round, with equal halves; cavity deep, wide, regular; suture a mere line, very shallow or with almost no depression; apex roundish, with a small tip set in a depression; color lemon-yellow overspread with attractive dark red and with mottlings and splashes of carmine; pubescence light; skin thick, tough, separates but poorly from the pulp; flesh yellow, red around the pit, juicy, fine-grained, sweet or somewhat sprightly; good in quality; stone free, one and three-fourths inches long, one and one-fourth inches wide, oval, plump, flattened at the base, pointed at the apex, with grooved and pitted surfaces; ventral suture furrowed, deeply grooved along the sides; dorsal suture winged, deeply grooved.

JENNIE WORTHEN

1. *Mich. Sta. Bul.* **31**:58. 1887. **2.** Munson *Cat.* 8. 1890-91. **3.** *Ill. Hort. Soc. Rpt.* 183. 1898.

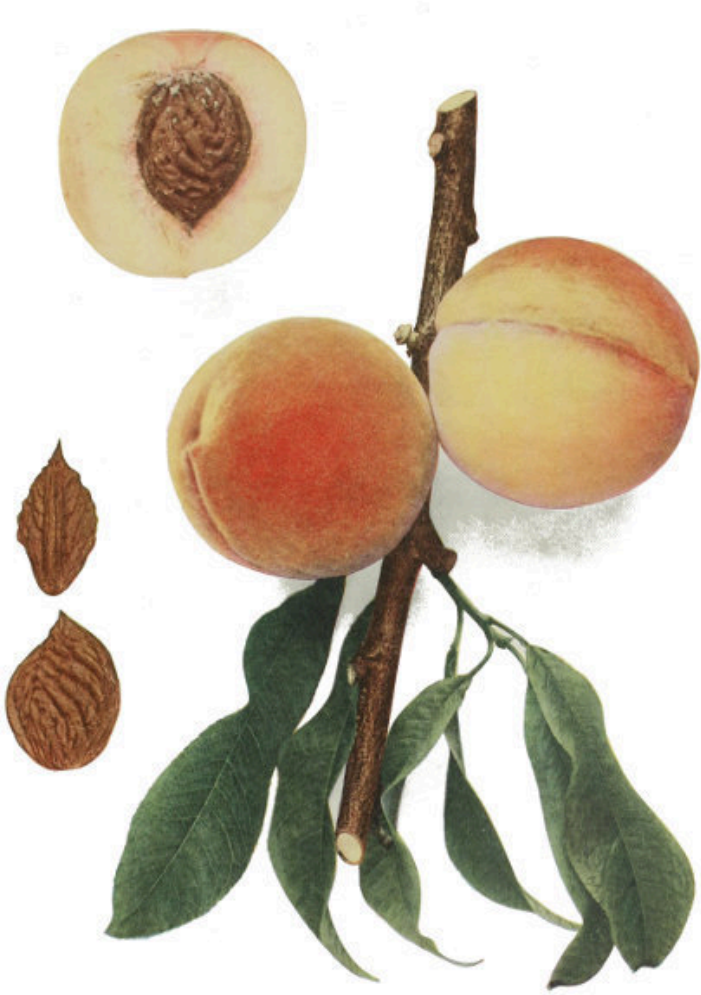
Worthen. **4.** *U. S. D. A. Pom. Rpt.* 44. 1895. **5.** *Mich. Sta. Bul.* **169**:229. 1899.

Jennie. **6.** *Tex. Sta. Bul.* **39**:812. 1896.

Jennie Worthen is given a place among the major varieties in *The Peaches of New York* with the hope that New York growers may be induced to try it as a high-grade, yellow-fleshed, freestone variety to precede Elberta. It is enough to

say that it is very similar to Early Crawford—best of all early peaches—and on the Station grounds is more productive, unproductiveness being the fault that keeps Early Crawford from being a money-making variety. Whether or not Jennie Worthen can be grown commercially, it is well worth planting in the home orchard.

But little is known of the history of this variety. According to a letter from the late T. V. Munson, Denison, Texas, it originated in Illinois with a Mr. Worthen and was named for his daughter. The Munson Nursery grew the variety for a few years after its introduction but has since discontinued its propagation.



JENNIE WORTHEN

Tree large, vigorous, spreading, hardy, productive; trunk thick, smooth; branches thick, nearly smooth, reddish-brown mingled with light ash-gray; branchlets of medium thickness, tending to rebranch near the tips, with internodes of medium length, dark pinkish-red intermingled with green, glossy, smooth, glabrous, with numerous

conspicuous, small, raised lenticels.

Leaves six and one-half inches long, one and three-eighths inches wide, curled both upward and downward, oval to obovate-lanceolate, thin, leathery; upper surface dark green, rugose near the base of the midrib; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-half inch long, glandless or with one to six reniform, reddish-brown glands of medium size, variable in position.

Flower-buds hardy, usually obtuse, sometimes conical, plump, very pubescent, free; blossoms appear in mid-season; flowers pale pinkish, darker pink near the margins, well distributed; pedicels short, medium to thick, glabrous, green; calyx-tube dull, dark reddish-green, orange-red within, campanulate, glabrous; calyx-lobes short, narrow, usually acute, glabrous within and without; petals oval, often broadly notched near the base, tapering to long, narrow claws occasionally tinged with red at the base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent at the ovary, equal to or longer than the stamens.

Fruit matures in mid-season; two and seven-eighths inches long, two and five-sixteenths inches wide, irregular, roundish-oval, bulged at one side, considerably compressed, with unequal sides; cavity medium to deep, abrupt, with tender skin; suture shallow, deepening toward the tip; apex elongated; color greenish-yellow changing to orange-yellow, with stripes and splashes and mottlings of deeper red; pubescence thick, long; skin thin, tough,

separates from the pulp; flesh deep yellow, stained with red near the pit, juicy, slightly stringy, tender, sweet, very pleasantly flavored, sprightly; good to very good in quality; stone free, one and three-eighths inches long, one inch wide, ovate, plump, bulged at one side, the surfaces grooved; ventral suture narrow, winged, deeply grooved near the edges; dorsal suture grooved.

KALAMAZOO

1. *Mich. Hort. Soc. Rpt.* 27, 28, 192. 1893. **2.** *Ibid.* 143. 1894. **3.** *Am. Pom. Soc. Cat.* 33. 1899. **4.** *Mich. Sta. Bul.* **169**:217. 1899. **5.** Budd-Hansen *Am. Hort. Man.* **2**:348. 1903. **6.** *Mich. Sta. Sp. Bul.* **44**:49 fig., 50. 1910. **7.** Waugh *Am. Peach Orch.* 203. 1913.

Before peach-growers had Elberta, Kalamazoo was a promising yellow-fleshed, freestone variety. The fruit is better in quality than Elberta but not as showy in appearance and the trees are not quite as productive. Kalamazoo ripens with Late Crawford and could well compete with that variety for the trees are hardier in wood and bud and are much more productive. The variety falls short, however, in the size of the peaches, these running no larger than a medium Late Crawford, though possibly this defect could be remedied by thinning. The fruits are of highest quality either for dessert or culinary purposes. The trees are susceptible to leaf-curl and must be thoroughly sprayed for this fungus. The variety is grown rather extensively in Michigan and is well known in parts of New York.

Kalamazoo originated with J. N. Stearns, Kalamazoo, Michigan, about 1869, as a sprout from below the bud on a Yellow Alberge tree. It first fruited in 1871 and was exhibited that year at the Michigan State Fair where it

received a premium as the best seedling peach. The American Pomological Society placed Kalamazoo in its fruit-list in 1899 where it still remains.



KALAMAZOO

Tree large, spreading, vigorous, open-topped, very productive; trunk medium in thickness and smoothness; branches stocky, nearly smooth, reddish-brown mingled with light ash-gray; branchlets long, with internodes of medium length, dark pinkish-red with a small amount of olive-green,

smooth, glabrous, with lenticels of medium number and size.

Leaves six and one-half inches long, one and three-eighths inches wide, nearly flat or curled downward, oval to obovate-lanceolate, leathery; upper surface dark olive-green, smooth; lower surface grayish-green; apex narrow-acuminate; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with one to six small, reniform, reddish-brown glands variable in position.

Flower-buds hardy, conical, somewhat pointed, pubescent, partly appressed; blossoms appear in mid-season; flowers pale pink, white at the center of the petals, one and one-eighth inches across; pedicels short, medium to slender, glabrous, green; calyx-tube reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes medium to narrow, acute, glabrous within, pubescent without; petals oval to somewhat ovate, irregular in outline near the base, tapering to narrow claws occasionally reddish at the base; filaments one-half inch long; pistil pubescent at the base, equal to or shorter than the stamens.

Fruit matures late; two and three-eighths inches long, two and seven-sixteenths inches wide, roundish-oval, often compressed, with unequal sides; cavity rather wide, flaring to abrupt; suture indistinct becoming more pronounced toward the tip; apex ending in a small, elongated point; color greenish-yellow becoming yellow, with a faint or distinct blush usually extending over one-fourth of the surface, mottled; pubescence thick, fine;

skin thin, tough, separates from the pulp; flesh light yellow, stained with red near the pit, juicy, tender, sweet, mild; good in quality; stone free or nearly so, one and one-half inches long, one and one-sixteenths inches wide, oval to ovate, bulged on one side, winged near the base, the surfaces pitted and grooved near the apex; ventral suture very deeply grooved at the sides, medium in width; dorsal suture winged, grooved deeply.

LAMONT

1. *Cornell Sta. Bul.* **74**:372. 1894. **2.** *N. Y. State Fr. Gr. Assoc. Rpt.* 144. 1910. **3.** *Ibid.* 21. 1912. **4.** *Van Dusen Nur. Cat.* 21. 1913.

Though long grown in parts of western New York, Lamont has not been sufficiently well tested by the peach-growers of the State. It is a yellow-fleshed, freestone peach, much like Early Crawford in appearance and quality, which ripens from one to two weeks after Elberta. It is more productive than either of the Crawfords and if it does as well elsewhere as about Geneva, the place of its origin, it ought to take high place in the list of commercial peaches for this State. Several large growers in this region speak well of it as a market fruit. As a garden variety for its season, it can hardly be surpassed.

The original Lamont tree grew as a chance seedling on the grounds of Charles Lamont, Geneva, New York, first fruiting about 1884. It was introduced by E. Smith and Sons, Geneva, New York, soon after its discovery. The variety is offered by several Geneva nurserymen.



LAMONT

Tree large, vigorous, upright-spreading, productive; trunk thick, nearly smooth; branches stocky, smooth, reddish-brown with light ash-gray; branchlets with internodes of medium length, dark pinkish-red intermingled with green, glossy, smooth, glabrous, with inconspicuous, raised lenticels.

Leaves seven inches long, one and five-eighths inches wide, folded upward and

curled downward slightly, oval to obovate-lanceolate, thick, leathery; upper surface dark olive-green, smooth; lower surface grayish-green; apex acuminate; margin finely and sharply serrate, tipped with reddish-brown glands; petiole one-half inch long, with one to six reniform, dark brown glands variable in position.

Flower-buds tender, large, long, conical or pointed, pubescent, free; blossoms appear in mid-season; flowers thirteen-sixteenths inch across, white at the center of the petals becoming dark pink near the edges; pedicels short, green; calyx-tube reddish-green at the base, obconic, glabrous; calyx-lobes short, medium to broad, obtuse, glabrous within, heavily pubescent without; petals roundish-oval, somewhat irregular in outline near the base, tapering to long, narrow claws occasionally with a red base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent near the base, as long as the stamens.

Fruit matures late; about two and seven-eighths inches in diameter, roundish-cordate, compressed, with unequal sides; cavity deep, usually abrupt; suture indistinct, becoming deeper near the tip; apex roundish or pointed, usually with a noticeable mamelon or sometimes mucronate tip; color golden-yellow, blushed and faintly striped and splashed with carmine; pubescence heavy, long, coarse; skin thick, tough, adherent to the pulp; flesh light yellow, stained with red near the pit, juicy, coarse, tender, pleasantly sprightly; good in quality; stone free, one and five-eighths inches long, one and one-eighth inches wide, oval to obovate,

flattened near the base, often bulged at the apex, winged, with grooved surfaces; ventral suture deeply marked along the edges, narrow, winged; dorsal suture grooved, the sides wing-like.

LARGE YORK

1. *Am. Pom. Soc. Cat.* 22. 1897. **2.** *Ill. Hort. Soc. Rpt.* 26. 1899.

New York Rareripe. **3.** Coxe *Cult. Fr. Trees* 220. 1817. **4.** Elliott *Fr. Book* 277. 1854.

Large Early York. **5.** Prince *Treat. Fr. Trees* 16. 1820. **6.** *Proc. Nat. Con. Fr. Gr.* 39, 51. 1848. **7.** Cole *Am. Fr. Book* 192. 1849. **8.** *Cultivator* **6**:308 fig. 1849. **9.** *Am. Pom. Soc. Rpt.* 44. 1856. **10.** Elliott *Fr. Book* 288. 1859. **11.** *Horticulturist* **16**:245. 1861. **12.** *Gard. Mon.* **5**:13. 1863. **13.** Downing *Fr. Trees Am.* 619. 1869. **14.** Fulton *Peach Cult.* 185, 186. 1908.

Large Early Rareripe. **15.** Prince *Pom. Man.* **2**:25. 1832.

Large York long ago lost all value for either home or commercial plantings but it is still listed in a few nursery catalogs and is still in the fruit-list of the American Pomological Society. It is one of the old American sorts and has been much confounded with several other peaches. We place it among the major varieties in *The Peaches of New York* chiefly to straighten out the nomenclatorial tangle involving it and the several varieties with which it is commonly confounded.

Large York has been more often confused with Early York than any other sort. George IV, Haines and Honest John have also been listed time and again as identical with Large York. While the sorts mentioned have many resemblances,

there are distinguishing characters for all of them. Large York, known also as Large Early York and Large Early Rareripe, originated with William Prince,[261] Flushing, New York, some time in the Eighteenth Century, probably from a pit of Red Rareripe. The variety was at first called Early York but to distinguish it from another Early York the term Large was added. Prince sent the variety to William Forsyth of England about 1790. Forsyth grew it in the Royal Kensington Gardens and later renamed it Royal Kensington under which name it is frequently sold in England. While Large York and Early York are closely related, the leaves of the latter are glandless while those of the former have globose glands. At the National Convention of Fruit-Growers held in 1848, Large York was put on the list of recommended varieties under the name Large Early York. The peach has remained on the American Pomological Society's fruit-catalog since the date given, the name being shortened in 1897 to Large York.

Tree large, vigorous, upright-spreading, open-topped, rather unproductive; trunk thick; branches thick, smooth, reddish-brown intermingled with light ash-gray; branchlets with long internodes, dark red with some green, somewhat russetted, glossy, smooth, glabrous, with conspicuous, numerous, large, raised lenticels; leaves six and one-half inches long, one and one-half inches wide, variable in position, oval to obovate-lanceolate, thick, leathery, dark green tinged with olive-green; margin finely serrate; petiole three-eighths inch long, glandless or with one to six small, globose, reddish-brown glands; flower-buds small, short, pointed, not very plump, pubescent, appressed; flowers small, appearing in mid-season.

Fruit ripens in mid-season; one and seven-eighths inches long, two and one-sixteenth inches wide, round-oblate, bulged at one

side, compressed, with unequal halves; cavity narrow, abrupt, faintly splashed with red; suture shallow, becoming deeper toward the apex and extending considerably beyond; apex roundish or depressed, with a mucronate tip; color greenish-white or creamy-white, blushed and mottled with red; pubescence short, thick, fine; skin thin, tender, adheres to the pulp; flesh white, rayed with red near the pit, juicy, stringy, tender, sweet, mild, pleasant flavored, aromatic; good in quality; stone nearly free, one and one-eighth inches long, seven-eighths inch wide, oval, plump, short-pointed at the apex; ventral suture medium in width; dorsal suture grooved.

LATE CRAWFORD

1. Mas *Le Verger* **7**:231, 232, fig. 114. 1866-73. **2.** Waugh *Am. Peach Orch.* 204. 1913.

Crawford's Superb Malacatune. **3.** Kenrick *Am. Orch.* 191, 192. 1841.

Crawford's Late Melocoton. **4.** *Horticulturist* **1**:12. 1846-47. **5.** Downing *Fr. Trees Am.* 491. 1845. **6.** Cole *Am. Fr. Book* 197. 1849.

Crawford's Late. **7.** *Proc. Nat. Con. Fr. Gr.* 51. 1848. **8.** Hovey *Fr. Am.* **2**:9, 10, Pl. 1851. **9.** Elliott *Fr. Book* 273. 1854. **10.** *Am. Pom. Soc. Rpt.* 43. 1856. **11.** Fulton *Peach Cult.* 194. 1908.

Late Crawford is at the head of the Crawford family, long dominant among the several groups of American peaches and not yet equalled by any other yellow-fleshed peaches in quality. Late Crawford, a quarter-century ago, began to give

way to Elberta because of the greater productiveness of the Elberta tree and the showier Elberta fruits and now, though widely distributed, is nowhere largely planted and seems destined to pass out of cultivation as a peach of commerce. Unproductiveness and tardiness in coming in bearing are the faults on account of which Late Crawford is failing. Itself adapted to a wide range of soil and climatic condition, Late Crawford, through the recurring variations from seed, has made the Crawford family the most cosmopolitan of the several distinct races of American peaches. Of all the family it is most virile, more than a score of its offspring being described in *The Peaches of New York*.

Compared with other Crawford-like peaches, Late Crawford is possibly the best in fruit-characters, the peaches being unsurpassed in appearance and scarcely equalled in texture of flesh and richness of flavor. The peaches, too, are more shapely and more uniform in shape than fruits of other Crawford varieties, being rounder, trimmer in contour and having a suture that scarcely mars the symmetry of the peach. In color, Late Crawford runs the whole gamut of soft tints of red and yellow that make Melocotons and Crawfords the most beautiful of all peaches. The trees are as vigorous, hardy, healthy and as little susceptible to disease as any of the varieties near of kin, failing only, as has been said, in productiveness and in coming in bearing rather tardily. Evidently destined to pass from commercial cultivation, Late Crawford ought long to remain one of the treasures of the home orchard.

Late Crawford was raised by William Crawford, Middletown, New Jersey, at least a hundred years ago, the exact date of origin, as well as its parentage, being unknown. The variety was first brought to notice by William Kenrick, Newton, Massachusetts, who described it in the *American Orchardist* under the name Crawford's Superb Malacatune. No doubt it has a worthy line of ancestors in the old seedling orchards of the early colonists, the fact that it is the founder of a race indicating long-continued reproduction from seeds with little interposition of budding. At the National Convention of Fruit-Growers

held in 1848, Late Crawford was placed in the list of recommended fruits and since that time has held a place on the fruit-list of the American Pomological Society. It was first listed as Crawford's Late; later as Crawford's Late Melocoton and now appears as Late Crawford in accordance with the Society's rules of nomenclature.



LATE CRAWFORD

Tree large, vigorous, upright-spreading, open-topped, not very productive; trunk

stocky, smooth; branches thick, smooth, reddish-brown mingled with light ash-gray; branchlets long, somewhat twiggy, dark reddish-brown overlaid with olive-green, smooth, glabrous, with conspicuous, numerous, small, raised lenticels.

Leaves six and seven-eighths inches long, one and three-fourths inches wide, folded upward and curled downward, oval to obovate-lanceolate, thick, leathery; upper surface dark olive-green, smooth becoming rugose along the midrib; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-half inch long, with one to six small, globose, reddish-brown glands variable in position.

Flower-buds tender, large, above medium in length, obtuse or conical, plump, very pubescent, appressed or free; blossoms open in mid-season; flowers one and one-eighth inches across, pink, well distributed; pedicels short, medium to slender, glabrous, green; calyx-tube reddish-green, orange-colored within, obconic, glabrous; calyx-lobes medium to broad, obtuse, glabrous within, pubescent without, becoming heavily pubescent near the edges; petals oval to ovate, notched at the base, tapering to narrow claws which are reddish at the base; filaments seven-sixteenths inch long, shorter than the petals; pistil pubescent near the base, longer than the stamens.

Fruit matures late; two and three-fourths inches long, two and eleven-sixteenths inches wide, roundish-oval, compressed, with unequal halves; cavity deep, medium to narrow, abrupt or flaring; suture

shallow, deepening toward the apex; apex roundish, with a slightly pointed and swollen beak-like tip; color deep yellow, dully or brightly blushed, with the red cheek splashed with darker red; pubescence short, fine; skin thick, tough, separates readily from the pulp; flesh yellow, strongly stained with red at the pit, juicy, firm but tender, sweet but sprightly, richly flavored; very good in quality; stone free, one and three-fourths inches long, one and one-eighth inches wide, ovate, flattened, bulged on one side, blunt-pointed, flattened near the base, with surfaces deeply pitted and grooved; ventral suture deeply grooved along the edges; dorsal suture a deep, wide groove, winged.

LATE RARERIPE

1. *Am. Pom. Soc. Cat.* 22. 1897. **2.** Waugh *Am. Peach Orch.* 204. 1913. *Prince Red Rareripe.* **3.** Prince *Pom. Man.* **2**:16. 1832. **4.** Elliott *Fr. Book* 278. 1854. *Late Red Rareripe.* **5.** Downing *Fr. Trees Am.* 486. 1845. **6.** *Am. Pom. Soc. Cat.* 78. 1862.

Rareripe Rouge Tardive. **7.** Mas *Le Verger* **7**:217, 218, fig. 107. 1866-73. **8.** Leroy *Dict. Pom.* **6**:255 fig., 256. 1879.

Prince. **9.** *Mich. Sta. Bul.* **169**:223. 1899.

Late Rareripe is a white-fleshed, late freestone. It is of value now only because of its historical interest though its high quality makes it well worth growing in gardens. Its position as a milestone in the progress of peaches is better marked if we quote A. J. Downing[262] who wrote in 1845 when Late Rareripe was in its prime and one of the leading varieties: "Unquestionably one of the very finest of all peaches. Its large size, great excellence, late maturity, productiveness,

vigor, all unite to recommend it to universal favor. We cannot praise it too highly."

This old variety is certainly of American origin but the originator, the time and place of origin are all unknown. It has been cultivated more than a hundred years. Prince believed it to be a seedling of Red Rareripe but there is nothing to be found now to verify this belief. Late Rareripe was sent to France in 1855 where it has since been grown as a satisfactory commercial sort. The American Pomological Society listed this variety in its catalog in 1862 under the name Late Red Rareripe. In 1897, the name was shortened to Late Rareripe as it now appears.



LATE RARERIPE

Tree often very large, vigorous, spreading, open-topped, of medium productiveness; trunk stocky, nearly smooth; branches thick, smooth, reddish-brown tinged with light ash-gray; branchlets long, with internodes of medium length, dark pinkish-

red intermingled with dull green, glabrous, with numerous conspicuous, large lenticels raised at the base.

Leaves six and one-half inches long, one and one-half inches wide, folded upward and curled downward, oval to obovate-lanceolate, thick, leathery; upper surface smooth becoming rugose at the midrib; lower surface pale green; apex acuminate; margin finely and often doubly serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four small, globose, reddish-brown glands variable in position.

Flower-buds half-hardy, conical to pointed, plump, pubescent, free; blossoms appear in mid-season; flowers one and three-sixteenths inches across, white at the center of the petals changing to pink toward the margins, well distributed; pedicels short, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, obconic, glabrous; calyx-lobes acute, glabrous within, pubescent without; petals oval, faintly notched near the base, tapering to narrow claws of medium length tinged with red at the base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent near the base, usually as long as the stamens.

Fruit matures late; two and five-eighths inches long, two and eleven-sixteenths inches wide, roundish-cordate, with unequal surfaces; cavity variable in depth and width, abrupt or flaring, often with twig-mark across the cavity; suture variable in depth, extending beyond the tip; apex roundish, mamelon or mucronate, recurved;

color greenish or creamy-white, sometimes with a lively red blush, mottled and splashed with darker and duller red; pubescence thick, coarse; skin tough, adherent to the pulp; flesh white, stained with red near the pit, juicy, stringy, tender, pleasantly flavored, sweet or somewhat sprightly; good to very good in quality; stone free or nearly so, one and one-half inches long, one and one-sixteenth inches wide, oval to ovate, plump, with deeply grooved surfaces; ventral suture deeply grooved along the edges, strongly furrowed; dorsal suture deeply grooved.

LEMON FREE

1. Wickson *Cal. Fruits* 313. 1889. **2.** *Am. Pom. Soc. Cat.* 33. 1899. **3.** *Mich. Sta. Bul.* **169**:218. 1899. **4.** Budd-Hansen *Am. Hort. Man.* **2**:349. 1903. **5.** Waugh *Am. Peach Orch.* 204. 1913.

Lemon. **6.** *Rural N. Y.* **47**:131. 1888. **7.** *Am. Pom. Soc. Cat.* 32. 1889. **8.** *Ont. Fr. Exp. Sta. Rpt.* **2**:59. 1895.

Lemon Free is a yellow-fleshed, freestone, lemon-shaped, lemon-colored peach ripening in late mid-season. The fruit is not sufficiently attractive in appearance to sell well in the markets and, besides, is too thin-skinned to ship or keep well. The quality is very good, the flavor being sweet, rich and delicious, though possibly the flesh is a little too dry to permit the variety being ranked as "very good." It is an excellent peach for culinary purposes having the reputation of making a handsomer canned product than any other peach. Lemon Free is little grown in the eastern states but it is one of the leading sorts of its season in parts of California. The color-plate shows the shape very well but the color is not quite that of the real peach.

This variety seems to have originated in Ohio about 1885 but nothing is known of its parentage, originator or introducer. Wickson, in *California Fruits*, claims California as its birthplace but this, we think, is an error. In 1889 the American Pomological Society placed Lemon Free in its fruit-catalog as Lemon but in 1899 changed the name to Lemon Free.



LEMON FREE

Tree very large, vigorous, upright-spreading, dense-topped, hardy, rather unproductive; trunk thick, smooth to medium; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets often very long, with a tendency to rebranch, with medium to long internodes, pinkish-red with but a trace of green, glossy, smooth, glabrous, with large, raised, russetty lenticels medium in number.

Leaves seven inches long, one and three-fourths inches wide, folded upward and curled downward, oval to obovate-lanceolate, thick, leathery; upper surface dark olive-green, smooth becoming rugose along the midrib; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with two to six rather large, reniform, reddish-brown glands variable in position; flower-buds intermediate in size and length, conical to pointed, slightly pubescent, usually free; flowers appear in mid-season.

Fruit matures in late mid-season; two and one-half inches long, two and five-sixteenths inches wide, roundish-oval; cavity medium to deep, wide, flaring, often mottled with red; suture shallow, becoming deeper at the apex and extending beyond; apex mucronate to roundish-mamelon, recurved; color green or golden-yellow, with a faint blush and mottled with red; pubescence fine, long, thick; skin thin, tender, variable in adhesion to the pulp; flesh yellow, juicy, stringy, tender and melting, sweet to sprightly, pleasantly flavored; very good in quality; stone semi-free to free, one and one-fourth inches long, nearly one inch wide, oval, plump, flattened near the base, short-pointed, the surfaces usually grooved and with few pits; ventral suture winged, deeply marked along the edges, narrow; dorsal suture winged, grooved.

LEVY

1. *Gard. Mon.* **23**:82. 1881. **2.** *Am. Pom.*

Soc. Cat. 37. 1909. **3.** Waugh *Am. Peach Orch.* 204. 1913.

Henrietta. **4.** *U. S. Pat. Off. Rpt.* 380. 1858. **5.** *Cult. & Count. Gent. 45*:649. 1880. **6.** *Tex. Sta. Bul.* **39**:807. 1896. **7.** *Am. Pom. Soc. Cat.* 33. 1899. **8.** Waugh *Am. Peach Orch.* 203. 1913.

Levy Late. **9.** *Am. Pom. Soc. Rpt.* 92, 93. 1881. **10.** Downing *Fr. Trees Am.* 3rd App. 171. 1881. **11.** Budd-Hansen *Am. Hort. Man.* **2**:349. 1903.

This variety ripens quite too late for any but the most favorable peach-sections in New York. It is a round, yellow-fleshed clingstone of very good quality and might be planted in the parts of New York, where the season permits it to mature, for a very late culinary peach. It is one of the favorite peaches to close the season in Southern fruit-growing sections.

The history of Levy is badly confused. More than half a century ago a peach called Henrietta was cultivated. Where or when the variety originated no one can tell. In 1881, Downing mentioned a peach under the name Levy Late as being a new, late clingstone originating in the garden of W. W. Levy, Washington, District of Columbia. Downing gave Henrietta as a synonym of Levy Late, as have several pomologists since. From these facts, it seems safe to say that the variety is old, that it was first introduced as Henrietta and that the peach which Mr. Levy claimed to have originated was Henrietta. The American Pomological Society, in 1899, added this peach to its fruit-list as Henrietta but in 1909 changed the name to Levy, giving Henrietta as a synonym.

Tree large, vigorous, upright to quite spreading, hardy, productive; trunk thick, rough; branches stocky, smooth, reddish-brown intermingled with very light ash-

gray; branchlets slender, with internodes dark red or purplish-red mingled with light green, smooth, glabrous, with small, numerous, conspicuous, raised lenticels.

Leaves six and one-half inches long, one and one-half inches wide, oval to obovate-lanceolate, of medium thickness, leathery; upper surface dark green, smooth becoming rugose along the midrib; lower surface grayish-green; apex acuminate; margin finely serrate, tipped with reddish-brown glands; petiole five-sixteenths inch long, with one to six small, globose, reddish-brown glands variable in position.

Flower-buds hardy, conical to pointed, plump, pubescent, free; blossoms appear in mid-season; flowers seven-eighths inch across, with varying shades of pink, sometimes in twos; pedicels short, medium to thick, glabrous, green; calyx-tube reddish-green at the base, orange-colored within, somewhat campanulate, glabrous; calyx-lobes short, medium to narrow, acute, glabrous within, pubescent without; petals oval, notched near the base, tapering to long, narrow claws often tinged with red at the base; filaments five-sixteenths inch long, equal to the petals in length; pistil pubescent near the base, as long as or longer than the stamens.

Fruit matures very late; about two and one-half inches in diameter, roundish-cordate, compressed, with very unequal halves; cavity medium to deep, wide, abrupt to slightly flaring, with tender skin and often twig-marked; suture deep, extending beyond the tip; apex mamelon, recurved, a few fruits with very large, mucronate tips;

color greenish or golden-yellow, with splashes of dull red and a lively blush covering one cheek; pubescence short, thick, fine; skin thick, adherent to the pulp; flesh yellow, juicy, stringy, meaty, mild or somewhat astringent, pleasantly flavored; fair to good in quality; stone clinging, one and one-half inches long, one inch wide, bulged on one side, ovate to oval, plump, winged, with surfaces marked by short, red grooves; ventral suture deeply furrowed along the edges, wide; dorsal suture a deep groove.

LOLA

1. *Del. Sta. Rpt.* **13**:104. 1901. **2.** *Am. Pom. Soc. Cat.* 37. 1909.

Lolo. **3.** *Cornell Sta. Bul.* **74**:373. 1894. **4.** *Am. Pom. Soc. Cat.* 33. 1899. **5.** Budd-Hansen *Am. Hort. Man.* **2**:349, 350. 1903.

Miss Lola. **6.** *U. S. D. A. Pom. Rpt.* 43, Pl. IV. 1895. **7.** *Rural N. Y.* **60**:678. 1901. **8.** *N. Y. Sta. Bul.* **364**:184. 1913.

Miss Lolo. **9.** *Tex. Sta. Bul.* **39**:808. 1896.

Lola is a popular peach in parts of the South but is hardly known in New York. On the Station grounds it is the best of its season and one of the best of all white-fleshed peaches. Moreover, it fills a gap in the peach procession that ought to make it valuable in this State. It follows Mamie Ross and Greensboro, both of which it surpasses in appearance and quality. It precedes Champion and is even better than that handsome and delicious peach. Since it ripens with the well-known Carman, fruit-growers will want to know how it compares with that variety. It is hardier in bud than Carman, that sort not having a single fruit after the cold winter of 1911-12 while Lola bore a fair crop; the fruit is of

better quality, larger, hardly as well colored and on the Station grounds the tree is more productive. Attention of New York peach-growers was called to Lola, in words almost identical with those here used, in Bulletin 364 from this Station, published in 1913, with the result that it is now being tried in several parts of the State and we shall soon know what its commercial value is this far north.

The parentage of Lola is unknown. The variety originated from seed planted in 1876 by J. W. Stubenrauch, Mexia, Texas, who named it Miss Lola in honor of his daughter. The American Pomological Society listed Lola in its catalog in 1899 as "Lolo." In 1909, however, the spelling was changed to Lola as it is correctly written.



LOLA

Tree large, vigorous, upright-spreading, open-topped, hardy, productive; trunk thick, smooth; branches stocky, smooth, reddish-brown with a light tinge of ash-gray; branchlets very long, with internodes of medium length, dark pinkish-red intermingled with pale green, glossy, smooth, glabrous, with conspicuous, numerous, small, raised lenticels.

Leaves six inches long, one and one-half inches wide, variable in position, oval to obovate-lanceolate, thin; upper surface dull, dark green; lower surface silvery-green; apex acuminate; margin finely serrate to nearly crenate, glandular; petiole three-eighths inch long, with one to five reniform glands usually on the petiole.

Flower-buds hardy, obtuse, very plump, heavily pubescent, appressed or free; blossoms open early; flowers nearly two inches across, light to dark pink, usually in twos; pedicels short, slender, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, somewhat campanulate, glabrous; calyx-lobes broad, obtuse, glabrous within, pubescent without; petals ovate, deeply indented near the base, faintly crenate, tapering to narrow claws; filaments one-half inch long, shorter than the petals; pistil, pubescent near the base, equal to the stamens in length.

Fruit matures in early mid-season; two and three-eighths inches long, two and one-half inches wide, round-oval, usually somewhat oblique, compressed, with nearly equal halves; cavity deep, wide, abrupt, with tender skin; suture shallow, deepening toward the tip; apex small, mucronate, roundish or somewhat depressed; color creamy-white blushed with carmine deepened by a few dark splashes; pubescence short, thin; skin thin, tough, separating from the pulp; flesh white, rayed with red near the pit, very juicy, tender and melting, sweet, with a pleasant sprightliness; good in quality; stone semi-free to free, one and three-eighths inches long, fifteen-sixteenths inch wide, obovate,

plump, abruptly pointed, with corrugated and pitted surfaces; ventral suture wide, winged, deeply furrowed along the edges; dorsal suture a deep, narrow groove.

MAMIE ROSS

1. *Can. Hort.* **17**:346. 1894. **2.** *Tex. Sta. Bul.* **39**:807, 808 fig. **8.** 1896. **3.** *Ga. Sta. Bul.* **42**:238. 1898. **4.** *Am. Pom. Soc. Cat.* 33. 1899. **5.** *Del. Sta. Rpt.* **13**:104, 105. 1901. **6.** Budd-Hansen *Am. Hort. Man.* **2**:351. 1903. **7.** Waugh *Am. Peach Orch.* 205. 1913.

Mamie Ross seems to have a very good reputation as a table and market peach in Texas and other parts of the South but is hardly worth growing in New York. The fruit has two bad faults: The quality is not high—the flesh being coarse, juicy and insipid in flavor; and the peaches bruise with the least possible handling so that they cannot be shipped to advantage. On the Station grounds the pubescence, too, is so abundant as to be objectionable. Mamie Ross comes at a season when there are many other good mid-season, white-fleshed peaches and may, therefore, be thrown out of the list for this region. It is, as the color-plate shows, a very handsome peach.

Mamie Ross is probably a seedling of Chinese Cling. It originated about 1881 with Captain A. J. Ross, Dallas, Texas. The variety soon attracted attention and neighbors began propagating it. Later, Mr. Ross' brother named the peach after the originator's youngest daughter. In 1899, the American Pomological Society added the variety to its fruit-list.



MAMIE ROSS

Tree large, vigorous, upright-spreading to somewhat drooping, open-topped, hardy, productive; trunk thick, smooth; branches stocky, smooth, reddish-brown with light ash-gray; branchlets very long, with long internodes, dark red with considerable olive-green, glossy, smooth, glabrous, with numerous conspicuous, raised lenticels variable in size.

Leaves six and three-fourths inches long,

one and three-fourths inches wide, variable in position, oval to obovate-lanceolate, thick, leathery; upper surface dark green, smooth becoming rugose along the midrib; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with none to five small, globose and reniform, reddish-brown glands variable in position.

Flower-buds semi-hardy, obtuse to pointed, plump, heavily pubescent, free or appressed; blossoms open early; flowers one and three-fourths inches across, pink, single; pedicels very short, medium to thick, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, obconic, glabrous; calyx-lobes acute or obtuse, glabrous within, heavily pubescent without; petals oval to obovate, entire except near the base, tapering to narrow claws often red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the base, equal to the stamens in length.

Fruit matures in early mid-season; two and one-half inches long, two and seven-eighths inches wide, roundish-oval to oblong, often bulged on one side, compressed, usually with sides equal; cavity deep, abrupt, often marked with streaks of red; suture variable in depth; apex small, mucronate, set in a slight depression; color pale yellowish-cream, with more or less dull or bright red in which are splashes of darker red; pubescence short, fine, thick; skin thin, tough, separates from the pulp; flesh white, streaked with red near the pit, very juicy, stringy, tender, melting, sweet or somewhat sprightly, pleasantly flavored; good in

quality; stone semi-cling or cling, one and five-eighths inches long, one inch wide, ovate to long-elliptical, plump, long-pointed, bulged on one side, with pitted and grooved surfaces; ventral suture deeply grooved along the edges, narrow, winged; dorsal suture grooved.

MAY LEE

1. *Del. Sta. Rpt.* **13**:105. 1901. **2.** Stark Bros. *Cat.* fig. 1904. **3.** *Ibid.* 62 fig. 4, 63. 1910.

May Lee is a very early white-fleshed, clingstone, pink-cheeked peach introduced to rival Alexander, Triumph and other extra early sorts. It fails, on the Station grounds at least, because the peaches run small, the flesh clings too tenaciously and the stones crack. Neither is the fruit attractive in color nor high in quality. It may be as good in quality as Alexander or Triumph but is no better. The variety is but doubtfully worth planting in New York.

May Lee originated with E. W. Kirkpatrick, McKinney, Texas, from a seed of Mamie Ross planted in 1896.



MAY LEE

Tree large, spreading, low-growing, very productive; trunk thick, smooth; branches stocky, smooth, reddish-brown with light ash-gray; branchlets slender, often inclined to rebranch, medium to long, with internodes dark pinkish-red intermingled with olive-green, glossy, smooth, glabrous, with numerous conspicuous, raised lenticels medium in size.

Leaves six and one-half inches long, one and three-fourths inches wide, flattened or curled downward, oval to obovate-lanceolate, rather thick, leathery; upper surface dark green, smooth becoming rugose along the midrib; margin crenate, tipped with small, reddish glands; petiole three-eighths inch long, glandless or with one to five large, reniform glands variable in color and position.

Flower-buds hardy, small, short, conical, plump, very pubescent, appressed or free; blossoms open in mid-season; flowers nearly two inches across, light pink; pedicels very short, of medium thickness, glabrous; calyx-tube greenish-red, campanulate; calyx-lobes obtuse, glabrous within, pubescent without; petals round or broadly ovate, notched near the base, tapering to claws red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, longer than the stamens.

Fruit matures early; about two and three-fourths inches in diameter, round, compressed, bulged along one size, with unequal halves; cavity deep, narrow, abrupt; suture variable in depth, extending beyond the tip; apex small, mucronate, depressed; color creamy-white, usually with a blush toward the apex; tomentose; skin thick, tough, semi-free to free; flesh white, very juicy, tender and melting, sweet, mild, pleasantly flavored; good in quality; stone semi-clinging to clinging, one and nine-sixteenths inches long, one and one-eighth inches wide, oval, conspicuously winged, flattened near the base, with deeply grooved surfaces; ventral suture thin,

winged, very deeply grooved along the edges; dorsal suture grooved.

MORRIS WHITE

1. *Proc. Nat. Con. Fr. Gr.* 39, 51. 1848. **2.** Elliott *Fr. Book* 276. 1854. **3.** *Am. Pom. Soc. Cat.* 22. 1897. **4.** *Mich. Sta. Bul.* **169**:220. 1899. **5.** Fulton *Peach Cult.* 190, 191. 1908.

White Rareripe. **6.** Coxe *Cult. Fr. Trees* 222. 1817. **7.** Prince *Pom. Man.* **2**:26. 1832.

Morris White Freestone. **8.** *Lond. Hort. Soc. Rpt.* **6**:410. 1826. **9.** Floy-Lindley *Guide Orch. Gard.* 189. 1846.

Morris White Rareripe. **10.** Downing *Fr. Trees Am.* 481. 1845.

Blanche de Morris. **11.** Mas *Le Verger* **7**:171, 172, fig. 84. 1866-73.

Morris Blanche. **12.** Leroy *Dict. Pom.* **6**:171 fig., 172. 1879.

Morris White is one of the ancients of American peach-orchards worth noticing now only because of its worthy past. It is distinguished among peach varieties by its white flesh—white clear to the pit with no trace of red even on the surface or next to the stone. It is further distinguished by its sweet, rich flavor—giving it high rank among the best of peaches—and by the great productiveness of the trees. Though undoubtedly the day of Morris White is passed for either commercial or home orchards, it might still be used advantageously in breeding late, white-fleshed, freestone peaches.

William Robert Prince,[263] in his *Pomological Manual*, describes a White Rareripe which he claims originated in the nursery of his grandfather and which can be no other

than the Morris White under discussion. The origin of the variety will always be in doubt but probably the elder Prince originated it in the latter part of the Eighteenth Century. Leroy has confused the history of Morris White with that of Red Rareripe, commonly called Morris Red Rareripe, which probably originated with Robert Morris, Philadelphia, Pennsylvania. Leroy questions the identity of the White Rareripe mentioned by Coxe but, although the season of Coxe's sort is a trifle earlier than Leroy's, the two are probably the same. There was a White Rareripe grown for a short time in America many years ago which proved to be the old French Nivette renamed. Nivette was not widely disseminated and probably has long since passed from cultivation in America. Morris White was reported upon at the National Convention of Fruit-Growers in 1848 and received a place in the list of recommended fruits. It continued to be listed in the American Pomological Society's fruit-catalog until 1891 when it was dropped but was replaced in 1897 and still remains there.



MORRIS WHITE

Tree large, vigorous, upright-spreading to drooping, dense-topped, productive; trunk intermediate in thickness and smoothness; branches stocky, smooth, reddish-brown with very light tinge of ash-gray; branchlets long, with long internodes, dark red mingled with green, glossy, smooth, glabrous, with many conspicuous, small, raised lenticels at the base.

Leaves six and three-fourths inches long, one and three-fourths inches wide, flat or curled downward, oval to obovate-lanceolate, leathery; upper surface dull, dark green, smooth; lower surface grayish-green; apex long, acuminate; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with one to five small, globose and reniform glands variable in color and position.

Flower-buds tender, obtuse to conical, plump, very pubescent, usually free; blossoms appear in mid-season; flowers less than an inch across, pale pink, deepening in color along the edges; pedicels short, thick, glabrous, green; calyx-tube greenish-red, greenish-yellow within, campanulate, glabrous; calyx-lobes narrow, glabrous within, pubescent without; petals oval, narrow; filaments three-eighths inch long, equal to the petals in length; pistil longer than the stamens.

Fruit matures late; two and one-sixteenth inches long, two and one-eighth inches wide, cordate-oval or oblate, compressed, with halves nearly equal; cavity abrupt or flaring; suture a line, becoming deeper

toward the tip; apex roundish, depressed in the suture, with mucronate tip; color pale white, usually without blush or with a faint bronze blush; pubescence heavy, long and coarse; skin thin, tough, somewhat adherent; flesh white, juicy, tender and melting, sweet, pleasantly flavored; good in quality; stone semi-free to nearly free, one and one-fourth inches long, seven-eighths inch wide, oval to slightly obovate, flattened near the base, with deeply grooved surfaces; ventral suture with deep grooves along the edges, furrowed; dorsal suture grooved.

MOUNTAIN ROSE

1. Tilton *Jour. Hort.* **7**:339 fig. 1870. **2.** *Am. Pom. Soc. Cat.* 18. 1871. **3.** Downing *Fr. Trees Am.* 1st App. 121. 1872. **4.** *Mich. Hort. Soc. Rpt.* 33, 261. 1874. **5.** *N. J. Hort. Soc. Rpt.* 41. 1878. **6.** *Ga. Sta. Bul.* **42**:239. 1898. **7.** *Mich. Sta. Bul.* **169**:220. 1899. **8.** Budd-Hansen *Am. Hort. Man.* **2**:352. 1903. **9.** Fulton *Peach Cult.* 174. 1908.

For many years Mountain Rose was preeminent among white-fleshed, freestone peaches by virtue of high quality and handsome appearance. It has a distinct and curious but delicious flavor—a sort of scented sweetness that appeals to all who appreciate choicely good fruit. Unfortunately, it fails in the chief requirement for popularity in these days of commercial fruit-growing—the trees are unproductive, a fault so marked that the variety is rapidly passing from cultivation. Mountain Rose sells well in all markets where it is known, usually bringing a fancy price because of its extra good quality and because it follows closely after the dozen or more white-fleshed, clingstones of poorer quality.

The variety originated about 1851 on the farm of a Dr.

Marvin, Morristown, New Jersey. Of its parentage nothing is known. Mountain Rose has always been considered a good market variety and has been widely disseminated. The American Pomological Society added this peach to its fruit-list in 1871, a place it has since held.



MOUNTAIN ROSE

Tree large, vigorous, upright-spreading, low-growing and dense-topped, rather unproductive; trunk thick, medium in smoothness; branches stocky, smooth, reddish-brown covered with light ash-gray;

branchlets thick, long, with internodes of medium length, dark red intermingled with olive-green, glossy, smooth, glabrous, with numerous conspicuous, large and small lenticels raised near the base.

Leaves six and three-fourths inches long, one and five-eighths inches wide, flattened or curled downward, oval to obovate-lanceolate, thick, leathery; upper surface dull, dark green; lower surface grayish-green; apex long-acuminate; margin finely serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, with two to four small, globose, reddish-brown glands variable in position; flower-buds conical to pointed, plump, very pubescent, usually appressed; blossoms appear in mid-season; flowers small.

Fruit matures in early mid-season; two and one-eighth inches long, two and one-fourth inches wide, roundish-oblate to slightly cordate; cavity intermediate in depth and width, flaring to abrupt, often twig-marked; suture shallow, becoming deeper toward the tip; apex roundish, depressed in the suture, with mucronate or sometimes mamelon tip; color creamy-white blushed with deep red, with a few splashes of darker red; pubescence long, thick; skin thin, tough, variable in adhesion; flesh white, stained red near the pit, juicy, tender and melting, sweet, mild, pleasantly flavored; good to very good in quality; stone free, one and one-fourth inches long, seven-eighths inch wide, oval to ovate, plump, bulged on one side, contracted toward the base, tapering to a short point, usually with small pits in the surfaces; ventral suture deeply grooved along the

sides, furrowed; dorsal suture grooved, faintly winged.

Muir

1. *Mich. Hort. Soc. Rpt.* 314. 1889. **2.** Wickson *Cal. Fruits* 312, fig. 1889. **3.** *Ga. Sta. Bul.* **42**:239. 1898. **4.** *Am. Pom. Soc. Cat.* 34. 1899. **5.** *Mich. Sta. Bul.* **169**:221. 1899. **6.** Budd-Hansen *Am. Hort. Man.* **2**:352. 1903.

As a rule, peaches originating in California find small favor in New York. California peaches are selected for canning, evaporating and shipping, whereas New York varieties are dessert fruits. Muir is a California sort suitable only for culinary purposes—attractive enough inside but so unattractive externally that it could tempt no one who did not know the fruit to be sweet and delicious in flavor. It is a late mid-season, yellow-fleshed, freestone peach much used by canners on the Pacific slope. It ought to be more generally grown for the same purpose in the East; for, as a canned product, it is hardly surpassed in appearance or quality. The trees are vigorous, productive and little subject to leaf-curl but the fruits in New York are often marred by peach-scab. The variety seems perfectly at home in this State as, seemingly, it is in most peach-regions. In fruit-characters, Muir is very similar to Wager.

The variety was found more than twenty-five years ago on the farm of John Muir, near Silveyville, California. G. W. Thissell, Winters, California, named and introduced Muir. The American Pomological Society added this peach to its fruit-list in 1899.



MUIR

Tree vigorous, upright or somewhat spreading, hardy, productive; trunk rough; branches smooth, ash-gray over reddish-brown; branchlets slender, long, with short internodes, dark pinkish-red with but a trace of green, smooth, glabrous, with inconspicuous, small, raised lenticels.

Leaves fall early in the season, six and three-fourths inches long, one and three-eighths inches wide, flat or somewhat curled downward, oval-lanceolate, leathery; upper surface dull, dark green, nearly smooth; lower surface olive-green; apex

acuminate; margin bluntly serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, with one to five large, reniform glands variable in position.

Flower-buds small, short, obtuse, very plump, heavily pubescent, appressed; blossoms open late; flowers seven-eighths inch across; pale pink, darker about the edges, usually singly; pedicels short, green; calyx-tube reddish-green, orange-red within, campanulate, glabrous; calyx-lobes short, obtuse, glabrous within, pubescent without; petals narrow-oval or ovate, tapering to claws of medium width; filaments three-eighths inch long, equal to the petals in length; pistil as long as the stamens.

Fruit matures in mid-season; two and three-fourths inches long, two and three-eighths inches wide, roundish-cordate or oval, slightly angular, compressed, with unequal halves; cavity shallow, contracted about the sides, abrupt or flaring; suture medium in depth; apex pointed, with a large, recurved, mamelon tip; color greenish or lemon-yellow, with little if any blush; pubescence heavy, long; skin thin, tough, separates from the pulp when fully ripe; flesh yellow, faintly tinged with red near the pit, dry, coarse, tender, sweet, mild; good in quality; stone free, one and seven-sixteenths inches long, fifteen-sixteenths inch wide, ovate, flattened, wedge-shape toward the base, tapering to a long apex, with large pits and a few small grooves in the surfaces; ventral suture deeply grooved along the sides, very wide, deeply furrowed; dorsal suture widely and deeply grooved.

NIAGARA

1. *W. N. Y. Hort. Soc. Rpt.* 115. 1900. **2.** Budd-Hansen *Am. Hort. Man.* **2**:352, 353. 1903. **3.** *W. N. Y. Hort. Soc. Rpt.* 24. 1904. **4.** *Am. Pom. Soc. Cat.* 38. 1909. **5.** *N. Y. Sta. Bul.* **403**:213, 214, Pl. 1915.

Newark Seedling. **6.** *Del. Sta. Rpt.* **5**:99. 1892.

Niagara is a variant of a peach which all growers lament as being less and less grown, the Crawford. The Crawford group, though a dominant type, is, as we have several times pointed out, a little too capricious as to soil and climate to suit the needs of commercial peach-growers, failing to bear regularly or abundantly in most soils. For this reason the once very popular Early and Late Crawfords are now seldom grown. All who know these varieties regret that a sort of their type, without their faults, has not yet come to light. In New York the best of the comparatively new Crawford-like peaches is Niagara, said to be a seedling of one of the Crawfords. The fruit ripens later than Early Crawford, averages larger, is borne more abundantly and holds its size better to the end of the season. But Niagara's great point of merit, as compared with Crawford, is that it is more dependable in all tree-characters, being, especially, less capricious as to soil and climate. Niagara, as the color-plate shows it, is a beautiful fruit, yellow, with a handsome over-color of red. The flesh, too, is attractive and delectable—yellow, thick and firm, with a rich, sweet flavor which makes it one of the most palatable peaches of its season. It is, as are most of its type, a freestone. Niagara fails in productiveness in some localities, having in this respect the fault of all its tribe; but it should have a welcome place in any home collection and, where it proves productive, is one of the best for general market.

Niagara probably came originally from Maryland to Julius Harris, Ridgeway, New York. Later it was sold to a grower near Lockport, New York, who disposed of it to a Mr.

Corwin, Newfane, Niagara County, New York, who called it Corwin's Crawford. It then came into possession of the Rogers Nurseries, Dansville, New York, from whom this Station received its trees under the name Niagara. It is probably a seedling of Early Crawford. Niagara was added to the fruit-list of the American Pomological Society in 1909.



NIAGRA

Tree large, upright-spreading, hardy, medium in productiveness; trunk thick and smooth; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets thick, red intermingled with olive-green, glossy, smooth, glabrous, with conspicuous, large, raised lenticels.

Leaves six and three-fourths inches long, one and three-fourths inches wide, flattened or curled downward, oval to obovate-lanceolate, leathery; upper surface dull, dark green, rugose along the midrib; lower surface grayish-green; apex acuminate; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to five small, globose, raised, reddish-brown glands variable in position.

Flower-buds large, long, conical or pointed, very plump, pubescent, usually free; blossoms open in mid-season; flowers one inch across, white near the center of the petals changing to dark pink near the edges; pedicels very short, thick, glabrous, green; calyx-tube reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes narrow, acute, glabrous within, pubescent without; petals round-oval, tapering toward the apex, broadly notched near the base, contracting to claws red at the base; filaments three-eighths inch long, equal to or shorter than the petals; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in mid-season; two and one-half inches long, two and three-eighths inches wide, round-cordate to oval, compressed, with equal halves; cavity medium to deep, flaring to abrupt, with very tender skin, often splashed with red; suture shallow, deepening toward the apex and often extending beyond; apex rounded or pointed, with a mamelon and sometimes recurved tip; color orange-yellow, blushed with deep, dull red, with stripes and splashes of darker red; pubescence short,

thick, fine; skin thick, tough, adherent to the pulp; flesh yellow, deeply tinged with red near the pit, juicy, coarse but tender, sprightly; very good in quality; stone free, one and five-eighths inches long, one and one-eighth inches wide, broadly ovate, plump, with long point at the apex, usually with grooved surfaces and with few pits, tinged with red; ventral suture very deeply grooved along the sides, winged, rather wide; dorsal suture deeply grooved, wing-like.

OLDMIXON CLING

1. Coxe *Cult. Fr. Trees* 218. 1817. **2.** Kenrick *Am. Orch.* 231. 1832. **3.** Prince *Pom. Man.* **2**:23. 1832. **4.** Downing *Fr. Trees Am.* 497. 1845. **5.** *Am. Pom. Soc. Rpt.* 211. 1856. **6.** Fulton *Peach Cult.* 198. 1908. **7.** Waugh *Am. Peach Orch.* 205. 1913.

Oldmixon. **8.** Hoffy *Orch. Com.* **1**:1841-42. **9.** Elliott *Fr. Book* 278. 1854.

Without question one of the oldest American peaches, going back at least 150 years, Oldmixon Cling is still well worthy a place in every orchard where high quality is a prime requisite. It is a rich, luscious, white-fleshed peach, ripening late, which, besides being excellent in quality for dessert and culinary purposes, is uncommonly handsome—a combination of characters possessed by few other peaches. The color-plate is almost a perfect picture of the variety and could the flavor be as well conveyed to readers, Oldmixon Cling might again take on some of its one time popularity. We can discover but one fault in the fruits as they grow on the Station grounds—the pits crack badly. The variety, however, seems to be passing out because the trees are not, as a rule, fruitful though in all other respects they are seemingly near perfection.

There is no trace of when, where or how Oldmixon Cling originated. Coxe[264] first set forth its merits in 1817. It is reported to have been introduced from Europe by Sir John Oldmixon but Downing believes that it was the pit and not the tree which Oldmixon brought to America. At any rate the variety takes its name from its supposed introducer. If the pit were planted by Sir John Oldmixon, this must be the oldest of our peaches for Oldmixon came to America nearly 200 years ago. He was, by the way, the author of one of the early and notable books on America, *The British Empire in America*, published in London in 1741. Pomologists from time to time have made two words of the name making it appear that old and new Mixon peaches existed. Oldmixon Cling was placed in the fruit-list of the American Pomological Society in 1856 and ever since has retained a place there. In 1881 the Society changed the name from Old Mixon Cling to Oldmixon Cling.



OLDMIXON CLING

Tree large, vigorous, upright-spreading, hardy, rather unproductive; trunk medium to thick, smooth; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets of medium thickness and length, with tendency to rebranch, red intermingled with dull green, glossy,

smooth, glabrous, with numerous conspicuous, large, raised lenticels.

Leaves six and three-fourths inches long, one and one-half inches wide, flattened or curled downward, oval to obovate-lanceolate, leathery; upper surface dark green, smooth becoming rugose along the midrib; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with one to four small, globose glands variable in color and position.

Flower-buds large, conical or pointed, plump, pubescent, appressed or somewhat free; blossoms appear in mid-season; flowers three-fourths inch across, light pink at the center deepening to darker pink at the margins, often in twos, sometimes in threes; pedicels short, green; calyx-tube reddish-green at the base, greenish-yellow within, obconic, glabrous; calyx-lobes short, narrow, acute, glabrous within, pubescent without; petals round-oval, nearly entire, tapering to claws tinged with red at the base; filaments three-eighths inch long, equal to or longer than the petals; pistil pubescent near the base, usually equal to the stamens in length.

Fruit matures late; about two and one-half inches in diameter, round or roundish-oval, bulged along one side, compressed, with unequal halves; cavity medium to deep, wide, variable in shape; suture shallow, becoming deeper toward the apex and extending beyond; apex round, with a recurved, mucronate or prominent and prolonged mamelon tip; color creamy-white, with a blush of lively red and faint splashes of darker red; pubescence fine,

short, thick; skin thin, tough, separates from the pulp; flesh white, faintly stained with red near the pit, juicy, stringy, tender, melting, sweet but sprightly, pleasantly flavored; very good in quality; stone clinging, one and seven-sixteenths inches long, one and one-eighth inches wide, ovate to oval, bulged on one side, flattened near the base, plump, long-pointed, with grooved surfaces; ventral suture deeply grooved along the edges, furrowed; dorsal suture grooved, with tendency to wing.

OLDMIXON FREE

1. Kenrick *Am. Orch.* 221. 1832. **2.** Prince *Pom. Man.* **2**:23. 1832. **3.** Downing *Fr. Trees Am.* 484. 1845. **4.** *Proc. Nat. Con. Fr. Gr.* 51. 1848. **5.** Elliott *Fr. Book* 278. 1854. **6.** *Am. Pom. Soc. Rpt.* 45, 183, 211. 1856. **7.** Fulton *Peach Cult.* 187, 188. 1908. **8.** Waugh *Am. Peach Orch.* 205. 1913.

Oldmixon Clearstone. **9.** Coxe *Cult. Fr. Trees* 222. 1817.

Oldmixon Free is a variant of Oldmixon Cling, differing, essentially, as the name implies, in having a free stone; it is, also, more sprightly in flavor and not quite as well endowed with the characters that constitute high quality. Side by side, outwardly, the two peaches can hardly be told apart. Since Oldmixon Cling is sometimes semi-free and Oldmixon Free often clings more or less, the two are often confused in orchards and markets. Both of these Oldmixons, as those who live in regions where cold and frost do frequent damage should know, are as hardy in wood and bud as any of the white-fleshed varieties. The blossoms of both, too, appear in late mid-season, thereby often escaping frosts. The trees of Oldmixon Free, like those of Oldmixon Cling, have the fault of being unproductive.

Oldmixon Free is supposed to be an American seedling of Oldmixon Cling, a fruit for the introduction of which we are indebted to Sir John Oldmixon of early colonial fame. At the Convention of Fruit-Growers held in 1848, Oldmixon Free was placed on the list of recommended peaches. In 1856 it appeared in the fruit-list of the American Pomological Society where it still remains.



OLDMIXON FREE

Tree very large, vigorous, upright to spreading, hardy, rather unproductive; trunk thick, smooth; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets of medium thickness and length, with tendency to rebranch, dark, deep red intermingled with olive-

green, glossy, smooth, glabrous, with conspicuous, numerous, raised lenticels.

Leaves six and seven-eighths inches long, one and three-fourths inches wide, curled downward or flattened, oval to obovate-lanceolate, leathery, dull, dark green, smooth; lower surface grayish-green; apex acuminate; margins finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four small, globose glands variable in color and position.

Flower-buds half-hardy, conical to pointed, plump, pubescent, free; blossoms appear in mid-season; flowers three-fourths inch across, pale pink near the center becoming darker pink at the outside, often in twos; pedicels very short, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, obconic; calyx-lobes short, obtuse, glabrous within, pubescent without; petals oval, faintly notched near the base, tapering to narrow, long claws tinged with red at the base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent near the base, equal to or longer than the stamens.

Fruit matures late; two and one-half inches long, two and three-fourths inches wide, round-cordate, usually bulged on one side, often compressed, with unequal sides; cavity medium to deep, abrupt or flaring, tinged with red; suture shallow, becoming deeper toward the apex and extending beyond; apex roundish, with a mucronate or recurved, mamelon tip; color creamy-white more or less overspread with a lively red blush in which are faint splashes and

mottlings of darker red; pubescence coarse, thick; skin thin, tough, separates from the pulp; flesh white, deeply tinted with red near the pit, juicy, stringy, tender and melting, sweet, with more or less sprightliness; very good in quality; stone free or nearly free, one and three-eighths inches long, one and one-eighth inches wide, oval to ovate, bulged, flattened near the base, with grooved and purplish-brown surfaces; ventral suture deeply grooved near the edges, furrowed, faintly winged; dorsal suture grooved.

OPULENT

1. *Ill. Hort. Soc. Rpt.* 209. 1906. **2.** *Fancher Creek Nur. Cat.* 31. 1907. **3.** *Burbank Cat.* 5. 1911.

Opulent is a white-fleshed, freestone peach of very mediocre character as it grows on the Station grounds. The fruits are attractive in appearance but not uncommonly so and are often marred, as they grow in New York, by peach-scab. The quality is scarcely better than the average and is ruined for most peach-lovers by a bitter tang, though to others this almond-like bitterness in the flavor may be a commendation. The variety ripens in mid-season. The trees are scarcely more satisfactory on the Station grounds than the fruits, being unproductive and none too vigorous. The chief claim this peach has to public notice is that it is a cross between a peach and a nectarine. Though as yet not thoroughly tried in New York, it is safe to say that it is worthless for this region.

Opulent was sent out several years ago by Luther Burbank, Santa Rosa, California, as a hybrid between the Muir peach and New White Nectarine.

Tree large, vigorous, upright-spreading with a tendency to droop, medium in

productiveness; trunk smooth; branches stocky, smooth, reddish-brown with a light ash-gray tinge; branchlets slender, long, with medium to long internodes, dull red intermingled with green, glossy, smooth, glabrous, with conspicuous, large, raised lenticels few in number.

Leaves six and one-half inches long, one and one-half inches wide, flattened or curled downward, oval to obovate-lanceolate, leathery, dark green, smooth becoming rugose along the midrib; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole one-half inch long, with one to six small, globose and reniform, reddish-brown glands variable in position.

Flower-buds tender, large, long, conical or obtuse, pubescent, plump, free; blossoms appear in mid-season; flowers one and one-eighth inches across, white at the center of the petals becoming dark pink near the margins; pedicels short, glabrous, green; calyx-tube reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes short, narrow, acute, glabrous within, pubescent without; petals oval or roundish, broadly notched, tapering to long, narrow claws red at the base; filaments five-sixteenths inch long, equal to the petals in length; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in early mid-season; two and one-half inches long, two and seven-sixteenths inches wide, round-oval, compressed, with unequal halves; cavity deep, abrupt, often marked with red; suture a mere line or very shallow, often a slight

depression just beyond the point; apex roundish, with a mucronate and recurved tip; color creamy-white, with a faint blush, speckled and striped with darker red; pubescence short; skin tough, separates from the pulp; flesh white, juicy, stringy, tender, melting, sweet but sprightly; fair in quality; stone free, one and five-sixteenths inches long, seven-eighths inch wide, ovate to slightly oval, flattened at the base, plump, short-pointed, with pitted surfaces marked by few grooves; ventral suture deeply furrowed along the edges, medium in width, furrowed; dorsal suture deeply grooved.

PALLAS

1. *Ga. Hort. Soc. Rpt.* 55. 1885. **2.** *Am. Pom. Soc. Cat.* 46. 1891. **3.** *La. Sta. Bul.* **17**:499. 1891. **4.** *Tex. Sta. Bul.* **39**:805. 1896. **5.** *Ga. Sta. Bul.* **42**:239, 240. 1898. **6.** *Mich. Sta. Bul.* **169**:222. 1899. **7.** Budd-Hansen *Am. Hort. Man.* **2**:353. 1903. **8.** *Fla. Sta. Bul.* **73**:150. 1904. **9.** *Ala. Sta. Bul.* **156**:134. 1911.

Pallas Honeydew. **10.** *Ohio Sta. Bul.* **170**:178. 1906.

Pallas is about the best of the several honey-flavored, beaked peaches that have fruited on the Station grounds. This is one of the sorts supposed to thrive only in warm climates but here, in a location none too favorably situated as to climate, the trees are vigorous, appear to be hardy and differ from northern varieties, so far as life events are concerned, only in holding their leaves longer. The fruits run small and lack uniformity in size, faults that will not permit Pallas ever to become a commercial sort in New York. Moreover, the peaches are not attractive in

appearance, suffer terribly from brown-rot and do not ship well—further disqualifications for competition in commerce. In quality, especially, to those who have a taste for sweets, Pallas is almost unapproachable—so rich, sweet, aromatic and delicious as well to justify the sobriquet, "Honeydew," frequently bestowed upon it. This variety might well be planted in every home orchard.

Pallas is one of the many seedlings of Honey and originated in 1878 with L. E. Berckmans, Augusta, Georgia. In 1891 the American Pomological Society added Pallas to its list of fruits as a noteworthy variety for southern fruit-districts.



PALLAS

Tree medium in vigor, upright-spreading, round-topped, productive; trunk rough; branches roughened by the lenticels, brownish intermingled with ash-gray and a little red; branchlets slender, with internodes of medium length, dark pinkish-red mingled with green, smooth, glabrous, with numerous conspicuous, small, raised, russet-colored lenticels.

Leaves fall late in the season, six inches long, one and one-half inches wide, variable in position, ovate-lanceolate, thin, leathery; upper surface dull, dark green, smooth; lower surface olive-green; margin sharply and often doubly serrate, glandular; petiole three-eighths inch long, stout, glandless or with one to three small, globose glands usually at the base of the leaf.

Flower-buds large, long, conical, plump, pubescent, conspicuous, usually free; flowers appear in mid-season, light pink changing to darker red; pedicels thick, glabrous, green; calyx-tube red, yellowish-green within, obconic, glabrous; calyx-lobes obtuse, glabrous within, heavily pubescent without; petals oval, entire, red at the base; filaments shorter than the petals; pistil pubescent, longer than the stamens.

Fruit matures in early mid-season; two and one-fourth inches long, two inches wide, pointed-oval, compressed, with halves equal; cavity shallow, flaring, with tender skin; suture shallow; apex a characteristically long, straight tip; color pale white or greenish-white occasionally

with a bright red blush but mostly with dull mottlings; pubescence medium in amount; skin thick, tough; flesh white, scarcely stained at the pit, very juicy, sweet, tender and melting, high-flavored; very good in quality; stone free, one and five-sixteenths inches long, seven-eighths inch wide, oval to ovate, slightly wedge-shaped at the base, plump, conspicuously winged, long-pointed, with pitted and grooved surfaces; ventral suture narrow, furrowed; dorsal suture grooved.

PEARSON

1. *Del. Sta. Rpt.* **13**:105. 1901. **2.** *N. Y. State Fr. Gr. Assoc. Rpt.* 21. 1912.

Pearson is a newcomer among peaches which will bear watching if it does as well in other parts of New York as on the Station grounds. It is a large, handsomely-colored, white-fleshed, freestone peach of good quality which ripens ten days before Champion. There are, it is true, a good many white-fleshed peaches at this season but Pearson is an exceptionally good one, much excelling Mamie Ross with which it might have to compete although the latter ripens a little later. The trees are very vigorous, productive and, so far, about as healthy as any on the Station grounds.

Pearson originated with J. M. Pearson, McKinney, Texas. Its parentage is unknown. The variety was introduced by E.W. Kirkpatrick of McKinney, who thinks it may be a seedling of Chinese Cling.



PEARSON

Tree large, vigorous, spreading, the lower branches drooping, very productive; trunk medium in thickness, smooth; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets slender, short, with short internodes, dark red mingled with olive-green, glossy, smooth, glabrous, with few inconspicuous lenticels

variable in size and raised toward the base.

Leaves seven inches long, one and three-fourths inches wide, variable in position, oval to obovate-lanceolate, leathery; upper surface dark, dull green, smooth becoming rugose along the midrib; lower surface grayish-green; apex long and narrow; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four small, globose, reddish-brown glands usually at the base of the blade.

Flower-buds hardy, long, heavily pubescent, conical to obtuse, plump, appressed or partly free; blossoms appear very early; flowers nearly two inches across, pink, usually single; pedicels short, of medium thickness, glabrous, green; calyx-tube dark, dull reddish-green, greenish-yellow within, campanulate, glabrous; calyx-lobes broad, often emarginated, acute or obtuse, glabrous within, heavily pubescent without; petals oval to roundish-obovate, tapering to long, narrow claws; filaments about one-half inch long, shorter than the petals; pistil pubescent only at the base, equal to the stamens in length.

Fruit matures in early mid-season; two and one-fourth inches long, two and three-sixteenths inches wide, round-oval or somewhat cordate, compressed, with unequal halves, bulged near the apex; cavity medium to deep, abrupt or flaring, with tender skin; suture quite variable in depth; apex round or depressed, with a small, mucronate or recurved, mamelon tip; color greenish-white, with a blush covering

much of the surface, more or less mottled; pubescence thin, fine, short; skin thin, tough, semi-free; flesh white, faintly tinged with red near the pit, juicy, stringy, tender and melting, pleasantly flavored; good in quality; stone semi-clinging or free, one and three-eighths inches long, one inch wide, oval, flattened at the base, winged, with pitted surfaces; ventral suture deeply grooved near the edges, narrow; dorsal suture grooved, winged.

PEENTO

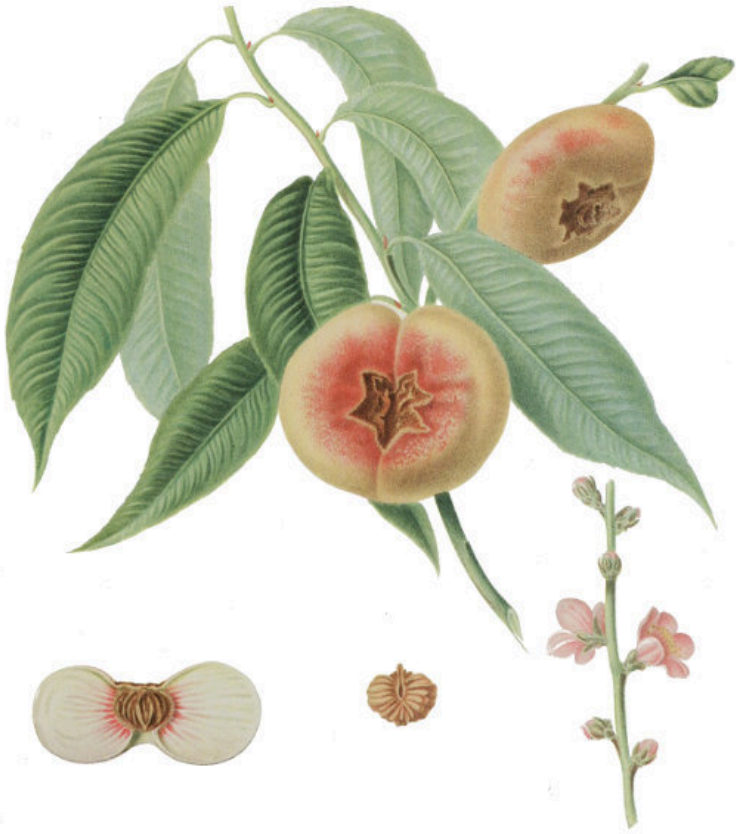
1. *Am. Pom. Soc. Rpt.* 41. 1877. **2.** *Gard. Mon.* **19**:114, 301. 1877. **3.** *Gard. Mon.* **26**:61. 1884. **4.** *U. S. D. A. Rpt.* 650. 1887. **5.** *Am. Pom. Soc. Cat.* 32. 1889. **6.** *Am. Pom. Soc. Rpt.* 114-116. 1889. **7.** *Fla. Sta. Bul.* **62**:506-509, Pl. 1. 1902. **8.** Fulton *Peach Cult.* 202. 1908.

Chinese Flat. **9.** Prince *Treat. Hort.* 16, 17. 1828. **10.** Kenrick *Am. Orch.* 225, 226. 1832.

Flat Peach of China. **11.** Lindley *Guide Orch.* 247, 248. 1831. **12.** *Horticulturist* **1**:383, 384, fig. 92. 1846-47. **13.** *Fla. Sta. Bul.* **62**:512, 513. 1902.

Platt Pfirsich. **14.** Mathieu *Nom. Pom.* 410. 1889.

For the history and a discussion of the horticultural characters of Peento, the reader is referred to page 108. The variety is too tender to cold to be grown in New York; in fact it succeeds only in Florida and the warmest parts of the other Gulf States. The American Pomological Society listed Peento in its fruit-catalog in 1889. The following description, as it applies to the tree, has been compiled:



PEENTO

[Reproduced from Transactions of the Horticultural Society of London IV: 512. 1822.]

Tree vigorous, open-topped, too tender for the North, variable in productiveness; leaves mature late, four and one-half inches long, one and seven-sixteenths inches wide, oblong-oval, thin, leathery; upper surface light olive-green, smooth; lower surface grayish-green; margin coarsely serrate, tipped with dark glands; petiole with two or three reniform glands of medium size, gray or greenish-yellow, usually at the base.

Fruit matures early; one and three-eighths inches long, two and seven-sixteenths inches wide, strongly oblate; cavity shallow, very wide, flaring, twig-marked; suture deep, wide, extending two-thirds around the fruit; apex depressed, set in a large, wide, flaring basin; color creamy-yellow, mottled and delicately pencilled with red, often blushed toward the apex; pubescence short, thick; skin thick, tough, nearly free; flesh white, stained red at the stone, juicy, stringy, tender and melting, sweet, mild, with an almond-like flavor; very good in quality; stone clings, red, one-half inch long, fifteen-sixteenths inch wide, strongly oblate, with corrugated surfaces; ventral suture very deep at the edges, narrow at the base, becoming wide at the apex; dorsal suture a wide, deep groove, merging into a line at the apex.

PROLIFIC

1. *Ga. Sta. Bul.* **42**:240. 1898.

New Prolific. **2.** *Col. O. Hort. Soc. Rpt.* **32.** 1892. **3.** *Mich. Hort. Soc. Rpt.* 190. 1895. **4.** *Ohio Hort. Soc. Rpt.* **59.** 1896-97. **5.** *Mich. Sta. Bul.* **169**:221. 1899. **6.** Budd-Hansen *Am. Hort. Man.* **2**:352. 1903. **7.** *Am. Pom. Soc. Cat.* 38. 1909.

Prolific was heralded a quarter-century ago as one of the great acquisitions to the peach-flora of the country. Time has not dealt kindly with the variety and it is doubtful if it is as popular now as it was a few years after its introduction. The trees are very satisfactory, excelling most of their orchard-associates in vigor, size, health, hardiness and productiveness but the peaches fall below the mark in several characters. The fruits are of but medium size and

not uncommonly attractive in color, though handsome enough, but too poor in quality to rate high among the peaches of its season which is a few days before Elberta. The flesh is yellow, firm, dry and little attacked by rot. With the qualities just named, the variety is, of course, a good shipper and might be in demand in the markets for culinary purposes. We doubt whether the peach should be largely planted in New York.

Further than that Prolific comes from Michigan, nothing is known of its parentage, the originator or the date of origin. It was introduced about 1890 by Greening Brothers, Monroe, Michigan, under the name New Prolific. In 1909 the American Pomological Society added this peach to its fruit-list as New Prolific.



PROLIFIC

Tree large, vigorous, spreading, becoming drooping, open-topped, very productive; trunk rough; branches stocky, smooth, reddish-brown with a very light tinge of ash-gray; branchlets deep, dull red intermingled with green, glossy, smooth, glabrous, with conspicuous, numerous lenticels raised near the base.

Leaves six and one-half inches long, one and one-half inches wide, variable in position, oval to obovate-lanceolate, leathery; upper surface dull, dark green,

smooth, becoming rugose near the midrib; lower surface grayish-green; apex long-acuminate; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with from one to five small, globose glands variable in color and position.

Flower-buds hardy, conical to obtuse, plump, somewhat pubescent, appressed or free; blossoms open early; flowers one and five-sixteenths inches across, white near the center becoming pink along the edges; pedicels very short, glabrous, green; calyx-tube dull, dark reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes narrow, acute, glabrous within, heavily pubescent without; petals roundish-ovate to oval, broadly notched near the base, tapering to narrow claws red at the base; filaments seven-sixteenths inch long, equal to the petals in length; pistil pubescent at the ovary, as long as the stamens.

Fruit matures in mid-season; two and one-fourth inches long, two and three-eighths inches wide, round-oval to cordate, bulged on one side, compressed, with unequal halves; cavity deep, usually abrupt, frequently mottled with red; suture a line, becoming deeper toward the tip; apex round or somewhat pointed, with a recurved, mamelon tip; color light orange, mottled and blushed with red; pubescence thick, fine; skin thin, tough, separates from the pulp; flesh light yellow, stained with red near the pit, medium juicy, coarse, stringy, tender, sweet, mild, pleasantly flavored; good in quality; stone free, one and three-eighths inches long, one inch

wide, ovate, bulged on one side, plump, with long, pointed apex, with surfaces grooved and marked by small pits; ventral suture deeply grooved along the sides, slightly winged near the base; dorsal suture a deep groove, faintly winged.

RAY

1. *Del. Sta. Rpt.* **13**:106. 1901. **2.** *Am. Pom. Soc. Cat.* 38. 1909. **3.** *N. J. Hort. Soc. Rpt.* 35. 1912. **4.** Harrison *Cat.* 27. 1915.

This is another of the many early, white-fleshed, freestone peaches which are competing for favor among peach-growers. We doubt if Ray, however, should find a place on the peach-list for New York. Several faults condemn it; worst of all, the trees are not productive. Add to unproductiveness, lack of uniformity in size, shape, color and flavor and the variety is out of the race as a commercial sort. This far north, too, the trees suffer from winter injury. The variety is remarkable for its foliage. Were it not for the fact that Ray is well spoken of in several other states, and the possibility that it might do better in other parts of New York than on the Station grounds, we should not place it among the major varieties in *The Peaches of New York*. It is said to be an excellent shipper.

This peach is occasionally confused with Raymond Cling, which originated in Mississippi many years ago and which has long since passed from cultivation. The present variety originated with D. Ray, Tyler, Texas. Its parentage is unknown. The American Pomological Society placed Ray on its fruit-list in 1909.



RAY

Tree large, vigorous, upright-spreading, the lower branches drooping, medium in productiveness; trunk thick, nearly smooth; branches stocky, smooth, reddish-brown with a light tinge of ash-gray; branchlets slender, dark red intermingled with olive-green, glossy, smooth, glabrous, with numerous raised lenticels variable in size.

Leaves six and one-half inches long, one and five-eighths inches wide, flattened or curled downward, oval to obovate lanceolate, leathery; upper surface dark green, smooth; lower surface medium

green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to three small, globose glands variable in position.

Flower-buds half-hardy, short, heavily pubescent, conical to pointed, plump, usually appressed; blossoms appear in mid-season; flowers one inch across, light pink becoming darker pink along the edges; pedicels short; calyx-tube reddish-green, greenish-yellow within, obconic; calyx-lobes long, narrow, obtuse, glabrous within, heavily pubescent without; petals ovate, with claws medium in length and width; filaments three-eighths inch long, equal to the petals in length; pistil pubescent at the base, longer than the stamens.

Fruit matures in mid-season; two and three-eighths inches long, two and one-half inches wide, roundish-conic to oblong-conic, slightly compressed, with nearly equal halves; cavity narrow, abrupt, with tender skin; suture shallow, deepening toward and often extending beyond the tip; apex round, with a mucronate tip; color greenish-white changing to white, scarcely blushed or with a bright pinkish-red blush varying from a small amount to about one-third of the surface, faintly mottled; pubescence coarse, thick, long; skin very thin, tough, separates from the pulp; flesh greenish-white, stained with red near the pit, juicy, stringy, firm but tender, aromatic, sprightly; good in quality; stone semi-free to free, one and seven-sixteenths inches long, slightly more than one inch wide, oval to ovate, plump, with short point at the apex, with grooved and pitted surfaces; ventral suture deeply grooved

along the edges, narrow, furrowed; dorsal suture grooved.

RED CHEEK MELOCOTON.

1. Prince *Pom. Man.* **2**:31, 32. 1832. **2.** Downing *Fr. Trees Am.* 492. 1845. **3.** *Am. Pom. Soc. Cat.* 32. 1867.

Red Cheek Malacotan. **4.** Coxe *Cult. Fr. Trees* 225. 1817. **5.** Floy-Lindley *Guide Orch. Gard.* 186. 1846.

Early Yellow Malacatune. **6.** Kenrick *Am. Orch.* 220. 1832.

Yellow or *Red Cheek Malacatune*. **7.** *Ibid.* 225. 1832.

Hogg's Malacatune. **8.** *Ibid.* 190. 1841.

Red Cheek. **9.** Elliott *Fr. Book* 288. 1854. **10.** *Mich. Sta. Bul.* **169**:223, 224. 1899. **11.** Budd-Hansen *Am. Hort. Man.* **2**:354. 1903. **12.** Fulton *Peach Cult.* 195, 196. 1908. **13.** *Am. Pom. Soc. Cat.* 39. 1909.

Malacatune. **14.** Hooper *W. Fr. Book* 225. 1857.

For nearly a century, beginning soon after the Revolutionary War, Red Cheek Melocoton had few rivals among yellow-fleshed, freestone peaches. Even yet it is surpassed in quality only by members of the Crawford family of which, by the way, it is supposed to be the immediate ancestor—certainly all Crawford-like peaches resemble it in both fruit and tree-characters. Lack of vigor and unproductiveness have driven Red Cheek Melocoton from common cultivation—indeed it is now almost impossible to obtain the trees. We give the variety attention in *The Peaches of New York*, not because of present worth,

but because of the prominent part it has played in the peach-industry of the country in the past. The color-plate is an admirable reproduction of this old peach though possibly the fruits run a little larger than in the illustration. The derivation of "Melocoton," so often used in this text, is given on page 51.

Red Cheek Melocoton is an American seedling which, according to William Prince, sprang from a bud of a stock on which Lemon Cling had been grafted, at the Prince farm, Flushing, New York. The Princes were so impressed with the seedling that they propagated it, giving it the name Red Cheek Malacatune, the name Malacatune at that time being given to all yellow peaches having little red. The discovery of the variety in the Prince orchards dates back considerably over one hundred years. From Red Cheek Melocoton the Crawfords and several other notable peaches are said to have come. In 1867 the American Pomological Society placed this variety in its catalog as Red Cheek Melocoton but in 1909 shortened the name to Red Cheek. We prefer to preserve the old name.



RED CHEEK MELOCOTON

Tree medium in size, vigorous, upright-spreading, lacking in productiveness; trunk intermediate in thickness and smoothness; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets

thick, variable in length, with medium to long internodes, deep, dark red intermingled with green, glossy, roughened by the lenticels, glabrous, with a few smallish, inconspicuous lenticels which are raised toward the base.

Leaves seven and one-fourth inches long, nearly two inches wide, variable in position, oval to obovate-lanceolate, medium in thickness, leathery, dark olive-green, smooth, becoming rugose toward the midrib; margin sharply serrate; petiole three-eighths inch long, glandless or with one to three small, globose, alternate glands variable in color and in their position; flower-buds intermediate in size and length, conical or pointed, plump, free; blossoms appear in mid-season; flowers small.

Fruit matures in mid-season; two and one-fourth inches long, about two and one-half inches wide, roundish-cordate, compressed, with halves nearly equal; cavity wide, deep, flaring or abrupt; suture shallow; apex roundish, with a mucronate or mamelon tip; color deep golden-yellow, splashed, blushed and mottled with red; pubescence heavy; skin thick, tough, adherent to the pulp; flesh rayed with red near the pit, yellow, juicy, firm but tender, sweet, pleasantly flavored; good in quality; stone free, one and one-half inches long, one inch wide, ovate, more or less bulged at one side and drawn out near the base, plump, rather long-pointed, with short grooves and pits in the surfaces; ventral suture winged, medium in thickness, deeply grooved and furrowed along the edges; dorsal suture a narrow groove, winged.

REEVES

1. *Tex. Sta. Bul.* **39**:814. 1896. **2.** *Mich. Sta. Bul.* **169**:224. 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:354. 1903. **4.** *Am. Pom. Soc. Cat.* 39. 1909.

Reeves' Favorite. **5.** Elliott *Fr. Book* 288. 1854. **6.** Downing *Fr. Trees Am.* 633. 1857. **7.** *Am. Pom. Soc. Cat.* 30. 1875. **8.** Fulton *Peach Cult.* 193. 1908.

Reeves' Late. **9.** *Mich. Hort. Soc. Rpt.* 458. 1883.

Reeves is another of the old favorites now rapidly passing out of cultivation. In its day it was justly celebrated for the high quality of its yellow-fleshed, freestone fruits which are as handsome as they are palatable. The peaches have but two minor defects to keep them from perfection—they are a little too irregular in shape and sometimes fall short in size. In texture of flesh, juiciness, taste and aroma they are scarcely surpassed. The fault that condemns the variety is unproductiveness in the trees. Under average conditions, Reeves is scarcely as productive as the Crawfords which are rated by all as about the poorest bearers. Making up in some degree for unfruitfulness, the trees are vigorous and more than usually hardy. It can hardly be expected that so poor a bearer will prove profitable in commercial plantations but Reeves is worthy of perpetuation for home orchards.

This attractive peach came from a chance seedling found about sixty years ago by Samuel Reeves, Salem, New Jersey. The variety has for many years gone under the name Reeves' Favorite and was so listed in the fruit-catalog of the American Pomological Society in 1875 but in 1909 the name was shortened by the Society to Reeves.



REEVES

Tree medium to large, vigorous, upright-spreading, hardy, rather unproductive; branches stocky, smooth, reddish-brown with light ash-gray; branchlets intermediate in thickness and length, with a tendency to rebranch, dark pinkish-red with some olive-green, glossy, smooth, glabrous, with moderately conspicuous lenticels raised and breaking the bark near the base.

Leaves six and three-fourths inches long, one and three-fourths inches wide, variable in position, oval to obovate-lanceolate; upper surface dark olive-green, smooth

becoming rugose along the midrib; lower surface grayish-green; apex acuminate; margin finely serrate, with reddish-brown glands; petiole three-eighths inch long, glandless or with one to three small, globose glands variable in position.

Flower-buds tender, medium in size and length, pubescent, conical or pointed, plump, free; blossoms open late; flowers seven-eighths inch across, light and dark pink, well distributed; pedicels very short, glabrous, greenish; calyx-tube reddish-green at the base, orange-colored within, obconic, glabrous; calyx-lobes medium to narrow, acute, glabrous within, pubescent without; petals oval to ovate, tapering to claws red at the base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent near the base, as long as the stamens.

Fruit matures in mid-season; two and three-eighths inches long, two and one-half inches wide, round-cordate, bulged at one side, compressed, with unequal halves; cavity often very deep, flaring or abrupt, the skin tender and often marked with red; suture shallow, sometimes extending beyond both cavity and tip; apex pointed or rounded, with a prominent, recurved, mamelon tip; color deep yellow, blushed with dull red, striped, splashed and mottled with brighter red; pubescence thick, long; skin thick, tough, separates from the pulp; flesh yellow, tinged with red near the pit, juicy, stringy, tender and melting, pleasantly flavored, mild, sweet; very good in quality; stone free, one and three-eighths inches long, fifteen-sixteenths inch wide, ovate to oval, more or less bulged near the

apex, sometimes winged along the ventral suture, with pitted and grooved surfaces; ventral suture deeply furrowed along the sides, narrow, grooved; dorsal suture small, grooved.

RIVERS

1. *Am. Pom. Soc. Cat.* 34. 1883. **2.** *Ont. Fr. Exp. Sta. Rpt.* **6**:22 fig. 1899. **3.** *Del. Sta. Rpt.* **13**:106. 1901. **4.** *Can. Hort.* **25**:464. 1902. **5.** Budd-Hansen *Am. Hort. Man.* **2**:354. 1903.

Early Rivers. **6.** *Jour. Hort.* N. S. **17**:38, 58. 1869. **7.** Downing *Fr. Trees Am.* 1st App. 120, 121. 1872. **8.** *Gard. Chron.* 1262. 1872. **9.** *Am. Pom. Soc. Cat.* 28. 1875. **10.** Hogg *Fruit Man.* 445. 1884. **11.** *Rev. Hort.* 388. 1890. **12.** *Cat. Cong. Pom. France* 98 fig. 1906.

Rivers' Frühe. **13.** Lauche *Deut. Pom.* **VI**: No. 9, Pl. 1882.

Précoce Rivers. **14.** Baltet *Cult. Fr.* 239 fig. 138. 1908.

Rivers and one other, Salwey, are the only foreign peaches now commonly cultivated in America. The peach, of all tree-fruits, best proves the general rule that American varieties of fruits are best adapted to American conditions. Perhaps to Rivers may be added three or four more exotic peaches which are now and then planted in this country but all are passing out so rapidly that we shall soon be standing on a basis in peach-growing which is wholly American. Earliness and high quality of fruit keep Rivers alive in private places in America. No one would think of planting it in a commercial orchard because of its small fruit, tender skin and flesh which show every bruise, and its susceptibility to brown-rot. It is a white-fleshed freestone,

tender, juicy and with an exceedingly rich, sugary flavor with a savoring smack of the nectarine. This variety stands almost alone in beauty of flesh which is white to the stone, translucent and more or less mottled and interspersed with white veins. At its best the fruits are rather large and quite handsome as they grow in America, but even so they are but a shadow of the peach described under this name in European fruit-books. The trees are fairly satisfactory in all essential characters.

Rivers originated with Thomas Rivers, Sawbridgeworth, England, about 1865 as a seedling of Early Silver. Soon after its introduction in England it was brought to America. The American Pomological Society listed the variety in its fruit-catalog in 1875 as Early Rivers but in 1883 changed the name to Rivers though it is still popularly known as Early Rivers.



RIVERS

Tree large, vigorous, upright-spreading, with inclination to droop, round-topped, hardy, productive; trunk thick; branches stocky, smooth, dark reddish-brown

overspread with light ash-gray; branchlets long, with internodes olive-green overlaid with thin brownish-red, glossy, smooth, glabrous, with numerous conspicuous, large and small lenticels.

Leaves five and three-fourths inches long, one and five-eighths inches wide, folded upward and somewhat recurved, oval to obovate-lanceolate, thin, leathery, dark green, smooth or sometimes rugose; lower surface grayish-green, not pubescent, with a prominent midrib; apex acuminate; margin finely serrate, tipped with fine, reddish-brown glands; petiole one-fourth inch long, with one to six reniform, greenish-yellow glands variable in position.

Flower-buds large, long, conical, heavily pubescent, appressed; season of bloom early; flowers pink, one and one-half inches across, often in pairs; pedicels short, glabrous, green; calyx-tube dull reddish-green, light yellow within, campanulate, glabrous; calyx-lobes short, narrow, acute to obtuse, glabrous within, heavily pubescent without; petals round-ovate, bluntly notched near the base, tapering to long, narrow claws occasionally with a reddish base; filaments one-half inch long, shorter than the petals; pistil pubescent at the ovary, equal to the stamens in length.

Fruit matures early; two and three-eighths inches long, two and one-fourth inches wide, round-oval, compressed, with unequal halves; cavity shallow, contracted, irregular, abrupt; suture medium to shallow; apex roundish, somewhat mucronate; color creamy-white, blushed with red; pubescence short, heavy; skin

thick but tender, adherent to the pulp; flesh white, translucent, veined, juicy, melting, sweet or mildly sprightly; good in quality; stone nearly free, one and five-sixteenths inches long, one inch wide, oval, plump, bulged on one side, light colored, short-pointed at the apex, with grooved surfaces; ventral suture very deeply grooved along the sides, narrow, winged; dorsal suture grooved, more or less winged.

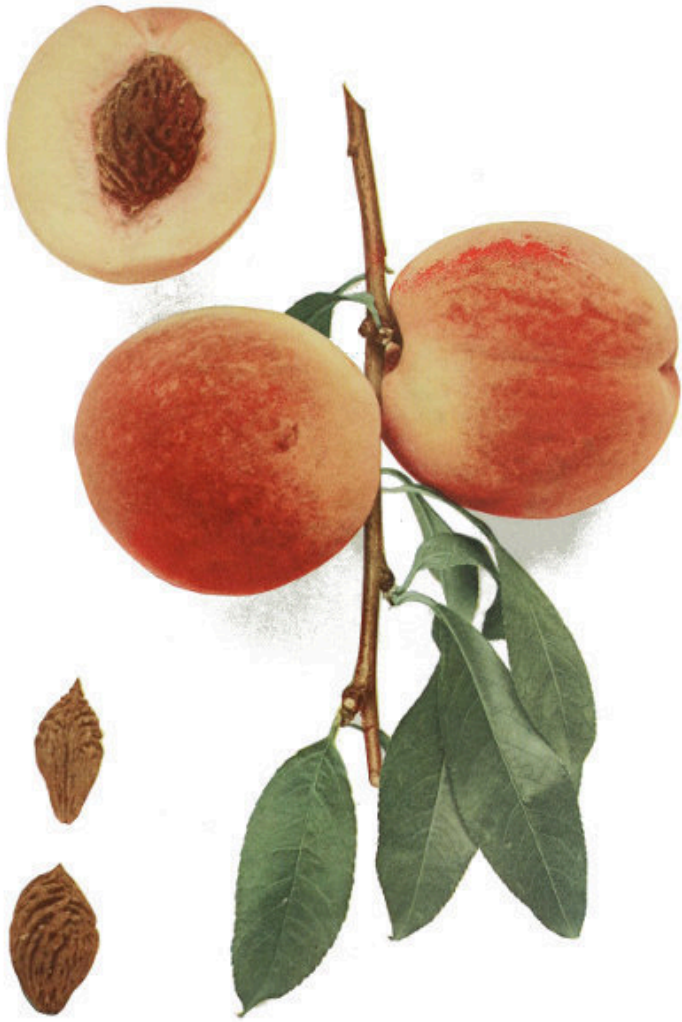
ROCHESTER

1. Heberle Bros. *Cat.* 11, 23. 1915. **2.** *N. Y. Sta. Bul.* **414**:6, 7, Pl. 1916. **3.** *N. Y. State Fr. Gr. Assoc. Rpt.* 18. 1916.

Fruit-growers have long desired an early, yellow, freestone peach with suitable tree-characters for a commercial plantation. There are several competitors for the place, the latest of which is Rochester, a member of the Crawford group and in several respects a marked improvement on the well-known Early Crawford. Rochester, in season, regarding the crop as a whole, certainly precedes Early Crawford several days, ripening soon after the middle of August. The introducers say that it is two weeks earlier, a statement made possible by the fact that its season is very long, a few specimens ripening extremely early. The great length of season of this variety under some circumstances may be an asset, under others a liability. As the color-plate shows, the peaches are large, yellow, with a handsome over-color of mottled red, more rotund than either of the two Crawfords or Elberta, making, all in all, a strikingly beautiful peach. The flesh, too, meets all the requirements of a good peach—thick and firm, marbled yellow, stained with red at the pit, juicy, rich, sweet and in all respects fully up to the high standard of palatability found in peaches of the Crawford group. While the variety must be classed as a freestone, yet there is a slight clinging which may disappear under some conditions and may be augmented under others. Rochester

seems to be sufficiently productive for a good commercial fruit but it remains to be seen how generally it is adapted to soils and climates. Should its range of adaptability be great, Rochester, by virtue of earliness, good quality and handsome appearance, at once takes a high place in commercial peach-growing in New York.

Rochester came from a seed planted about 1900 on a farm owned by a Mr. Wallen, near Rochester, New York. It was introduced by the Heberle Brothers Nurseries, Brighton, New York, in 1912.



ROCHESTER

Trees large, vigorous, upright-spreading, more upright than Elberta, productive; trunk medium to thick, somewhat shaggy; branches stocky, smooth, ash-gray over red; branchlets slender, long, with long internodes, green mottled with brownish-red, smooth, glabrous, with numerous inconspicuous, small lenticels.

Leaves six inches long, one and five-eighths inches wide, folded upward and slightly recurled, oval to ovate-lanceolate, thin, leathery; upper surface dark green but often with a lighter tinge, smooth; lower surface grayish-green; apex acuminate; margin shallowly crenate; petiole one-half inch long, thick, with two to eight large, reniform glands variable in position.

Fruit matures in early mid-season; variable in size, the larger specimens varying from three to three and one-half inches in diameter, round-oblate, compressed, with unequal halves, often bulged near the apex; cavity wide, deep, flaring; suture shallow, becoming deeper near the tip; apex variable, often with a mucronate tip; color lemon-yellow changing to orange-yellow, blushed with deep, dark red, mottled; pubescence heavy; skin thick, tough, separates from the pulp; flesh yellow, stained with red near the pit, very juicy, tender and melting, sweet, highly flavored, sprightly; very good in quality; stone free, one and three-eighths inches long, more than one inch wide, oval, plump, flattened near the base, with roughened surface marked by large, deep pits and short grooves; ventral suture deeply furrowed along the edges, rather wide; dorsal suture grooved deeply, wide.

ST. JOHN

1. *Mich. Hort. Soc. Rpt.* 320. 1890. **2.** *Am. Pom. Soc. Cat.* 46. 1891. **3.** *Mich. Hort. Soc. Rpt.* 68. 1891. **4.** *Tex. Sta. Bul.* **39**:814. 1896. **5.** *Ont. Fr. Exp. Sta. Rpt.* **9**:8 fig. 1902. **6.** Waugh *Am. Peach Orch.* 207.

1913.

Flater's St. John. **7.** Downing *Fr. Trees Am.* 613. 1869.

Yellow St. John. **8.** *Am. Pom. Soc. Cat.* 18. 1871. **9.** *Am. Pom. Soc. Rpt.* 64. 1871. **10.** *Ohio Sta. Bul.* **170**:182. 1906.

Fleitas St. John. **11.** *Pa. Bd. Agr. Rpt.* 586. 1878. **12.** *Ga. Sta. Bul.* **42**:235. 1898.

May Beauty. **13.** *Am. Pom. Soc. Rpt.* 148. 1883.

Crane. **14.** *Mich. Sta. Sp. Bul.* **44**:34. 1910.

Unproductiveness and uncertainty in bearing keep this magnificent yellow-fleshed dessert fruit from being one of the most popular early peaches. Even with these handicaps, to which may be added small size in many situations, St. John has maintained great popularity for home orchards and in many peach-regions is grown for the markets. It is one of the earliest of the Crawford-like peaches, a perfect freestone, handsome in appearance, sweet, rich and delicious in flavor and pleasing in all of the flesh attributes of a good dessert peach. St. John resembles Early Crawford in size and shape but is a little more rotund, runs somewhat smaller, is not quite as high in quality and ripens several days earlier. The trees are all that could be asked for in size, vigor and hardiness, falling short only in the characters noted in the opening sentence. St. John should always be planted in the home orchard and it would seem that it is more often worth planting in commercial orchards. The color-plate does not do the variety justice in size, color or shape, the Station grounds being one of the many places in which the variety cannot be had at its best.

Where, by whom and when St. John originated and what its parentage, are unknown. It is more than half a century old, came from the South, and has been widely planted in southern peach-districts, especially along the southern coast

of Alabama. The variety reproduces itself from seed and this fact has led to its being distributed under a number of different names as is shown by the synonyms listed in the references. In Michigan the variety was grown for some time as Crane, or Crane's Early Yellow, having come from the orchard of Charles G. Crane of Fennville. Mr. Crane, it appears, had lost the true name of the peach and after fruiting his supposed seedling for a time it was discovered by T. T. Lyon[265] to be identical with St. John. In 1871 the American Pomological Society added this peach to its fruit-list as Yellow St. John but dropped "Yellow" from the name in 1891, the variety having appeared since that time in the Society's catalog as St. John.



ST. JOHN

Tree medium to large, vigorous, upright-spreading, with the lower branches drooping, unproductive; trunk stocky, medium to smooth; branches thick, smooth, reddish-brown covered with light ash-gray; branchlets with internodes of medium length, dark pinkish-red with a trace of green, glossy, smooth, glabrous, with a few lenticels variable in size, raised at the base.

Leaves six and one-half inches long, one and three-fourths inches wide, flattened or slightly curled downward, oval to obovate-lanceolate, thick; upper surface dull, dark green, smooth; lower surface grayish-green; apex acuminate; margin finely serrate, often in two series, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to five small, globose glands variable in color and position.

Flower-buds obtuse, pubescent, plump, appressed or free; blossoms appear in mid-season; flowers seven-eighths inch across, white toward the base of the petals, becoming dark pink near the edges; pedicels short, glabrous, pale green; calyx-tube reddish-green, orange-colored within, obconic; calyx-lobes obtuse, glabrous within, pubescent without; petals small, ovate to oval, notched near the base, tapering to narrow claws; filaments seven-sixteenths inch long, equal to the petals in length; pistil pubescent near the base, as long as the stamens.

Fruit matures early; two and one-half inches long, two and three-fourths inches wide, round-oval, often bulged near the apex, usually compressed, with oblique

sides; cavity medium to deep, wide, abrupt or flaring, often tinged with red; suture deep near the tip; apex round or depressed, with a mucronate or pointed tip; color deep yellow, blushed and splashed with carmine; pubescence thick and long; skin medium to thick, tough, variable in adherence to the pulp; flesh light yellow, tinged with red near the pit, juicy, tender, pleasantly sprightly, highly flavored; very good in quality; stone free, one and one-fourth inches long, fifteen-sixteenths inch wide, ovate, plump, tapering to a long point, with rough surfaces marked by large and small pits; ventral suture deeply grooved along the edges, furrowed; dorsal suture a large, deep groove.

SALWEY

1. Leroy *Dict. Pom.* **6**:270, 271 fig. 1879. **2.** Hogg *Fruit Man.* 460. 1884. **3.** Bunyard *Cat.* 36. 1913-14.

Salway. **4.** *Horticulturist* N. S. **8**:168. 1858. **5.** *Gard. Chron.* 944. 1861. **6.** Mas *Le Verger* **7**:51, 52, fig. 24. 1866-73. **7.** *Am. Hort. Ann.* 80, 81 fig. 38. 1870. **8.** *Am. Pom. Soc. Rpt.* 56. 1871. **9.** Downing *Fr. Trees Am.* 1st App. 122. 1872. **10.** *Horticulturist* **27**:248. 1872. **11.** *Am. Pom. Soc. Cat.* 30. 1875. **12.** *Mich. Sta. Bul.* **169**:225. 1899. **13.** *Kan. Hort. Soc. Rpt.* 48, 49. 1901. **14.** Budd-Hansen *Am. Hort. Man.* **2**:355. 1903. **15.** *Cat. Cong. Pom. France* 114 fig. 1906.

Salwey is one of the two European peaches cultivated on a commercial scale in America, Rivers being the other. Both find their greatest usefulness in extending the peach-season, this variety being one of the latest and Rivers one of the

earliest sorts. It is a yellow-fleshed, freestone peach of attractive appearance and of good quality, neither handsome enough nor good enough in quality, however, to be considered a first-class dessert fruit. On the other hand it is one of the best sorts for canning, preserving and evaporating. The trees are vigorous, hardy, healthy and very productive but unfortunately ripen their crop so late in New York that the variety cannot be depended upon. Early freezes often destroy the fruit and cold, wet weather usually hinders maturity so much that the peaches are seldom at their best in this State. Possibly no other peach is more widely grown than Salwey. It is a standard sort in France, England and in peach-regions in America from the Atlantic to the Pacific and from Canada to the Gulf. This uncommon adaptability to diverse soils and climates ought to make it a valuable sort in peach-breeding. It has the reputation of coming true to seed but we do not find that many varieties have come from it.

The history of Salwey is not clear. Pomologists generally credit Thomas Rivers, Sawbridgeworth, England, with being the originator and introducer of the variety. It is known that Rivers grew it on his grounds but it is doubtful if he originated it. Other accounts say that it was raised in 1844 by Colonel Salwey, Egham Park, Surrey, England, from the seed of an Italian peach. Some say that a Charles Turner, Slough, England, brought the Italian peach seed from Florence, Italy, while others state that Turner introduced the new peach. The variety has long been known in America as Salway but Colonel Salwey, after whom the peach was named, spelled his name with an "e" and the correction is made in this text. In 1875 the American Pomological Society added this peach to its list of recommended fruits under the name Salway.



SALWEY

Tree of medium size, vigorous, upright-spreading, becoming drooping, dense-topped, hardy, very productive; trunk thick, smooth; branches stocky, smooth, reddish-brown mingled with very light ash-gray; branchlets slender, very long, with a tendency to rebranch near the tips; internodes dull pinkish-red with but little if

any green, glossy, smooth, glabrous, with numerous raised lenticels.

Leaves seven inches long, one and three-fourths inches wide, folded upward and recurled, oval to ovate-lanceolate, leathery; apex acuminate; upper surface dark, dull green, smooth, becoming rugose near the midrib; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to six small, globose and reniform glands variable in color and position.

Flower-buds hardy, conical or pointed, pubescent, appressed or partly free; blossoms appear in mid-season; flowers seven-eighths inch across, white at the center of the petals, becoming pink near the margins; pedicels very short, nearly sessile, thick; calyx-tube reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes short, narrow, acute, glabrous within, pubescent without; petals round, broadly oval, widely notched near the base, tapering to long, narrow claws red at the base; filaments five-sixteenths inch long, equal to the petals in length; pistil pubescent, longer than the stamens.

Fruit matures very late; two and nine-sixteenths inches long, two and one-half inches wide, round-cordate, bulged near the apex, compressed, with unequal halves; cavity deep, abrupt, often splashed with red; suture shallow, often extending beyond the tip; apex usually a small, elongated point; color greenish-yellow, usually with a brownish-red blush splashed dark red; pubescence short, thick, fine; skin thin, tough, adherent to the pulp; flesh golden-

yellow, faintly tinged with red near the pit, juicy, stringy, tender, becomes dry with age, sweet, pleasantly flavored, aromatic; good to very good in quality; stone free, one and one-half inches long, one and one-sixteenth inches wide, oval to roundish-oval, very plump, pointed at the base, with large pits and short grooves in the surfaces; ventral suture narrow, deeply furrowed along the edges; dorsal suture winged, a narrow groove.

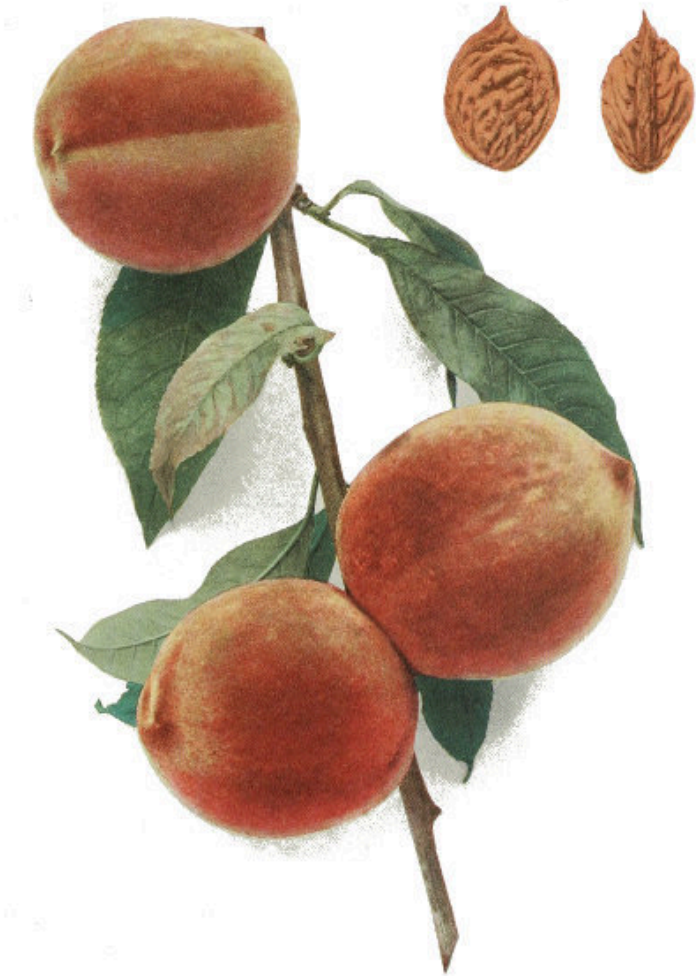
SCHUMAKER

1. *Gard. Mon.* **22**:276. 1880. **2.** *W. N. Y. Hort. Soc. Rpt.* 115. 1880. **3.** *Gard. Mon.* **25**:111 fig. 1883. **4.** *Mich. Hort. Soc. Rpt.* 314, 315. 1889. **5.** *R. I. Sta. Bul.* **7**:41. 1890. **6.** Budd-Hansen *Am. Hort. Man.* **2**:356. 1903.

Shoemaker's Seedling. **7.** *Cult. & Count. Gent.* **41**:631. 1876.

Schumaker, now grown only in western New York and Pennsylvania, for a long time was described as the earliest of the white-fleshed, clingstone peaches. There are other peaches as early but, on the Station grounds, this is the best flavored of the early peaches. Moreover, when fully ripe it is almost a freestone. It is a handsome peach in color and shape but the fruits are too small though this can be remedied in part by thinning. The trees are large, hardy, vigorous and productive to a fault. With all of these good qualities, the wonder is that Schumaker is not more popular as a commercial variety to open the season but for some reason peach-growers are not pleased with it—probably because of the small size of the peaches. For a peach of its season, Schumaker is remarkably free from brown-rot. Nurserymen often substitute Alexander for this variety and vice versa.

This variety originated as a seedling with Michael Schumaker, Fairview, Erie County, Pennsylvania. Its parentage is unknown. It fruited for the first time in 1877 and was for a few years grown commercially but its popularity has long been on the wane.



SCHUMAKER

Tree large, vigorous, upright-spreading, becoming drooping, open-topped,

productive; trunk thick, smooth; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets long, pinkish-red with but a trace of green, glossy, smooth, glabrous, with large, conspicuous, raised lenticels.

Leaves six and one-half inches long, one and five-eighths inches wide, variable in position, oval to obovate-lanceolate, leathery; upper surface dull, dark green, smooth; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, glandless or with one to four small, globose, reddish-brown glands variable in position.

Flower-buds hardy, pubescent, conical or pointed, plump, usually free; blossoms appear early; flowers one and one-half inches across, pink; pedicels very short, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, obconic, glabrous; calyx-lobes short, acute, glabrous within, pubescent without; petals oval to ovate, tapering to claws sometimes red at the base; filaments one-half inch long, shorter than the petals; pistil pubescent at the base, as long as the stamens.

Fruit matures very early; about two and one-eighth inches in diameter, round, compressed, with unequal halves; cavity deep, flaring; suture shallow; apex ending in a recurved, mucronate tip but variable; color creamy-white, heavily blushed and often mottled with dark red; pubescence short, thick; skin thin, tender, separates from the pulp when fully ripe; flesh white, very juicy, stringy, tender, sweet, aromatic,

highly flavored; very good in quality; stone clinging, becoming semi-cling when fully mature, one and one-fourth inches long, three-fourths inch wide, oval, plump, inconspicuously winged, with corrugated surfaces.

SMOCK

1. *U. S. D. A. Rpt.* 193, 194. 1865. **2.** Mas *Le Verger* **7**:75, 76, fig. 36. 1866-73. **3.** *Am. Pom. Soc. Cat.* 28. 1873. **4.** Leroy *Dict. Pom.* **6**:279 fig., 280. 1879. **5.** *Mich. Sta. Bul.* **169**:225, 226. 1899. **6.** Fulton *Peach Cult.* 196, 197. 1908.

Saint George. **7.** Kenrick *Am. Orch.* 193. 1841.

Smock Freestone. **8.** Downing *Fr. Trees Am.* 492. 1845. **9.** Bridgeman *Gard. Ass't* Pt. **3**:108. 1857. **10.** *Am. Pom. Soc. Cat.* 78. 1862.

Though little grown now, during the last half of the last century Smock was one of the leading commercial peaches of its season. The variety has so little to recommend it, however, that we cannot but believe that reputation more than merit kept up its popularity. The trees are about all that could be desired but the peaches are of but mediocre quality and not at all attractive in appearance, lacking in size and color, are ungainly in shape and have but little uniformity in size, color or shape. It is one of the latest yellow-fleshed peaches and is said to be excellent for all culinary purposes. With so many better varieties of late yellow-fleshed, freestone peaches, Smock is not worth planting for any purpose.

Smock originated three-quarters of a century or more ago with a Mr. Smock, Middletown, New Jersey. Variations under such names as Smock X and Smock (Hance) have

arisen as distinct varieties but all have proved to be identical with the old sort. The name Smock Cling appears in peach-literature but whether the peach was distinct we cannot say. Years after the introduction of Smock a peach was put out under the name "Beers Smock." The differences claimed are that Beers Smock runs larger and is better in quality than Smock. All descriptions of the two sorts, however, are so nearly identical that we believe that the two names are given to the same peach. In 1862 the American Pomological Society listed Smock in its catalog as Smock Freestone. In 1873 the name was shortened to Smock and it so appears today.



SMOCK

Tree large, vigorous, upright-spreading, somewhat drooping, dense-topped, tall, usually very productive; trunk medium to thick, rough; branches stocky, smooth, reddish-brown with very light ash-gray tinge; branchlets slender, medium to long, with short internodes, dark red intermingled with olive-green, glossy, smooth, glabrous, with large, raised

lenticels.

Leaves six and one-fourth inches long, one and one-half inches wide, flattened or curved downward, oval to obovate-lanceolate, thick; upper surface dull, dark green; smooth; lower surface grayish-green; margin finely serrate, tipped with dark red glands; petiole three-eighths inch long, with none to five small, globose or reniform glands variable in color and position.

Flower-buds tender, conical or pointed, slightly pubescent, appressed or free; blossoms appear in mid-season; flowers less than one inch across, white at the center of the petals, light or dark pink near the edges, often in twos; pedicels short, glabrous, greenish; calyx-tube reddish-green at the base, orange-colored within, campanulate, glabrous; calyx-lobes broad, acute, serrate, glabrous within, pubescent without, partly reflexed; petals oval, irregular in outline near the base, tapering to long, narrow claws often reddish at the base; filaments three-eighths inch long, equal to the petals in length; pistil pubescent near the base, equal to or longer than the stamens.

Fruit matures very late; two and one-half inches long, two and three-eighths inches wide, oval, irregular, often bulged near the apex, compressed, with halves unequal and somewhat angular; cavity narrow, abrupt, contracted around the sides, twig-marked; suture a mere line, becoming deeper toward the apex; apex roundish, with a recurved, mucronate tip; color greenish-yellow or sometimes orange-yellow, specked and mottled with dull, dark red or sometimes

faintly tinted with a bronze blush; pubescence very heavy, thick, fine; skin thin, tough, adherent to the pulp; flesh yellow, faintly tinged with red near the pit, variable in juiciness, tender, sprightly, pleasantly flavored; good in quality; stone free, one and five-eighths inches long, one and one-sixteenth inches wide, oval or obovate, bulged near the apex, flattened toward the base, with deeply grooved surfaces; ventral suture narrow, winged, deeply grooved along the sides; dorsal suture a wide and deep groove, winged.

STEVENS

1. Budd-Hansen *Am. Hort. Man.* **2**:356, 357. 1903.

Stevens Rareripe. **2.** *N. J. Hort. Soc. Rpt.* 42. 1878. **3.** *Am. Pom. Soc. Cat.* 32. 1889. **4.** *Ont. Fr. Gr. Assoc. Rpt.* **22**:31, 32. 1890. **5.** *Mich. Sta. Bul.* **169**:227. 1899. **6.** *Ont. Fr. Exp. Sta. Rpt.* **9**:38. 1902. **7.** Waugh *Am. Peach Orch.* 207. 1913.

Stevens is one of the fruits of the generation just past—a large, white and red, white-fleshed, freestone peach. The variety is best known as Stevens Rareripe but the last part of the name is inapt for the true rareripes are earlier ripening peaches while with Stevens lateness is one of its prime assets. In quality the fruits are extra good, the flesh-characters pleasing in every respect. The flavor is a pleasing mingling of sweet and sour not found in many other peaches so late in the season. The appearance of the peach is as alluring as the taste. The color-plate shows the variety almost perfectly in color and shape but the peaches as depicted are rather smaller than the average. These late, white-fleshed peaches now seldom sell well, usually reaching the markets in poor condition, but they are choice

fruits for home use and for this purpose Stevens should be planted in every home orchard. The variety has the reputation of being hardy in both wood and buds.

Stevens originated about 1858 on the farm of B. Stevens, Morristown, New Jersey. Its parentage is unknown. It was listed in the American Pomological Society's catalog in 1889 as Stevens Rareripe. Later the name was shortened to Stevens in accordance with the Society's rules of nomenclature.



STEVENS

Tree vigorous, upright-spreading, with the lower branches inclined to droop, productive; trunk of medium thickness, rough; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets thick, dark reddish-brown with but little green, glossy, smooth, with numerous large and small lenticels.

Leaves six inches long, one and five-eighths inches wide, folded upward and slightly recurled, oval to obovate-lanceolate, leathery; upper surface dark green, glossy, rugose along the midrib; lower surface light green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths

inch long, glandless or with one to six small, reniform glands usually at the base of the leaf; flower-buds intermediate in size and length, conical to pointed, somewhat appressed, pubescent; flowers small.

Fruit matures late; about two and eleven-sixteenths inches in diameter, round to round-oval, with nearly equal sides; cavity deep, wide, flaring to abrupt; suture medium to deep, often extending beyond the tip; apex roundish, with a strongly mucronate and recurved tip; color greenish-white overlaid with attractive purplish-red, often mottled or splashed with darker red; pubescence short, fine; skin thick, tough, adherent to the pulp; flesh white, tinted with red near the pit and reddish underneath the deepest surface blush, juicy, coarse, sweet, sprightly; good in quality; stone nearly free, one and five-eighths inches long, one and one-eighth inches wide, obovate, flattened at the base, plump, with grooved surfaces; ventral suture medium to deeply grooved along the edges, intermediate in width, furrowed; dorsal suture deeply grooved, winged.

STUMP

1. *Tex. Sta. Bul.* **39**:817. 1896. **2.** *Am. Pom. Soc. Cat.* 22. 1897. **3.** *Mich. Sta. Bul.* **169**:227. 1899. **4.** Budd-Hansen *Am. Hort. Man.* **2**:357. 1903.

Stump the World. **5.** *U. S. Pat. Off. Rpt.* 299. 1854. **6.** Elliott *Fr. Book* 304. 1859. **7.** *Horticulturist* **14**:106, 107, Pl. 1859. **8.** *Am. Pom. Soc. Cat.* 80. 1862. **9.** *U. S. D. A. Rpt.* 193. 1865. **10.** Hogg *Fruit Man.* 232. 1866.

11. Downing *Fr. Trees Am.* 633. 1869. **12.** *Ga. Sta. Bul.* **42**:242. 1898. **13.** Fulton *Peach Cult.* 189, 190. 1908.

Stump-of-the-World. **14.** *N. J. Hort. Soc. Rpt.* 41, 42. 1878.

Pêche du New-Jersey. **15.** Leroy *Dict. Pom.* **6**:195, 196 fig. 1879.

Late Stump. **16.** *Ark. Sta. Bul.* **43**:102. 1896.

Stump has long been a favorite white-fleshed, freestone, late peach of the Oldmixon type. It is not a handsome fruit, the color-plate flattering rather than detracting from its appearance, but makes up in quality what it lacks in looks. The flesh is melting, juicy, sparkling, rich and good though dry and very mediocre if permitted to overripen. The peaches are too tender for distant shipment and the variety is of value only for local markets and home use. The trees are large, vigorous, hardy, healthy and productive, with a shapely, upright-spreading, dense-topped head—about all that could be desired in a peach-tree. In spite of the high quality of the peaches and the splendid tree-characters, Stump is steadily waning in popularity and will, no doubt, soon pass from cultivation.

We can say little of the history of Stump other than that it originated in New Jersey at least three-quarters of a century ago. A Mr. Brant, Madison, New Jersey, in a report on peaches at the meeting of the New Jersey Horticultural Society in 1878 mentions a variety as Stump-of-the-World which originated on the farm of Samuel Whitehead in Middlesex County, New Jersey, about 1825. Mr. Brant, however, considered this sort distinct from Stump although very similar to it. From the description he gives it seems certain that he was describing the true Stump. In 1862 the American Pomological Society listed this sort in its catalog as Stump the World. The name was shortened to Stump in 1897 by the committee on nomenclature in accordance with pomological rules.



STUMP

Tree of medium size, vigorous, upright-spreading, dense-topped, productive; trunk medium in diameter, smooth; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets thick, inclined to rebranch, long, with internodes dark red mingled with olive-green, glossy, smooth, glabrous, with many conspicuous, small, raised lenticels.

Leaves six and three-fourths inches long, one and three-fourths inches wide, folded downward, broad-oval to obovate-lanceolate, leathery; upper surface dull, dark green, rugose along the midrib; lower surface grayish-green; margin finely serrate, often in two series, tipped with reddish-

brown glands; petiole seven-sixteenths inch long, with one to four globose glands variable in color and position.

Flower-buds semi-hardy, pubescent, conical to pointed, plump, usually more or less free; blossoms appear in mid-season; flowers thirteen-sixteenths inch across, white at the center, becoming pink near the margin; pedicels long, slender; calyx-tube dull reddish-green, yellow within, campanulate, glabrous; calyx-lobes acute, obtuse, glabrous within, pubescent without; petals oval, faintly notched near the base, tapering to very short claws tinged with red near the base; filaments five-sixteenths inch long, equal to the petals in length; pistil pubescent at the ovary, longer than the stamens.

Fruit matures late; about two and one-half inches in diameter, round-oval to cordate bulged near the apex, compressed, with markedly unequal halves; cavity shallow, wide, uneven in outline, flaring or abrupt, with tender skin; suture shallow, often extending beyond the tip; apex round or pointed, with a recurved, mucronate tip; color creamy-white, blushed, mottled and splashed with red; pubescence long, thick, coarse; skin thin, tough, separates from the pulp; flesh white, strongly stained with red near the pit, juicy, tender and melting, sweet, rich, pleasantly flavored, aromatic; very good in quality; stone nearly free, one and one-half inches long, one and one-sixteenth inches wide, ovate to oval, plump, flattened toward the base, tapering to a long point, with grooved surfaces; ventral suture deeply marked along the edges, narrow, sometimes winged; dorsal suture

grooved.

SUMMER SNOW

1. *Okla. Sta. Bul.* **2**:15. 1892. **2.** *Mich. Sta. Bul.* **118**:31. 1895. **3.** Thomas *Am. Fruit Cult.* 691. 1897. **4.** *Mich. Sta. Bul.* **169**:227. 1899. **5.** *Ont. Fr. Exp. Sta. Rpt.* **7**:55. 1900.

Summer Snow is a curiosity with some value for culinary purposes Its distinctive peculiarities are a skin almost pure white and flesh white as snow from skin to pit. The quality is poor and the flesh clings to the pit so tenaciously that the variety has no value, whatsoever, for dessert but is said to be excellent for pickling and to make a very good and a very distinctive canned product.

There are no records of the origin of this peach but it is doubtful if it dates back more than a quarter of a century. The variety is very similar to the old Snow, which was probably its prototype, differing essentially in having a clinging stone while the stone of Snow is free. In New York the name is a misnomer as the fruit does not ripen until the last of September or early in October. Albino peaches date back to the early records of this fruit and seem to be known wherever peaches are grown. Whenever seedling peaches are grown in large numbers, an occasional albino appears.



SUMMER SNOW

Tree large, vigorous, upright-spreading, slightly drooping, productive; trunk thick and, smooth; branches stocky, smooth, reddish-brown mingled with very light ash-gray; branchlets very long, inclined to rebranch, with internodes of medium length, olive-green intermingled with light brown, smooth, glabrous, with conspicuous, russet-colored lenticels.

Leaves six and one-fourth inches long, one and five-eighths inches wide, flattened or

curved downward, oval to obovate-lanceolate, thin; upper surface dull green, smooth; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to six small, globose and reniform glands variable in color and position.

Leaf-buds semi-hardy, small, short, variable in shape, plump, appressed or slightly free; blossoms appear in mid-season; flowers one and five-eighths inches across, white, sometimes in twos; pedicels short, thick, glabrous, green; calyx-tube tinged with green, yellow within, campanulate, glabrous; calyx-lobes variable in length, medium to narrow, acute, glabrous within, pubescent without; petals often pointed at the apex, round-ovate, broadly notched at the base, tapering to broad, short claws; filaments seven-sixteenths inch long, shorter than the petals; pistil pubescent near the base, as long as the stamens.

Fruit matures late; two and three-eighths inches long, two and five-sixteenths inches wide, round-cordate, somewhat angular, bulged at one side, compressed, with unequal sides; cavity deep, narrow, abrupt, contracted about the sides, twig-marked; suture shallow, becoming deeper toward the tip; apex roundish or depressed, with a mucronate or sometimes a small, mamelon tip; color greenish-white changing to creamy-white, without blush; pubescence long, thick, coarse; skin thin, tender, adherent to the pulp; flesh white to the pit, juicy, meaty, mildly sweet to sprightly; fair in quality; stone firmly clinging, one and nine-sixteenths inches long, one and one-

eighth inches wide, broad-oval, often bulged near the apex, winged, with pitted surfaces marked with short grooves; ventral suture rather narrow, winged, with furrows of medium depth along the sides; dorsal suture grooved, with winged sides.

SURPASSE

1. *Mich. Sta. Bul.* **169**:227. 1899. **2.** Budd-Hansen *Am. Hort. Man.* **2**:357. 1903.

Surpasse Melocoton. **3.** *Mich. Hort. Soc. Rpt.* 33. 1874. **4.** Barry *Fr. Garden* 407. 1883. **5.** *R. I. Sta. Bul.* **7**:41. 1890.

As Surpasse grows on the Station grounds, it has most of the qualities of a first-class yellow-fleshed, freestone peach. The fruits are large, handsome and of excellent quality, while the trees are satisfactory in every respect except, possibly, in productiveness. The variety has been grown sufficiently long in New York to have been well tested and has not found favor, so that we must conclude that it does not do as well elsewhere as here and that it is doomed to go into the discard.

Surpasse originated more than forty years ago on the grounds of Ellwanger & Barry, Rochester, New York, and has long been sold by this nursery firm. It has never been widely nor largely grown commercially but is not uncommon in western New York.



SURPASSE

Tree above medium size, vigorous, upright-spreading, with a tendency to droop, rather unproductive; trunk thick and smooth; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets thick, inclined to rebranch, long, dark pinkish-red with some green, smooth except for the lenticels, glabrous, with very

conspicuous, numerous, large and small, raised lenticels.

Leaves six inches long, one and five-eighths inches wide, variable in position, oval to obovate-lanceolate, leathery; upper surface dark olive-green, rugose along the midrib; apex acuminate; margin finely serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, glandless or with one to four small, globose glands variable in color and position.

Flower-buds tender, pubescent, conical to pointed, plump, usually free; blossoms open in mid-season; flowers seven-eighths inch across, light pink but darker along the edges, usually single; pedicels short, glabrous, green; calyx-tube reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes long, narrow, acute, glabrous within, pubescent without; petals ovate, with short, indistinct claws; filaments three-eighths inch long, equal to the petals in length; pistil as long as the stamens.

Fruit matures in mid-season; two and one-half inches long, two and three-eighths inches wide, round-cordate, irregular, compressed, much bulged near the apex, with unequal halves; cavity deep, wide, flaring to abrupt, with tender, reddish skin; suture a line becoming deeper toward the tip; apex pointed, usually with an erect, mamelon tip; color pale yellow or orange-yellow, mottled and splashed more or less with red and overspread with a lively, dark red blush; pubescence medium in length, thick, fine; skin thin, separates from the pulp; flesh light yellow, red near the pit,

very juicy, rather coarse, stringy, tender and melting, sprightly, highly flavored; good to very good in quality; stone free, one and three-eighths inches long, fifteen-sixteenths inch wide, ovate, rather plump, tapering to a long point, sometimes slightly winged along the ventral suture, with pitted surfaces; ventral suture deeply grooved along the edges, below medium in width, furrowed; dorsal suture grooved, winged.

THURBER

1. *Am. Pom. Soc. Rpt.* 75. 1873. **2.** *Gard. Mon.* **17**:175. 1875. **3.** Downing *Fr. Trees Am.* 2nd App. 144. 1876. **4.** *Am. Pom. Soc. Cat.* 32. 1881. **5.** *Del. Sta. Rpt.* **13**:109 fig. 8, 110. 1901. **6.** Budd-Hansen *Am. Hort. Man.* **2**:357. 1903.

Thurber is mediocre in all of its characters in New York, though perhaps it is a little better in quality than the average white-fleshed, mid-season freestone. In the South, however, it seems to be considered one of the best of its class not only in quality but in size and appearance. The fruits are small in New York, as the color-plate shows, while all descriptions of them in the South say they are large. The variety is possibly worth planting, because of good quality, in home orchards in this State.

Thurber is a seedling of Chinese Cling grown by L. E. Berckmans, Rome, Georgia, more than forty years ago. The variety was named in honor of Dr. George Thurber, American botanist, naturalist and editor. It is similar to its parent but is a freestone and the trees are more compact and thrifty than those of Chinese Cling. The American Pomological Society added Thurber to its fruit-list in 1881, a place it still holds



THURBER

Tree above medium size, vigorous, upright-spreading, productive; trunk thick and smooth; branches stocky, smooth, reddish-brown mingled with light ash-gray; branchlets slender, often very long, olive-green with some red, glossy, smooth, glabrous, with numerous conspicuous, raised lenticels variable in size, usually russetted toward the base.

Leaves six inches long, over one and one-half inches wide, flattened or curled downward, oval to obovate-lanceolate, leathery; upper surface dull, dark green, smooth becoming rugose along the midrib; lower surface grayish-green; margin finely

serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four small, globose glands variable in color and position.

Flower-buds tender, large, medium to short, heavily pubescent, obtuse, very plump, usually free; blossoms open in mid-season; flowers one and one-eighth inches across, light pink, darker along the edges, usually single; pedicels long, slender, glabrous, greenish; calyx-tube reddish-green, greenish-yellow within, campanulate, glabrous; calyx-lobes acute, glabrous within, heavily pubescent without, flattened; petals ovate, tapering to short, narrow claws; filaments seven-sixteenths inch long, equal to the petals in length; pistil longer than the stamens.

Fruit matures in mid-season; two and three-eighths inches long, two and one-eighth inches wide, round-oval, somewhat compressed, with unequal halves; cavity shallow, narrow, flaring or abrupt, often tinted with red, compressed about the sides; suture a line or very shallow, often extending beyond the tip; apex round, with a recurved, mucronate or mamelon tip; color green or creamy-white, with few splashes of dull red over a lively red blush; pubescence long, coarse, thick; skin thin, tough, variable in adherence to the pulp; flesh white, deeply stained with red near the pit, juicy, tender and melting, pleasantly sprightly, aromatic; good in quality; stone free, one and one-half inches long, more than an inch wide, red, obovate to oval, flattened toward the base, plump, tapering to a short point, often winged on the ventral suture, with surfaces pitted and

marked by short grooves; ventral suture deeply grooved along the edges, narrow; dorsal suture grooved, slightly winged.

TRIANA

1. *Tex. Sta. Bul.* **39**:819. 1896. **2.** *Fla. Sta. Bul.* **73**:152. 1904. **3.** *Glen St. Mary Nur. Cat.* 23. 1906. **4.** *Am. Pom. Soc. Cat.* 39. 1909.

Triana is another of the honey-fleshed, beaked peaches supposed to thrive only in the far South. It can be grown, however, with about as much certainty in New York as many of the standard varieties of the North. Its small size and poor shipping qualities debar it from competing with commercial peaches in this region but it is well worth planting in home orchards for the sake of variety and because of its delicious flavor—a sort of scented sweetness wholly unknown in northern varieties. The good health, vigor, size and hardiness of these honey-peaches on the Station grounds is a constant surprise to those who have believed that they could be grown only in the Gulf States.

Triana originated a quarter of a century or more ago at the Glen Saint Mary Nurseries, Glen Saint Mary, Florida. It was introduced in 1892 by the originators. The American Pomological Society added Triana to its fruit-list in 1909.



TRIANA

Tree of medium size, upright-spreading, open-topped, productive; branches greenish-red; branchlets slender, long, with a tendency to rebranch, dark red with some olive-green, rough, glabrous, with numerous conspicuous, large, raised lenticels.

Leaves five and one-half inches long, one

and five-eighths inches wide, folded upward and recurled, slightly lanceolate, thin, leathery; upper surface dark green, smooth; lower surface grayish-green, with prominent mid-rib; margin finely serrate; petiole three-eighths inch long, with one to five small, reniform glands variable in position.

Flower-buds half-hardy, short, pubescent, conical, plump, usually appressed; blossoms one and one-half inches across, pale red, in dense clusters, usually single; pedicels long, slender, glabrous, greenish; calyx-tube reddish-green, dark greenish-yellow within, campanulate, glabrous; calyx-lobes acute, glabrous within, pubescent without; petals oval to long-ovate, tapering to short claws; filaments seven-sixteenths inch long, shorter than the petals; pistil pubescent at the ovary, often longer than the stamens.

Fruit matures in late mid-season; two and one-eighth inches long, one and thirteen-sixteenths inches wide, oval, compressed, with unequal halves; cavity shallow, flaring; suture of medium depth; apex a long, mucronate tip; color creamy-white, blushed, splashed and mottled with bright red; pubescence short, fine; skin thin, tender, adhering to the pulp; flesh white, faintly stained with red near the pit, tender, sweet, mild; good in quality; stone nearly free, one and one-fourth inches long, one and three-fourths inches wide, oval or elliptical, usually with pitted surfaces; ventral suture deeply grooved along the edges; dorsal suture grooved.

TRIUMPH

1. *Gard. & For.* **8**:20. 1895. **2.** *U. S. D. A. Pom. Rpt.* 44. 1895. **3.** Kan. Hort. Soc. *Peach, The* 49. 1899. **4.** *Am. Pom. Soc. Cat.* 34. 1899. **5.** *Can. Hort.* **24**:401, fig. 2158. 1901. **6.** *Ont. Fr. Exp. Sta. Rpt.* **9**:38. 1902. **7.** Budd-Hansen *Am. Hort. Man.* **2**:358. 1903. **8.** *Ohio Sta. Bul.* **170**:182. 1906. **9.** Waugh *Am. Peach Orch.* 196, 208. 1913.

Triomphe. **10.** *Rev. Hort.* 79. 1895.

Triumph is an extra early, yellow-fleshed peach so inferior in appearance and quality of fruit and so subject to brown-rot that it is not worth growing in any but the most northern peach-regions where, because of great hardiness in wood and bud, it becomes a valuable variety. It is grown more or less, however, both north and south because it is one of the earliest yellow-fleshed sorts and because the trees bear regularly and abundantly. The dark color and the great amount of fuzzy pubescence detract materially from the appearance of the peach. The specimens shown in the color-plate are from unthinned trees; the size can be increased by thinning. Small pits somewhat offset the small size of the fruits. The peaches, if not attacked by brown-rot, stand shipment splendidly, a character which adds to its value for early markets. Though often put down as a clingstone it is, when well grown, a semi-cling and sometimes the stone is free.

Triumph is one of several seedlings grown by J. D. Husted, Vineyard, Georgia. It is supposed to be an offspring of Alexander. The date of origin is unknown but references go back to 1895. Triumph was placed on the fruit-list of the American Pomological Society in 1899.



TRIUMPH

Tree of medium size, vigorous, upright-spreading, with lower branches drooping, hardy, very productive; trunk intermediate in thickness and smoothness; branches stocky, smooth, reddish-brown intermingled with very light ash-gray; branchlets slender, long, with internodes of medium length, dark pinkish-red with some green, glossy, very smooth, glabrous, with many conspicuous, small, raised lenticels.

Leaves six inches long, one and five-eighths

inches wide, flattened or curled downward, oval to obovate-lanceolate, thin, leathery; upper surface dull, dark olive-green, rugose near the midrib; lower surface grayish-green; margin finely and shallowly serrate, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four very small, globose glands variable in position.

Flower-buds hardy, small, short, pubescent, obtuse or pointed, plump, appressed or free; blossoms unfold early; flowers one and five-eighths inches across, dark pink, sometimes in twos; pedicels short, slender, glabrous, green; calyx-tube reddish-green at the base, orange-colored within, campanulate, glabrous; calyx-lobes broad, obtuse, glabrous within, pubescent without; petals broadly oval to ovate, widely notched near the base, tapering to claws with reddish base; filaments seven-sixteenths inch long, shorter than the petals; pistil pubescent near the base, equal in length to the stamens.

Fruit matures early; two inches long, two and one-eighth inches wide, roundish-oval, compressed, with unequal sides; cavity deep, abrupt, with tender skin; suture shallow; apex roundish, with a mamelon and recurved tip; color pale yellow overlaid with dark red; pubescence thick and long; skin thin, adherent to the pulp; flesh yellow, stained with red near the pit, juicy, firm until fully ripe, sprightly; fair in quality; stone semi-free to free when fully ripe, one and one-fourth inches long, seven-eighths inch wide, obovate, flattened wedge-like at the base, bulged at one side near the apex, plump, with deeply grooved

surfaces; ventral suture deeply grooved along the edges, furrowed; dorsal suture winged, deeply grooved, rather wide.

TROTH

1. *Am. Pom. Soc. Cat.* 35. 1899. **2.** *Mich. Sta. Bul.* **169**:228. 1899. **3.** *Am. Gard.* **24**:413. 1903.

Troth's Early Rareripe. **4.** Kenrick *Am. Orch.* 183. 1841.

Troth's Early Red. **5.** Elliott *Fr. Book* 304. 1859. **6.** Downing *Fr. Trees Am.* 634. 1869.

Troth's Early. **7.** *Am. Pom. Soc. Cat.* 80. 1862. **8.** *Am. Jour. Hort.* **3**:341. 1868. **9.** Fulton

Peach Cult. 183, 184. 1908.

Troth, the standard early peach in the middle of the last century, is now all but out of cultivation. It is still listed in a few nursery catalogs and is still on the fruit-list of the American Pomological Society. Among the multitude of early peaches now grown, Troth cuts but a sorry figure in either tree- or fruit-characters. It is worth discussing here only because it is a milestone in the evolution of cultivated peaches.

Troth, first known as Troth's Early Red, originated in the first years of the Nineteenth Century, probably in New Jersey. Nothing is known of its parentage or of the originator. It ripens with Early York and some pomologists have confused it with this variety and also with Haines but, while similar to both, Troth is distinct. The American Pomological Society placed the variety upon its fruit-list in 1862 under the name Troth's Early Red but dropped it in 1891. In 1899 it was once more recommended by the Pomological Society, being listed as Troth.

Tree above medium in size, vigorous, upright-spreading, the lower branches drooping, very productive; trunk somewhat stocky; branches thick, smooth, reddish-brown covered with light ash-gray; branchlets slender, long, with short internodes, dark pinkish-red intermingled with green, with conspicuous, very numerous, large and small lenticels; leaves six and one-fourth inches long, one and three-fourths inches wide, flattened and slightly curled downward, oval to obovate-lanceolate, leathery, dark, dull green, smooth becoming rugose near the midrib; margin finely and shallowly serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, with one to five very small, globose, reddish-brown glands; flower-buds half-hardy, of medium size and length, more or less pubescent, obtuse or conical, plump, usually appressed; blossoms small, appear in mid-season.

Fruit matures in early mid-season; two inches long, two and one-eighth inches wide, roundish-oblate, slightly bulged at one side, somewhat compressed, with halves decidedly unequal; cavity of medium depth and width, abrupt, somewhat irregular, contracted about the sides, often dotted and striped with red; suture rather shallow, extending considerably beyond the point; apex roundish or depressed, with a mucronate or slightly pointed tip; color greenish-white or creamy-white, blushed with dark, dull red and with more or less heavy mottlings extending over more than half of the surface; pubescence thick, short; skin thin, tender, adheres somewhat to the pulp; flesh whitish, tinged with red near the pit, variable in juiciness, tender, nearly

melting, pleasant flavored; fair to good in quality; stone free, one and one-eighths inches long, seven-eighths inch wide, oval, flattened toward the base, acute at the apex, with grooved surfaces; ventral suture medium in width; dorsal suture grooved.

WADDELL

1. *Ga. Sta. Bul.* **42**:242. 1898. **2.** *Del. Sta. Rpt.* **13**:111 fig. 9. 1901. **3.** *Am. Pom. Soc. Rpt.* 249. 1903. **4.** Budd-Hansen *Am. Hort. Man.* **2**:358. 1903. **5.** *Ohio Sta. Bul.* **170**:182. 1906. **6.** *Am. Pom. Soc. Cat.* 39. 1909. **7.** Waugh *Am. Peach Orch.* 208. 1913.

Waddell is an early mid-season, white-fleshed, semi-cling peach from Georgia, a very evident descendant of Chinese Cling. The variety is now widely grown and is everywhere esteemed as a commercial sort. Its chief competitor is Carman, compared with which the fruit differs in ripening a few days early; is handsomer, in color at least, the two, as the color-plates show, being very similar in size and shape; is of rather finer texture of flesh and is better flavored; and, lastly, according to most reports, Waddell is a better shipper than Carman. The variety has not been nearly as widely nor as generally planted as the better-known Carman but we are of the opinion that it has been a greater factor in the success of a score or more of the big commercial peach-orchards, North and South, of the last few years. It is a particularly pleasing peach in New York and ought to be considered for every commercial plantation where a variety of its season is wanted to precede or to compete with Carman.

Waddell is a chance seedling found by William Waddell, Griffin, Georgia. The variety was introduced by J. H. Hale, South Glastonbury, Connecticut. The American Pomological Society added Waddell to its fruit-list in 1909.



WADDELL

Tree medium in size, vigorous, upright becoming spreading and with the lower branches inclined to droop, hardy, productive; trunk thick, smooth; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets long, inclined to rebranch, dark pinkish-red overspread with green, glossy, smooth, glabrous, with numerous conspicuous, raised lenticels variable in size.

Leaves six inches long, one and three-fourths inches wide, folded upward and

curled downward, oval to obovate-lanceolate, leathery; upper surface dull, dark green, smooth; lower surface grayish-green; apex acuminate; margin finely serrate, tipped with reddish-brown glands; petiole three-eighths inch long, with one to four small, globose, reddish-brown glands variable in position.

Flower-buds hardy, conical or pointed, pubescent, usually appressed; blossoms appear in mid-season; flowers one and three-fourths inches across, red becoming pale pink, in clusters of twos; pedicels short, slender, glabrous, green; calyx-tube reddish-green at the base, greenish-yellow within, campanulate, glabrous; calyx-lobes broad, obtuse, glabrous within, pubescent without; petals oval, crenate, irregular in outline near the base, tapering to claws with reddish base; filaments seven-sixteenths inch long, shorter than the petals; pistil pubescent near the base, equal to the stamens in length.

Fruit matures in early mid-season; two and one-fourth inches long, about two inches wide, oval to roundish-oval, compressed, bulged on one side, with unequal halves; cavity deep, abrupt, with tender skin, tinged with pink; suture shallow, deepening toward the apex and extending beyond; apex roundish, with a small, mucronate tip; color creamy-white, blushed with red and with a few dull splashes of darker red; pubescence thick; skin tough, separates from the pulp; flesh white, stained with pink near the pit, juicy, stringy firm but tender, sweet but sprightly, aromatic; very good in quality; stone semi-free to free, one and three-eighths inches long, one inch

wide, ovate; ventral suture deeply grooved along the sides, faintly winged; dorsal suture grooved, not winged.

WAGER

1. *Cult. & Count. Gent.* **43**:584. 1878. **2.** *W. N. Y. Hort. Soc. Rpt.* 113, 114. 1880. **3.** *Cult. & Count. Gent.* **48**:823. 1883. **4.** Black *Cult. Peach & Pear* 111. 1886. **5.** *Am. Pom. Soc. Cat.* 22. 1897. **6.** Kan. Hort. Soc. *Peach, The* 148. 1899. **7.** Budd-Hansen *Am. Hort. Man.* **2**:358, 359. 1903.

Hardiness, productiveness and early bearing are the outstanding characters of Wager that give it a high place in the peach-list for New York. It is a yellow-fleshed, freestone peach none too attractive in coloring, always rather small and of only fair quality as a dessert fruit but excellent for canning, drying and all culinary purposes. The variety comes true to seed, or nearly so. The fruits of Wager are not attractive enough and the trees are too small to make the variety of much value in commercial plantations but it is a very good peach for home orchards and one of the best of all where hardiness is a prime requisite. Several quite distinct peaches are sold by nurserymen as Wager.

Wager originated some time previous to 1870 with Benjamin Wager, West Bloomfield, Ontario County, New York. The variety was added to the fruit-list of the American Pomological Society in 1897.



WAGER

Tree medium in size or small, upright-spreading, hardy, productive; trunk intermediate in thickness and smoothness; branches stocky, smooth, reddish-brown overlaid with light ash-gray; branchlets rebranching near the tips, dark red with some green, roughened by the lenticels, which are medium in size and number.

Leaves five and one-half inches long, one and one-fourth inches wide, flattened or

curled downward, oval to obovate-lanceolate, thin, leathery; upper surface dull, dark green, rugose along the midrib; lower surface grayish-green; apex acuminate; margin finely serrate, tipped with reddish-brown glands; petiole five-sixteenths inch long, with two to four small, globose or reniform glands variable in color and position.

Flower-buds medium in size and length, heavily pubescent, conical, plump, usually free; blossoms appear in mid-season; flowers one and one-eighth inches across; pedicels very short, thick, glabrous, green; calyx-tube reddish-green, orange-colored within, campanulate, glabrous; calyx-lobes narrow, acute, glabrous within, pubescent without; petals oval, broadly notched, tapering to claws red at the base; filaments three-eighths inch long, shorter than the petals; pistil pubescent at the ovary, longer than the stamens.

Fruit matures in mid-season; two and one-half inches long, two and one-fourth inches wide, oval, bulged near the apex, sometimes conical, compressed, with unequal halves; cavity flaring or abrupt, often mottled with red and with tender skin; suture a line, becoming deeper toward the tip; apex roundish or pointed, usually with a mamelon, recurved tip; color orange-yellow, blushed and mottled with dark red; pubescence thick, long and fine; skin thin, tough, separates from the pulp; flesh yellow, faintly stained with red near the pit, meaty but tender, sweet, mild; good in quality; stone free, one and three-eighths inches long, one inch wide, ovate, flattened near the base, with pitted surfaces, marked

with few short grooves; ventral suture deeply grooved along the sides, wide, furrowed; dorsal suture a wide, deep groove.

WATERLOO

1. *Cult. & Count. Gent.* **43**:489. 1878. **2.** *W. N. Y. Hort. Soc. Rpt.* 51. 1879. **3.** Hogg *Fruit Man.* 463. 1884. **4.** *Am. Pom. Soc. Cat.* 34. 1885. **5.** *Ibid.* 22. 1897. **6.** *Garden* **66**:112. 1904. **7.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903. **8.** Fulton *Peach Cult.* 173. 1908. **9.** Waugh *Am. Peach Orch.* 209. 1913.

Waterloo is without honor in its own country but is a standard peach in England. In spite of the fact that the variety originated within ten miles of the Station grounds it is all but worthless here as it is in most parts of New York. Waterloo is an extra-early, white-fleshed, semi-cling peach very similar to the better-known Canada. The faults that condemn it are small size, poor quality, susceptibility to brown-rot and a long period of ripening for the fruit and small size and unproductiveness in the tree. It is given prominence in *The Peaches of New York* only because it is so often noted in the horticultural press as a standard variety, an opinion, no doubt, reflected in America from European publications.

Waterloo was first grown by Henry Lisk, Waterloo, Seneca County, New York, who brought it to notice in 1877. Thomas Rivers introduced it into England where it has long been grown and esteemed for its earliness and good quality. The American Pomological Society placed Waterloo in its fruit-catalog in 1885, where it remained until 1891 when it was dropped, but was replaced in 1897.



WATERLOO

Tree small, upright-spreading, sometimes productive; trunk smooth; branches stocky, smooth, reddish-brown covered with light ash-gray; branchlets very long, rebranching, with internodes of medium length, dark pinkish-red mingled with green, glossy, smooth, glabrous, with few large lenticels.

Leaves six and one-fourth inches long, one and three-fourths inches wide, flattened, oval to obovate-lanceolate, leathery; upper surface dull, dark olive-green, smooth; lower surface grayish-green; margin finely

serrate, tipped with reddish-brown glands; petiole seven-sixteenths inch long, glandless or with one to four small, globose and reniform, reddish-brown glands variable in position.

Flower-buds half-hardy, obtuse or conical, plump, usually free, pubescent; flowers appear in mid-season; blossoms one and one-half inches across, light pink, usually single; pedicels very short, thick, green; calyx-tube lemon-yellow within, campanulate, glabrous; calyx-lobes short, obtuse, glabrous within, pubescent without; petals ovate, tapering to claws with reddish base; filaments one-half inch long, shorter than the petals; pistil equal to the stamens in length.

Fruit matures very early; nearly two inches in diameter, roundish, with equal halves; cavity deep, wide flaring; suture shallow; apex depressed, with a recurved, mamelon tip; color creamy-white, blushed and mottled with red; pubescence short, thick; skin thin, adherent to the pulp; flesh greenish-white, juicy, stringy, tender and melting, sweet, mild, fair to good in quality; stone semi-clinging, one and one-sixteenth inches long, three-fourths inch wide, oval, plump, acutely pointed at the apex, with pitted surfaces; dorsal suture slightly winging.

WHEATLAND

1. Thomas *Am. Fruit Cult.* 550. 1875-85. **2.** *W. N. Y. Hort. Soc. Rpt.* 113. 1880. **3.** Downing *Fr. Trees Am.* 3rd App. 173. 1881. **4.** *Am. Pom. Soc. Cat.* 34. 1883. **5.** *Tex. Sta.*

Bul. **39**:815. 1896. **6.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903. **7.** Waugh *Am. Peach Orch.* 209. 1913.

Wheatland is a large, yellow-fleshed, freestone peach of excellent quality which ripens just before Late Crawford. Although the variety originated in this State it is little grown here now, being somewhat more popular westward in Michigan and very much grown in Colorado and Utah. The fruit is about all that could be desired in New York but the trees are so unproductive that the variety is nowhere grown in this region with profit. The beauty and high quality of the fruit might make it desirable for home orchards.

Wheatland is a chance seedling found about 1870 on the grounds of Daniel E. Rogers, Scottsville, New York. The variety was placed on the fruit-list of the American Pomological Society in 1883.



WHEATLAND

Tree medium to large, vigorous, upright-spreading, with the lower branches drooping, hardy, rather unproductive; trunk thick and smooth; branches stocky, smooth, reddish-brown tinged with light ash-gray; branchlets long, with long internodes, inclined to rebranch, dark pinkish-red with

but little green, smooth, glabrous, with conspicuous, large and small, raised lenticels intermediate in number.

Leaves six and one-half inches long, one and three-fourths inches wide, folded upward and recurved downward, oval to obovate-lanceolate, leathery; upper surface dark green, rugose; lower surface grayish-green; margin finely serrate, tipped with reddish-brown glands; petiole five-sixteenths inch long, with one to five small, globose and reniform, reddish-brown glands variable in position.

Flower-buds tender, medium to small, pubescent, conical or pointed, plump, usually free; blossoms open late; flowers seven-eighths inch across, light pink becoming darker along the edges; pedicels very short, glabrous, green; calyx-tube reddish-green, orange-colored within, campanulate; calyx-lobes narrow, acuminate, glabrous within, pubescent without; petals ovate; filaments five-sixteenths inch long, equal to the petals in length; pistil as long as the stamens, sometimes defective.

Fruit matures in mid-season; large, round; suture shallow; apex a small, acute point; color yellow, blushed and mottled with red; skin separates from the pulp; flesh yellow, stained red around the pit, juicy, firm but tender, sweet, pleasantly flavored; good in quality; stone free, one and seven-sixteenths inches long, more than an inch wide, ovate, broad at the base, with pitted surfaces; ventral suture very deeply grooved at the edges; dorsal suture deeply grooved.

YELLOW RARERIPE

1. *Lond. Hort. Soc. Cat.* 102. 1831. **2.** Kenrick *Am. Orch.* 229. 1832. 3. Prince *Pom. Man.* **2**:14, 15. 1832. **4.** Downing *Fr. Trees Am.* 493. 1845. **5.** Elliott *Fr. Book* 280. 1854. **6.** *Am. Pom. Soc. Cat.* 80. 1862. **7.** *Mich. Sta. Bul.* **169**:229. 1899. **8.** Fulton *Peach Cult.* 193, 194. 1908.

Marie Antoinette. **9.** Kenrick *Am. Orch.* 187. 1846.

Early Orange Peach. **10.** Floy-Lindley *Guide Orch. Gard.* 187. 1846.

Cutter's Yellow. **11.** Hovey *Fr. Am.* **2**:59, 60, Pl. 1851.

Rareripe Jaune. **12.** Mas *Le Verger* **7**:215, 216, fig. 106. 1866-73.

A century ago Yellow Rareripe was at the head of the list of yellow-fleshed, freestone peaches—largest, handsomest, hardiest and best-flavored of all. Even now in fruit- and tree-characters, with the single exception of productiveness, Yellow Rareripe holds its own very well with the peaches of its type and season. A glance at the color-plate shows the peach to be as attractive as any in color and shape; the size is above the average and in texture and flavor it is not often surpassed. Its fault is unproductiveness, to make up for which the trees usually bear regularly and come in bearing early. The variety is now hardly worth planting commercially in New York, being equalled by several yellow-fleshed peaches in all characters and surpassed in productiveness by many, but, if the trees can be obtained, it might find a welcome place in home orchards. Yellow Rareripe seems still to have all of the vigor and vitality of the first trees, helping thereby to furnish evidence that varieties do not run out.

This is another American peach the origin of which is involved in so much uncertainty that it is impossible to state where, when and by whom produced. Prince claims to have discovered the original Yellow Rareripe tree near Flushing, New York, over a hundred years ago. It was being grown in the vicinity of Boston early in the Nineteenth Century where it seems to have been first introduced by William Kenrick, Newton, Massachusetts, under the name Yellow Red Rareripe. Occasionally another and inferior peach, Yellow Melocoton, was substituted for Yellow Rareripe. Hovey received peach-trees from Kenrick under the name Cutter's Yellow which later proved to be Yellow Rareripe. Hovey retained the name Cutter's Yellow, because it was briefer. The Marie Antoinette, mentioned by Kenrick in 1841, is without question Yellow Rareripe and has been listed as synonymous by several authors. Yellow Rareripe was placed in the American Pomological Society's fruit-catalog in 1862 where it has since remained as a recommended variety.



YELLOW RARERIPE

Tree large, vigorous, upright-spreading, rather unproductive; trunk stocky; branches thick, smooth, reddish-brown mingled with light ash-gray; branchlets with internodes of medium length, dark pinkish-red tinged with pale green, glossy, smooth, glabrous, with conspicuous, numerous, large, raised lenticels.

Leaves six and three-fourths inches long, one and three-fourths inches wide, folded upward and curled downward, oval to obovate-lanceolate, leathery; upper surface

dull, dark olive-green, smooth becoming rugose near the midrib; lower surface grayish-green; margin finely serrate and sometimes in two series, tipped with reddish-brown glands; petiole three-eighths inch long, glandless or with one to four small, globose glands variable in color and position.

Flower-buds conical or pointed, pubescent, plump, usually appressed; blossoms open in mid-season; flowers seven-eighths inch across, light pink but darker along the edges, usually single; pedicels short, green; calyx-tube reddish-green, orange-colored within, campanulate; calyx-lobes narrow, acute, glabrous within, pubescent without; petals oval to ovate, shallowly and widely notched towards the base, tapering to claws red at the base; filaments three-eighths inch long, equal to the petals in length; pistil as long as the stamens.

Fruit matures in mid-season; two and one-fourth inches long, two and three-sixteenths inches wide, round-conic to round-cordate, compressed, with unequal halves; cavity contracted and wrinkled about the sides, abrupt or flaring; suture shallow; apex round or somewhat pointed, with a mucronate or mamelon tip; color orange-yellow, with a deep red blush, splashed and mottled with red; pubescence thick, long, coarse; skin thin, tender, variable in adherence to the pulp; flesh yellow, tinged with red near the pit, juicy, fine-grained, tender and melting, sweet, pleasantly flavored; good to very good in quality; stone free, one and one-fourth inches long, seven-eighths inch wide, oval to ovate, bulged near the apex, plump, tapering to a

short point, with grooved and pitted surfaces; ventral suture deeply grooved along the edges, furrowed; dorsal suture grooved, winging.

CHAPTER VI

THE MINOR VARIETIES OF PEACHES

À Bec. 1. *Jour. Hort.* N. S. **3**:370. 1862. **2.** Hogg *Fruit Man.* 212. 1866. **3.** *Pom. France* **6**:No. II, Pl. II. 1869.

Mignonne à bec. **4.** Mas *Le Verger* **7**:37, 38, fig. 17. 1866-73.

Pourprée à bec. **5.** Mas *Pom. Gen.* **12**:186. 1883.

Schnabel Pfirsich. **6.** Mathieu *Nom. Pom.* 414. 1889.

The À Bec peach takes the name from its beak-like apex. It originated about 1811 at Ecully, Rhône, France, with a M. Lacène. Tree hardy, vigorous, productive; leaves large; glands globose; flowers large, rose-colored; fruit very large, roundish, uneven in outline; apex terminates in a bold, blunt nipple; cavity narrow, deep; skin thin, tender, lemon-yellow, blushed and dotted with deep crimson where exposed; flesh white, with a slight tinge of red about the stone, tender, melting, sweet, aromatic; quality good; stone oval, furrowed, free; ripens the first half of August.

Abbé de Beaumont. 1. Thomas *Guide Prat.* 52. 1876. **2.** Leroy *Dict. Pom.* **6**:35, 36 fig. 1879.

This peach originated in Daumeray, France, in the Eighteenth Century but was not introduced until 1868. Tree vigorous, productive; glands globose; fruit large, globular; suture a mark; cavity large, deep; skin heavily pubescent, white, marbled with carmine; flesh white, tinged with a rose color at the stone, juicy, sprightly; stone ovoid, free; ripens at the end of July.

Abbé Jodoc. 1. Thomas *Guide Prat.* 47, 214. 1876.

Abt Jodocus. **2.** Mas *Pom. Gen.* **12**:185. 1883.

A fruit of English origin. Flowers rose-colored; leaves glandless; fruit large, spherical, irregular; skin almost covered with small, bright red dots; flesh fine; ripens the last of August.

Abundance. 1. McKay *Cat.* 20. 1913.

This variety as grown on the Station grounds is a type of Alexander. Introduced about 1907 by W. L. McKay, late proprietor of the Van Dusen Nurseries, Geneva, New York.

Acampo. 1. Leonard Coates *Cat.* 6. 1913.

According to Leonard Coates, Morganhill, California, this variety is a medium early, high-colored yellow peach of good quality; good for table and drying.

Acme. 1. *Am. Pom. Soc. Rpt.* 161. 1881.

This variety was reported as growing in Texas.

Acton Scot. 1. Lindley *Guide Orch. Gard.* 254. 1854. **2.** Mas *Le Verger* **7**:93, 94, fig. 45. 1866-73.

Acton Scot is the result of crossing Noblesse with Red Nutmeg; raised by Thomas Knight, Downton Castle, England, 1814. Leaves crenate; glands globose; flowers

large, pale rose; fruit small, narrowed and depressed at the apex; cavity large, deep; skin woolly, pale yellow, blushed, marbled with deeper red; flesh yellowish-white usually to the stone, juicy, sugary but slightly bitter; quality medium; pit free, small, plump; ripens the end of August.

Adèle Thirriot. 1. Thomas *Guide Prat.* 47. 1876.

Tree strong, productive; flowers small; glands reniform; fruit very large, with a purplish blush; first quality; ripens in September.

Admirable. 1. Duhamel *Trait. Arb. Fr.* **2**:31, 32, Pl. XXI. 1768. **2.** Prince *Pom. Man.* **1**:196. 1831. **3.** Leroy *Dict. Pom.* **6**:38 fig., 39, 40. 1879.

Early Admirable. **4.** Langley *Pomona* 103, Pl. 30 fig. 2. 1729. **5.** Lindley *Guide Orch. Gard.* 256, 257. 1831. **6.** Downing *Fr. Trees Am.* 477. 1845. **7.** *Am. Pom. Soc. Cat.* 30. 1877. **8.** Hogg *Fruit Man.* 442. 1884.

Wunderschöner Lackpfirsche. **9.** Dochnahl *Führ. Obstkunde* **3**:209, 210. 1858.

According to Leroy, Admirable was first mentioned by Lectier in 1628, probably having originated in France many years previous. Although not an extremely early peach it was long called Early Admirable to distinguish it from Late Admirable. The American Pomological Society listed Admirable in its fruit list in 1877 but dropped it in 1897. Tree productive; flowers small; glands globose; fruit of medium size, roundish, pale yellowish-white, with a lively red cheek; flesh white, red next the pit from which it readily separates, melting, juicy, with a good, rich, sweet flavor; ripens the first of September or later.

Admirable Jaune. 1. Noisette *Man. Comp. Jard.* **2**:478. 1860.

This variety should not be confused with Yellow Admirable described elsewhere. Variations in the size of the flowers cause writers to list more than one sort under this name. The peach listed here has medium-sized flowers and globose glands.

Admirable Jaune Tardive. 1. Noisette *Man. Comp. Jard.* **2**:478. 1860.

Tree very vigorous; glands globose; flowers of medium size; fruit large, elongated, yellow; flesh yellow, slightly vinous; ripens late in October.

Admirable Saint-German. 1. Leroy *Dict. Pom.* **6**:42, 43. 1879.

This peach was obtained from seed by Charles Buisson, Tronche, Isère, France, in 1863. Tree vigorous; glands small, globose; flowers medium in size, rose-colored; quality of first rank; ripens early in August.

Adrian. 1. *Col., O., Hort. Soc. Rpt.* 32. 1892. **2.** *Mich. Sta. Bul.* **169**:207. 1899.

Adrian originated in Louisiana. Tree vigorous, hardy, spreading, productive; glands globose; flowers small; fruit medium to large, roundish-oval; cavity abrupt; suture distinct near the apex; skin clear yellow, occasionally washed with red; flesh yellow, red at the pit, juicy, firm, vinous; quality good; pit free, oval, plump; ripens late in September.

Advance. 1. *Am. Pom. Soc. Rpt.* 147. 1881. **2.** *Mich. Sta. Bul.* **152**:199. 1898. 3. *Ibid.* **169**:207. 1899.

Advance is a seedling of Hale Early which originated with C. C. Engle, Paw Paw, Michigan. Tree spreading; glands reniform; flowers small; fruit medium to large, roundish; cavity deep; skin creamy-white, largely mottled with red; flesh creamy-white, juicy, tender, sprightly; quality good; pit semi-clinging; ripens early in August.

Aehrenthal. 1. Mathieu *Nom. Pom.* 386. 1889.

Aehrenthal Lackpfirsich. **2.** Dochnahl *Führ. Obstkunde* **3**:214. 1858.

Originated about 1851. Tree vigorous, productive; glands reniform; flowers small; fruit large, roundish, slightly oblate; skin yellowish-white, blushed with lively red which becomes purplish; flesh white, vinous; stone small, oval; ripens at the end of August.

Aiken. 1. *Can. Exp. Farms Rpt.* 301. 1890.

Listed as growing in Canada.

Ailsworth. 1. *Mich. Sta. Sp. Bul.* **44**:29. 1910.

Ailsworth is a late, yellow-fleshed peach which originated near Benton Harbor, Michigan. The fruit as it grows on the Station grounds is not attractive in color but is pleasantly flavored. Tree vigorous, upright; leaves long; glands reniform; flowers small; fruit above medium in size, roundish-cordate; skin heavily pubescent, golden yellow, with a slightly mottled blush of red; flesh yellow, red at the pit, juicy, medium coarse, firm, pleasingly subacid; quality good; pit free, oval, winged; ripens the last week in September.

Albatross. 1. Thomas *Guide Prat.* 54. 1876. **2.** Hogg *Fruit Man.* 435. 1884. **3.** Bunyard *Fruit Cat.* 35. 1913-14.

Thomas Rivers, Sawbridgeworth, England, grew Albatross from a stone of Princess of Wales about 1870. Leaves glandless; flowers large; fruit very large, roundish; suture distinct only at the apex; skin pale yellow, blushed with crimson and mottled with darker crimson; flesh white, stained with red at the stone, juicy, melting; ripens the end of September.

Albemarle. 1. Langley *Pomona* 104, Pl. XXXI fig. II. 1729.

Skin yellowish-green overlaid with red; flesh vermilion about the stone, melting, vinous; ripens the first week in August.

Alberge. 1. Rea *Flora* 211. 1676. **2.** Coxe *Cult. Fr. Trees.* 220. 1817.

Purple Alberge. **3.** Langley *Pomona* 104, Pl. XXX fig. V. 1729. **4.** Lindley *Guide Orch. Gard.* 267. 1831.

Yellow Alberge. **5.** Miller *Gard. Dict.* 1752. **6.** Prince *Pom. Man.* **1**:182, 183. 1831. **7.** Downing *Fr. Trees Am.* 492, 493. 1845. **8.** *Rural N. Y.* **11**:111. 1860.

Gelbe Pfirsche. **9.** Sickler *Teutsche Obst.* **8**:229-234, Tab. 12. 1797.

Rother Aprikosenpfirsch. **10.** Dochnahl *Führ. Obstkunde* **3**:218. 1858.

Rossanne. **11.** Leroy *Dict. Pom.* **6**:263, 264 fig., 265. 1879.

Safranpfirsch. **12.** Mathieu *Nom. Pom.* 413. 1889.

Alberge is an old French sort, one of the earliest of the yellow-fleshed peaches. Probably from this variety have sprung the Melocotons and Yellow Rareripes of this country. Rossanna, though very similar to Alberge, differs from it in having reniform glands and in ripening about two weeks later. In some sections, especially around Rochester, New York, Alberge is known as Barnard's Rareripe. The variety was placed on the fruit-list of the American Pomological Society in 1862 but was dropped in 1891. Tree moderate in growth; leaves crenate; glands globose; flowers small, rose-colored; fruit medium in size, nearly globular; suture and

cavity deep; skin yellow, almost entirely covered with deep red or purple; flesh deep yellow, red near the stone, melting, juicy, vinous; of second quality; pit large, oval, terminating in a short point, brownish-red, free; ripens in the middle of August.

Albert. 1. *Am. Pom. Soc. Cat.* 32. 1883.

Early Albert. **2.** *Gard. Chron.* 1025. 1861. **3.** *Mag. Hort.* **29**:53. 1863. **4.** Mas *Le Verger* **7**:103, 104, fig. 50. 1866-73. **5.** *Am. Pom. Soc. Cat.* 30. 1877.

Albert was raised by Thomas Rivers, Sawbridgeworth, England, from a pit of Grosse Montagne Précoce. The variety appeared on the fruit-list of the American Pomological Society in 1877 as Early Albert; later it was changed to Albert and in 1891 was dropped. Tree vigorous, hardy; glands globose; flowers small; fruit medium in size, roundish, one side of the suture frequently higher than the other; skin greenish-yellow, deep crimson where exposed; flesh white, brick-red next to the stone, tender, melting, aromatic; of first quality; ripens early in August.

Albert Late Rareripe. 1. *Horticulturist* N. S. **7**:178. 1857.

Glands globose; fruit large, globular; skin yellowish-white, marbled with red; flesh pale white, stained at the pit, very sweet, juicy; quality very good; ripens early in September.

Albert Sidney. 1. *Del. Sta. Rpt.* **5**:97. 1892. **2.** *Ga. Sta. Bul.* **42**:232. 1898.

Johnson. **3.** *Del. Sta. Rpt.* **13**:103. 1901.

Albert Sidney was grown from seed received from Japan in 1860 by Judge Campbell, Pensacola, Florida, and was introduced by P. J. Berckmans, Augusta, Georgia. Tree tall, spreading; leaves large; glands reniform; fruit large, oblong, greenish-yellow, blushed with red; flesh white, stained with red at the stone, juicy, melting; quality good; pit free; ripens

late in July.

Albertine Millet. 1. Thomas *Guide Prat.* 48. 1876.

A very early variety with globose glands and rose-colored blossoms.

Alberza. 1. Parkinson *Par. Ter.* 582. 1629.

"The Alberza Peach is late ripe, and of a reasonable good taste."

Albright. 1. *U. S. D. A. Rpt.* 391. 1891. **2.** Lovett *Cat.* 25. 1892. **3.** *Rural N. Y.* **52**:430. 1893. **4.** *Mich. Sta. Bul.* **169**:207. 1899.

Albright originated with a Miss Albright, York, Pennsylvania. Tree vigorous, upright; glands globose; flowers small; fruit large, faintly ovate; cavity narrow, deep; skin lightly pubescent, creamy-white, splashed and washed with red; flesh white, red at the pit, juicy, melting, vinous; quality good; pit oval, long, free; ripens the middle of September.

Albright Cling I. 1. *Am. Pom. Soc. Cat.* 35. 1909.

Albright. **2.** *Am. Pom. Soc. Rpt.* 97. 1887.

Albright October. **3.** *N. C. Sta. Rpt.* **12**:108. 1889.

Albright Winter. **4.** *Franklin Davis Nur. Cat.* 26. 1901.

This Albright Cling is a white-fleshed peach from North Carolina. The variety appeared on the fruit-list of the American Pomological Society in 1899 as Albright but was later changed to Albright Cling. Tree large, vigorous, upright; leaves large; glands reniform; flowers large; fruit of medium size, roundish, halves unequal in many; cavity

narrow; skin heavily pubescent, greenish-white, thick, tough; flesh whitish, meaty, tender, juicy, astringent; quality below fair; stone medium in size, oval, plump, clinging; ripens late.

Albright Cling II. 1. Wickson *Cal. Fruits* 318. 1889.

A yellow clingstone grown by a Mr. Albright, Placerville, California. The fruit is described as larger, more highly colored, and more productive than Orange Cling. It should not be confused with the white Albright Cling of the East.

Alexandra. 1. Hogg *Fruit Man.* 213. 1866. **2.** Downing *Fr. Trees Am.* 597. 1869. **3.** Budd-Hansen *Am. Hort. Man.* **2**:336. 1903.

Alexandra Noblesse. **4.** *Gard. Mon.* **7**:373. 1865.

Noblesse Seedling. **5.** *Soc. Nat. Hort. France Pom.* 318 fig., 319. 1904.

This variety was raised many years ago by Thomas Rivers, Sawbridgeworth, England, from seeds of the old Noblesse, a sort at one time prominent in the Old World. Curiously enough Alexandra has been many times confused with Alexander, a variety of American origin differing from the European sort both in color of skin and in season. Although of excellent quality Alexandra seems never to have found favor in America. Tree vigorous, healthy, productive; fruit large, round, marked with a deep suture; skin covered with a rough pubescence, pale, without any color except a few clusters of red dots on the side exposed to the sun; flesh white to the stone, tender, melting, juicy, richly flavored, vinous, sweet; quality very good; stone large, free; season the middle of August.

Alexandre Dumas. 1. Mathieu *Nom. Pom.* 408. 1889.

Listed as a clingstone in this reference.

Alexiana Cherpin. 1. Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Tree vigorous; branches slender; leaves large; glands reniform; flowers large; fruit large, globular; suture more pronounced near the cavity; skin heavily pubescent, wine-red becoming violet, marbled, adheres to the pulp; flesh blood-red, fibrous, melting, aromatic; stone large, ovoid, free; ripens early in October.

Alexis Lepère. 1. *Rev. Hort.* 471. 1892. **2.** *Cat. Cong. Pom. France* 84 fig. 1906.

Alexis Lepère, Jr., Montreuil, France, grew this variety from seed about 1876. Tree vigorous, productive; leaves glandless; flowers small; fruit large, roundish, faintly conic; skin greenish-yellow, marbled with carmine; flesh white, tinged with red about the stone, fine, melting, juicy, aromatic; quality very good; stone free; ripens the last of August.

Alger Winter. 1. *Mich. Hort. Soc. Rpt.* 297. 1875.

A yellow, freestone peach which ripens late and keeps long.

Algerine. 1. *Peachland Nur. Cat.* 12. 1892.

The catalog of the Peachland Nurseries, Seaford, Delaware, describes this variety as a large, yellow-fleshed, clingstone peach.

Alice. 1. Munson *Cat.* 6. 1898-99. **2.** *Del. Sta. Rpt.* **13**:90. 1901.

Alice Haupt. **3.** *Am. Pom. Soc. Rpt.* 152. 1883.

Alice is a white-fleshed, freestone seedling of Chinese Cling raised by William W. Haupt, Kyle, Texas.

Alice Free. 1. *Green River Nur. Cat.* 14.

1899.

The catalog of the Green River Nurseries, Bowling Green, Kentucky, states that J. W. Shalcross, Louisville, Kentucky, first grew Alice Free. Fruit very large; skin white, red where exposed; quality good; ripens late in October.

Alida. 1. *Horticulturist* **22**:45 fig. 1867. **2.** Downing *Fr. Trees Am.* 597. 1869.

Alida originated with Charles Carpenter, Kelly Island, Ohio, and is probably a seedling of Late Crawford. Fruit large, round; skin blushed with dark red; flesh yellow, juicy; quality good; ripens in September.

Allen I. 1. *Cultivator* N. S. **1**:352. 1844. **2.** Hooper *W. Fr. Book* 212. 1857.

Allen I reproduces itself from seed, having been so grown for a number of years by a community of Allens in Walpole, Massachusetts. The variety was put on the fruit-list of the American Pomological Society in 1901. Tree hardy, productive; leaves with globose glands; flowers small; fruit small, roundish, blushed with red; flesh white, juicy, vinous; stone free; ripens in September.

Allen II. 1. *W. N. Y. Hort. Soc. Rpt.* 113. 1880.

This is an early seedling raised by A. T. Allen, Willoughby, Ohio.

Allen October. 1. *Am. Pom. Soc. Cat.* 26. 1873. **2.** Waugh *Am. Peach Orch.* 198. 1913.

This variety originated in Missouri and appears on the fruit-list of the American Pomological Society from 1873 to 1899. Fruit of medium size, round, yellow, blushed with red; flesh yellow, red at the pit; quality poor; freestone; ripens late.

Allman Cling. 1. *Ill. Hort. Soc. Rpt.* 167. 1871.

Allman Cling is recommended for the vicinity of Centralia, Illinois.

Almond. 1. Lindley *Guide Orch. Gard.* 243, 244. 1831.

Mandel-Pfirsiche. **2.** Sickler *Teutsche Obst.* **12**:260-264, Tab. 14. 1799.

Amandier-Pêcher. **3.** Carrière *Var. Pêchers* 102, 103. 1867.

Externally Almond resembles the almond but the characters of the flesh and stone are those of the peach. The variety was raised by T. A. Knight, Downton Castle, England, from a seed of the sweet almond which had been fertilized by a peach. Tree vigorous, bearing glandless leaves which are doubly serrate; fruit medium in size, roundish, with a slight suture; apex somewhat depressed; skin heavily pubescent, yellow, marbled with pale red in the sun; flesh pale yellow, bright red next the pit which is free, very juicy, melting, with a good flavor; season the middle of September.

Alpha I. 1. *W. N. Y. Hort. Soc. Rpt.* 114. 1880.

Alpha is thought to be a cross between Early Rivers and Foster, raised by T. V. Munson, Denison, Texas. The fruit ripens before Alexander which it resembles very closely.

Alpha II. 1. *Ill. Hort. Soc. Rpt.* 166. 1895. **2.** *Mich. Sta. Bul.* **169**:207. 1899.

Tree moderately vigorous, not very productive, roundish, upright; glands reniform; flowers small; fruit rather large, roundish, slightly compressed toward the suture which is indistinct; skin rich, clear yellow, much overspread with dark red; flesh yellow, firm, juicy, nearly sweet; quality good; pit large, oval, plump, adherent; ripens the middle of

September.

Alpha III. 1. Wood *Cat.* 7 fig. 1910.

A few years ago Allen Wood, Rochester, New York, introduced a white-fleshed variety under the name Alpha but it was so similar to Champion that its propagation was discontinued.

Alto Pass. 1. *Ill. Hort. Soc. Rpt.* 53, 207. 1896.

This is a medium-sized, leather-colored peach under test in Illinois; flesh lemon-yellow; of good quality; freestone.

Amande Douce. 1. Thomas *Guide Prat.* 48. 1876.

Listed without a description.

Ambrosia. 1. *Continental Pl. Cat.* 14. 1913.

This variety is said by the Continental Plant Company, Kittrell, North Carolina, to be a productive, attractive fruit with tender, melting flesh of high flavor, ripening in July.

Amelia I. 1. Mas *Le Verger* **7**:241, 242, fig. 119. 1866-73. **2.** *Gard. Mon.* **10**:126. 1868. **3.** Downing *Fr. Trees Am.* 598. 1869. **4.** *Am. Pom. Soc. Cat.* 18. 1871. **5.** *Mich. Sta. Bul.* **169**:207. 1899.

This peach originated many years ago with a Mr. Stroman, Orangeburg, South Carolina. Tree moderately productive, vigorous; glands reniform; fruit large, roundish-oblong, with a large, deep suture extending nearly around the fruit; skin pale whitish-yellow, shaded and marbled with a crimson blush; flesh creamy-white, juicy, melting, sweet, rich, vinous; quality good; pit free; ripens the last of August.

Amelia II. 1. *Gard. Mon.* **10**:22. 1868. **2.** Downing *Fr. Trees Am.* 598. 1869. **3.** *Tex.*

Sta. Bul. **39**:809. 1896.

Pavie Amelia. **4.** Leroy *Dict. Pom.* **6**:211 fig., 212. 1879.

This variety, which originated in 1850 with George Husman, Hermann, Missouri, is supposed to be a seedling of Columbia. It has frequently been confused with the Amelia from South Carolina. Tree vigorous, healthy; fruit large, round; suture distinct; apex roundish; color clear, rich yellow, marbled with dull red; flesh yellow, firm, juicy, sweet or pleasantly subacid; stone large, free; season the last of September.

Ameliaberta. 1. *Am. Pom. Soc. Cat.* 32. 1899. **2.** *Del. Sta. Rpt.* **13**:90. 1901.

Ameliaberta is a cross between Amelia II and Elberta. The variety has little or no value in this State. It originated with J. H. Jones, Herndon, Georgia, and was introduced in 1893. In 1899, it was given a place in the fruit-list of the American Pomological Society where it remained until 1909. On the Station grounds the fruit ripens with Elberta and does not equal that variety. Tree vigorous, upright-spreading; leaves oval to obovate-lanceolate, usually with reniform glands; flowers appear late; fruit large, roundish; suture shallow, deeper at the apex; skin yellow, washed and splashed with crimson; flesh yellow, with red radiating from the pit, stringy, juicy, sprightly; quality good; stone free, large, broadly oval; ripens the first half of September.

American Apricot. 1. Dochnahl *Führ. Obstkunde* **3**:219. 1858. **2.** *Gard. Mon.* **29**:306 fig. 1887. **3.** *Mich. Sta. Bul.* **169**:207. 1899.

Jaune d'Amerique? **4.** Mas *Pom. Gen.* **12**:176. 1883.

Northern Apricot. **5.** *Mich. Sta. Bul.* **129**:26. 1896.

This variety, a seedling from South Carolina, as grown on the Station grounds is of the Crawford type, rather late in ripening and only fair in quality.

American Pound. 1. *Gard. Mon.* **7**:372. 1865.

A name applied to a large, American variety introduced into New Zealand.

Ammirabile Belga. 1. *Gard. Chron.* 907. 1858.

An Italian peach exhibited at the Imperial and Royal Horticultural Society of Tuscany, Italy, in 1858.

Amsden. 1. Hogg *Fruit Man.* 437. 1884. **2.** *Rev. Hort.* 506, 507, 508. 1893. **3.** *Cat. Cong. Pom. France* 85 fig. 1906.

Amsden June. **4.** *Cult. & Count. Gent.* **39**:472, 486. 1874. **5.** *Gard. Mon.* **16**:278. 1874. **6.** Downing *Fr. Trees Am.* 2nd App. 141. 1876. **7.** *Am. Pom. Soc. Cat.* 28. 1877.

Amsden grew from a seed planted in 1868 by L. C. Amsden, Carthage, Missouri. It first fruited in 1872; in 1877 the American Pomological Society added the variety to its fruit-list but dropped it in 1891. Tree vigorous, productive; glands globose; fruit of medium size, roundish, slightly compressed, with a broad, shallow suture extending beyond the depressed apex; skin greenish-white, nearly covered with light and dark red, nearly purple in the sun; flesh greenish-white throughout, tender, juicy, sweet, slightly vinous; quality good; stone small, nearly free when mature; season the last of June or early in July.

Amsden Pine. 1. *Can. Exp. Farms Rpt.* 416. 1899.

Listed as growing in Canada.

Ananiel. 1. Mas *Le Verger* **7**:187, 188, fig. 92, 1866-73. **2.** Thomas *Guide Prat.* 45, 215. 1876.

Ananiel originated near Tournay, Belgium. Glands globose; flowers small, rose-colored; fruit large, irregular, spherical, truncated at the base; skin whitish-yellow, more or less covered with purple at maturity; flesh pale, purplish near the stone, melting, very juicy; quality good; stone terminating in a long point, free; ripens the last of September.

André Leroy. 1. Mathieu *Nom. Pom.* 387. 1889.

Listed but not described.

Andrews. 1. *Mich. Sta. Bul.* **118**:29. 1895.

Andrews Mammoth. **2.** *Ibid.* **31**:58. 1887.

Listed as growing in Michigan.

Angel. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *Tex. Sta. Bul.* **39**:818 fig. 1896. **3.** *Fla. Sta. Bul.* **62**:509, 510, 519. 1902. **4.** Budd-Hansen *Am. Hort. Man.* **2**:336, 337. 1903. **5.** *Ala. Sta. Bul.* **156**:132. 1911. **6.** Waugh *Am. Peach Orch.* 198. 1913.

Angel was grown from a Peento seed by Peter C. Minnich, Waldo, Florida, about thirty years ago. G. L. Taber, Glen Saint Mary, Florida, bought the original tree and introduced the variety in 1889. The American Pomological Society added Angel to its fruit-list in 1891. Tree open, productive; fruit small, roundish; suture shallow, short; apex blunt or very slightly tipped; skin light creamy-white, tinted and washed with attractive red; flesh white, reddish near the pit, firm, juicy, with a slightly acid, agreeable flavor; quality good; pit free; season the middle of June to the first of July in Florida.

Angelle Lafond. 1. Thomas *Guide Prat.* 48. 1876.

Listed as a large and beautiful variety with reniform glands.

Angers Large Purple. 1. *Horticulturist* N. S. **5**:70. 1855.

Said to be one of the largest and finest of peaches; ripens with Chancellor.

Anna Ruffin. 1. Van Lindley *Cat.* 19. 1892.

Listed without description in the catalog of J. Van Lindley, Pomona, North Carolina.

Anne. 1. Langley *Pomona* 100. 1729. **2.** Forsyth *Treat. Fr. Trees* 27. 1803.

Early Anne. **3.** Lindley *Guide Orch. Gard.* 246, 247. 1831.

Green Nutmeg. **4.** Prince *Pom. Man.* **2**:23. 1832.

Anne is an old English sort which for many years was the earliest of all peaches. The variety was named in honor of Mrs. Anne Dunch, Pusey, Berkshire, England. Tree not very vigorous; leaves doubly serrated, glandless; flowers large, nearly white; fruit roundish, medium in size; skin white, blush often lacking; flesh soft, melting, white to the stone, sugary; stone free; ripens very early.

Annie Laurie. 1. Smith Brothers *Cat.* 16. 1899.

It is stated in the catalog of Smith Brothers, Concord, Georgia, that this variety has been in cultivation fifty years and comes true from seed. Fruit of medium size, bright red; flesh tender, sweet, juicy; quality best.

Annie Trice. 1. *Green River Nur. Cat.* 13.

1899.

According to the catalog of the Green River Nurseries, Bowling Green, Kentucky, Annie Trice originated some forty years ago in Hopkinsville, Kentucky. It is an early peach of the Hale Early type.

Annie Wylie. 1. *Am. Pom. Soc. Rpt.* 41. 1877. **2.** *Ala. Sta. Bul.* **11**:6. 1890.

Annie Wylie originated at Chester, South Carolina. Fruit large; skin white, with a red blush; flesh white, red at the pit, fine-grained, melting, vinous; quality very good; clingstone; ripens early in September in South Carolina.

Antleys. 1. *Del. Sta. Rpt.* **13**:90. 1901.

P. J. Berckmans, Augusta, Georgia, found this variety on the farm of a Mr. Antleys, Blackville, South Carolina. It is a very large and almost white Chinese Cling.

Apex. 1. Weber & Sons *Cat.* 11. 1912.

The catalog of Weber and Sons, Nursery, Missouri, states that Apex ripens with Alexander but is superior to it in size, color and flavor; skin yellow, mottled with red; flesh yellow; stone adherent.

Arctic. 1. *Gard. Mon.* **12**:156. 1870. **2.** *Mich. Sta. Bul.* **169**:208. 1899. **3.** *Rural N. Y.* **59**:705. 1900.

This is a hardy seedling said to have been introduced from the Isle of Man. Tree vigorous, not very productive, upright; leaves partially folded, with reniform glands; fruit medium in size, roundish-ovate; cavity rather broad; apex sunken; skin light yellow; flesh pale yellow, red at the pit, not very juicy, mild; quality fair; stone free, oval, plump; ripens early in October.

Aremie. 1. Downing *Fr. Trees Am.* 598. 1869.

Aremie is a large, high-flavored, yellow-fleshed clingstone which originated in Pomaria, South Carolina. Fruit ripens in early August.

Arietta. 1. *Ala. Sta. Bul.* **47**:11. 1893.

This is a freestone peach resembling Stump; ripens the end of July in Alabama.

Arkansas. 1. Budd-Hansen *Am. Hort. Man.* **2**:337. 1903.

Arkansas Traveler. **2.** *Mass. (Hatch) Sta. Bul.* **2**:14. 1888. **3.** Harrison & Sons *Cat.* 16. 1904.

Arkansas as it fruits at this Station resembles Alexander very closely in season, size and shape. It is distinct, however, being a seedling of Amsden. Like all other early, white-fleshed peaches it rots badly. Tree vigorous, hardy, moderately productive; leaves large; glands globose; flowers large, pale pink; fruit about two inches in diameter, roundish-truncate; apex mucronate; skin thick, tough, covered with short pubescence, creamy-white, blushed with dark red, with few stripes and splashes; flesh white, stringy, juicy, sweet; quality fair; stone semi-free to free, oval, very plump; ripens the last week of July.

Arlington. 1. *Cal. Sta. Rpt.* 408. 1892-93.

Early Arlington. **2.** *Fla. Sta. Bul.* **62**:512. 1902.

Listed as belonging to the Peento type.

Arthur Chevreau. 1. *Rev. Hort.* 103. 1901.

Arthur Chevreau, Montreuil, France, grew this variety from a seed of Bonouvrier. Tree vigorous, productive; glands globose; flowers small; fruit large, round; suture pronounced; cavity deep, large; flesh whitish-yellow, juicy, sugary, acidulated; stone large, free; ripens early in

September.

Artz. 1. *U. S. D. A. Pom. Rpt.* 25. 1894.

This is a large, handsome clingstone grown near Georgetown, District of Columbia. Fruit roundish-oval; cavity deep, abrupt; apex terminates in a mamelon tip; skin thin, tough, pubescent, creamy-white, blushed and marbled with crimson; flesh white, tinged with red about the pit, firm, juicy, mild subacid, sprightly; quality very good; stone oval.

Asa Meek Seedling. 1. J. R. Johnson *Cat.* 5. 1894.

According to J. R. Johnson, Coshocton, Ohio, this is a seedling very closely resembling Globe.

Ashby Early. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880. **2.** *Am. Pom. Soc. Cat.* 32. 1883.

This variety, raised by G. W. Ashby, Charrute, Kansas, is said to be earlier and better than Amsden. In 1883 it was placed on the fruit-list of the American Pomological Society where it remained until 1891.

Astor. 1. *Lond. Hort. Soc. Rpt.* **6**:414. 1826. **2.** Floy-Lindley *Guide Orch. Gard.* 183. 1846.

Astor was found by Michael Floy in the yard of a Mr. Astor, New York City, about 1820. Tree large, thrifty, productive; leaves broad, deeply serrated, with globose glands; flowers medium in size; fruit large, oblate; cavity deep; suture divides the fruit; skin pale yellow, with a deep red cheek; flesh melting, whitish-yellow, faintly red at the stone, very juicy, high in quality; stone small, roundish, free; ripens the last of August.

Athenian Cling. 1. *Horticulturist* N. S. **7**:180. 1857.

Fruit very large, oblong, depressed at the apex; suture a mere line; skin very downy, yellowish-white, marbled with dull red in the sun; flesh pale red at the pit, firm, rich, vinous; quality good; ripens in October.

Athens. 1. *New Haven Nur. Cat.* 6. 1901-02.

This variety is briefly described in the catalog of the New Haven Nurseries, New Haven, Missouri. Athens on the Station grounds is a light bearer of fruit fair in quality. Tree vigorous; leaves thin; glands globose; fruit oval-cordate, about two and one-fourth inches high, halves unequal; suture shallow, deepening toward the apex; skin tough, golden yellow, with a lively red blush and a few darker splashes; flesh yellow, meaty, rather coarse, sweet; quality fair; stone clings, oval, noticeably bulged near the apex; ripens the second half of September.

Atlanta. 1. Downing *Fr. Trees Am.* 1st App. 120. 1872.

As fruited on the Station grounds, Atlanta does not appear valuable for any purpose. The variety was raised by Dr. E. W. Sylvester, Lyons, New York. Tree vigorous; glands reniform; fruit of medium size, roundish; suture large, distinct; cavity deep; skin greenish-white, blushed with deep red; flesh white, usually stained with red at the stone, soft, juicy; stone nearly free; ripens the last of August.

Atwater. 1. Elliott *Fr. Book* 281. 1854.

This is a variety of American origin closely resembling President.

Atwood. 1. Downing *Fr. Trees Am.* 598. 1869.

Atwood is a large, productive clingstone originating with Roscius Atwood, Newberry, South Carolina.

Augbert. 1. *U. S. D. A. Yearbook* 447, 448, Pl. 44. 1908. **2.** *Am. Pom. Soc. Cat.* 35.

1909.

Augbert as it fruits on the Station grounds is a disappointment in productiveness and in quality of fruit. It originated with Joel Boon, Lindale, Texas, about 1897, from a seed of Elberta, thought to have been fertilized with Salwey. In 1906 the name Augbert was registered as a trade-mark. In 1909 the variety was put on the fruit-list of the American Pomological Society. Tree vigorous; glands reniform; flowers medium in size; fruit large, oval, slightly cordate; cavity abrupt, medium to deep, often marked with red; apex terminates in a noticeable mamelon tip; skin thin, tough, finely pubescent, light golden, with a few carmine splashes on a lighter red cheek; flesh yellow, stained with red at the pit, tender, fine-grained, juicy, vinous; stone large, oval, pointed at the ends, plump; ripens just before Salwey.

Augusta. 1. Ramsey *Cat.* 8. 1909.

F. T. Ramsey and Son, Austin, Texas, state that Augusta is a large, yellow, freestone seedling of Elberta ripening a month later than its parent.

Auguste Fau Jaune. 1. Mathieu *Nom. Pom.* 408. 1889.

Listed by Mathieu as a clingstone.

Aurora. 1. Bailey *Ann. Hort.* 184. 1892.

This variety was introduced by J. H. Jones, Herndon, Georgia, as a cross between Chinese Cling and Mary Choice. Fruit very large, creamy, with a dark cheek; freestone; ripens early in July.

Austin. 1. *Am. Pom. Soc. Cat.* 44. 1891.

Austins Late Red. **2.** Elliott *Fr. Book* 292. 1859. **3.** Downing *Fr. Trees Am.* 598. 1869. **4.** *Am. Pom. Soc. Cat.* 28. 1875.

Austin Cling. **5.** *Okla. Sta. Bul.* **2**:14. 1892.

The cultivation of Austin is confined to the South. It first appeared on the fruit-list of the American Pomological Society in 1872; later it was listed as Austin Late and finally as Austin in 1891 in which year it was dropped from the list. Glands reniform; flowers large; fruit large, oblong; color white, with a red cheek; flesh white, juicy, vinous; clingstone.

Australian Saucer. 1. *Oregon Nur. Cat.* 28. 1903.

According to the catalog of the Oregon Nursery Company, Orenco, Oregon, this variety is one of the Peento peaches and takes its name from its flat appearance, one side being hollowed like a saucer. Skin white, with a crimson blush; flesh white, sweet; pit very small, almost round.

Avant-Pêche Jaune. 1. Duhamel *Trait. Arb. Fr.* **2**:9, 10. 1768. **2.** Leroy *Dict. Pom.* **6**:48, 49 fig. 1879.

Gelbe Frühpfirsche. **3.** Liegel *Anweisung* 69. 1822.

Early Yellow Alberge. **4.** Prince *Pom. Man.* **1**:183, 184. 1831.

Früher Aprikosenpfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:218. 1858.

According to Leroy, this variety was mentioned as early as the Fourteenth Century. It has been much confused with Avant-Pêche Blanche. Tree vigorous; glands reniform; flowers large; fruit medium in size, roundish; cavity deep; apex mamelon; skin thin, heavily pubescent, golden-yellow, mottled with dark brownish-red; flesh firm, yellow, carmine at the stone, juicy, sweet, aromatic; stone small, roundish, plump, strongly sutured, free; ripens the middle of July.

Avant-Précoce. 1. Mas *Pom. Gen.* **12**:157,

158, fig. 15. 1883.

Glands reniform; flowers medium in size; fruit small to medium, nearly round; apex mucronate; suture deep; cavity narrow, small; skin firm, thin, heavily pubescent, whitish-yellow, purple where exposed; flesh white, stained with red at the stone, firm, sugary, juicy, aromatic; stone small, oval; ripens late in July.

Avant-Précoce Pavie. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed but not described.

Avocat Collignon. 1. Mathieu *Nom. Pom.* 387. 1889.

Listed but not described.

Azoo Cling. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed as growing in Texas.

Babcock. 1. *N. Y. Sta. Rpt.* **15**:289. 1897.

Grown at one time on the Station grounds.

Bagby Large. 1. Elliott *Fr. Book* 293. 1859.

The tree of Bagby Large has a peculiar, slender, drooping growth. The fruit, which is esteemed for drying, is oblong, white and juicy; ripens the middle of August.

Bailey. 1. *Ia. Hort. Soc. Rpt.* 244. 1893. **2.** *Ibid.* 417, 418. 1898. **3.** *Ibid.* 89, 90. 1899. **4.** *Am. Pom. Soc. Cat.* 35. 1909.

Friday Seedling. **5.** *Ia. Hort. Soc. Rpt.* 373, 377. 1896.

Cedar County Hardy. **6.** *Ibid.* 373. 1896.

Bailey is a very hardy peach grown in southeastern Iowa. It

was named after Dr. Bailey, West Branch, Iowa, who grew the variety most extensively. In Scott County, it is known as Friday seedling, after its originator, Jacob Friday. The variety was listed by the American Pomological Society in 1909. Bailey reproduces itself from seed and has been distributed throughout Iowa by this means, which accounts for the differences that appear in different localities. The variety as it grows on the Station grounds is very susceptible to mildew; leaves deeply serrated, glandless; fruit small, white; freestone; worthless for New York.

Baker Cling. 1. *Del Sta. Rpt.* **5**:97. 1892.

Listed in this reference.

Baker Early. 1. *Am. Pom. Soc. Rpt.* 161. 1881.

Baker Early May. **2.** *W. N. Y. Hort. Soc. Rpt.* 50. 1879.

A very early freestone of southern origin which resembles Hale Early.

Baldwin. 1. *Am. Pom. Soc. Cat.* 44. 1891.

Baldwin October Free. **2.** *U. S. Pat. Off. Rpt.* 279. 1854.

Baldwin Late. **3.** *Am. Pom. Soc. Cat.* 18. 1871. **4.** *Ga. Sta. Bul.* **42**:233. 1898.

Baldwin originated with Dr. William Baldwin, Montgomery, Alabama. It became popular because of its late ripening and splendid keeping qualities and gained a place on the fruit-list of the American Pomological Society in 1871, which it held until 1897. Leaves large; glands reniform; fruit medium in size, greenish-white; flesh white, stained at the stone; quality fair; stone free, small.

Baltet. 1. Thomas *Guide Prat.* 48. 1876. **2.** *Cat. Cong. Pom. France* 86 fig. 1906.

M. Baltet, Troyes, Aube, France, originated this variety about 1866. Leaves glandless; flowers medium in size; fruit large, roundish-oval, with a mamelon tip at the apex; skin creamy-white, reddish-purple where exposed; flesh tinged with red, deeper about the stone; quality excellent; stone elongated, with pointed apex; ripens early in October.

Baltimore Beauty. 1. Downing *Fr. Trees Am.* 490. 1845.

Leaves with globose glands; flowers large; fruit small, roundish-oval; color deep orange, with a brilliant red cheek; flesh yellow, red at the stone, sweet; ripens early in August.

Baltimore Rose. 1. *Ohio Hort. Soc. Rpt.* 9. 1857.

Very similar to Oldmixon Cling.

Bandel. 1. *Mich. Hort. Soc. Rpt.* 279. 1882. **2.** *Ibid.* 197. 1883.

This variety, grown from seed by a Mr. Bandel, Saugatuck, Michigan, closely resembles Early Crawford but ripens five days earlier.

Banner. 1. *Ont. Sta. Rpt.* **5**:107. 1898. **2.** *Am. Pom. Soc. Cat.* 32. 1899. **3.** *Mich. Hort. Soc. Rpt.* 107. 1903.

Banner originated in Essex County, Canada, about 1880. At Geneva, the fruit is small, fair in quality and the tree an uncertain yielder. In 1899 it was added to the fruit-list of the American Pomological Society. Tree large, vigorous; leaves thin; glands reniform; flowers small, pink; fruit small to above, roundish, slightly cordate; apex rounded, with a mamelon tip; skin tough, with short, fine pubescence, deep yellow, mottled with deep red; flesh yellow, stained with red at the pit, moderately juicy, meaty, mild; quality fair; stone broadly oval, slightly flattened, deeply grooved; ripens about a week after the Elberta.

Barber. 1. *Mich. Sta. Bul.* **104**:88. 1893. **2.** *Ibid.* **118**:32. 1895. **3.** *Ibid.* **152**:200. 1898.

Hinman. **4.** *Del. Sta. Rpt.* **5**:98. 1892.

Barber is thought to have originated in Allegan County, Michigan. The trees at Geneva are not productive and the fruits are only fair in quality. Tree upright, slightly spreading, vigorous; glands usually reniform; flowers small; fruit large, roundish-oval, halves noticeably unequal; cavity wide, flaring; suture enlarged on one side; apex prominent, with a recurved, mamelon tip; skin tough, thickly pubescent, lemon-yellow, with a dull carmine blush giving a bronze effect; flesh yellow, tinged with red at the stone, melting, mild subacid, lacks character; stone oval, dull brown, free; ripens the middle of September.

Barcelona Yellow Clingstone. 1. Prince *Treat. Fr. Trees* 17. 1820.

A large clingstone ripening in October.

Barker No. 13. 1. *Kan. Hort. Soc. Rpt.* 50. 1901.

This is a descendant of Golden Rareripe which originated with F. G. Barker, Salina, Kansas. Fruit large, downy, yellow, coarse.

Barnard. 1. Elliott *Fr. Book* 281. 1854. **2.** *Am. Pom. Soc. Cat.* 78. 1862. **3.** *Mich. Hort. Soc. Rpt.* 32. 1874. **4.** Budd-Hansen *Am. Hort. Man.* **2**:337. 1903.

Early Barnard. **5.** *Mag. Hort.* **14**:538. 1848. **6.** *Mich. Sta. Bul.* **169**:212. 1896.

Barnard, once a favorite in Michigan, is a seedling of Alberge and is often confused with Yellow Alberge and Yellow Rareripe, all being similar to Alberge. The variety has held a place in the American Pomological Society's fruit-list since 1862. Tree vigorous, productive, slightly

spreading; glands reniform; fruit large, roundish, with a distinct suture; apex small; skin yellow, nearly covered with dark purplish-red; flesh deep yellow, red at the pit, juicy, tender, rich; quality good; stone free; season the last of August.

Barnes. 1. Munson *Cat.* 6. 1893. **2.** *Tex. Sta. Bul.* **39**:809. 1896.

Barnes originated in Bell County, Texas, with a Mr. Barnes Parker. Tree vigorous; fruit medium in size, yellow; flesh firm, subacid; clingstone.

Baron Ackenthal. 1. *Guide Prat.* 40. 1895.

An Austrian variety with globose glands.

Baron Dufour. 1. Thomas *Guide Prat.* 39, 215. 1876. **2.** Lauche *Ergänzungsband* 697 fig., 698. 1883.

This sort was found by Baron Dufour in his gardens at Metz, Germany; it is called by some Grosse Magdalene von Metz. In 1872 it was introduced as Baron Dufour. Tree vigorous, productive; glands globose; fruit large, roundish; suture shallow; cavity wide, shallow; skin greenish-yellow, dark brownish-red in the sun; flesh clear yellow, tinged with red at the stone, juicy, melting, aromatic; stone large, oval, roundish at the base; ripens the last of August.

Baron Pears. 1. Carrière *Var. Pêchers* 81. 1867.

This variety was grown from seed by Baron Pears, Oostcamp, near Bruges, Belgium. Tree vigorous; leaves glandless; flowers large; fruit large, oblate, strongly sutured; skin pale yellow, striped with red where exposed; flesh white, tinged with red at the stone, firm, juicy, aromatic; stone free, bluntly oval; ripens the last of September.

Baronne de Brivazac. 1. Mathieu *Nom. Pom.* 387. 1889.

Listed in the reference given.

Barr Early. 1. *Fla. Sta. Bul.* **14**:6. 1891. **2.** *Ibid.* **62**:510. 1902.

A seedling of Peento which originated with Colonel John Barr, Micanopy, Florida. Fruit medium in size, showy; semi-cling; matures a week later than Peento.

Barr Late. 1. *Fla. Sta. Bul.* **14**:6. 1891. **2.** *Ibid.* **62**:510. 1902.

This is another of Colonel Barr's seedlings; it resembles Barr Early but matures two weeks later. Neither variety is planted commercially.

Barrington. 1. Brookshaw *Pom. Brit.* **1**:Pl. 23. 1817. **2.** Lindley *Guide Orch. Gard.* 255. 1831. **3.** *Am. Pom. Soc. Cat.* 78. 1862.

Buckingham Mignonne. **4.** Kenrick *Am. Orch.* 226. 1832.

Barringtoner Lieblingspfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:205, 206. 1838.

A Mr. Barrington, Burwood, Surrey, England, grew this variety about 1800. Barrington was entered on the fruit-list of the American Pomological Society in 1862 but remained there only a few years. Tree hardy, prolific; glands globose; flowers large; fruit large, roundish, somewhat elongated; skin pale yellowish, with crimson stripes and mottlings; flesh yellowish-white, tinged with red at the stone, melting, juicy; stone free; ripens late in September.

Batchelder. 1. Cole *Am. Fr. Book* 196. 1849.

Batchelder originated in Haverhill, Massachusetts, with William Batchelder; it is said to reproduce itself from seed. Fruit large, round, white, with a deep blush; flesh white, melting, juicy, vinous; ripens the last of September.

Baugh. 1. Downing *Fr. Trees Am.* 608. 1857.

Leaves with reniform glands; fruit medium in size, roundish; suture obscure; apex with a mucronate tip; skin pale yellow, with a slight blush towards the sun; flesh yellowish-white, melting, juicy, sweet; freestone; ripens the first of October.

Baxter Cling. 1. Wickson *Cal. Fruits* 314. 1889.

Wickson says this is a good cling similar to Orange Cling but earlier. It originated in Placer County, California, with William Baxter.

Bayne Favorite. 1. Kenrick *Am. Orch.* 183. 1841.

Introduced by a Dr. Bayne, Alexandria, Virginia, about 1843. Tree productive; fruit very large, oval, pointed; color pale yellow, pale red in the sun; flesh yellow, melting, juicy; freestone; ripens with Anne.

Bayne New Heath. 1. Kenrick *Am. Orch.* 196. 1841.

This is another of Dr. Bayne's seedlings which is said to be superior to Heath Cling with which it ripens.

Bealmear Cling. 1. J. R. Johnson *Cat.* 5. 1894.

J. R. Johnson, Coshocton, Ohio, states that this variety is a yellow-fleshed seedling raised some years ago by a Dr. Bealmear, Nashport, Ohio. Tree strong, willowy; fruit large, oblong, juicy, sweet, clingstone; ripens the third week in September.

Bear Early. 1. *Lond. Hort. Soc. Cat.* 93. 1831.

Listed in this reference.

Bear Late. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:63. 1900.

Listed as a strong grower in Canada.

Beatrice. 1. *Gard. Mon.* **13**:279. 1871. **2.** *Tex. Sta. Bul.* **39**:809. 1896. **3.** Budd-Hansen *Am. Hort. Man.* **2**:337. 1903.

Early Beatrice. **4.** *Gard. Chron.* 1323. 1872. **5.** *Gard. Mon.* **15**:315, 339, 340. 1873. **6.** *Am. Pom. Soc. Cat.* 28. 1875. **7.** Hogg *Fruit Man.* 443, 444. 1884.

This peach is a seedling of Rivers White Nectarine and was raised many years ago by Thomas Rivers, Sawbridgeworth, England. The American Pomological Society added Beatrice to its fruit-list in 1875 but dropped it in 1891. Fruit small to medium, round, a little pointed at the apex, marked on one side by a distinct suture; skin yellowish, almost covered with patches of bright red; flesh pale yellowish-white, melting, juicy, richly flavored, slightly adherent to the pit; season remarkably early, ripening in England in July.

Beauchamp. 1. *Tex. Sta. Bul.* **39**:809. 1896.

Tree rather weak in growth, unproductive; fruit medium in size, round, yellow, with a red cheek; flesh yellow, firm, mild acid; quality fair; freestone; ripens the latter part of August.

Beauté de la Saulsaie. 1. Thomas *Guide Prat.* 51. 1876.

A glandless variety of doubtful merit.

Beauty of Salisbury. 1. Elliott *Fr. Book* 290. 1854.

A foreign, freestone variety subject to mildew; fruit large, roundish, yellowish-white, blushed with red; ripens in September.

Beaver No. 2. 1. *Am. Pom. Soc. Rpt.* 45. 1897.

Fruit roundish, above medium in size; skin thin, white, washed and splashed with red; pubescence short; flesh white, purplish at the stone, mild subacid; quality very good; stone free; ripens early in August.

Beckwith Early. 1. *W. N. Y. Hort. Soc. Rpt.* 50. 1879.

Beckwith Early is a large, early clingstone raised by a Mr. Beckwith, Olathe, Kansas.

Beckworth. 1. *Cultivator* 3rd Ser. **1**:155. 1853.

A hardy, prolific seedling, immune to mildew, raised by Dr. Beckworth, Oswego, New York; flesh yellow; pit small; ripens the first of September.

Becquett Late. 1. *Tex. Sta. Bul.* **39**:810. 1896.

This variety may be identical with Bequette Free. Tree vigorous, productive; fruit medium to small, oval, light yellow, subacid; quality good; freestone; season late in Texas.

Beer Late White Cling. 1. *N. J. Hort. Soc. Rpt.* 42. 1878.

This variety originated with Samuel Beer, Keyport, New Jersey. Fruit large, rich, fine for brandying; ripens about the middle of October.

Beers Late. 1. Lovett *Cat.* 36. 1890.

Beers Melcatoon. **2.** *Ill. Hort. Soc. Rpt.* 184. 1898.

Beers Late Melocoton. **3.** *Okla. Sta. Bul.* **2**:14.

1892.

Beers Late is a seedling of Late Crawford with which it ripens. Tree strong; fruit rather large, yellow, more or less red.

Beers Late Red Rareripe. 1. Kenrick *Am. Orch.* 191. 1841.

Beers Red Rareripe. **2.** Bridgeman *Gard. Ass't* **Pt. 3**:105. 1857.

Joseph Beers, Middletown, New Jersey, first grew this peach. Fruit very large, oblong; skin nearly white, red where exposed; flesh firm, juicy, high in quality; ripens the last of September.

Beers Smock. 1. *Am. Pom. Soc. Cat.* 28. 1875. **2.** *Mich. Hort. Soc. Rpt.* 299. 1875. **3.** Budd-Hansen *Am. Hort. Man.* **2**:337. 1903. **4.** Waugh *Am. Peach Orch.* 198. 1913.

Beer. **5.** *Tex. Sta. Bul.* **39**:815. 1896.

Beers Smock and Smock are identical as grown at this Station. Pomological authorities now very generally agree that the two names have been given the same fruit. For a description of Beers Smock see Smock.

Bell Favorite. 1. *Mich. Sta. Bul.* **169**:208. 1899.

Tree fairly vigorous, upright, medium productive; glands globose; flowers small; fruit large, oval, tapering; skin light yellow, with a small blush of red, lightly pubescent; flesh yellow, stained with red at the pit, juicy, vinous; quality fair; pit nearly free; season towards the end of September.

Bell October. 1. *Kan. Hort. Soc. Rpt.* 38. 1902-03. **2.** Munson *Cat.* 7. 1904-05.

Bell October is a large, yellow peach of fine flavor ripening

after Salwey and often keeping until November. It originated in Denton County, Texas.

Belle de Bade. 1. *Guide Prat.* 42. 1895.

Fruit very large, yellow; glands globose; flesh firm, sweet, aromatic; matures in September.

Belle de Beaucaire. 1. *Lond. Hort. Soc. Cat.* 94. 1831. **2.** Elliott *Fr. Book* 290. 1854. **3.** Leroy *Dict. Pom.* **6**:52, 53 fig. 1879.

This variety originated near Beaucaire, Gard, France. Glands small, globose; flowers small; fruit large, roundish; cavity narrow, deep; apex with a mamelon tip; skin greenish-yellow, spotted with carmine in the sun; flesh greenish-white, red at the stone, firm, juicy, pleasingly acidulated; stone free, brown; ripens the last of August.

Belle Beausse. 1. Leroy *Dict. Pom.* **6**:54 fig., 55, 56. 1879.

Belle Beauce. **2.** Kenrick *Am. Orch.* 212. 1832.

Belle Bausse. **3.** Prince *Pom. Man.* **2**:11, 12. 1832. **4.** Mas *Le Verger* **7**:163, 164, fig. 80. 1866-73. **5.** Downing *Fr. Trees Am.* 599. 1869.

Belle-Bauce. **6.** Poiteau *Pom. Franc.* **1**:No. 15, Pl. 1846.

Schöne von Beauce. **7.** Dochnahl *Führ. Okstkunde* **3**:202, 203, 1858.

This variety was raised long ago by Joseph Beausse, Montreuil, Bellay, France. Because of its close resemblance to Grosse Mignonne the two have often been confused. Fruit large, somewhat flattened at the base and apex, with a distinct suture; skin thin, with fine pubescence, greenish-yellow, highly colored with deep red; flesh white, tinged

with red around the pit, juicy, tender, melting, vinous; quality good; freestone; season early September.

Belle Beauté. 1. Liegel *Syst. Anleit.* 184. 1825.

An excellent, scarlet-red freestone ripening the end of September.

Belle Cartière. 1. *Pom. France* **6**:No. 8, Pl. 8. 1869.

Armand Jaboulay introduced Belle Cartière which he found in the vineyard of Madame Cartière, Oullins, Rhône, France. Glands reniform; flowers small; fruit large, globular; suture more or less pronounced; skin heavily pubescent, white, almost entirely covered with reddish-purple; flesh white, with red radiating from the pit, melting, vinous, juicy; pit nearly free, obtuse, deeply grooved; ripens the first week in September.

Belle de Charleville. 1. Thomas *Guide Prat.* 52. 1876.

Fruit very large, of first quality; glands reniform; ripens in September.

Belle Conquête. 1. Carrière *Var. Pêchers* 74. 1867.

Tree moderately vigorous; glands globose, small; flowers very large; fruit large, roundish, often flattened at the ends; skin heavily pubescent, whitish-yellow, mottled with carmine; flesh whitish, reddish at the pit, melting, sweet; stone large, oval, plump, free; ripens the last of August.

Belle de la Croix. 1. Hogg *Fruit Man.* 214. 1866. **2.** Thomas *Guide Prat.* 44. 1876.

This variety was first grown in Bordeaux, France. Tree hardy; glands reniform; flowers small; fruit large, round; skin white, washed with purple; flesh fine, reddish about

the stone, sweet, aromatic; of first quality; ripens the end of August.

Belle de Doué. 1. Hogg *Fruit Man.* 214, 215. 1866. **2.** Mas *Le Verger* **7**:139, 140. fig. 68. 1866-73. **3.** Leroy *Dict. Pom.* **6**:58, 59. 1879.

Schöne von Doué. **4.** Lauche *Deut. Pom.* **VI**:No. 20, Pl. 1882.

This peach was grown from seed in 1839 by a M. Dimia-Chatenay at Doué-la-Fontaine, Maine-et-Loire, France. Glands globose; flowers small; fruit medium to large, roundish, with a distinct suture; skin greenish-yellow, washed and mottled with red; flesh greenish-white, red at the pit, juicy, sweet, with a delicious, aromatic flavor; stone free; ripens about the middle of August.

Belle Dupont. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Belle et Bonne. 1. *Ann. Pom. Belge* **1**:49, 50, Pl. 1853.

Schöne Magdalene. **2.** Dochnahl *Führ. Obstkunde* **3**:199. 1858.

A. Bivort grew this seedling about 1831 and, because of size and quality of fruit called it Belle et Bonne. Leaves glandless; flowers large; fruit large, roundish, deeply sutured; skin heavily pubescent, clear yellow, with a bright red cheek; flesh white, fine, melting, aromatic; freestone; ripens the latter part of August.

Belle Henri Pinaud. 1. *Gard. Chron. N. S.* **18**:472. 1882. **2.** *Soc. Nat. Hort. France Pom.* 292 fig., 293. 1904.

A French variety introduced to commerce about 1881. Tree

vigorous; glands reniform; flowers large; fruit large, roundish, slightly flattened at apex; skin greenish-yellow, deep red where exposed; faintly sutured; flesh whitish-yellow, fine, sweet; very good in quality; stone free, elongated; ripens the middle of September.

Belle Impériale. 1. *Mag. Hort.* **34**:89. 1868. **2.** *Cat. Cong. Pom. France* 93 fig. 1906.

Obtained by a M. Chevalier, Montreuil, Seine, France. Tree vigorous; glands globose; flowers medium in size; fruit large, spherical, slightly oblique near the apex; shallowly sutured; skin heavily pubescent, yellow, blushed with deep red in the sun; flesh whitish-yellow, faint carmine near the stone, melting, vinous, sweet; quality good; ripens the middle of September.

Belle de Liège. 1. Thomas *Guide Prat.* 48. 1876.

Belle de Liège produces large, excellent fruit of first quality; glands absent; flowers medium in size; ripens the end of August.

Belle de Logelbach. 1. Mathieu *Nom. Pom.* 388. 1889. **2.** *Guide Prat.* 40. 1895.

Tree vigorous, productive; glands reniform; fruit very large, juicy, aromatic; ripens the middle of September.

Belle de Mes Yeux. 1. Thomas *Guide Prat.* 52. 1876.

Described as a medium-sized peach, with a reddish-brown blush on a green ground; ripens early in September.

Belle de Neuville. 1. *Cat. Cong. Pom. France* 90 fig. 1906.

A French seedling raised by C. Jacquet, Neuville, France. Tree vigorous; glands globose; flowers very large; fruit medium in size, roundish, faintly sutured; skin amber,

washed with deep purple where exposed; flesh amber, tinged with red at the pit, juicy, sweet, sprightly; quality excellent; pit large, broad, plump, nearly free; ripens the last of August.

Belle d'Orbassano. 1. Thomas *Guide Prat.* 48. 1876.

Mentioned as a very late, but excellent, Italian variety with reniform glands.

Belle de Saint-Geslin. 1. *Gard. Mon.* **15**:244. 1873. **2.** *Le Bon Jard.* 326. 1882.

A variety discovered some years ago in the ruins of the St. Geslin tower near Richelieu, Indre-et-Loire, France, by a M. Joutron. Fruit large, whitish-green, splashed with purple; flesh white, melting; very good; stone free; matures the latter half of October.

Belle de Saint-Geslin Blanche. 1. *Gard. Chron.* N. S. **22**:472. 1884.

A white-fruited sport from the Belle de Saint-Geslin, much esteemed by the French as a late peach.

Belle de Toulouse. 1. Leroy *Dict. Pom.* **6**:60 fig., 61. 1879.

Belle Toulousaine. **2.** Carrière *Var. Pêchers* 54. 1867.

Schöne Toulouserin. **3.** Mathieu *Nom. Pom.* 414. 1889.

Jean Rey, a nurseryman at Toulouse, Haute Garonne, France, raised this peach from seed in 1859. Leroy combines Souvenir de Jean Rey with this variety but the two are apparently distinct. Fruit large, roundish-oval, with a shallow suture; skin clear yellow, washed with dark red; flesh greenish-white, red at the pit, juicy, with a sweet, vinous flavor; stone free; season the first of September.

Belle de Vitry. 1. Duhamel *Trait. Arb. Fr.* **2**:36, 37, Pl. XXV. 1768. **2.** Lindley *Guide Orch. Gard.* 244, 245. 1831. **3.** Downing *Fr. Trees Am.* 472. 1845. **4.** Leroy *Dict. Pom.* **6**:61 fig., 62. 1879.

Bellis. **5.** Miller *Gard. Dict.* 1752.

Beauty of Vitry. **6.** Prince *Pom. Man.* **1**:193. 1831.

Schöner von Vitry. **7.** Dochnahl *Führ. Obstkunde* **3**:210. 1858.

According to Leroy this peach was raised more than two centuries ago at Vitry-sur-Seine, France, and was first mentioned by Merlet in 1675. Some writers have confused it with Admirable. Leaves glandless or with few globose glands; fruit of medium size, broad, with a deep suture; skin pale yellowish-white, tinged and marbled with bright and dull red; flesh greenish-yellow, red at the pit, firm, juicy, rich; quality good; stone free; season the last of September.

Bellegarde. 1. Leroy *Dict. Pom.* **6**:62, 63 fig. 1879.

This name has been applied to another peach called Galande but the variety described by Leroy in this reference appears to be distinct. Fruit medium in size, roundish, compressed; skin covered with dark red in the sun; flesh whitish, juicy, sweet, with a pleasant flavor; stone free; ripens the first of September.

Bellows. 1. Langley *Pomona* 105, Pl. XXXI fig. V. 1729.

Bellows is a good bearer with fruit of fair quality. Color greenish-yellow, with a mottled blush; flesh white, with a trace of red at the pit; ripens the first of August.

Beltzar. 1. *Mag. Hort.* **13**:110. 1847.

An early variety originating in Coshocton County, Ohio.

Beltzar Early Rareripe. 1. *Mag. Hort.* **13**:110. 1847. *2.* Elliott *Fr. Book* 291. 1854.

Originated in Coshocton County, Ohio. Glands globose; fruit roundish, blushed with red in the sun; ripens in August.

Ben Hur. 1. *Mich. Sta. Sp. Bul.* **44**:30. 1910.

A variety, thought to have originated in Michigan, which ripens just before Elberta.

Benade. 1. *Jour. Hort.* N. S. **7**:429. 1864.

Benade is an American peach of medium size; yellow flesh; poor quality; ripening in August.

Benango. 1. *Tex. Sta. Bul.* **39**:810. 1896.

Listed as growing in Texas.

Bennett Rareripe. 1. Kenrick *Am. Orch.* 199. 1841. **2.** Elliott *Fr. Book* 291. 1854.

Of American origin. Glands globose; fruit large, whitish-yellow, blushed with red; deficient in flavor; ripens early in August.

Bequette Cling. 1. *Mich. Sta. Bul.* **118**:32. 1895. **2.** *Am. Pom. Soc. Cat.* 32. 1899.

Becquette Cling. **3.** *Del. Sta. Rpt.* **13**:91. 1901.

Bequette Cling originated about 1860 in a seedling orchard belonging to Benjamin Bequette, Visalia, California. In 1877 J. H. Thomas of the same place gave the variety the name of the originator and commenced propagating it. This peach is similar to Bequette Free, see page 184, a variety of the same origin, except in the clinging tendency of the stone.

Berckmans. 1. *Del. Sta. Rpt.* **13**:91. 1901.

Dr. Berckmans. **2.** *Rural N. Y.* **54**:106. 1895. **3.** *Ga. Sta. Bul.* **42**:235. 1898.

Dr. L. E. Berckmans, Augusta, Georgia, grew Berckmans from a pit of General Lee about 1880. Glands reniform; fruit large, creamy-white, blushed and mottled with crimson; flesh white, stained with red at the pit, melting, juicy, vinous; season follows Thurber.

Bergame. 1. Thomas *Guide Prat.* 52. 1876.

Tree vigorous, productive; fruit very large, roundish, irregular; skin blushed with purple on a deep yellow ground; of first quality; ripens early in October.

Bergen. 1. Elliott *Fr. Book* 272. 1854.

Bergen Yellow. **2.** Kenrick *Am. Orch.* 199. 1841. **3.** Downing *Fr. Trees Am.* 490. 1845. **4.** *Proc. Nat. Con. Fr. Gr.* 51. 1848.

Bergen is probably a native of Long Island. It resembles Yellow Rareripe but ripens about ten days later. The American Pomological Society added this variety to its list of fruits in 1848, a place which it still holds. Tree bears well; glands reniform; flowers small; fruit large, globular, depressed; suture distinct; skin deep orange, with a broad, dark red cheek; flesh yellow, melting, juicy, rich; matures early in September.

Bermuda Cling. 1. *Am. Pom. Soc. Rpt.* 191. 1860.

Recommended for planting in Mississippi.

Bernard Verlot. 1. Carrière *Var. Pêchers* 52, 53. 1867.

A French variety obtained by a M. Carrelet, Paris, France. Tree vigorous; glands reniform; flowers small; fruit very large, roundish; cavity wide, shallow; skin with short pubescence, streaked and spotted with reddish-violet where

exposed; flesh whitish, stained at the pit, melting, very juicy, aromatic; stone nearly free, obovate, deeply grooved at the sutures.

Bernardin de Saint-Pierre. 1. Leroy *Dict. Pom.* **6**:65 fig., 66. 1879.

An old, French seedling found growing about 1865 in the nurseries of Jamin and Durand near Paris, France. Tree moderately productive; glands reniform; flowers small; fruit above medium in size, roundish-oval; suture faintly marked; skin heavily pubescent, whitish-yellow, mottled with purple in the sun; flesh whitish, carmine at the stone, melting, very juicy, sweet, sprightly; quality good; stone small, free, ovoid, plump; ripens in September.

Berry. 1. *U. S. D. A. Pom. Rpt.* 41. 1895.

Fruit roundish, medium in size; cavity wide, deep; suture distinct; apex swollen; skin thin, tough, covered with short pubescence, creamy-white, washed with red; flesh whitish, tinged with red at the stone, meaty, tender for a cling, very juicy, sweet, rich; quality good; stone small, oval, clinging; ripens in the District of Columbia early in September.

Bertholome. 1. Thomas *Guide Prat.* 52. 1876.

Barthélemy. **2.** Mathieu *Nom. Pom.* 387. 1889.

A very large, yellow, late peach with small flowers and reniform glands.

Bessie Kerr. 1. J. S. Kerr *Cat.* **4.** 1898.

This variety is described briefly by J. S. Kerr, Denton, Maryland. Tree vigorous, upright, productive; fruit large, oblong, white; clingstone; matures in August.

Best June. 1. Ramsey *Cat.* 3. 1912.

According to F. T. Ramsey and Son, Austin, Texas, this peach was originated about 1894 by John Burkhardt, Fayette County, Texas. It was introduced by F. T. Ramsey and Son in 1906, and is said to excel Mamie Ross. Tree very productive; fruit light-colored, with a red cheek; stone semi-clinging; season the last of June in Texas.

Besy Robin. 1. Thomas *Guide Prat.* 52. 1876. **2.** Leroy *Dict. Pom.* **6**:66 fig., 67. 1879.

Raised by Besy Robin, Angers, Maine, France, about 1863. Tree productive; glands reniform; flowers small; fruit large, globular, truncate; suture prominent; skin thick, greenish-yellow, blushed with red, deeper where exposed; flesh whitish-yellow, stained at the pit, firm though melting, very juicy, sprightly; of first quality; stone free, very large, roundish-oval, plump; matures the middle of September.

Beville. 1. *Mag. Hort.* **15**:503. 1849.

Beville has a dwarfish, compact habit of growth and bears numerous, large blossoms. Grown only in the South.

Bexar. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** *Ibid.* **39**:810. 1896.

Tree vigorous, moderately productive; glands globose; fruit ovate, light creamy; flesh slightly acid; freestone; ripens the middle of August.

Bianci di Nizza. 1. *Gard. Chron.* 907. 1858.

Exhibited at the Imperial and Royal Horticultural Society of Tuscany, Italy.

Bickell. 1. *Mich. Sta. Bul.* **104**:88. 1894. **2.** *Ibid.* **194**:45. 1901.

An undesirable, late, white freestone of medium size, ripening with Salwey.

Biddle. 1. Ill. Hort. Soc. Rpt. 167. 1895.

A white-fleshed clingstone ripening the middle of July.

Bidwell Early. 1. *Gard. Mon.* **28**:334. 1886. **2.** *U. S. D. A. Rpt.* 575, Pl. VI. 1888.

3. *Am. Pom. Soc. Cat.* 44. 1891. **4.** *Fla. Sta. Bul.* **62**:511. 1902.

One of the seedlings of Peento raised about 1886 by A. I. Bidwell, Arlington, Florida. The variety was placed in the fruit-list of the American Pomological Society in 1891. Fruit medium in size, oblong; cavity abrupt; apex rounded, with a small, recurved point; skin velvety, creamy-white, deep red where exposed; flesh firm, whitish, juicy; quality very good; stone oval, thick, clinging; season in Florida May 20th to June 15th.

Bidwell Late. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *Fla. Sta. Bul.* **62**:511. 1902.

Another of A. I. Bidwell's seedlings of Peento that does well further north than some varieties of the same origin. Placed in the fruit-list of the American Pomological Society in 1891. Fruit large, roundish, yellowish-white; flesh meaty, juicy; quality excellent; stone adherent; matures in Florida June 15th to July 1st.

Bilice. 1. Rea *Flora* 211. 1676.

"The Bilice peach is something like the Newington."

Billmeyer. 1. *Mich. Sta. Sp. Bul.* **44**:30. 1910.

Billmeyer is a sprout from the stem of an old Crawford tree, raised by J. H. Billmeyer, Holloway, Michigan. Tree productive; fruit roundish-oblate, medium to large; cavity deep; skin thick, tough, with long pubescence, pale yellow, blushed with dark crimson; flesh yellow, stained with red at the stone, meaty, tender, juicy, sprightly; quality very good;

stone oval, small, free; matures between the two Crawfords.

Bilyeu. 1. *Am. Pom. Soc. Cat.* 21. 1897. **2.** Budd-Hansen *Am. Hort. Man.* **2**:338. 1903. **3.** Waugh *Am. Peach Orch.* 199. 1913.

Bilyeu Comet. **4.** *Gard. Mon.* **18**:14, 27, 140, 141. 1876.

Bilyeu's October. **5.** Fulton *Peach Cult.* 177. 1908.

This peach seems to have originated more than forty years ago as a chance seedling in Caroline County, Maryland, having been found and propagated by a Mr. Bilyeu. It was once quite popular in Maryland. Tree moderately productive, vigorous; fruit medium in size, round; skin greenish-white, with a red cheek; flesh white, firm, sweet; of fair quality; stone free; ripens very late.

Binney Large Red. 1. Thomas *Guide Prat.* 48. 1876.

Listed as having small flowers and globose glands.

Bird Beauty. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Exhibited at the World's Fair in 1893, as having grown in Illinois.

Bishop. 1. *Okla. Sta. Bul.* **2**:14. 1892. **2.** *U. S. D. A. Pom. Rpt.* 41. 1895. **3.** *Am. Pom. Soc. Cat.* 32. 1899. **4.** *Mich. Sta. Bul.* **169**:208. 1899.

Bishop Early. **5.** *Ohio Sta. Bul.* **170**:172. 1906. **6.** Waugh *Am. Peach Orch.* 199. 1913.

According to Waugh, Bishop originated in California. Tree vigorous, hardy, productive; glands globose; fruit medium to large, round, with a distinct suture; color creamy-white,

with a dark red blush; flesh white, juicy, tender, vinous; quality good; pit free; season the last of August.

Black. 1. *Am. Pom. Soc. Rpt.* 45. 1897.

Dr. Black. **2.** *Am. Gard.* **18**:715. 1897.

Black is a seedling of the Smock type, named in honor of Dr. J. J. Black, Newcastle, Delaware. Fruit large, round; skin heavily pubescent, yellow, with a blushed cheek; flesh yellow, red at the pit, rich subacid; quality very good; stone oval; ripens late.

Black Early. 1. *Gard. Mon.* **14**:280. 1872.

Black Extra Early. **2.** Downing *Fr. Trees Am.* 1st App. 120. 1872.

A very early, white-fleshed seedling found on the farm of Dr. J. Stayman, Leavenworth, Kansas. The fruit is said to surpass Hale Early in size and quality.

Black Seedling. 1. *Rural N. Y.* **62**:562. 1903.

A seedling of Mamie Ross raised by J. H. Black, Hightstown, New Jersey. The fruit ripens with Sneed but is higher in quality and is more resistant to rot.

Blacke. 1. Parkinson *Par. Ter.* 582. 1629.

"The Blacke Peach is a great large Peach, of a very darke browne colour on the outside, it is of a waterish taste, and late ripe."

Blake. 1. *Mich. Sta. Sp. Bul.* **44**:30. 1910.

A peach that William Blake, Niles, Michigan, says is the earliest, yellow freestone.

Blanc de City. 1. Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Tree moderately vigorous, very productive; glands reniform; flowers medium to large; fruit medium in size, globular; suture distinct; cavity wide; skin covered with short pubescence, whitish-yellow, dark red where exposed; flesh whitish, melting, juicy; stone large, roundish, nearly free; ripens early in September.

Blanchard. 1. Munson *Cat.* 7. 1904-05.

The catalog of T. V. Munson, Denison, Texas, states that this variety is a seedling originated and named by C. C. F. Blanchard, Runnels County, Texas. It is similar to Chinese Cling but ripens later.

Blanche d'Ekenholm. 1. *Mag. Hort.* **20**:270. 1854.

Fruit large, yellowish-white, lightly marked with carmine; flesh whitish-yellow, sweet, sugary; stone free; ripens at the end of July.

Blanche Énorme de Mézel. 1. Carrière *Var. Pêchers* 64. 1867.

Tree vigorous; glands reniform; flowers large, rose-colored; fruit large, spherical, rarely elongated; skin very pubescent, pale yellow, occasionally blushed in the sun; flesh yellow, stained at the pit, melting, sweet; stone oval, free; ripens the second half of August.

Blanche Tardive de Sabarot. 1. Mathieu *Nom. Pom.* 388. 1889.

Listed in this reference.

Blanton Cling. 1. Downing *Fr. Trees Am.* 635. 1857.

Yellow Blanton Cling. **2.** Elliott *Fr. Book* 277. 1854.

A seedling of Lemon Cling and very similar to it but a few

days later. Leaves large; glands reniform; fruit large, resembling Lemon Cling. Reproduces itself from seed.

Bledsoe Early Cling. 1. *W. N. Y. Hort. Soc. Rpt.* 50. 1879. **2.** *Ibid.* 110. 1880.

A seedling raised by Ira L. Wood, Pleasant Hill, Missouri. Said to be earlier and better than Amsden.

Bledsoe Seedling. 1. Hooper *W. Fr. Book* 214. 1857.

A good commercial peach about Frankfort, Kentucky. Leaves glandless; flowers large; fruit roundish-oblong, of medium size, yellow, with a red blush; flesh mild, sweet; ripens in September.

Blodgett's Seedlings. 1. *Gard. Mon.* **24**:334, 335. 1882.

The following are seedlings mentioned as having originated with a Lorin Blodgett:

Blodgett Crimson Cling,
Blodgett Crimson Freestone,
Blodgett Golden Cling,
Blodgett Golden Freestone,
Blodgett Golden October Cling,
Blodgett Golden Pointed Cling.

These peaches do not seem to have been recognized by other writers.

Blondeau. 1. Thomas *Guide Prat.* 48. 1876. **2.** *Soc. Nat. Hort. France Pom.* 296 fig., 297. 1904.

Joseph Blondeau, Montrueil, Seine, France, introduced this variety about 1856. Tree moderately vigorous, very productive; glands globose; flowers small, deep red; fruit large, roundish; cavity large, deep; skin milky-white, purple where exposed; flesh milky-white, reddish around the pit, melting, sweet, aromatic; quality excellent; stone elliptical, plump, free; ripens late in September.

Blood Free. 1. *Am. Pom. Soc. Cat.* 21. 1897.

Blood Freestone. **2.** Downing *Fr. Trees Am.* 601. 1869.

Indian Blood Freestone. **3.** *Am. Pom. Soc. Cat.* 28. 1873. **4.** *Ga. Hort. Soc. Rpt.* 25. 1876.

Blood Free was probably raised by John M. Ives, Salem, Massachusetts, and is distinct from Blood Cling in having its stone free. The American Pomological Society placed the variety in its list of fruits in 1873 as Indian Blood Freestone but in 1897 shortened the name to Blood Free. Tree vigorous, hardy; fruit of medium size, compressed; apex roundish; skin greenish-white overspread with splashes and stripes of dark red; flesh blood-red throughout, juicy, coarse, tough and meaty; quality fair; stone free; season very late.

Bloor. 1. *Mich. Sta. Sp. Bul.* **44**:31. 1910.

Named after the originator, John Bloor, Mears, Michigan. Tree upright, exceptionally hardy in bud and branch; fruit resembles Kalamazoo with which it ripens but is superior to it.

Blush. 1. *Del. Sta. Rpt.* **13**:92. 1901.

Beauty Blush. **2.** Bailey *Ann. Hort.* 184. 1892.

A little known seedling from Chinese Cling raised by J.H. Jones, Herndon, Georgia. Fruit large, high-colored, melting, delicious; freestone; ripens in Georgia the last of June.

Bogg Leviathan. 1. *W. N. Y. Hort. Soc. Rpt.* 114. 1880.

Bogg Mammoth. **2.** *Am. Pom. Soc. Rpt.* 161. 1881.

A very large peach of good quality, ripening three weeks later than Late Crawford, excellent for drying and canning. Raised by a Mr. Bogg, Bonham, Texas.

Boisselot. 1. Thomas *Guide Prat.* 52. 1876. **2.** Leroy *Dict. Pom.* **6**:68 fig., 69. 1879.

Auguste Boisselot, Nantes, Loire-Inferieure, France, originated this variety. Glands reniform; flowers small, rose-colored; fruit large, roundish-oval; skin thick, whitish, marbled and streaked with red; flesh white, melting, rather firm, juicy, often disagreeable; stone elongated, free; ripens the last of August.

Bokhara. 1. *Ia. Hort. Soc. Rpt.* 377. 1896. **2.** *Ibid.* 256. 1897. **3.** *Mich. Sta. Bul.* **187**:68. 1901. **4.** *Am. Pom. Soc. Cat.* 36. 1909.

Bokhara is remarkable for great hardiness but has little else

to recommend it. It was introduced by the late J. L. Budd from pits received from Bokhara, Russia, about 1890 and in 1909 was added to the fruit-list of the American Pomological Society. Several distinct peaches are grown under this name, probably all from the pits planted by Professor Budd. As Bokhara grows on the Station grounds the leaves are large; glands reniform; flowers appear in mid-season, medium in size, pink; fruit of medium size, oblong-oval, bulged near the apex making the halves unequal; suture shallow; apex with a prolonged tip; skin thin, tender, with a thick, short pubescence, greenish-yellow, pale, faintly blushed and striped with dull red; flesh greenish-white, stringy, mealy, sweet; quality poor; stone oval, narrow, conspicuously winged; ripens late in August.

Boley. 1. *New Haven Nur. Cat.* 6. 1899-1900.

This variety is described in the catalog of the New Haven Nurseries, New Haven, Missouri, as a large, white-fleshed variety ripening in Missouri about August 20th.

Bollweiler Favorite 1. Mas *Le Verger* **7**:33, 34, fig. 15. 1866-73. **2.** Lauche *Deut. Pom.* **VI**:No. 2, Pl. 1882.

Obtained by Eugene Baumann, Bollweiler, Elsass, Germany. Tree productive; glands reniform; flowers large; fruit large, roundish, flattened at the base; suture shallow; skin tender, whitish-yellow, blushed; flesh white, tender, sweet, pleasing; stone oval, free; ripens early in August.

Bollweiler Magdalene. 1. Kenrick *Am. Orch.* 177. 1835. **2.** Dochnahl *Führ. Obstkunde* **3**:197. 1858.

Bollwiller de Madeleine. **3.** *Lond. Hort. Soc. Cat.* 98. 1831.

Grosse-Madeline. **4.** Thomas *Guide Prat.* 40, 219. 1876.

Another variety from the same source as above. Tree vigorous, productive; glandless; flowers large; fruit medium in size, roundish; suture shallow; skin greenish-white; flesh very pleasing; stone free; ripens the last of August.

Bonanza. 1. *Am. Pom. Soc. Rpt.* 161. 1881. **2.** *Mich. Sta. Bul.* **169**:208. 1899.

Bonanza is of Texas origin and is planted only in the South. It is very late in ripening and is not productive nor is the fruit high in quality on the Station grounds. Tree vigorous, hardy; glands reniform; flowers appear in mid-season, small, dark pink at the edges; fruit small to above, roundish-oval, with a prune-like neck, halves unequal; apex with a small, mamelon tip; skin tough, with long, coarse pubescence, creamy-white, with a small blush of lively red; flesh white, rather dry, stringy, with a slight astringency; stone oval, slightly flattened, with a long, sharp apex; ripens the second week of October.

Bonito. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** *Ibid.* **39**:815. 1896.

Vigorous, productive; glands reniform; fruit rather small, roundish, with an acute projection; color creamy-white; stone adherent; ripens July 25th.

Bonlez. 1. Mas *Le Verger* **7**:43, 44, fig. 20. 1866-73. **2.** Downing *Fr. Trees Am.* 606. 1869.

Bonlezer Lackpfirsich. **3.** Dochnahl *Führ. Obstkunde* **3**:212. 1858.

Bonlez was obtained by Bivort of Belgium about 1830. Tree moderately productive; glands reniform; flowers large; fruit large, roundish, depressed, deeply sutured; skin downy, white, blushed; flesh white, melting, juicy, sweet, aromatic; of first quality; stone oval, thick, free; ripens the middle of September.

Bonne Dame de Laeken. 1. Thomas *Guide*

Prat. 52. 1876.

A variety of Belgian origin; fruit large; tree productive.

Bonne Gros de Noisette. 1. Downing *Fr. Trees Am.* 601. 1869.

Guter grosser Lackpfirsich. **2.** Dochnahl *Führ. Obstkunde* **3**:211. 1858.

Originated with a M. Noisette, Paris, France. Fruit large, roundish, depressed; suture deep; color white, faintly marbled in the sun; flesh yellowish-white, juicy, vinous, aromatic; freestone; ripens in September.

Bonne Grosse. 1. Noisette *Man. Comp. Jard.* **2**:480. 1860.

Bonne Grosse originated about 1820 in France. Glands globose; flowers small; fruit very large, roundish, greenish, blushed with red; flesh firm, vinous, good; ripens at the end of September.

Bonne-Julie. 1. Thomas *Guide Prat.* 52, 216. 1876.

Fruit large; skin washed and spotted with carmine-red; flesh melting, very juicy, pleasing; ripens the second half of August.

Bonneuil. 1. Hogg *Fruit Man.* 227. 1866. **2.** Carrière *Var. Pêchers* 46. 1867.

Bonneuil Lackpfirsich. **3.** Dochnahl *Führ. Obstkunde* **3**:216. 1858.

This is a very late clingstone ripening the second week in November; a long keeper. Glandless; flowers large; fruit above medium in size, roundish, distinctly sutured; apex mamelon; skin greenish-white, with a faint blush in the sun; flesh firm, white, juicy; not highly flavored.

Bonouvrier. 1. Mas *Le Verger* **7**:147, 148, fig. 72. 1866-73. **2.** Bobbink & Atkins *Cat.* 119. 1914.

Bonouvrier originated with a M. Bonouvrier, Montreuil, Seine, France. Glands globose; flowers medium in size; fruit large, roundish, compressed; suture more pronounced at the apex; skin white, largely blushed with deep purple; flesh white, stained at the pit, melting, sweet; stone nearly free; ripens at the end of September.

Boquier. 1. Wickson *Cal. Fruits* 316. 1889.

A large, yellow, Californian variety with good shipping qualities.

Bordeaux. 1. *Am. Pom. Soc. Cat.* 28. 1875.

Bordeaux Cling. **2.** Downing *Fr. Trees Am.* 635. 1857.

Belle de Bordeaux. **3.** *Can. Exp. Farm Bul.* 2d Ser. **3**:63. 1900.

Bordeaux was raised from a stone brought from Bordeaux, France. It held a place on the fruit-list of the American Pomological Society from 1875 until 1891. Fruit large, oblong, a little one-sided; suture shallow; skin downy, lemon-yellow, with a red cheek; flesh yellow, red at the pit, juicy, melting, vinous; stone clinging; ripens early in August.

Böttchers Frühpfirsich. 1. Mas *Pom. Gen.* **12**:185. 1883.

Not described in this reference.

Bourdeaux. 1. Rea *Flora* 211. 1676. **2.** Miller *Gard. Dict.* 1752.

Listed among yellow varieties of lesser merit.

Bourdine. 1. Langley *Pomona* 102, Pl. 28 fig. 5. 1729. **2.** Duhamel *Trait. Arb. Fr.* **2**:20, 21, Pl. 12. 1768. **3.** Lindley *Guide Orch. Gard.* 245, 246. 1831. **4.** *Gard. Chron.* 152. 1865. **5.** Leroy *Dict. Pom.* **6**:70, 71 fig., 72, 73, 74. 1879.

Bourdin Lackpfirsich. **6.** Dochnahl *Führ. Obstkunde* **3**:208, 209. 1858.

Boudin. **7.** Hogg *Fruit Man.* 215. 1866.

Bourdine is an old French sort written of by Merlet and Quintinye. It has been confused with Royale, Louis XIV having so named it on receiving it from his gardener, Bourdine. Duhamel maintains that these two are distinct varieties and we have followed him. Leaves with globose glands; flowers small, edged with carmine; fruit large, roundish, halves unequal; suture deep and wide; skin greenish-white, blushed and marbled; flesh white, melting, separates readily from the pit, sugary; quality good; stone small, nearly round; ripens the middle of September.

Bourdine Royale. 1. *Lond. Hort. Soc. Cat.* 94. 1831.

Listed in this reference.

Bowers Early. 1. *Gard. Mon.* **19**:274. 1877. **2.** *W. N. Y. Hort. Soc. Rpt.* 50. 1879.

A large, freestone peach, earlier than Amsden, said to have originated in Frederick, Maryland, in 1876.

Bowslaugh Late. 1. *Can. Hort.* **11**:151. 1888.

Bowslaugh. **2.** *Ont. Fr. Gr. Assoc. Rpt.* **22**:31. 1890.

A fine, late, yellow seedling of the Crawford type; originated in the Niagara district, Ontario, Canada.

Boyd Early. 1. *Del. Sta. Rpt.* **5**:97. 1892.

Listed in this reference.

Boyles. 1. *Ont. Sta. Rpt.* **1**:51. 1894. **2.** *Mich. Sta. Sp. Bul.* **44**:31. 1910.

A variety found by James Boyles, Douglas, Michigan. A very good substitute for Early Crawford. Tree vigorous; fruit large, yellow, pleasing.

Brackett. 1. Berckmans *Cat.* 12. 1912-13.

P. J. Berckmans, Augusta, Georgia, states that this variety was named in honor of the late Colonel G. B. Brackett. It is a yellow-fleshed freestone, a cross between Smock and Chinese Cling, ripening just after Elberta, said to be of best quality.

Braddick American. 1. Brookshaw *Hort. Reposit.* **1**:59, Pl. 29. 1823. **2.** Lindley *Guide Orch. Gard.* 273, 274. 1831.

Braddick's North American. **3.** *Lond. Hort. Soc. Cat.* 94. 1831.

Leaves crenate, with globose glands; flowers small; fruit of medium size, slightly tapering towards the apex; deeply sutured; skin pale yellow, tinged with red; flesh pale yellow nearly to the stone, juicy; stone clings; ripens the middle of September.

Braddick New York. 1. *Lond. Hort. Soc. Cat.* 94. 1831.

Braddick New York is a freestone of second size and quality, ripening early in September; glands reniform; flowers small; color pale green, with a blush.

Braddick Red. 1. *Lond. Hort. Soc. Cat.* 94. 1831.

Leaves serrate, glandless; flowers large; fruit large, pale green, blushed with dark red; flesh melting, free from the pit; of first quality; ripens at the end of August.

Braddick South American. 1. *Lond. Hort. Soc. Cat.* 94. 1831.

Not described in this reference.

Braddick Summer. 1. *Lond. Hort. Soc. Cat.* 95. 1831.

Leaves with reniform glands; flowers small; fruit large, pale green; flesh melting; of second quality; pit free; ripens late in August.

Bradley. 1. *Pa. Fr. Gr. Soc. Rpt.* 39, Pl. 1879. **2.** *Del. Sta. Rpt.* **5**:97. 1892.

Bradley originated in Lancaster County, Pennsylvania. Not generally disseminated. Tree vigorous, productive; glands globose; fruit large; flesh white, firm, juicy; freestone; ripens after Late Crawford.

Brainard Large Yellow. 1. Kenrick *Am. Orch.* 189. 1841.

Fruit large, yellow in the shade; of excellent flavor; ripens in September.

Brandy. 1. Kenrick *Am. Orch.* 199. 1841.

Brandy is a round, medium-sized fruit, with crimson flesh; ripens in August.

Brandywine. 1. *Am. Pom. Soc. Rpt.* 161. 1881. **2.** *Rural N. Y.* **46**:352. 1887. **3.** *Am. Pom. Soc. Cat.* 32. 1899. **4.** *Mich. Sta. Bul.* **169**:208, 209. 1899. **5.** Budd-Hansen *Am. Hort. Man.* **2**:339. 1903. **6.** Fulton *Peach Cult.* 175. 1908.

According to the references, Delaware is the place of origin of this peach and Late Crawford may be its parent. Tree vigorous, moderately productive; glands globose; fruit large, flattened and ovate, compressed at the suture which is distinct; apex prominent; color yellow, washed and striped with red; flesh yellow, red at the pit, juicy, tender, mild but not rich; quality good; pit free; season the last of September.

Brant. 1. *Utah Sta. Bul.* **18**:12. 1892.

Listed as once grown in Utah.

Bray Rareripe. 1. *N. J. Hort. Soc. Rpt.* 42. 1878. **2.** *Mo. State Fr. Sta. Rpt.* 12. 1905-06.

Bray White. **3.** *Mich. Hort. Soc. Rpt.* 243. 1886.

This variety resembles Oldmixon Free except in season, being later. It originated with D. Bray, Monmouth County, New Jersey. The peach as it grows on the Station grounds is hardy but not productive; glands globose; flowers small, appear in mid-season; fruit large, roundish; cavity shallow; apex mamelon, recurved; skin tough, thick, heavily pubescent, creamy-white, blushed with lively red; flesh white, stained at the pit, juicy, tender, sprightly, pleasing; good in quality; stone free, broadly oval, flattened; ripens late in September.

Braunauer Lackpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:214. 1858.

Braunauer Rote Frühe Pfirsich. **2.** Mathieu *Nom. Pom.* 389. 1889.

A seedling of Gemeiner Lieblingspfirsich. Tree productive; glands reniform; fruit above medium in size, oval; skin heavily pubescent, greenish-yellow; flesh reddish at the pit, aromatic; stone free; ripens the middle of September.

Braunauer Magdalene. 1. Mathieu *Nom. Pom.* 389. 1889.

Listed in the reference given.

Brett. 1. *Gard. Mon.* **22**:370. 1880. **2.** *Am. Pom. Soc. Cat.* 36. 1909.

Mrs. Brett. **3.** Budd-Hansen *Am. Hort. Man.* **2**:352. 1903.

Brett was introduced by Joseph H. Ricketts, Newburgh, New York; listed by the American Pomological Society in 1909. It is earlier than Oldmixon Free and superior to it in color and quality.

Brevoort. 1. *Lond. Hort. Soc. Rpt.* **6**:414. 1826. **2.** Downing *Fr. Trees Am.* 472. 1845.

Brevoort Seedling Melter. **3.** Floy-Lindley *Guide Orch. Gard.* 183. 1846.

Raised by Henry Brevoort of New York, from Morrisania Pound. Leaves crenated; glands reniform; flowers small; fruit below medium in size, roundish; skin grayish-white, bright red where exposed; flesh firm, juicy, sugary; stone small, flat, free; ripens the middle of August.

Brevoort Seedling Pound. 1. *Lond. Hort. Soc. Rpt.* **6**:412. 1826.

Another seedling of Morrisania Pound, raised by Henry Brevoort. Resembles its parent in shape and flavor, but ripens two weeks earlier.

Brice Early. 1. *W. N. Y. Hort. Soc. Rpt.* 50. 1879. **2.** *Gard. Mon.* **25**:272. 1883.

Dr. S. M. Brice of Kansas originated this variety about 1874; it is said to rival other early, white clings.

Briggs. 1. Cole *Am. Fr. Book* 193. 1849. **2.** Waugh *Am. Peach Orch.* 199. 1913. **3.** *Am. Pom. Soc. Cat.* 36. 1909.

Briggs' May. **4.** *Ibid.* 28. 1877.

Brigg's Early May. **5.** *W. N. Y. Hort. Soc. Rpt.* 113. 1880.

Rouge de Mai. **6.** *Cat. Cong. Pom. France* 526. 1906.

The name Briggs has been applied to three distinct varieties. This peach originated in Dedham, Massachusetts, many years ago. The American Pomological Society added it to its fruit-list in 1877 as Briggs' May, dropping it in 1891 but replacing it as Briggs in 1909. Tree hardy, reproducing itself closely from seed; fruit large, roundish-truncate, with a distinct suture; skin white, nearly covered with bright red; flesh white, tinged with red at the pit, juicy, with a rich, sweet, vinous flavor; quality good; pit free; season the first of September.

Briggs Red May. 1. *Gard. Mon.* **18**:145, 241. 1876. **2.** Wickson *Cal. Fruits* 309. 1889.

Briggs. **3.** Budd-Hansen *Am. Hort. Man.* **2**:339, 340. 1903.

This variety originated about 1870 as a chance seedling on the farm of John G. Briggs, near Yuba City, California. Fruit medium to large, round; skin white, with a rich red cheek; flesh greenish-white, melting, juicy, free; quality very good; season early.

Bright. 1. *Can. Hort.* **26**:483. 1903.

Charles E. Bright, Brampton, Canada, originated this variety about 1895. Fruit large, creamy-white; flesh tender, juicy, sweet; matures early in October.

Brodie. 1. Kenrick *Am. Orch.* 184. 1835.

Fruit large, round, red in the sun; very juicy; clingstone.

Bronough Cling. 1. *Am. Pom. Soc. Rpt.* 158. 1881. **2.** *Tex. Sta. Bul.* **39**:815. 1896.

A very late variety with reniform glands. "Does not do well in Texas."

Bronzée. 1. Mas *Pom. Gen.* **12**:185. 1883.

Fruit not described in this reference.

Brooks. 1. Langley *Pomona* 104, Pl. 31 fig. 3. 1729.

Raised by Lord Brooks, Twickenham, Middlesex, England. Fruit large; flesh white to the stone, melting, juicy; freestone; ripens on a west wall about August 8th.

Brown. 1. *Mich. Hort. Soc. Rpt.* 170. 1882. **2.** *U. S. D. A. Yearbook* 273. 1903.

This is a white-fleshed seedling of Chili found by Orrin Brown, Berrien County, Michigan. Tree hardy, with the drooping habit of Chili. Fruit averages larger than Hale Early which it closely follows in ripening.

Brown Choice. 1. Black *Cult. Peach & Pear* 115. 1886.

Brown Best. **2.** Fulton *Peach Cult.* 177, 178. 1908.

A large, white-fleshed variety ripening with Late Crawford.

Brown Early. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

An early variety originated by W. L. Brown, Ashley, Illinois.

Brown Nutmeg. 1. Prince *Pom. Man.* **2**:24, 25. 1832.

This is a stray variety which has often been confused with Red Nutmeg but the two are distinct. Fruit much smaller

than Red Nutmeg, somewhat oval, with a mamelon apex; skin yellowish, with considerable dingy red; flavor pleasant; ripens in July.

Browns Frühpfirsich. 1. Stoll *O. U. Pom.* Pl. 52 fig. 4. 1888.

A seedling of Hale Early ripening after it. Fruit globular, slightly compressed at the ends; skin woolly, whitish-yellow, spotted red where exposed; flesh white, adherent; stone large for the size of fruit.

Brunson. 1. *Mich. Hort. Soc. Rpt.* 79. 1889.
2. *Mich. Sta. Sp. Bul.* **44**:32, Pl. 1910.

Brunson is a chance seedling found about 1880 by Rufus Brunson, Benton Harbor, Michigan. It is grown in Michigan but not as much as Kalamazoo which it closely resembles. On the Station grounds the trees are hardy, unproductive, large, with lower branches drooping. Glands reniform; flowers appear early, small; fruit large, cordate; apex usually mamelon; skin tough, covered with short pubescence, lemon-yellow, splashed with dark, dull red on a lively blush giving it a bronze effect; flesh yellow, firm, mild; good; stone broadly oval, bulged near the apex, terminating in a long, sharp point; ripens the middle of September.

Buck. 1. Wickson *Cal. Fruits* 318. 1889.

A seedling grown by L. W. Buck, Vaca Valley, California; a good shipper.

Buckeye. 1. *Ohio Hort. Soc. Rpt.* 4. 1855.

A seedling from Clark County, Ohio, having pale yellowish-white flesh. It is inferior to Late Crawford and ripens ten days later.

Buckinghamshire Minion. 1. Brookshaw *Pom. Brit.* **1**:Pl. 23. 1817.

Skin thin; flesh red at the stone; ripens the middle of August.

Bullard. 1. Kenrick *Am. Orch.* 186. 1841.

Originated with a Mr. Bullard, Framingham, Massachusetts. Fruit very large, round, deep yellow in the sun; flesh yellow, juicy, sweet; freestone; ripens early in September.

Bullard Cling. 1. Kenrick *Am. Orch.* 196. 1841.

A large, round clingstone from Massachusetts.

Bullmann Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:219. 1858.

Leaves glandless; flowers small; fruit of medium size, somewhat oblate, faintly sutured; flesh yellow, sprightly; stone acutely pointed, free; ripens at the end of August.

Buonaparte. 1. Bridgeman *Gard. Ass't* **Pt. 3**:105. 1857.

A fine, early market variety introduced by Joseph Buonaparte, New Jersey.

Burchell Early. 1. *Lond. Hort. Soc. Cat.* 95. 1831.

Listed in this reference.

Burdock. 1. Langley *Pomona* 106, Pl. 33 fig. 2. 1729.

Fruit large, blushed with vermilion-red; flesh firm, juicy; stone clinging; ripens on a south wall August 30th.

Burford October Cling. 1. *Am. Pom. Soc. Rpt.* 191. 1860.

Reported as grown successfully in Mississippi.

Burgess Beauty. . Kenrick *Am. Orch.* 183. 1841.

A variety from Middletown, New Jersey. Earlier, better, and more productive than Early York.

Burke. 1. *Gard. Mon.* **27**:79. 1886. **2.** *Del. Sta. Rpt.* **13**:92. 1901.

Burke is of southern origin having come from Avoyelles, Louisiana. The peaches ought to ship well as they are thick-skinned. On the Station grounds the fruit drops badly and lacks both color and quality. Tree vigorous, hardy, unproductive; glands reniform; flowers appear in mid-season, large; fruit large, oblong-oval, halves unequal, sides drawn up about the cavity, with a mucronate tip at the apex; skin thick, tough, covered with thick, coarse pubescence, creamy-yellow, with a slight blush of lively red; flesh white, stained at the pit, firm, juicy, tender, pleasing; quality fair; stone clinging, oval, pointed at the ends, plump on one side; ripens the first week in September.

Burlington Large Early. 1. *Lond. Hort. Soc. Cat.* 95. 1831.

Listed in this reference.

Burnap. 1. Ramsey *Cat.* 3. 1912.

This variety is described by F. T. Ramsey and Son, Austin, Texas, as a productive, white clingstone found by S. L. Burnap, Austin, Texas.

Burns. 1. *Gard. Mon.* **20**:273. 1878. 2. *W. N. Y. Hort. Soc. Rpt.* 51. 1879.

Burns is claimed by its originator, T. F. Burns, Mt. Pulaski, Illinois, to ripen a month earlier than Alexander.

Burrough. 1. *Del. Sta. Rpt.* **5**:97. 1892.

Listed in this reference.

Buski. 1. *Ariz. Sta. Bul.* **15**:67. 1895.

Listed as having been grown in Arizona.

Bustian October. 1. *Gard. Mon.* **16**:315. 1874. **2.** *Ga. Sta. Bul.* **42**:233. 1898.

Bustian October originated in Fayette County, Georgia. Ripens too late for the North. Tree spreading, dense; glands reniform; flowers conspicuous; fruit large, sweet; clingstone; ripens the middle of October.

Butler Late. 1. *N. C. Sta. Rpt.* **11**:108. 1889. **2.** Hood *Cat.* 30. 1905.

Butler Late originated with J. T. Butler, Richmond, Virginia. The fruit on the Station grounds lacks in size and flavor. Tree hardy, not very productive; glands reniform; flowers appear in mid-season, small, margins deep pink; fruit medium in size, irregularly oval, angular; cavity shallow; suture extends nearly around the fruit, deepens near the apex; skin thin, tough, with thick pubescence, creamy-white, blushed with lively red, deepening to dark red; flesh white, rather dry, stringy, slightly sprightly; fair in quality; stone wedge-shape at the base, obovate, acutely pointed at the apex, semi-clinging; ripens the last of September.

Butterpfirsich. 1. Mathieu *Nom. Pom.* 391. 1889.

Beure. **2.** Mas *Le Verger* **7**:31, 32, fig. 14. 1866-73. **3.** Carrière *Var. Pêchers* 79. 1867.

Found in the village of Beure, Doubs, France. Tree productive; glandless; flowers small, deep red; fruit of medium size, halves unequal, depressed at the apex; cavity deep, narrow; skin marbled with deep red in the sun; flesh whitish, faintly red at the stone, melting, juicy, sugary; stone small, oval, nearly free; ripens August 15th.

Buttram. 1. Ramsey *Cat.* 8. 1909.

F. T. Ramsey, Austin, Texas, introduced Buttram from Deaf Smith County, Texas. A large, yellow clingstone ripening in Texas about September 15th.

C. Cling. 1. *N. Y. Sta. Rpt.* **15**:288. 1897.

Listed by this Station in 1897; received from the Farmers Nursery Company, Tadmor, Ohio.

Cabin. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Exhibited at the World's Fair, 1893, as having been grown in Illinois.

Cable. 1. *Am. Pom. Soc. Cat.* 36. 1909.

Cable Late. **2.** Elliott *Fr. Book* 282. 1854. **3.** Downing *Fr. Trees Am.* 602. 1869.

Cable Late Malacatune. **4.** Hooper *W. Fr. Book* 215. 1857.

A seedling of Red Cheek Melocoton, raised by E. Cable, Cleveland, Ohio. Resembles Late Crawford but the fruit is larger and earlier.

Cable Early. 1. Elliott *Fr. Book* 291. 1854.

One of E. Cable's seedlings; glands globose; fruit large, yellow, subacid; ripens in September.

Cable Medium Melocoton. 1. Elliott *Fr. Book* 291. 1854.

A yellow variety with globose glands; ripening in September.

Cabler Indian. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *Glen St. Mary Nur. Cat.* 11. 1900.

Cabler Indian originated in Texas. In 1891 it appeared on the fruit-list of the American Pomological Society where it remained about ten years. Fruit large; flesh purplish, rich,

subacid; clingstone; ripens in Florida July 15th.

California. 1. Wickson *Cal. Fruits* 316. 1889. **2.** *Am. Pom. Soc. Cat.* 36. 1909.

California originated in Sacramento, California; it is highly prized in its native state. It was entered on the fruit-list of the American Pomological Society in 1909. Fruit large, round, orange-yellow, largely blushed with dark red; flavor delicate, rich, vinous; clingstone.

Callie Scaff. 1. *Gard. Mon.* **20**:237. 1878.

A seedling of Early York from J. D. Scaff, Water Valley, Kentucky. It is an early sort, said to excel Amsden.

Calloway Cling. 1. *Gard. Mon.* **24**:83, 148. 1882.

Calaway. **2.** *Tex. Sta. Bul.* **39**:815. 1896.

Introduced about 1875 by G. W. Stoner, Shrevesport, Louisiana. Remarkable for the size, quality, and lateness of the peaches.

Camak Serrate. 1. *Am. Pom. Soc. Rpt.* 186. 1858.

Camak Red Twigged. **2.** *Mag. Hort.* **15**:501, 502. 1849.

This variety is grown more for its tree than for its fruit. The tree has vermilion-colored twigs in winter and golden foliage in summer. Fruit large, oval; suture distinct; apex noticeably mamelon; flesh yellow, juicy; flavor reminding one of an unripe pineapple; season very late.

Cambria. 1. Brookshaw *Hort. Reposit.* **2**:197, Pl. 103. 1823.

Cambray. **2.** *Lond. Hort. Soc. Cat.* 95. 1831.

Cambria is a poor table-fruit but is one of the best for

preserving. Leaves coarsely serrated; flowers large; fruit pale greenish-white, blushed; ripens the last of September.

Cambridge Belle. 1. Elliott *Fr. Book* 282. 1854. **2.** *Am. Pom. Soc. Cat.* 72. 1862.

Hovey Cambridge Belle. **3.** *Mag. Hort.* **13**:114. 1847.

Cambridge Belle held a place on the fruit-list of the American Pomological Society from 1862 until 1869. Fruit large, roundish, clear waxen, tinted where exposed; ripens early in September.

Camden Superb. 1. *Mo. State Fr. Sta. Rpt.* **1**:11. 1901.

Listed but not described.

Camelia. 1. *Rural N. Y.* **62**:533. 1903.

Camelia originated on the farm of a Mr. Wright, Randolph County, North Carolina. It is very similar to Carman.

Campbell. 1. *Ala. Hort. Soc. Rpt.* 106. 1908.

Campbell is a strain of Chinese Cling raised by Judge Campbell, Pensacola, Florida. It is too tender for commercial purposes.

Canary. 1. Elliott *Fr. Book* 291. 1854. **2.** Hogg *Fruit Man.* 215, 216. 1866. **3.** Downing *Fr. Trees Am.* 602. 1869.

Canary takes its name from the peculiar coloring of its fruit; it is of American origin. Glands globose; flowers small; fruit medium in size, roundish-oblong; skin thin, bright yellow flesh melting, juicy, rich; stone free; ripens in the North in August.

Canner Choice. 1. *Tex. Nur. Cat.* 5. 1913.

Mentioned by the Texas Nursery Company, Sherman, Texas, as a white clingstone, ripening in July.

Cannon. 1. *Peachland Nur. Cat.* 11. 1892.

This variety, according to the Peachland Nurseries, Seaford, Delaware, is grown in Bridgeville, Delaware, where it originated with H. P. Cannon. Tree vigorous, productive; fruit large, yellow; ripens late.

Caper. 1. *Am. Pom. Soc. Rpt.* 164. 1899.

Recommended for Delaware.

Capital. 1. *U. S. D. A. Pom. Rpt.* 25. 1894.

Fruit above medium to large, roundish; cavity broad and deep; suture deep at the cavity; with a mamelon tip at the apex; skin velvety, thin, tenacious, yellow, with a slight blush; flesh lemon-yellow, stained at the stone, firm but tender, sprightly; quality very good; stone very small, oval, free; ripens the first of October.

Capps. 1. Capps Bros. *Cat.* 1908.

Capps was raised and introduced by Capps Brothers, Mt. Pulaski, Illinois, about 1902. At this Station the trees are unproductive. Tree low, open; leaves large, with both globose and reniform glands; flowers appear in mid-season; fruit large, roundish-oval, halves unequal; cavity deep, wide; skin tough, covered with a thick, coarse pubescence, golden yellow, usually blushed with lively red; flesh yellow, stained at the pit, fine, tender, pleasing when fully ripe; quality variable; stone large, oval, plump, flattened and pointed at the base, with numerous pittings, free; ripens the middle of September.

Cardinale. 1. Duhamel *Trait. Arb. Fr.* **2**:43, Pl. 31. 1768. **2.** Christ *Wörterb.* 349. 1802. **3.** Prince *Pom. Man.* **1**:199. 1831. **4.** Leroy *Dict. Pom.* **6**:82 fig., 83. 1879.

Grosse Blutpfirsche. **5.** Christ *Handb.* 595, 596. 1817.

Sanguine Cardinale. **6.** Carrière *Var. Pêchers* 65. 1867.

According to Duhamel, this is a sub-variety of Sanguinole which it surpasses. It was brought to America by W. R. Prince as a curiosity. The flesh is dark purple; the quality is poor. In warmer climates, it does much better than here and is esteemed for preserves and compotes; ripens in October.

Carey Mammoth Cling. 1. *Horticulturist* **2**:400. 1847-48.

This variety is not large as the name would indicate. Glands globose; flowers small; fruit oval; flesh white and well-flavored; ripens the last of September.

Carl Late. 1. *Pa. Dept. Agr. Rpt.* 149. 1895.

Listed as having been grown in the Juniata peach-belt, Blair County, Pennsylvania.

Carl Wredow. 1. Mathieu *Nom. Pom.* 391. 1889.

Listed but not described.

Carlisle. 1. *Ont. Sta. Rpt.* **1**:19. 1894. **2.** Brown Bros. *Cat.* 32. 1900.

A hardy, vigorous and productive peach originating in St. Catherines, Ontario, Canada. Fruit with thin skin, considerably blushed; flesh deep yellow, firm, aromatic; pit small; ripens after Early Crawford.

Carmine. 1. Elliott *Fr. Book* 294. 1859.

Carmine is a freestone peach of American origin, with reniform glands and small flowers. Fruit large, oblong, reddish, with sweet, juicy flesh; ripens in August.

Carnation. 1. Parkinson *Par. Ter.* 580. 1629.

"The Carnation Peach is of three sorts, two are round, and the third long; they are all of a whitish colour, shadowed over with red, and more red on the side is next the sunne; the lesser round is the more common, and the later ripe."

Caroline Beauty. 1. *N. Y. Sta. Rpt.* **12**:612. 1893. **2.** Hood *Cat.* 30. 1905.

A white-fleshed clingstone from Caroline County, Virginia, where it is largely used for preserves. It matures on the Station grounds early in October.

Caroline Incomparable. 1. Carrière *Var. Pêchers* 43. 1867.

Tree vigorous; glands reniform; flowers small, pale rose; fruit large, irregular in outline, conical, mamelon at the apex; skin orange-yellow, blushed and marbled with deep red; flesh stained at the pit, firm, fibrous, sugary, juicy; stone clinging, acutely oval; ripens the first of September.

Carolinen Härtling. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Carpenter. 1. *Am. Pom. Soc. Cat.* 36. 1909.

Carpenter Cling. **2.** *Ibid.* 44. 1891. **3.** *Del. Sta. Rpt.* **13**:91, 92. 1901.

Carpenter is a seedling of Chinese Cling which originated with a Mr. Carpenter of Texas. It was put on the American Pomological Society's list of fruits in 1891 as Carpenter Cling, but was dropped in 1897, reappearing in 1909 as Carpenter. Fruit large, white-fleshed, clingstone; ripens July 15th.

Carpenter Red Rareripe. 1. Hooper *W. Fr.*

Book 215. 1857.

Best known about Frankfort, Kentucky. Glands reniform; flowers small; fruit roundish, of medium size; flesh white, stained at the pit, melting, juicy; quality fair; freestone; ripens in September.

Carpenter White. 1. Downing *Fr. Trees Am.* 609. 1857. **2.** *Am. Pom. Soc. Cat.* 78. 1862.

Carpenter Late. **3.** Kan. Hort. Soc. *Peach, The* 139. 1899.

William S. Carpenter, New York City, introduced this variety. It held a place on the fruit-list of the American Pomological Society from 1862 until 1869. Tree vigorous, productive; glands globose; fruit very large, round, white; flesh white to the pit, juicy, melting, separating from the stone, of excellent flavor; matures the middle of October.

Carroll Late. 1. *Del. Sta. Rpt.* **5**:97. 1892.

Listed as growing at the Delaware Station.

Carson. 1. Berckmans *Cat.* 11. 1912-13.

Carson came from Hancock County, Georgia, according to the catalog of P. J. Berckmans, Augusta, Georgia. Tree productive; fruit above medium in size; skin pale yellow, totally overspread with light carmine; flesh white, juicy, vinous; stone adherent; ripens late in July in Georgia.

Carter Large. 1. *Ohio Hort. Soc. Rpt.* 7. 1857.

A seedling from Pennsylvania, resembling Oldmixon Free. Tree hardy, productive; flowers large; valuable as a market sort.

Caruth Late. 1. J. S. Kerr *Cat.* 5. 1898.

Caruth Late was introduced by J. S. Kerr, Sherman, Texas. The variety is very prolific, bright yellow, and a freestone.

Catharine. 1. Langley *Pomona* 107, Pl. 33 fig. 6. 1729. **2.** *Pom. Mag.* **1**:9, Pl. 1828. **3.** *Am. Pom. Soc. Cat.* 28. 1875.

Catharinen-Lackpfirsich. **4.** Dochnahl *Führ. Obstkunde* **3**:216. 1858.

This is an old variety long grown in England and France, in the latter country as La Belle Catharine. The fruit is similar to Incomparable but higher in flavor. It was placed on the list of fruits of the American Pomological Society in 1875 where it remained until 1897. Leaves crenate, with reniform glands; flowers small, reddish; fruit large, roundish, surface uneven; color pale yellow, marbled with red; flesh white, strongly red at the pit, very firm, juicy; stone clinging, roundish-oval; ripens the last of September.

Catline. 1. *Lond. Hort. Soc. Cat.* 95. 1831.

Leaves with globose glands; flowers small; fruit of medium size, pale yellow, blushed; stone adherent; ripens late in September.

Cécile. 1. Thomas *Guide Prat.* 48. 1876.

Glands reniform; flowers small.

Cécile Mignonne. 1. Thomas *Guide Prat.* 53. 1876. **2.** Leroy *Dict. Pom.* **6**:85, 86 fig. 1879.

A seedling raised by Charles Buisson, Grenoble, Isère, France. Tree productive; glands small, globose; flowers large, pink; fruit above medium in size, irregularly ovoid; skin tender, finely pubescent, yellowish-white, streaked and spotted with carmine; flesh white, faintly tinged at the stone, melting, juicy, sugary; of first quality; stone ovoid, free; matures early in August.

Célestin Port. 1. Leroy *Dict. Pom.* **6**:86, 87 fig. 1879.

A variety named after Célestin Port, Angers, Maine-et-Loire, France, about 1870. Tree productive; glands very small, globose; flowers of medium size, deep pink; fruit large, globular, flattened at the ends; suture narrow; skin thick, tough, heavily pubescent, greenish-yellow, with a dull red blush; flesh white, firm but melting, stained at the stone, very juicy, vinous; stone large, roundish-oval, free; matures early in August.

Centennial. 1. *Ont. Sta. Rpt.* **1**:22. 1894. **2.** *Can. Exp. Farm Bul.* 2nd Ser. **1**:13. 1898.

Centennial is a strong, round-topped grower; fruit large and late.

Chalmer Yellow Free. 1. *Mo. Hort. Soc. Rpt.* 178. 1903.

A variety grown in Illinois; said to be earlier, larger, and better than Elberta. It reproduces itself from seed.

Champion (of Michigan). 1. *Mich. Sta. Bul.* **143**:187. 1897. **2.** *U. S. D. A. Yearbook* 479. 1908.

This is an early variety which originated with Eugene Gibson in western Michigan and was introduced by him about 1887. The variety was subject to mildew and the fruit proved to be of so little value that the sort was soon dropped from cultivation. The leaves are serrate and the stone clings. Although very different from the well-known Champion of Illinois, it was at first sold for the latter, much to the disappointment of buyers.

Chancellor. 1. Miller *Gard. Dict.* No. 14. 1752. **2.** Brookshaw *Pom. Brit.* **1**:Pl. 30 fig. 1. 1817. **3.** Lindley *Guide Orch. Gard.* 255, 256. 1831. **4.** Leroy *Dict. Pom.* **6**:88 fig., 89. 1879.

Stewards Late Galande. **5.** *Lond. Hort. Soc. Cat.* 97. 1831.

English Chancellor. **6.** Prince *Pom. Man.* **1**:188, 189. 1831.

Kleinblühender Kanzlerpfirsich. **7.** Dochnahl *Führ. Obstkunde* **3**:214. 1858.

This peach was named after Chancellor Pierre Seguier, Paris, France, in whose garden it grew about 1670. Leaves crenate, with reniform glands; flowers small, reddish; fruit large, oval, distinctly sutured; skin pale yellow, mottled with dark crimson; flesh yellowish-white, stained at the pit, juicy, melting; stone oblong, tapering, free; ripens the middle of September.

Chapman. 1. Little *Price List* 2. 1897.

Chapman resembles Late Crawford of which it is a seedling. Introduced by W. S. Little and Company, Rochester, New York.

Charles Ingouf. 1. *Rev. Hort.* 113. 1906.

Named after Charles Ingouf, a nephew of the pomologist, Charles Baltet, Troyes, France, in whose nursery this seedling was found. Fruit large, early, blushed with carmine on a creamy ground; ripens between Amsden and Hale Early.

Charles Rongé. 1. Mas *Le Verger* **7**:81, 82, fig. 39. 1866-73.

Charles Rongé was introduced by a M. Galopin, Liege, Belgium. Glands small, globose; flowers of medium size; fruit large, spherical, compressed at the ends; noticeably sutured; skin tender, covered with short pubescence, pale green, blushed with intense carmine; flesh white to the pit, melting, sugary; first quality; stone small for the size of fruit, ovoid, semi-free; ripens early in August.

Chas. Wood. 1. *Can. Exp. Farms Rpt.* 404. 1894.

Grown in Canada.

Charlotte. 1. *Am. Pom. Soc. Cat.* 36. 1909. **2.** Waugh *Am. Peach Orch.* 200. 1913.

Charlotte should not be confused with the yellow-fleshed Early Charlotte. This variety is said to have originated in Europe and is a large, oval, white-fleshed freestone, ripening in early mid-season; it was added to the American Pomological Society's fruit-list in 1909.

Chartreux. 1. Carrière *Var. Pêchers* 67, 68. 1867.

Chartreux was obtained from seed of either Brugnon Musque or Brugnon des Chartreux, planted in 1859. Tree vigorous; glands reniform; flowers very small; fruit medium to large, roundish, depressed; skin very pubescent, yellowish, streaked with dark red; flesh greenish-white, red at the pit; stone free, oval, roundish at the base; ripens the last of August.

Chase Early. 1. R. G. Chase *Cat.* 19, Pl. 1900.

Chase Early is a seedling of Mountain Rose according to R. G. Chase, Geneva, New York. On the Station grounds the fruit ripens with Elberta. Leaves large, with small, globose glands; flowers small, dark pink at the edge of the petals; fruit large, roundish-oblate; skin tough, thick, creamy-white, with a lively red blush and a few dull splashes; flesh white except at the pit, melting, juicy, sprightly; quality good; stone oval.

Chazotte. 1. Thomas *Guide Prat.* 41. 1876.

Chazotte is productive, vigorous; glands reniform; fruit very large, irregular in outline; flesh red at the pit, melting, juicy; ripens at the end of September.

Chelcie Cling. 1. *Cult. & Count. Gent.* **47**:513. 1882.

This variety, which reproduces itself from seed, is a seedling of Oldmixon Cling.

Cherokee. 1. *Mo. State Fr. Sta. Rpt.* 12. 1905-06.

Fruit a straw-yellow color with a brownish-red blush; semi-free; ripens the latter part of July.

Cherry Peach. 1. Parkinson *Par. Ter.* 582. 1629. **2.** Forsyth *Treat. Fr. Trees* 30. 1803.

Pêche Cerise. **3.** Duhamel *Trait. Arb. Fr.* **2**:25, 26, Pl. 15. 1768. **4.** Poiteau *Pom. Franc.* **1**:No. 38, Pl. 1846.

Kirschpfirsche. **5.** Christ *Handb.* 602, 603. 1817.

Fruit small, roundish, with a deep suture and a large, pointed apex; skin the color of wax, with a cherry-red blush, sometimes with very fine pubescence; flesh citron-yellow, fine, melting, rather insipid; ripens the first of September.

Chevreuse. 1. Langley *Pomona* 106, Pl. 33 fig. 1. 1729.

Belle Chevreuse. **2.** Duhamel *Trait. Arb. Fr.* **2**:22, 23. 1768. **3.** Poiteau *Pom. Franc.* **1**:No. 30, Pl. 1846.

Schöne Peruvianische. **4.** Liegel *Anweisung* 69. 1822.

Schöner peruanischer Lackpfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:213. 1858.

Chevreuse Hâtive. **6.** Leroy *Dict. Pom.* **6**:91, 92 fig., 93. 1879.

Chevreuse is an old French sort, Nicolas de Bonnefond having mentioned it in 1665. In 1768 Duhamel failed to recognize the presence of the glands, thus causing some confusion between this and the variety he describes as Chevreuse Hâtive. Leaves crenate, with reniform glands; flowers medium in size; fruit of medium size, elongated; skin greenish-white, marbled and streaked in the sun; flesh white except beneath the blush and at the stone, melting, sweet, agreeable; stone free, large; ripens early in September.

Chevreuse Clingstone. 1. Prince *Pom. Man.* **2**:33. 1832.

A variety received by W. R. Prince from the Mediterranean region. Fruit of good size, oval, greenish-yellow; ripens at the end of September.

Chevreuse à Feuilles Cloquées. 1. Carrière *Var. Pêchers* 53. 1867.

Freestone. **2.** Mas *Pom. Gen.* **12**:185. 1883.

Although resembling Late Purple, this variety is distinct. Tree vigorous; glands reniform; flowers very small, deep pink; fruit large, irregular in outline; skin heavily pubescent, tender, deep red on a yellow ground; flesh white except at the stone, melting, juicy; stone elliptical, free; ripens late in August.

Chevreuse Hâtive. 1. Duhamel *Trait. Arb. Fr.* **2**:21, 22. 1768. **2.** Poiteau *Pom. Franc.* **1**:No. 31, Pl. 1846.

Frühe Peruvianerin. **3.** Liegel *Syst. Anleit.* 179. 1825.

Früher peruanischer Lackpfirsich. **4.** Dochnahl *Führ. Obstkunde* **3**:212. 1858.

Chevreuse Hâtive, although very similar to Chevreuse, is here listed separately. Some authors, including Christ and

Leroy, combine the two varieties. The Chevreuse Hâtive ripens from the middle of August to the beginning of September.

> **Chevreuse Tardive. 1.** Duhamel *Trait. Arb. Fr.* **2**:24, 25, Pl. XIV. 1768. **2.** Prince *Pom. Man.* **1**:178. 1831. **3.** Leroy *Dict. Pom.* **6**:93, 94 fig., 95. 1879.
>
> *Später peruanischer Lackpfirsich.* **4.** Dochnahl *Führ. Obstkunde* **3**:212. 1858.

This peach is often called Pourprée because of its color but it should not be confused with the old Late Purple. Tree vigorous, productive; glands reniform; flowers small, rose-colored; fruit large, roundish, often compressed; suture distinct, deep; with a mamelon tip at apex; skin thick, pale yellow, spotted and washed with reddish-purple; flesh white except about the pit, melting, fibrous, juicy, sweet, pleasing; stone elongated, free; matures at the end of September.

> **Chick Early Cling. 1.** *Am. Pom. Soc. Rpt.* 75. 1873.

This variety originated with I. W. & R. S. Chick, Newberry, South Carolina. Flesh white, vinous, juicy; ripens with Tillotson or before.

> **Chili No. 2. 1.** *Mich. Sta. Bul.* **104**:88. 91. 1894. **2.** *Ibid.* **169**:210. 1899.
>
> *Engle-Chili.* **3.** *Mich. Sta. Sp. Bul.* **44**:40 fig., 41. 1910.

This is a seedling of Chili raised by C. C. Engle, Paw Paw, Michigan. Tree vigorous, spreading, productive; flowers small; fruit large, roundish-oval; cavity deep; apex prominent; skin thick, yellow, with a bright red cheek; flesh yellow, red at the pit, fine-grained, moderately juicy, tender, mild but rich; quality good; stone long, oval, pointed, free; season the last of September.

Chili No. 3. 1. *Mich. Sta. Bul.* **104**:88, 91. 1894. **2.** *Ibid.* **169**:210. 1899.

This is another seedling of the same origin as Chili No. 2. Tree moderately strong, spreading; flowers small or medium; fruit medium in size, roundish, slightly oblong, compressed; suture indistinct; apex not prominent; skin yellow, with a dark red cheek; flesh yellow, slightly red at the pit, moderately juicy, tender, mild, sweet; quality fair to good; pit large, oval, pointed, free; season the last of September.

Chilian. 1. Elliott *Fr. Book* 291. 1854.

This is an American peach of unknown origin. Fruit of medium size, yellowish-white, with a red cheek, lacking in flavor; freestone; season September.

Chilow. 1. Ramsey *Cat.* 9. 1909.

According to F. T. Ramsey and Son, Austin, Texas, Chilow is a yellow-fleshed seedling of Chinese Cling, which ripens at this Station the latter part of September. Tree vigorous, moderately productive; glands reniform; flowers appearing in mid-season, large, showy; fruit medium in size, oblong-oval; suture deeper at the cavity, extending beyond the apex; skin thin, tender, with coarse pubescence, lemon-yellow, with a faint, dull blush near the cavity; flesh yellow, tinged at the pit, coarse, meaty, juicy, mild; fair in quality; stone below medium in size, oval, flattened, clinging.

Chilson. 1. *Mich. Sta. Sp. Bul.* **44**:33. 1910.

N. and C. Chilson, Battle Creek, Michigan, first exhibited this peach in 1870. Described as a yellow-fleshed clingstone, of medium size.

Chinese Blood. 1. *Tex. Sta. Bul.* **39**:816. 1896.

Chinese Blood is of unknown origin; the fruit resembles Chinese Cling in flavor. Tree vigorous, moderately

productive; fruit small, ovate, with an acute apex; color yellowish-green, with a red blush; flesh clinging, moderately sweet, with a pleasant, vinous flavor; ripens in Texas the first of July.

Chinese Crooked. 1. Fulton *Peach Cult.* 202. 1908.

A variety of unknown origin; so named because of its crooked fruits. The seed from which it sprang is supposed to have been brought from China. The fruit is very sweet but so small and unattractive as to be worthless. Grown under glass as dwarf trees, the variety forms an attractive ornamental.

Chinese Peach. 1. *Gard. & For.* **5**:438, 439, fig. 72. 1892.

Peach-pits were sent to Charles S. Sargent, Arnold Arboretum, Jamaica Plains, Massachusetts, in 1879 from China and from one of these grew this peach. The tree is very vigorous and hardy. The fruit has a thick skin, white, juicy flesh; is of good quality and a freestone. Sargent believes the variety may be valuable in breeding a new race of exceptionally hardy peaches.

Chisolm. 1. *Tex. Nur. Cat.* 4. 1913.

The Texas Nursery Company, Sherman, Texas, describes this variety as a yellow freestone grown by W. H. Chisolm, Grayson County, Texas; it ripens after Elberta.

Christiana. 1. Downing *Fr. Trees Am.* 603. 1869. **2.** *Tex. Sta. Bul.* **39**:810. 1896. **3.** *Md. Sta. Bul.* **159**:155. 1911.

Downing speaks of a white-fleshed Christiana from Pomaria, South Carolina. Other pomologists say it has yellow flesh. On the Station grounds the tree is vigorous and only moderately productive. Glands small, globose; flowers appear in mid-season, small; petals edged with a deep pink; fruit large, roundish-oval, with a beaked apex, angular;

cavity deep; suture shallow; skin tough, covered with fine pubescence, golden-yellow, washed with deep red and with a few splashes; flesh light yellow, tinged with red about the pit, juicy, firm, stringy, sprightly; quality good; stone free, large, ovate, plump; matures the third week in September.

Christmas Seedling. 1. *N. Y. Sta. Rpt.* **12**:612. 1893.

Received at this Station in 1893 from Warren Hartle, Covington, Ohio.

Citry à Fruit Blanc. 1. Mathieu *Nom. Pom.* 392. 1889.

Listed in this reference.

Clara. 1. *Fla. Sta. Bul.* **62**:511, 512. 1902.

Clara is a seedling of Waldo raised by T. K. Godbey, Waldo, Florida. Fruit large, roundish-oblong; suture nearly lacking; apex rounded, oblique, with a very small tip; skin velvety, yellowish-red in the sun; flesh firm, white, melting, juicy, with a slight almond flavor; quality very good; stone large, oval, pointed, free; ripens early.

Clara Mayer. 1. *Guide Prat.* 43. 1895.

Tree productive; glands reniform; flowers double; fruit large, roundish-oval; skin greenish-yellow, faintly blushed where exposed; flesh greenish-yellow, juicy; freestone; an ornamental.

Clarissa. 1. *Tex. Sta. Bul.* **39**:811. 1896.

Clarissa seems to be well thought of in Texas, where it originated, but at Geneva it is unproductive; fruit of good quality. Glands large, reniform; flowers appear in mid-season, small; petals edged with dark pink; fruit above medium in size, oval-cordate, halves unequal, bulged at the apex; skin tough, covered with short, thick pubescence, golden-yellow mingled with lively red which deepens on the

exposed side; flesh yellow, stained at the pit, juicy, rather coarse and stringy, sweet, pleasing; stone below medium in size, oval, drawn in about the base, plump, semi-free; ripens the second half of September.

Clark Early. 1. *U. S. Pat. Off. Rpt.* 257. 1854.

Originated with Lewis Clark, St. Louis, Missouri. Said to be one of the earliest to ripen. Tree a slow grower, productive; fruit small, of rich flavor.

Clarke. 1. Cole *Am. Fr. Book* 194. 1849.

Clarke originated with A. Clarke, Sherburne, New York; fruit very large, roundish, yellow, blushed with red; flesh yellow except at the stone, juicy, sugary, aromatic; ripens September 10th.

Claudine Willermoz. 1. Mathieu *Nom. Pom.* 392. 1889.

Listed in this reference.

Cleffey Allen. 1. *Ont. Sta. Rpt.* **1**:20. 1894. **2.** *Mich. Sta. Bul.* **169**:210. 1899.

Tree strong, upright, fairly productive; glands reniform; flowers small; fruit medium to large, roundish, with a broad, deep cavity; suture indistinct; skin strongly pubescent, yellow, blushed with brownish-red; flesh juicy, tender, mild, not rich; quality good; pit oval, plump, pointed, free; ripens the middle of September.

Clémence Isaure. 1. Mas *Le Verger* **7**:47, 48, fig. 22. 1866-73. **2.** Leroy *Dict. Pom.* **6**:96, 97 fig. 1879.

Barthère Brothers, Toulouse, Haute-Garonne, France, first fruited this variety in 1854. Later it was named in honor of Clémence Isaure. Glands globose; flowers small, with an intense rose-color; fruit large, globular, halves unequal,

with a mamelon tip at the apex; suture distinct; skin tender, whitish-yellow, washed with carmine; flesh yellow, stained at the pit, melting, juicy, sugary; stone free, large, roundish-oval, plump; matures early in September.

Cleveland I. 1. *Peachland Nur. Cat.* 11. 1892.

Said to have originated at Salisbury, Maryland. The fruit excels Fox with which it ripens, according to the catalog of the Peachland Nurseries, Seaford, Delaware.

Cleveland II. 1. *Del. Sta. Rpt.* **13**:95. 1901.

Cleveland is a seedling raised and introduced by J. F. Lyendecker, Frelsburg, Texas, about 1881. The tree came up between Thurber and Onderdonk trees; it was named after President Cleveland. Fruit large, cream-colored; clingstone; ripens with Honey.

Clifton Cling. 1. *Mich. Sta. Bul.* **152**:196. 1898. **2.** *Ga. Sta. Bul.* **42**:234. 1898.

Tree low and spreading in growth, vigorous; leaves small; glands reniform; fruit greenish-yellow, faintly blushed with carmine; flesh greenish-yellow, red at the pit, granular, subacid; quality poor; ripens in Georgia the middle of August; very subject to rot.

Clifton Park. 1. Wiley *Cat.* 16. 1899. **2.** *Mich. Sta. Sp. Bul.* **30**:14. 1905.

William Palmer, Saratoga County, New York, first exhibited this seedling at the State Fair in 1897. The trees at this Station are not productive. Tree hardy, vigorous; glands reniform; flowers appear early, large, showy, pale pink; fruit of medium size, roundish-oval, bulged near the apex; suture shallow; skin thin, with short, thick pubescence, pale yellow, blushed with dark, dull red; flesh white, tinged at the pit, juicy, stringy, pleasing, sweet; quality good; stone with a slight clinging tendency, above medium in size, plump; ripens the second week in August.

Clingman May. 1. *La. Sta. Bul.* **27**:942. 1894. **2.** *Ibid.* **112**:30. 1908.

A large, white-fleshed clingstone; early but not very desirable.

Clinton. 1. Kenrick *Am. Orch.* 199. 1841. **2.** Downing *Fr. Trees Am.* 473. 1845.

An American variety of second quality. Glands globose; fruit medium in size, roundish; suture nearly lacking; skin pale yellowish-white, striped with dull red; flesh scarcely stained at the stone, juicy; ripens the last of August.

Cobb Mignonne. 1. *Lond. Hort. Soc. Cat.* 99. 1831.

Listed in the reference as having globose glands.

Cobbler. 1. *Okla. Sta. Rpt.* 61. 1898-99. **2.** Harrison *Cat.* 20. 1904.

Yellow Cobbler. **3.** *Am. Pom. Soc. Rpt.* 161. 1881.

From Grayson County, Texas. Large, yellow, freestone, ripening with Smock.

Coe Golden Cling. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:64. 1900.

A strong grower but does not ripen its fruit in Canada.

Coggin Early. 1. *Ala. Sta. Bul.* **11**:7. 1890.

Flowers large; fruit medium in size; flesh white, firm, semi-clinging; matures early in June.

Coigneau. 1. Leroy *Dict. Pom.* **6**:97, 98 fig. 1879.

Originated by P. J. Berckmans, Augusta, Georgia, but not described by American writers. Leaves with large, reniform

glands; flowers small, with an intense rose-color; fruit of medium size, irregularly globular; suture distinct; skin thick, yellow, washed and striped with carmine; flesh orange-yellow, red at the pit, fibrous, melting, juicy, resembles an apricot in flavor; stone small, plump, free; ripens early in August.

Cole. 1. *Am. Pom. Soc. Cat.* 44. 1891.

Cole Early. **2.** *Ibid.* 32. 1887.

Cole Early Red. **3.** Downing *Fr. Trees Am.* 473. 1845. **4.** *Am. Pom. Soc. Cat.* 78. 1862.

Cole appeared on the fruit-list of the American Pomological Society in 1862 as Cole Early Red but was dropped in 1891. Glands globose; flowers small; fruit of medium size, roundish; skin almost entirely overlaid with red; flesh white, melting, very sprightly; freestone; ripens early in August.

Cole Large Yellow. 1. *Gard. Chron.* 1251. 1864.

Listed as an undesirable variety introduced into England from America.

Cole White. 1. Carrière *Var. Pêchers* 55, 56. 1867.

According to Carrière this variety is distinct from Cole White Melocoton. Tree vigorous; flowers very small; glands reniform; fruit large, roundish, with a slight suture; skin yellowish-white, with a purplish-red blush; flesh yellowish-white, slightly stained with red at the pit, tender yet firm, juicy, very sweet; quality good; stone oval, free; ripens in France the first of September.

Cole White Melocoton. 1. Thomas *Am. Fruit Cult.* 299. 1849.

This peach is thought by most pomologists to be identical

with Morris White but according to T. Hancock, in the American Fruit Culturist, it is distinct, the peaches being larger, heavier, rounder and ripening two weeks later than Morris White.

Coleman. 1. *Tex. Sta. Bul.* **39**:804. 1896. **2.** *Am. Pom. Soc. Cat.* 36. 1909.

Coleman is a variety of the Honey type originated by Thomas Coleman, Rockport, Texas. It appeared on the fruit-list of the American Pomological Society in 1909. Tree vigorous, productive; glands both reniform and round; fruit medium in size, ovate, cream-colored, with a red cheek; flesh white, sweet; freestone; ripens with Climax.

Colerane. 1. Rea *Flora* 211. 1676.

"Colerane peach is a good red peach."

Colmar. 1. Mas *Pom. Gen.* **12**:179. 1883.

Listed in this reference.

Colon. 1. *Glen St. Mary Nur. Cat.* 11. 1900. **2.** *Fla. Sta. Bul.* **73**:143. 1904. **3.** *Am. Pom. Soc. Cat.* 36. 1909.

This is a seedling of Honey which was originated by G. L. Taber, Glen Saint Mary, Florida, about 1892. Fruit large, roundish-oblong; suture distinct; skin thin, tender, finely pubescent; flesh white, streaked with red at the stone, juicy, spicy, subacid; quality very good; stone large, elliptical, sharply pointed, free; ripens in Florida the last of June.

Colonel Ansley. 1. *Lond. Hort. Soc. Cat.* 93. 1831.

Resembles Barrington, the two being listed as the same by some writers.

Colonel McFarland. 1. *Gard. Mon.* **24**:338. 1882.

A seedling of Late Crawford originating in 1874 near Harrisburg, Pennsylvania. Tree strong, vigorous, spreading; fruit large, yellow, with a red cheek; flesh juicy, rich, high in quality; freestone; ripens the middle of October.

Colonel Tom Ruffin. 1. Van Lindley *Cat.* 16. 1892.

An early, white-fleshed clingstone, ripening about July 20th, according to the catalog of the J. Van Lindley Company, Pomona, North Carolina.

Columbia. 1. Coxe *Cult. Fr. Trees* 226, fig. 10. 1817. **2.** Prince *Pom. Man.* **2**:19, 20. 1832. **3.** Downing *Fr. Trees Am.* 491. 1845. **4.** Hooper *W. Fr. Book* 216, 217. 1857. **5.** *Am. Pom. Soc. Cat.* 78. 1862. **6.** *Am. Jour. Hort.* **3**:343. 1868. **7.** Leroy *Dict. Pom.* **6**:99 fig., 100. 1879.

Virginia. **8.** *Mo. Bd. Agr. Rpt.* **1**:411. 1865.

This singular peach was raised more than a century ago by William Coxe from a pit brought to New Jersey from Georgia. While it reproduces itself from seed with considerable exactness, most of the seedlings show variations in shape and color. Nurserymen have, therefore, grown many different types but all having the general characteristics of the original fruit. The American Pomological Society placed Columbia in its fruit-list in 1862 where it has since remained. Tree moderately hardy and productive; glands reniform; fruit large, round, broad and considerably depressed, with a distinct suture; skin rough, thick, dingy red, sprinkled with spots and streaks of darker red; flesh yellow, often with a red streak next the skin, rich, juicy, melting, with the texture of a very ripe pineapple; quality good; freestone; season the last of September.

Columbus June. 1. Downing *Fr. Trees Am.* 610. 1857.

Fruit medium to large, flattened, with a shallow suture; skin

pale yellowish-white, with a rich red cheek; flesh red at the pit, melting, juicy, pleasant-flavored; good; stone free; ripens in the South the middle of June.

> **Comet. 1.** *Mag. Hort.* **29**:52. 1863. **2.** Hogg *Fruit Man.* 216. 1866. **3.** *Tex. Sta. Bul.* **39**:811. 1896.

Comet was raised from a pit of Salwey by Thomas Rivers, Sawbridgeworth, England, fruiting for the first time in 1857, when the great comet of that year was in its zenith. Glands reniform; flowers small; fruit roundish; skin yellow, with a crimson cheek; flesh yellow, melting, juicy; stone free; matures early in October.

> **Comice d'Angers. 1.** Leroy *Dict. Pom.* **6**:100 fig., 101. 1879.
>
> *Jaune du Comice.* **2.** Mas *Le Verger* **7**:195, 196, fig. 96. 1866-73.
>
> *Hâtive de Gascogne.* **3.** Thomas *Guide Prat.* 52, 219. 1876.
>
> *Madeleine du Comice.* **4.** Mas *Pom. Gen.* **12**:186. 1883.

This variety, received from Angers, France, is grown commercially in that locality. Glands both reniform and globose; flowers small, with deep rose-color; fruit large, spherical, ending in a mamelon tip at the apex; suture distinct; skin tender, heavily pubescent, yellow, marbled and striped with purple on a deep carmine blush; flesh stained at the pit, melting, very juicy, sprightly; stone free, large, plump; ripens at the end of August.

> **Comice de Bourbourg. 1.** Brehaut *Peach Pruner* 173. 1866. **2.** Leroy *Dict. Pom.* **6**:101, 102 fig. 1879.

A seedling from Bourbourg, Nord, France, first fruiting about 1850. Glands small, both reniform and globose;

flowers of medium size; fruit large, roundish-oval, distinctly sutured; skin tender, light yellow, streaked with carmine; flesh white, melting, juicy, tinged about the pit, sprightly; stone free; ripens the middle of September.

Compton Pure Gold. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Exhibited from Illinois at the World's Fair, in 1893.

Comte d'Ansembourg. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Comte de Neperg. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Comtesse de Hainaut. 1. *Ann. Pom. Belge* **6**:79, 80, Pl. 1858.

Of Belgian origin, being a seedling of Early Purple found near the Royal Chateau at Laeken. Flowers large; fruit large, roundish; suture distinct but not deep; skin clear yellow; flesh yellowish-white except at the pit; stone large, free; ripens the first half of September.

Comtesse de Montijo. 1. Thomas *Guide Prat.* 53. 1876. **2.** *Cat. Cong. Pom. France* 524. 1906.

Obtained about 1848 by a gardener, Gauthier, in Paris, France. Tree vigorous, productive; glands very small, globose; flowers of medium size; fruit large, roundish; skin creamy-white, with a blush, often streaked; flesh melting, sprightly; ripens the middle of September.

Con Cling. 1. *Am. Pom. Soc. Cat.* 26. 1873.

Con Cling appeared on the fruit-list of the American

Pomological Society from 1873 until 1883 without a description. Recommended for Oregon.

> **Condor. 1.** *Jour. Hort.* N. S. **28**:470. 1875. **2.** Lauche *Ergänzungsband* 701 fig., 702. 1883.

A large and beautiful seedling of Early Silver. Tree vigorous, productive; glands reniform; flowers of medium size; fruit very large, globular, halves equal, distinctly sutured; skin greenish-yellow, blushed with pale red; flesh white, tinged at the stone, juicy, melting; stone oval, truncate at the base; ripens in August.

> **Congress. 1.** Prince *Treat. Fr. Trees* 17. 1820. **2.** *Lond. Hort. Soc. Cat.* 95. 1831. **3.** Prince *Pom. Man.* **2**:27. 1832. **4.** Carrière *Var. Pêchers* 66, 67. 1867.
>
> *Béguine de Termonde?* **5.** Thomas *Guide Prat.* 21, 215. 1876.

First cultivated by Alfred Livingston, Westchester County, New York. Leaves with reniform glands; flowers of medium size; fruit large, oval, pale yellow, blushed with red; clingstone; ripens in September.

> **Conkling. 1.** Ellwanger & Barry *Cat.* 33. 1879. **2.** *Am. Pom. Soc. Cat.* 36. 1909.

E. M. Conkling, Parma Corners, New York, introduced this peach about 1877, having fruited it first in 1873. The fruits are small and the trees unproductive at Geneva. It was added to the fruit-list of the American Pomological Society in 1909. Leaves with small, globose glands; flowers late; fruit below medium in size, roundish-oval, bulged near the apex; halves unequal; apex with a mamelon, recurved tip; skin thin, tender, with long, thick pubescence, yellow, mottled with dark red over a lighter blush; flesh stained at the pit, juicy, firm, stringy, sweet, pleasant; pit free; ripens early in September.

Connecticut. 1. Hale *Cat.* 29. 1898. **2.** *Ont. Sta. Rpt.* **6**:44. 1899.

Connecticut originated at South Glastonbury, Connecticut, about 1885 from a seed of Pratt pollinized by Chili. The trees are unproductive at this Station. Tree willowy in habit; glands small, both reniform and globose; flowers appearing in mid-season, small, edged with deep pink; fruit medium in size, roundish-cordate; apex noticeably mamelon, recurved; skin thin, tough, adherent, thickly pubescent, orange-yellow, blushed with dull red; flesh tinged at the pit, rather firm, stringy, sweet; quality good; stone free, small, ovate, plump, bulged near the apex; ripens the last of August.

Connett. 1. *Am. Pom. Soc. Cat.* 36. 1909.

Connett Early. **2.** *N. C. Hort. Soc. Rpt.* 64. 1893. **3.** *Am. Pom. Soc. Cat.* 32. 1899. **4.** *Del. Sta. Rpt.* **13**:96. 1901.

Connett originated as Connett Southern Early with Rev. Alfred Connett, McLeansville, North Carolina, about 1880. In 1889 it was listed by the American Pomological Society as Connett Early, the name being changed in 1909 to Connett. At this Station it is a shy bearer; ripens the middle of August. Tree willowy in growth; glands reniform; flowers appearing in mid-season, large; fruit above medium in size, roundish-oval; suture shallow; skin thin, tough, creamy-yellow, slightly blushed with dark red; flesh white except at the pit, firm, stringy, sweet, juicy; quality fair; stone nearly free, oval-elliptical, pointed at the ends.

Connor White. 1. *Am. Pom. Soc. Rpt.* 75. 1873.

Conner Cling. **2.** *Am. Pom. Soc. Cat.* 32. 1883.

Connor White is a southern variety which originated in Mississippi. The American Pomological Society listed it from 1883 until 1889. Fruit medium in size, slightly oblong, with a small, acute apex; skin white, nearly covered with

crimson; flesh white to the stone, juicy, vinous, subacid; clingstone; matures the last of June in Mississippi.

Conover. 1. *Mo. Hort. Soc. Rpt.* 422. 1905.

Conover is one of the best hardy peaches in Missouri.

Cook Late. 1. *Am. Pom. Soc. Cat.* 32. 1887.

Cook Late White. **2.** *Am. Pom. Soc. Cat.* 28. 1877.

A variety of American origin. Entered on the fruit-list of the American Pomological Society in 1877 where it remained until 1897. Fruit of medium size, white, freestone; ripens late.

Cook Seedling. 1. *Ohio Hort. Soc. Rpt.* 6, 7. 1857.

A seedling resembling Late Crawford grown by J. S. Cook, Walnut Hills, Ohio.

Cooley Mammoth. 1. Lovett *Cat.* 33. 1891. **2.** *Can. Exp. Farms Rpt.* 451. 1896.

Originated in Indiana where the fruit attracted attention because of large size and handsome color. Flesh yellow, juicy, sprightly; clingstone; ripens late in September.

Coolidge. 1. Cole *Am. Fr. Book* 191. 1849.

Cooledge's Favorite. **2.** Kenrick *Am. Orch.* 219, 220. 1832. **3.** Downing *Fr. Trees Am.* 473. 1845. **4.** *Proc. Nat. Con. Fr. Gr.* 38, 51. 1848.

Coolidge's Favorite. **5.** Hovey *Fr. Am.* **2**:49, 50, Pl. 1851. **6.** Hooper *W. Fr. Book* 216. 1857.

For many years Coolidge was a favorite in New England and in nearly every orchard there were trees of this sort. Joshua

Coolidge of Watertown, Massachusetts, raised the variety. The fruit-lists in the catalogs of the American Pomological Society from the first issue until 1899 contained the name of this peach. Fruit medium to large, roundish, with a shallow suture; skin clear white, with a fine, mottled, crimson cheek; flesh white, with red at the pit, melting, juicy, with a rich, sweet, high flavor; freestone; season the last of August.

Coolidge Mammoth. 1. *Mich. Sta. Bul.* **169**:211. 1899.

Tree vigorous; foliage crimped, with globose glands; flowers small; fruit large, roundish-ovate; suture distinct; apex prominent; skin bright yellow, with a bright blush; flesh red at the pit, juicy, mild, vinous; pit large, oval, pointed, free; matures the middle of September.

Cooner. 1. *Mich. Hort. Soc. Rpt.* 318. 1890.

A large-fruited, market variety from Allegan County, Michigan.

Cooper Early. 1. *Lond. Hort. Soc. Cat.* 95. 1831.

Leaves with globose glands; flowers small; fruit of medium size, pale yellow; stone adherent; of third quality; ripens early in September.

Cooper Late. 1. *Peachland Nur. Cat.* 11. 1892.

Cooper Late originated at New Castle, Delaware, and is a large, white-fleshed, productive peach, according to the catalog of the Peachland Nurseries, Seaford, Delaware.

Cooper Mammoth. 1. *Mich. Hort. Soc. Rpt.* 190. 1880.

A yellow peach found near South Haven, Michigan. The variety is worthless because of unproductiveness.

Cooper Manet. 1. *N. Mex. Sta. Bul.* **30**:242. 1899.

A variety being tested in New Mexico.

Cora. 1. *Am. Pom. Soc. Rpt.* 41. 1877. **2.** *La. Sta. Bul.* **21**:614. 1893.

One of L. E. Berckmans seedlings of Lady Parham, from Rome, Georgia, about 1873. Fruit small, round; skin creamy-white, splashed with dull red; flesh white, stained at the stone, juicy, melting, subacid; freestone; ripens at the end of September.

Cora Wright. 1. Fulton *Peach Cult.* 175. 1908.

A large, yellow peach from Caroline County, Maryland.

Corbeil. 1. Leroy *Dict. Pom.* **6**:102, 103. 1879.

Corbeil is a name applied to peaches found near Corbeil, Seine-et-Oise, France; mentioned first, according to Leroy, in 1540 by Charles Estienne. Fruits pubescent, white, juicy.

Corlett. 1. *Can. Exp. Farms Rpt.* 146. 1896.

Produced by a Mr. Corlett, Olinda, Ontario, Canada; resembles Amsden. Fruit large, round; suture shallow; skin yellow, partly covered with a pink blush; flesh pale yellow, juicy, sweet; stone medium in size, free; ripens at the end of July.

Cornelia. 1. Harrison *Cat.* 19. 1912.

Listed by J. G. Harrison, Berlin, Maryland, as a vigorous, productive, white-fleshed peach ripening at the end of July.

Corner. 1. *Mich. Hort. Soc. Rpt.* 197. 1883. **2.** *Mich. Sta. Bul.* **169**:211. 1899.

Originated by William Corner, Ganges, Michigan, where it is

grown locally. Tree vigorous; glands reniform; flowers small; fruit of medium size, oval to ovate; suture distinct; skin brightly blushed on a yellow ground; flesh red at the pit, moderately juicy, tender, mild but not rich; pit free, oval, pointed; matures early in September.

Corosa. 1. *Ga. Hort. Soc. Rpt.* 66. 1907.

According to the reference, Corosa ripens soon after Mamie Ross which it excels.

Corriell. 1. *Ia. Hort. Soc. Rpt.* 335. 1896.

A very hardy variety grown in southeastern Iowa.

Cothelstone Seedling. 1. *Lond. Hort. Soc. Cat.* 95. 1831.

Listed in this reference.

Coulombier. 1. Mathieu *Nom. Pom.* 392. 1889.

Mentioned in this reference.

Countess. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *La. Sta. Bul.* **27**:942. 1894. **3.** *Tex. Sta. Bul.* **39**:811. 1896. **4.** *Am. Pom. Soc. Cat.* 36. 1909.

Countess is a southern variety of unknown origin. It appeared on the fruit-list of the American Pomological Society from 1891 to 1899, reappearing in 1909. The fruit is white-fleshed, juicy, nearly free; ripens early in July.

Counts. 1. Downing *Fr. Trees Am.* 605. 1869. **2.** *Am. Pom. Soc. Cat.* 28. 1877.

Counts originated with H. H. Counts, Lylesford, South Carolina. It was on the fruit-list of the American Pomological Society from 1877 until 1891. Fruit large, white, blushed; flesh white, rich, juicy; clingstone; matures

in mid-season.

Coupers. 1. *Am. Gard.* **24**:414. 1903.

Coupers is a heavy bearer; skin white, with a blush; ripens late in August.

Cowan Late. 1. *Am. Pom. Soc. Rpt.* 186. 1860. **2.** *Tex. Sta. Bul.* **39**:811. 1896.

Glands reniform; fruit very small, round; ripens in September.

Cox Cling. 1. *Wash. Bd. Hort. Rpt.* 140. 1891-92. **2.** *Am. Pom. Soc. Cat.* 32. 1899.

Cox Cling appeared on the fruit-list of the American Pomological Society from 1899 until 1909. It is listed as a medium-sized, white-fleshed clingstone of fair quality; originated in Texas.

Cox October. 1. *U. S. Pat. Off. Rpt.* 298. 1855.

A choice variety grown at one time in Mississippi.

Cream. 1. *Kan. Hort. Soc. Rpt.* 80. 1898.

E. T. Daniels, Kiowa, Kansas, grew Cream from a stone of Marcella. It resembles Late Crawford in size and color; ripens October 15th.

Crimson Beauty I. 1. *Am. Pom. Soc. Rpt.* 161. 1881. **2.** *Ga. Sta. Bul.* **42**:234. 1898.

Tree tall, erect; glands reniform; fruit of medium size, globular; skin greenish-yellow, overspread with carmine; flesh white except at the stone; clingstone; ripens at the middle of August.

Crimson Beauty II. 1. Bailey *Ann. Hort.* 184. 1892.

Tree with heavy, dark foliage; fruit large, highly colored; flesh firm, fine; freestone; ripens in November.

Crimson Galande. 1. Hogg *Fruit Man.* 217. 1866. **2.** Mas *Le Verger* **7**:191, 192, fig. 94. 1866-73. **3.** Hogg *Fruit Man.* 441. 1884.

Crimson Mignonne. **4.** *Jour. Hort.* N. S. **5**:188. 1863.

Crimson Galande is one of the many seedlings raised by Thomas Rivers, Sawbridgeworth, England. Tree an abundant bearer; glands globose; flowers small; fruit large, roundish, uneven in outline, faintly sutured; skin almost entirely covered with very dark crimson; flesh white, purple about the pit, melting, juicy, sprightly; stone free, small, ovoid; ripens at the end of August.

Crockett. 1. *Tex. Sta. Bul.* **39**:811. 1896.

Crockett Late White. **2.** *Gard. Mon.* **2**:335 fig. 1860. **3.** *Am. Pom. Soc. Cat.* 28. 1877.

Crockett Late. **4.** *Am. Pom. Soc. Cat.* 32. 1887.

Crockett originated in New Jersey and was once popular as a late, market sort. In 1877, it was added to the fruit-list of the American Pomological Society; in 1887, the name was changed to Crockett Late; the variety was finally dropped in 1891. Glands reniform; fruit medium to large, oblong, greenish-white, with an occasional blush; flesh pale, sweet, not very juicy; freestone; ripens the last of September.

Crofts Golden. 1. *La. Sta. Bul.* **3**:44. 1890.

Listed by the Louisiana Experiment Station.

Cromwell Seedling. 1. *Gard. Mon.* **3**:280. 1861.

An early variety introduced by a Mr. Cromwell, Baltimore,

Maryland.

Crothers. 1. *U. S. D. A. Rpt.* 289. 1893. **2.** *Rural N. Y.* **59**:626 fig. 1900.

A Mr. Crothers of Neosho Falls, Kansas, found this variety on his farm. On the Station grounds it is very similar to Oldmixon Free. Tree fairly vigorous and productive; glands small, globose; flowers small, appearing early; fruit above medium in size, roundish-oval, sometimes oblique, angular; apex often with a recurved, mamelon tip; skin thin, tough, with fine, short pubescence, creamy-white, mottled with dark red; flesh white, stained about the pit, juicy, stringy, sprightly; quality not as high as Oldmixon Free; stone nearly free, large, plump, broadly oval, with a long point at the apex; ripens the last of September.

Crown. 1. *Rea Flora* 211. 1676.

Listed as a fair fruit ripening with Newington.

Cumberland. 1. *Am. Pom. Soc. Rpt.* 151. 1881. **2.** *Soc. Nat. Hort. France Pom.* 300 fig., 301. 1904.

An American variety but little known. Tree moderately vigorous, productive; glandless; flowers large; fruit medium in size, somewhat oblate; skin creamy-white, marbled with deep red; flesh white to the stone, melting, juicy, sweet; quality very good; stone small, oval, acutely pointed, nearly free; matures early in July.

Curtis. 1. *Tex. Sta. Bul.* **39**:806. 1896. **2.** *Am. Pom. Soc. Cat.* 32. 1899.

A southern variety named after Professor G. W. Curtis, College Station, Texas. The American Pomological Society held it on its fruit-list from 1899 until 1909. Tree vigorous, productive; glands globose; fruit of medium size, round to slightly oblong; skin clear yellowish-white; clingstone; matures early in July.

Cutter. 1. Cole *Am. Fr. Book* 194. 1849.

Cutter is very similar to Lincoln but is a few days earlier.

Dabezac. 1. Thomas *Guide Prat.* 48. 1876.

Fruit medium in size, cordate; of first quality; ripens the last of August.

Dad. 1. *Kan. Hort. Soc. Rpt.* 50. 1901.

A seedling from F. G. Barker, Salina, Kansas.

Dagmar. 1. *Jour. Hort.* N. S. **9**:190. 1865.
2. Hogg *Fruit Man.* 217. 1866.

A seedling of Albert raised by Thomas Rivers, Sawbridgeworth, England. Glands round; flowers small; fruit round; suture shallow; skin very tender, thickly pubescent, with a pale straw-colored ground, almost entirely overlaid with crimson; flesh white, tender, vinous; freestone; ripens in August.

Darby. 1. *Am. Pom. Soc. Rpt.* 75. 1873.

A seedling of the Heath type originated by I. W. and R. S. Chick, Newberry, South Carolina. Fruit large, round, with a well-marked suture; skin creamy-white, faintly washed with red; flesh white to the stone, fine, juicy, aromatic; quality very good; clingstone; matures at the end of October.

Daun. 1. Thomas *Guide Prat.* 40. 1876.

Glands globose; flowers large; fruit large, heavy, roundish, regular in outline; skin pale greenish-yellow, marbled with reddish-brown; flesh fine, melting, very juicy, aromatic; ripens before the middle of September.

David Hill. 1. *Cultivator* 3rd Ser. **6**:283. 1858.

According to this reference, David Hill was at one time valuable in western New York.

Davidson No. 1. 1. *W. N. Y. Hort. Soc. Rpt.* 113. 1880.

This variety was raised by M. B. Bateham, Painesville, Ohio. It is said to ripen a few days earlier than Alexander. The fruit is of medium size, attractive and equal in quality to most early peaches.

Davidson No. 2. 1. *W. N. Y. Hort. Soc. Rpt.* 113. 1880.

Another seedling raised by M. B. Bateham, Painesville, Ohio. Fruit medium in size, attractive, as good in quality as other early peaches. Ripens a few days later than the preceding sort.

Dawson. 1. *Ala. Sta. Bul.* **156**:132. 1911.

Dawson is not recommended in the reference given. Tree slow growing; fruit of medium size, round; skin rich yellow; flesh yellow; flavor excellent; ripens June 15th; a poor shipper.

Dawson Early. 1. *Mich. Hort. Soc. Rpt.* 170. 1882.

A white-fleshed variety, little known in Michigan; glands globose; flowers large; fruit roundish; ripens late in August; said to be free from rot.

Day Yellow Free. 1. Wickson *Cal. Fruits* 311. 1889.

A California seedling ripening with and closely resembling Foster; a good market variety.

De Citry. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

De Corsa Heath. 1. *Del. Sta. Rpt.* **5**:97. 1892.

Grown at one time near Seaford, Delaware.

De Ferrières. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed but not described.

De Gloria. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Listed in this reference.

De Grillet. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

De Halle. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:64. 1900.

A weak grower; planted in Canada.

D'Ispahan à Fleurs Simples. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed but not described.

De Napier. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:64. 1900.

A medium-vigorous variety grown in Canada.

De Thoissey. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

De Tondensis. 1. Kenrick *Am. Orch.* 199. 1841.

A large, moderately productive, first quality, red and white peach, ripening in September.

De Trianon. 1. Mas *Pom. Gen.* **12**:185.

1883.

Listed in this reference.

De Tullias. 1. *Mag. Hort.* **20**:271. 1854.

"A variety of the Egyptian peach with larger fruit, surpassing the original type."

De Zelhern. 1. Downing *Fr. Trees Am.* 606. 1869.

Fruit of medium size, roundish; suture deep; skin downy, yellow, with more or less bright red; flesh white, melting, juicy, sweet; freestone; matures in August.

Deaconess. 1. *Can. Hort.* **23**:379, 380. 1900.

A yellow variety said to be immune from yellows.

Dean Orange. 1. Kan. Hort. Soc. *Peach, The* 140. 1899.

Named after its originator, Martin Dean, Bavaria, Kansas, about 1875. Another seedling that reproduces itself from seed.

Dean Red Free. 1. *Ohio Hort. Soc. Rpt.* 16. 1896-97.

Dean Brothers of southern Indiana originated this variety; flesh white, freestone; ripens with Oldmixon Free.

December. 1. *U. S. D. A. Rpt.* 634. 1887. **2.** Wickson *Cal. Fruits* 318. 1889.

A white clingstone occasionally grown because of its extreme lateness.

Decker. 1. Wickson *Cal. Fruits* 201. 1908.

Buck Prolific. **2.** *Ibid.* 318. 1889.

Decker is grown extensively for eastern shipment in Sutter and Butte Counties, and in Vaca Valley, California.

Dekenhoven Pfirsich. 1. Mas *Pom. Gen.* **12**:185. 1883.

Madeleine d'Ekenholen. **2.** Carrière *Var Pêchers* 80. 1867.

Madeleine Dekenhoven. **3.** Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Tree moderately vigorous; branches slender; leaves devoid of glands; flowers large; fruit large, roundish, slightly depressed at the base, apex terminating in a small, mamelon tip; distinctly sutured; skin tender, almost entirely overlaid with reddish-black; flesh white except at the stone, melting, juicy, sweet; stone small, free; ripens the last of August.

Delavan White. 1. *Mich. Hort. Soc. Rpt.* 450. 1879. **2.** *Ibid.* 458. 1883.

Of American origin, but not generally known or valued. Glands round; flowers small; fruits large, roundish-oval; skin white, with a red cheek; freestone; ripens early in October.

Delaware. 1. Lovett *Cat.* 18. 1898. **2.** *Am. Pom. Soc. Cat.* 36. 1909.

Delaware, or Delaware Rareripe as it is sometimes called, originated in Delaware as a seedling of Mountain Rose. The variety is unproductive on the Station grounds. Tree large, vigorous; leaves large, with small, globose glands; flowers appear in mid-season, small, edged with deep pink; fruit medium in size, roundish-cordate, halves unequal; skin thin, thickly pubescent, pale yellowish-white, blushed about the cavity; flesh white, stained at the pit, coarse, stringy, sweet; quality good but not high; stone free, small, oval, plump; ripens the second half of August.

Deming. 1. *Cultivator* 3rd Ser. **4**:146. 1856. **2.** *Am. Pom. Soc. Cat.* 36. 1909.

Deming Orange. **3.** *Ibid.* 28. 1875.

Deming September. **4.** *Ga. Hort. Soc. Rpt.* 24. 1876. **5.** *Ga. Sta. Bul.* **42**:234. 1898.

Deming is a southern variety which was placed on the fruit-list of the American Pomological Society in 1875 as Deming Orange, remaining until 1897, and reappearing as Deming in 1909. Tree open; glands reniform; fruit large, oblate; flesh yellow; clingstone; ripens in mid-season.

Demouilles. 1. Thomas *Guide Prat.* 55. 1876. **2.** Leroy *Dict. Pom.* **6**:106 fig., 107. 1879.

An ornamental peach originating with a M. Demouilles, Toulouse, Haute-Garonne, France. Glands usually reniform; flowers small; fruit of medium size, roundish, generally depressed at the base; suture shallow; skin thick, orange-yellow, streaked and washed with deep red where exposed; flesh intense yellow, tinged with red at the pit, melting, juicy, vinous; stone free, small, ovoid, plump; ripens at the end of September.

Dennis. 1. *Mich. Sta. Bul.* **118**:29. 1895. **2.** *Ibid.* **169**:211. 1899.

Tree strong, spreading, with drooping branches; glands globose; flowers large; fruit of medium size, roundish; suture distinct, two-thirds around; skin yellow; flesh yellow, juicy, tender, highly vinous; pit large, roundish-oval, plump, free; ripens early in September.

Denton. 1. *Am. Pom. Soc. Rpt.* 45. 1897. **2.** *Del. Sta. Rpt.* **13**:96. 1901.

J. W. Kerr, Denton, Maryland, grew this peach in 1888 from a seed of Early Beauty crossed with Elberta. Denton resembles Elberta very closely and on the Station grounds ripens a week later. Tree large, vigorous, moderately productive; glands large, reniform; flowers large; fruit large, oval; cavity deep; skin tough, covered with thick, coarse

pubescence, lemon-yellow, with a few dark splashes; flesh yellow, with red radiating from the stone, juicy, firm, sprightly but varying in flavor; quality good; stone large, obovate, flattened, decidedly bulged, nearly free; ripens the third week in September.

Désiré Vitry. 1. *Rev. Hort.* 463. 1903.

Listed in this reference.

Despot. 1. Rea *Flora* 211. 1676.

Listed as a yellow peach spotted with red.

Desprez. 1. Poiteau *Pom. Franc.* **1**:No. 39, Pl. 1846.

Named after a M. Desprez, a judge at Alençon, Orne, France. Leaves carry from two to four reniform glands; flowers large; fruit variable, often large, roundish, with a small, mamelon tip at the apex; skin smooth, thick, yellow; flesh white, melting, vinous; stone plump, oval, pointed at the ends, free; ripens the last of August.

Desse Tardive. 1. *Jour. Hort.* N.S. **9**:250. 1865. **2.** Mas *Le Verger* **7**:143, 144, fig. 70. 1866-73. **3.** Hogg *Fruit Man.* 218. 1866.

Desse Tardive was named after its originator, a M. Desse of Chantecoq, Seine, France, about 1835. Glands round; flowers small; fruit large, round, flattened at the top, deeply sutured; skin thin, greenish-white, marbled with vermilion-red; flesh white, slightly colored with red at the stone, melting, juicy, sweet; stone plump, nearly free; ripens at the end of September.

Dewey Cling. 1. *Am. Pom. Soc. Rpt.* 91. 1899. **2.** Peyton-Barnes *Cat.* 19. 1912.

Dewey Cling originated with H. W. Jenkins, Boonville, Missouri, in 1898. Tree vigorous, healthy, upright yet spreading, hardy; fruit of good size; skin smooth, creamy-

white; flesh white, very juicy, rich; of good quality; ripens in Missouri the middle of September.

Dey. 1. *Rural N. Y.* **41**:864, fig. 1882.

Named after a Mr. Dey, Newark, New Jersey, in whose yard it was found. Fruit large, greenish-white; sweet, rich, juicy; freestone.

Di Carema Giallo. 1. Thomas *Guide Prat.* 48. 1876.

A delicious, yellow peach from Italy.

Diamond. 1. *Ohio Hort. Soc. Rpt.* 50. 1888-89. **2.** *Ibid.* 16. 1896. **3.** *Ga. Sta. Bul.* **42**:235. 1898.

Diamond originated in Athens County, Ohio. On the grounds of this Station it closely resembles Orange Cling. Tree low, spreading; leaves with globose glands; fruit large, globular; flesh pale yellow except at the pit; clingstone; ripens the first of October.

Diana. 1. Coxe *Cult. Fr. Trees* 221. 1817.

According to Coxe, Diana is a large, oblong clingstone, with white flesh, ripening the first of September.

Dix. 1. Kenrick *Am. Orch.* 199. 1841.

A large, productive, first-rate peach.

Dixie. 1. *U. S. D. A. Rpt.* 289. 1893.

Fruit above medium in size, roundish; cavity deep, abrupt; skin thin, yellowish-white, with a blush; flesh white, slightly tinged at the stone, firm, mildly, subacid, slightly bitter; stone oval, clinging.

Docteur Burkard. 1. Mathieu *Nom. Pom.* 393. 1889.

Listed but not described.

Docteur Lucas. 1. Thomas *Guide Prat.* 53. 1876.

Found at the Saint-Florian Abbey, Germany. Tree vigorous; fruit large, roundish-oblate, blushed with deep red on a green ground; of first quality; matures the middle of September.

Docteur Krans. 1. Mas *Le Verger* **7**:117, 118, fig. 57. 1866-73.

Introduced by a Dr. Krans, Liege, Belgium. Tree vigorous; glands reniform; flowers large; fruit of medium size, roundish-oval, flattened at the ends; suture pronounced; skin thin, tender, pale yellow, blushed with intense purple where exposed; flesh white, tinged about the pit, melting, juicy, sweet; of first quality; stone small, elliptical, nearly free; ripens at the end of August.

Dr. Burton. 1. Munson *Cat.* 6. 1905-06.

According to T. V. Munson, Denison, Texas, this variety is a seedling grown by Dr. E. L. Burton, Grayson County, Texas. In the Station orchard it is a fairly good peach but not of superior merit. Tree productive; glands globose, small; flowers appearing in mid-season, large; fruit large, oval; cavity deep; apex often ends in a mamelon tip; skin tough, creamy-yellow, with few splashes of dark, dull red usually near the cavity; flesh white, with a trace of pink along the suture, juicy, tender, stringy, sprightly; stone oval, with a long point at the apex, plump; ripens just before Champion.

Dr. Cummings. 1. *Rural N. Y.* **61**:734. 1902.

A seedling of Early Crawford raised at Cayuga, New York, and disseminated by H. S. Wiley of the same place; a yellow freestone ripening about October 1st.

Dr. Graham White Freestone. 1. *Lond.*

Hort. Soc. Rpt. **6**:412. 1826.

Fruit large, perfectly white; juice rich and sweet; stone small; ripens the middle of September.

Dr. Hogg. 1. *Jour. Hort.* N. S. **9**:190. 1865.

This peach was grown by Thomas Rivers, Sawbridgeworth, England, from a French peach. Tree a strong grower, vigorous, productive; glands reniform; flowers large; fruit large, round, with a distinct suture; skin thin, tough, lemon-colored, faintly crimson where exposed; flesh yellowish-white, deeply stained at the pit, firm but tender, sugary, brisk; stone free; ripens in August.

Dr. Pilkington. 1. *Cal. Sta. Rpt.* 393. 1895-97.

An Oregon freestone seedling of promise.

Dr. Tomlinson. 1. *Del. Sta. Rpt.* **5**:97. 1892.

Listed in this reference.

Domergue. 1. *Rev. Hort.* 156, Pl. 1889. **2.** *Guide Prat.* 42. 1895.

Originated near Marseilles, Bouches du Rhône, France, by a M. Domergue. Tree vigorous, productive; glands globose; flowers of medium size; fruit large, well colored; ripens early in August.

Donahoo. 1. Downing *Fr. Trees Am.* 636. 1857.

From a Mr. Donahoo, Clark County, Georgia. Glands reniform; fruit very large, roundish; suture visible around the entire fruit, deep on one side; skin creamy-white, tinged with red in the sun; flesh white to the stone, very juicy, excelling Heath Cling in tenderness and flavor; clingstone; ripens the second week in September in Georgia.

Donegal. 1. *U. S. D. A. Pom. Rpt.* 25. 1894.

Fruit large, roundish; cavity large and deep; skin thin, tenacious, velvety, yellow, sprinkled with dark red; flesh yellow, tinged at the pit, tender, melting, juicy, subacid; quality good to above; stone small, oval, free; season follows Smock.

Dorsetshire Mignonne. 1. *Lond. Hort. Soc. Cat.* 99. 1831.

A large-sized fruit of second quality ripening at the end of September; glands reniform; flowers small; skin dark red on a pale yellow ground; flesh melting.

Dorothy. 1. *Glen St. Mary Nur. Cat.* 12. 1901. **2.** *Fla. Sta. Bul.* **62**:512. 1902. **3.** *Am. Pom. Soc. Cat.* 36. 1909.

A seedling of Angel grown by G. H. Norton, Eustis, Florida. In 1909, it was listed by the American Pomological Society. Fruit large, nearly round; flesh yellow, rich, subacid; freestone; ripens early in July in Florida.

Double Blanche de Fortune. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Double Cramoisie de Fortune. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Double Jaune. 1. Mas *Pom. Gen.* **12**:165, 166, fig. 19. 1883.

Originated in the vicinity of Montauban, Tarn-et-Garonne, France. Leaves with reniform glands; flowers medium in size; fruit large, roundish-oval, ending in a mamelon tip; deeply sutured; skin thin, tender, canary-yellow, nearly covered with an intense reddish-brown; flesh yellow to the

stone, melting, juicy, with an apricot flavor; of first quality; stone small for the size of fruit, oval, freestone; ripens at the end of August.

Double Mountain. 1. Brookshaw *Pom. Brit.* **1**:Pl. 26. 1817. **2.** Christ *Handb.* 592. 1817. **3.** Lindley *Guide Orch. Gard.* 246. 1831.

Sion. **4.** Miller *Gard. Dict.* 1752.

Doppelter Bergpfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:198. 1858.

An excellent French variety very similar to Noblesse but ripening a week earlier. Leaves doubly serrate, glandless, not as susceptible to mildew as most French varieties; flowers large; fruit of medium size, roundish, flattened at the apex; skin greenish-white, marbled with deep red on a soft red blush; flesh white to the stone, melting, juicy, highly flavored; stone mucronate, rugged, free; ripens from the middle to the last of August.

Down Easter. 1. Elliott *Fr. Book* 283. 1854.

Hall Down-Easter. **2.** Cole *Am. Fr. Book* 196, 197. 1849.

This variety originated many years ago with M. Hall, Portland, Maine. It has long since passed from cultivation. Tree hardy and productive; fruit large, roundish, with a deep suture; skin yellow, with a broad, red cheek; quality fair; season the last of September.

Downer. 1. *Gard. Mon.* **19**:115. 1877.

A seedling of the old Red Rareripe, grown at Newburyport, Massachusetts; never disseminated.

Dowling. 1. *Tex. Sta. Bul.* **39**:811. 1896.

Dowling June. **2.** *Ibid.* **8**:34. 1889.

Tree vigorous, productive; glandless; fruit of medium size, roundish, with a slight projection at the apex; color creamy, with a red cheek; flavor subacid; clingstone; matures in Texas about July 8th.

Downing. 1. *Gard. Mon.* **17**:270. 1875. **2.** *Mich. Hort. Soc. Rpt.* 462. 1885. **3.** *Cat. Cong. Pom. France* 526. 1906.

Downing originated about 1870 with H. M. Engle, Lancaster County, Pennsylvania, from a pit of Hale Early. Tree productive; fruit of medium size, roundish, with a distinct suture; skin greenish-white, mottled with red; flesh white, juicy, melting, sweet; quality good; ripens from the first to the middle of July.

Drain Seedling. 1. *Ia. Hort. Soc. Rpt.* 491. 1908.

One of the early seedlings planted in Iowa.

Drap d'Or. 1. *Mag. Hort.* **20**:271. 1854. **2.** *Ann. Pom. Belge* **3**:1, Pl. 1855.

Drap d'or Esperen. **3.** Thomas *Guide Prat.* 52, 217. 1876.

A variety of Belgian origin. Tree moderately vigorous, productive; glands small, round; fruit large, roundish, depressed; skin thin, clear yellow, with spots of carmine; noticeably sutured; flesh whitish-yellow, colored at the pit, fine, juicy, vinous; quality good; stone very large, roundish-oval, partly free; ripens September 20th.

Druid Hill. 1. Downing *Fr. Trees Am.* 474. 1845. **2.** *Am. Pom. Soc. Cat.* 78. 1862. **3.** Leroy *Dict. Pom.* **6**:110 fig. 111. 1879. **4.** Fulton *Peach Cult.* 191. 1908.

Druid Hill originated about 1840 with Lloyd N. Rogers, Druid Hill, Baltimore, Maryland. From 1862 until 1899 it was listed in the catalog of the American Pomological

Society. Tree vigorous, productive; glands reniform; fruit large, round, with a slight suture; skin pale greenish-white, clouded with a red blush; flesh greenish-white, almost purple at the pit, very juicy, melting, with a rich, vinous flavor; stone free; season the last of September.

Duboisviolette. 1. Noisette *Man. Comp. Jard.* **2**:476. 1860.

This variety was brought to France from China by a M. Duboisviolette. The flowers are very large, semi-double, reddish-purple; glands reniform; fruit large, roundish, terminating in a mamelon tip; skin white except where exposed; flesh white, vinous.

Duboscq. 1. *Am. Pom. Soc. Rpt.* 122. 1860.

Similar to Oldmixon Free; a very large, good, greenish-white peach.

Duchess of Cornwall. 1. *Gard. Chron.* **59**:446. 1901.

Duchess of York. **2.** *Ibid.* **58**:59. 1900. **3.** *Ibid.* **59**:427. 1901.

Originated and introduced by Thomas Rivers, Sawbridgeworth, England. Fruit of medium size; skin creamy-yellow, with a striped red blush; flesh melting, with a distinct nectarine flavor; freestone; ripens with Alexander.

Duchesse de Galliera. 1. *Guide Prat.* 40. 1895.

Vigorous, productive; glands globose; fruit very large, compressed; apex mucronate; skin thin, reddish-purple in the sun; flesh white, violet at the pit, melting, very juicy; freestone; ripens the second half of September.

Duff. 1. *Am. Pom. Soc. Cat.* 44. 1891.

Duveteuse Jaune. **2.** Mas *Le Verger* **7**:237,

238, fig. 117. 1866-73.

Duff Yellow. **3.** Downing *Fr. Trees Am.* 608. 1869. **4.** *Ga. Hort. Soc. Rpt.* 24. 1876. **5.** *Am. Pom. Soc. Cat.* 28. 1877.

Duff is an early, market peach which appeared on the fruit-list of the American Pomological Society from 1877 until 1897. Glands globose; flowers small; fruit very large, round, with a sharp point; skin yellow, with a red cheek; flesh yellow, red about the stone, juicy, slightly acid; clingstone; ripens the middle of July in the South.

Duggar. 1. *Tex. Sta. Bul.* **39**:811. 1896.

Duggar Golden. **2.** *Ala. Sta. Bul.* **11**:8, 11. 1890.

Glands globose; flowers small; fruit large, roundish; color yellow, with a blush; flesh yellow, subacid, firm; clingstone; ripens the last of July.

Duggar White. 1. *Ala. Sta. Bul.* **11**:8. 1890.

Flowers large, white; fruit medium in size; flesh white, very firm; quality good; ripens the middle of July; not very prolific.

Duke of Marlborough. 1. Brookshaw *Pom. Brit.* **1**:Pl. 27 fig. 1. 1817.

A variety resistant to mildew, found in the garden of the Duke of Marlborough, near Brentford, Middlesex, England. Flowers large; fruit large, slightly flattened about the base, heavily pubescent; ripens August 10th.

Duke of York. 1. *Can. Hort.* **25**:326. 1902. **2.** Bunyard *Cat. Fr. Trees* 35. 1913-14.

This variety is a cross between Early Rivers nectarine and Alexander peach, made by Thomas Rivers, Sawbridgeworth, England. Fruit large; skin brilliant crimson; flesh tender,

melting, refreshing; ripens with Alexander.

Du Lin. 1. Thomas *Guide Prat.* 48. 1876.

A variety from Aire, France, with reniform glands.

Du Moulin. 1. Thomas *Guide Prat.* 48. 1876.

A variety with reniform glands; recommended for central France.

Du Quesnoy. 1. Mas *Pom. Gen.* **12**:155, 156, fig. 14. 1883.

A variety of Belgian origin. Leaves with small, globose glands; flowers large; fruit large, roundish, depressed at the ends, faintly sutured; skin heavily pubescent, greenish, covered more or less with an intense purplish-brown; flesh white, purplish about the pit, melting, sweet; stone small for the size of fruit, nearly free; ripens the middle of August.

Du Thiers. 1. Thomas *Guide Prat.* 52. 1876.

Glands reniform; flowers of medium size, pale rose-colored.

Dulany. 1. *Am. Pom. Soc. Rpt.* 95. 1854.

A seedling of Heath Cling; superior to its parent in Maryland.

Dulce. 1. Munson *Cat.* 7. 1904-05.

On the Station grounds the trees of Dulce are weak and unproductive. The variety, according to T. V. Munson, Denison, Texas, originated with B. C. Murray, Denison, Texas. Leaves with large, reniform glands; flowers appear late; fruit small, roundish-cordate, angular, halves unequal; cavity narrow, flaring; suture shallow; apex roundish, usually with a small, mamelon tip; skin covered with heavy, coarse pubescence, tough, greenish-yellow, faintly blushed, with a bronze appearance; flesh yellow, stained at the pit,

moderately juicy, fine-grained, mild, often astringent; stone below medium in size, ovate, plump, decidedly bulged, semi-clinging to free; ripens early in October.

Dumont. 1. *Mich. Hort. Soc. Rpt.* 267. 1885. **2.** *Mich. Sta. Bul.* **169**:212. 1899.

Raised by Peter Dumont, Allegan, Michigan, from seed planted about 1835. Tree strong, very hardy, susceptible to leaf-curl; glands reniform; flowers small; fruit medium to large, roundish-oval, much compressed; cavity narrow; suture distinct, extending beyond the apex which terminates in a short, projecting tip; skin covered with dense pubescence, dark golden, usually blushed, thick, tough; flesh deep yellow, tinged at the pit, melting, moderately juicy, brisk subacid; stone oval, free; ripens the middle of September.

Dun. 1. *Cat. Cong. Pom. France* 97 fig. 1906.

Dun originated in Austria. Leaves with small, globose glands; flowers large; fruit very large, roundish, with a mamelon tip at the apex; skin yellowish-white, marbled with dull red; flesh white, stained at the stone, melting, very juicy, aromatic; very good; stone ending in a long point, free; ripens the middle of August.

Dunlap. 1. *Mich. Sta. Bul.* **118**:29. 1895. **2.** *Ibid.* **169**:212. 1899.

Tree a strong grower, spreading; glands globose; flowers small; fruit large, roundish to occasionally ovate; cavity wide; suture distinct; color yellow, nearly covered with dark red; flesh yellow, stained at the pit, quite juicy, rich, vinous; pit large, plump, free; ripens the last of August.

Dunnington Beauty. 1. *Lond. Hort. Soc. Cat.* 96. 1831.

Very much like Noblesse. Leaves serrate, glandless; flowers large; fruit large; skin pale greenish-red; flesh melting;

quality good; ripens at the end of August.

Duperron. 1. Downing *Fr. Trees Am.* 608. 1869.

A seedling raised by a M. Duperron. Glands globose; flowers small; fruit large to very large, roundish, depressed at the end; suture shallow; skin downy, golden yellow, more or less washed with pale red; flesh yellow; clingstone; ripens in October.

Durasme. 1. Parkinson *Par. Ter.* 582. 1629.

"The Durasme or Spanish Peach is of a darke yellowish-red colour on the outside and white within."

Durchsichtiger Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:202. 1858.

Tree of medium size, productive; fruit large, roundish-oblate, yellowish-white, with a bright red blush; flesh firm yet melting, with a sweet, vinous flavor; quality good; season early in September.

Durham Favorite. 1. *Ind. Hort. Soc. Rpt.* 52. 1867.

Listed in this reference.

Dutchess. 1. Coxe *Cult. Fr. Trees* 223. 1817.

A very large peach, with white skin, a red cheek and a clear stone; ripens in August and September.

Dwarf Aubinel. 1. *Flor. & Pom.* 144. 1876.

This variety is remarkable for the constancy with which it is reproduced from seed and for its dwarf, bushy habit of growth. Flowers large; fruit large, globular; skin pale orange, marbled with red near the apex; flesh yellow, red near the stone; quality good; freestone; ripens at the end of September.

Dwarf Champion. 1. *N. Mex. Sta. Bul.* **30**:224, 225. 1899.

Listed as growing in New Mexico.

Dwarf Cuba. 1. *Mich. Sta. Bul.* **118**:29. 1895. **2.** *Ibid.* **129**:23. 1896.

A variety with small flowers and reniform glands.

Dwarf Orleans. 1. Prince *Treat. Hort.* 17. 1828.

Nain. **2.** Duhamel *Trait. Arb. Fr.* **2**:44, 45, Pl. 32. 1768. **3.** Leroy *Dict. Pom.* **6**:175 fig., 176. 1879.

Zwergpfirsich. **4.** Dochnahl *Führ. Obstkunde* **3**:199. 1858.

Italian Dwarf. **5.** *Am. Jour. Hort.* **1**:287, 288. 1867.

Dwarf Orleans originated in Orleans, Loiret, France, early in the Eighteenth Century. The tree attains a height of two or three feet and is used mostly as an ornamental; leaves long, pendent, glandless and much indented; flowers large, showy; fruit about two inches long, roundish, deeply sutured; skin white; flesh white, melting, with bitter juice; freestone; ripens early in October.

Dyer June. 1. *Gard. Mon.* **24**:18. 1882.

A chance seedling found near Ava, Missouri. Fruit large; early; clingstone.

Dymond. 1. *Jour. Hort.* 3rd Ser. **3**:331. 1881. **2.** Hogg *Fruit Man.* 442. 1884.

Said to have been introduced by a Mr. Veitch, Exeter, England. Leaves glandless; fruit large, roundish, with a deep suture; skin greenish-yellow, with a dull red cheek, mottled

with brighter red; flesh white, slightly red at the pit, juicy, melting, with a high flavor; stone free; season the middle of September.

Eagle Red. 1. Kenrick *Am. Orch.* 199. 1841.

Listed as a large, beautiful fruit, with a red blush, ripening in September.

Earliest Mignonne. 1. *Lond. Hort. Soc. Cat.* 99. 1831.

A variety with globose glands and small flowers.

Early. 1. *Lond. Hort. Soc. Cat.* 96. 1831.

A variety with globose glands and large flowers.

Early Alfred. 1. *Gard. Mon.* **7**:372. 1865. **2.** Hogg *Fruit Man.* 219. 1866.

Thomas Rivers, Sawbridgeworth, England, grew Early Alfred from a seed of Hunt Tawny nectarine. Glands round; flowers large; fruit large; suture deeply marked, higher on one side than the other; skin tender, pale straw-colored, somewhat mottled with bright crimson; flesh white, melting, brisk, vinous; ripens early in August.

Early Ascot. 1. *Gard. Chron.* 1474, 1506. 1870. **2.** *Flor. & Pom.* 1, Pl. 1873.

Early Ascot was raised from a seed of Elruge nectarine by a Mr. Standish of Ascot, England. Tree hardy, productive; glands small, roundish; flowers small; fruit medium in size, roundish, somewhat depressed, with a distinct suture; skin nearly smooth, almost entirely covered with red, becoming nearly black where exposed; flesh yellow, tinged at the stone, very juicy; partially freestone; ripens the second week in August.

Early Avant. 1. Forsyth *Treat. Fr. Trees* 27.

1803.

An agreeable-flavored peach ripening in August.

Early Beauty. 1. *Mich. Hort. Soc. Rpt.* 314. 1889.

This is a Texas variety. Fruit large, yellow; freestone; ripens very early.

Early Bourdine. 1. *Lond. Hort. Soc. Cat.* 94. 1831.

Listed as having serrate, glandless leaves and small flowers.

Early Charlotte. 1. R. G. Chase *Cat.* 20. 1896. **2.** *Chico Nur. Cat.* 25. 1904.

A seedling of Early Crawford which originated about 1878 with O. Dickenson, Salem, Oregon. The variety has considerable merit as it grows on the Station grounds. Leaves with reniform glands; flowers appear in mid-season, small, faded, pale pink; fruit large, roundish-oval, often cordate, halves unequal; cavity deep; apex with a recurved, mamelon tip; skin covered with long, thick pubescence, thin but tough, pale yellow, splashed with lively red on a slight blush; flesh yellow, deeply stained at the pit, slightly stringy, tender, sprightly, rich, pleasing; quality good to above; pit broadly oval, plump, bulged, free; matures early in September.

Early Chelmsford. 1. Cole *Am. Fr. Book* 190. 1849. **2.** Downing *Fr. Trees Am.* 614. 1857.

Tree vigorous, productive, hardy; leaves glandless; fruit large, roundish; suture encircling the fruit; skin white, with a bright red cheek; flesh white, melting, juicy, vinous; freestone; ripens the third week in August.

Early Chevalier. 1. *Gard. Chron.* N. S. **20**:47. 1883.

A French peach in which early and late fruits are produced on different branches of the same tree.

Early China. 1. *Tex. Sta. Bul.* **39**:804, 805. 1896. **2.** *Am. Pom. Soc. Cat.* 21. 1897.

Early China is a Honey-flavored peach which originated in southern Texas where it has proved vigorous and productive, gaining a place in 1897 on the fruit-list of the American Pomological Society. The glands are round, often lacking; fruit of medium size, oval; apex with a sharply recurved point; color creamy, with a bright red cheek; flesh white, pinkish at the pit, very sweet; quality fair; freestone; ripens the middle of June in Texas.

Early Crawford Seedlings Nos. 1 and 3. 1. *Mich. Sta. Bul.* **118**:29. 1895. **2.** *Ibid.* **169**:212. 1899.

Seedlings obtained by C. C. Engle, Paw Paw, Michigan.

Early Cream. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *Tex. Sta. Bul.* **39**:818. 1896. **3.** *Fla. Sta. Bul.* **73**:144. 1904.

Kite. **4.** *Ibid.* **73**:148. 1904.

Kite Honey. **5.** *Ibid.* **73**:149. 1904.

Early Cream is a seedling of Honey. It appeared on the American Pomological Society's fruit-list from 1891 until 1897. Tree strong, productive; fruit larger than Honey and resembles it in shape but is not as sharply pointed at the apex; skin very smooth, yellow, washed with red; flesh fine, sweet, juicy; flavor excellent; ripens the middle of June.

Early Cronesteyn. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:64. 1900.

Listed as a slow grower in Canada.

Early Curtis. 1. *Mich. Hort. Soc. Rpt.* 186.

1880.

A seedling with reniform glands; very similar to Alexander but less inclined to adhere to the pit.

Early Downton. 1. Lindley *Guide Orch. Gard.* 247. 1831.

Raised by Thomas Knight, Downton Castle, England, about 1815. Leaves crenate, with globose glands; flowers large, pale rose-colored; fruit narrowed at the apex, usually terminating in an acute nipple; skin pale yellowish-white, bright red in the sun; flesh yellowish-white to the stone from which it separates, juicy; ripens at the end of August.

Early Free. 1. *N. Y. Sta. Rpt.* **15**:289. 1897.

Growing on the grounds of this Station in 1896.

Early Imperial. 1. *Cal. Bd. Hort. Rpt.* 241. 1890.

W. W. Smith, Vacaville, California, grew Early Imperial from a pit of St. John open to cross-fertilization. It is highly recommended in California because of extreme earliness and its good drying qualities; flesh yellow; freestone.

Early Leopold. 1. *Jour. Hort.* N. S. **17**:58. 1869. **2.** *Mich. Hort. Soc. Rpt.* 34. 1874. **3.** Thomas *Guide Prat.* 53. 1876.

Raised by Thomas Rivers, Sawbridgeworth, England, from a seed of Early York. Glands reniform; flowers small; fruit of medium size, pale yellow, rich; succeeds Rivers.

Early Louise. 1. Downing *Fr. Trees Am.* 609. 1869. **2.** *Am. Pom. Soc. Cat.* 28. 1875. **3.** Hogg *Fruit Man.* 444. 1884. **4.** *Cat. Cong. Pom. France* 526. 1906.

Louise. **5.** Budd-Hansen *Am. Hort. Man.* **2**:350. 1903.

Thomas Rivers, Sawbridgeworth, England, raised this peach from a seed of Early Albert and named it in honor of Queen Victoria's daughter, Princess Louise. From 1875 until 1883 the variety maintained a place in the fruit-list of the American Pomological Society. Fruit of medium size, round, marked on one side with a deep suture; skin highly colored, with a bright red cheek; flesh yellowish-white, tender, richly flavored, partly adherent to the pit; season early.

Early Lydia. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

Early Lydia is said to be resistant to rot; a rose-colored freestone ripening with Hale Early.

Early Michigan. 1. *Mich. Sta. Bul.* **118**:29. 1895. **2.** *Am. Pom. Soc. Cat.* 36. 1909. **3.** *Mich. Sta. Sp. Bul.* **44**:38, 39. 1910.

Confusion has arisen over two seedlings put out by J. D. Husted, Lowell, Michigan, as Husted No. 15 and 16. Eventually, No. 15 was introduced as Early Michigan but because of its similarity to No. 16, the latter is often substituted for it. The true Early Michigan is a cross between Hale Early and Chili. As it fruits at this Station, the peaches lack size and quality. In 1909 the American Pomological Society added it to its fruit-list. Tree vigorous, spreading; glands reniform; flowers appear early, large, showy; fruit of medium size, roundish-oval; cavity deep, narrow; apex with a large, mucronate tip; skin thin, tender, with long, thick pubescence, creamy, blushed with dull red, with a few deep red splashes; flesh greenish-white, tinged at the pit, juicy, stringy, melting, sweet, mild; stone free, broadly oval, plump; ripens the last of August.

Early Miners. 1. *N. J. Hort. Soc. Rpt.* 40. 1878.

Not spoken of favorably in New Jersey.

Early Newington Free. 1. Downing *Fr. Trees Am.* 476. 1845. **2.** *Am. Pom. Soc. Cat.*

78. 1862.

This freestone should not be confused with the other Newingtons which are all clings and usually later in season. One characteristic of this variety is that fruits on the same tree are free or adhere partially or wholly to the stone. Tree a moderate bearer; glands reniform; flowers small; fruit large, round, distinctly sutured; skin pale yellowish-white, with a rich red cheek; flesh white, tinged at the stone, juicy, melting, vinous; ripens late in August.

Early Purple. 1. Miller *Gard. Dict.* 1752. **2.** Prince *Pom. Man.* **1**:189, 190. 1831. **3.** Kenrick *Am. Orch.* 211. 1832.

Véritable Pourprée hâtive à grande fleur. **4.** Duhamel *Trait. Arb. Fr.* **2**:16, 17, Pl. VIII. 1768.

Frühe Purpurfirsche. **5.** Christ Handb. 593, 594. 1817.

Pourprée Hâtive. **6.** Poiteau *Pom. Franc.* **1**:No. 16, Pl. 1846. **7.** Leroy *Dict. Pom.* **6**:241 fig., 242, 243. 1879.

Weiniger Lieblingspfirsich. **8.** Dochnahl *Führ. Obstkunde* **3**:203. 1858.

Desse Hâtive. **9.** Mas *Le Verger* **7**:201, 202, fig. 99. 1866-73.

This variety originated far back in the Eighteenth Century. According to Mas, it was raised by a M. Desse, Chantecoq, Seine, France, and passed for a long time under the name Desse Hâtive. Early Purple long found favor in European orchards but is not much grown now, being surpassed by better sorts. It was brought to America by William Prince, Flushing, New York, early in the Nineteenth Century and soon became confused with Early York. The true variety, however, quickly passed from cultivation and the name has ever since been confused with that of Early York. Fruit

medium to large, roundish, flattened at the base; suture deep; color yellowish, blushed with dark red and dotted with red on the shaded side; pubescence thick, fine; flesh white, stained red under the skin on the side exposed to the sun, tinged with red next the pit, juicy, vinous, highly flavored, melting; very good in quality; stone semi-free to free, brownish-red; ripens early.

Early Rareripe I. 1. *Am. Pom. Soc. Rpt.* 85. 1854.

Dr. H. A. Muhlenberg, Lancaster County, Pennsylvania, originated this freestone.

Early Rareripe II. 1. *Kan. Hort. Soc. Rpt.* 50. 1901.

Early Rareripe is an improvement on a seedling erroneously called Felt Rareripe, which was brought to Kansas from Illinois by F. G. Barker of Salina. Fruit large, deep yellow.

Early Red I. 1. *Lond. Hort. Soc. Cat.* 96. 1831.

Leaves with globose glands; flowers large; fruit of medium size; skin pale yellow, with a red blush; flesh melting; fair in quality; ripens at the end of August.

Early Red II. 1. *Mich. Sta. Bul.* **152**:199. 1898.

This Early Red originated with C. C. Engle of Paw Paw, Michigan.

Early Red Cling. 1. Prince *Cat. Fr. Trees* 24. 1823. **2.** Prince *Pom. Man.* **2**:27. 1832.

Earliest Red Cling. **3.** Prince *Treat. Fr. Trees* 16. 1820.

This variety is thought to have been brought to Flushing, New York, by the French. The shoots are subject to mildew;

flowers small.

Early Rose I. 1. Kenrick *Am. Orch.* 183. 1841.

Of foreign origin. Fruit of medium size; red where exposed; ripens in August.

Early Rose II. 1. *Gard. Mon.* **22**:338. 1880.

This Early Rose is one of the so-called Spanish peaches and was found on the farm of Preston Rose, Mission Valley, Texas. It is described as a medium-sized, round, rosy-red fruit, with firm flesh, ripening June 25th; freestone.

Early Rose III. 1. W. P. Stark *Cat.* 49, 50 fig. 1915.

Early Rose III, according to W. P. Stark, Stark City, Missouri, was grown by John Keller, Fort Valley, Georgia, from the pit of a Honey-flavored peach crossed with one of the Indian peaches. Tree a moderate grower, rather small; flowers large; fruit of medium size, a rich, deep red; flesh white, rich, sweet; clingstone; ripens with Eureka. The fruit is handsomely colored and is said to sell for a fancy price wherever known. Unfortunately, it seems not yet to have been tried in the North.

Early Royal George. 1. Kenrick *Am. Orch.* 220. 1832. **2.** *Mag. Hort.* **14**:538. 1848.

Early George. **3.** *Tex. Sta. Bul.* **39**:811. 1896.

This variety may be an American seedling of Royal George. Fruit large, roundish; skin yellowish-white, splashed with red in the sun; flesh juicy, tender, vinous, free; fair to good in quality; ripens in August.

Early Sam. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Early Silver. 1. Hogg *Fruit Man.* 220. 1866. **2.** Budd-Hansen *Am. Hort. Man.* **2**:343. 1903.

Argentée Précoce. **3.** Thomas *Guide Prat.* 43, 215. 1876.

Silver. **4.** *Del. Sta. Rpt.* **13**:107. 1901.

This variety was grown by Thomas Rivers, Sawbridgeworth, England, in 1857, from a seed of White Nectarine. Fruit large, roundish-ovate, with a shallow suture; color creamy-white, slightly sprinkled with red; flesh entirely white, melting, juicy, with a vinous, pleasant, subacid flavor; stone free; quality good to very good; ripens from the middle to the last of August.

Early Strawberry. 1. *Ariz. Sta. Bul.* **15**:62, 67. 1895.

Grown at one time in Arizona.

Early Tallman. 1. *Mich. Sta. Sp. Bul.* **40**:19. 1907.

This is a small, white-fleshed peach of fair quality, ripening with Triumph. It is a semi-clingstone and of no value.

Early de Tours. 1. *Lond. Hort. Soc. Cat.* 96. 1831.

Listed but not described.

Early Victoria. 1. *Gard. Chron.* 946. 1861. **2.** Mas *Pom. Gen.* **12**:143, 144, fig. 8. 1883.

Victoria. **3.** *Am. Pom. Soc. Cat.* 39. 1909.

Early Victoria should not be confused with the Victoria of the South. This variety first fruited in 1854 with Thomas Rivers, Sawbridgeworth, England, from a stone of Early York. In 1909 the American Pomological Society added it to

its fruit-list as Victoria. Leaves glandless; flowers large; fruit of medium size, roundish; skin pale yellow, with a maroon blush; flesh white, melting, juicy, sweet; stone free, small; season very early, a week before its parent.

Early Wheeler. 1. *U. S. D. A. Yearbook* 360, 361, Pl. 28. 1906.

This is one of a large number of Heath Cling seedlings grown by E. W. Kirkpatrick, McKinney, Texas, about 1900. Tree moderately productive; glands reniform; blossoms very large; fruit medium to large, roundish-oblong; cavity large, broad; apex protruding; skin thick, tough, heavily pubescent, creamy-white, marbled and splashed with crimson; flesh white, stained with red near the skin, firm, meaty, juicy, subacid; quality good to very good; stone adherent, oval; ripens with Alexander.

Early White. 1. *Am. Pom. Soc. Rpt.* 85. 1854.

A large, fine-flavored freestone originating with Dr. H. A. Muhlenberg, Lancaster County, Pennsylvania.

Early White Cling. 1. Prince *Cat. Fr. Trees* 24. 1823. **2.** Prince *Pom. Man.* **2**:35. 1832.

Fruit medium to small; skin pale yellow, marbled with red; flesh yellowish-green, juicy, pleasant; ripens early in September.

Eastburn Choice. 1. Hoffy *Orch. Comp.* **1**:Pl. 1841.

The name is in honor of the originator, Rev. Joseph Eastburn, Philadelphia, Pennsylvania, who planted a pit about 1825. The variety comes true from seed. Tree hardy, vigorous, productive; fruit large, nearly round; skin pale yellow, blushed on the sunny side; flesh yellowish-white, tinged about the pit, sprightly, slightly acid, juicy; pit small; ripens late in September.

Eaton. 1. *Am. Pom. Soc. Cat.* 44. 1891.

Eaton Golden. **2.** *Am. Pom. Soc. Rpt.* 205. 1858. **3.** Downing *Fr. Trees Am.* 611. 1869. **4.** *Am. Pom. Soc. Cat.* 18. 1871.

Eaton originated in North Carolina and its planting is confined chiefly to the South. In 1871 it was placed on the fruit-list of the American Pomological Society as Eaton Golden but in 1891 was changed to Eaton. Glands reniform; flowers large; fruit above medium in size, round; suture shallow; skin golden-yellow, with occasional pink spots near the base; flesh golden, sweet, juicy, with a marked apricot flavor; clingstone; ripens the middle of September.

Edgar Late Melting. 1. *Lond. Hort. Soc. Cat.* 96. 1831.

Listed in this reference.

Edith. 1. *Fla. Sta. Rpt.* **8**:89. 1896. **2.** Griffing Bros. *Cat.* 12. 1900.

Edith is a large, round, white-fleshed clingstone; ripens in Florida July 25th.

Edouard Andre. 1. *Rev. Hort.* 87, 208, 209, Pl. 1895.

A French variety originating in the Department of Ain, France. Tree vigorous, productive; fruit roundish, compressed; cavity deep and narrow; distinctly sutured; skin deep reddish-purple on a yellow ground; flesh cream-colored, red at the pit, melting, juicy; stone plump, oval; ripens the middle of August.

Eduard Lucas. 1. Mathieu *Nom. Pom.* 394. 1889.

Listed in this reference.

Edward Late White. 1. Downing *Fr. Trees*

Am. 614. 1857.

Raised by a Dr. Baldwin, Montgomery, Alabama. Fruit large, roundish, depressed at the apex; suture distinct; skin white, blushed with red; flesh white, stained at the pit, sweet, juicy; stone slightly adherent; ripens the first of October and continues all the month.

Eladie. 1. *Ga. Hort. Soc. Rpt.* 21. 1877.

A seedling of Chinese Cling; fruit of large size and excellent quality.

Elate. 1. *Ont. Sta. Rpt.* **1**:22. 1894

Mentioned but not described.

Elberta (Hottes). 1. *Winfield Nur. Cat.* 21 fig. 1912.

This is a supposed strain of Elberta found in an orchard of Elbertas in Grand Valley, Colorado, according to the catalog of the Winfield Nursery Company, Winfield, Kansas. The fruit is said to be larger and better in quality than Elberta but its other characters are similar.

Elberta Cling. 1. *Ill. Hort. Soc. Rpt.* 223. 1904. **2.** Stark Bros. *Cat.* 42. 1914.

This variety was brought to notice in Louisiana, Missouri, Stark Brothers having selected it from Elberta. Some pomologists rank it as identical with Elberta in growth and appearance except that it is a clingstone. As grown at this Station, however, it does not closely resemble Elberta in shape nor is it equal to that variety in quality. Tree vigorous, upright; glands usually reniform; fruit above medium in size, roundish-oblate, halves unequal, bulged near the apex; suture deepens toward the apex which is roundish; skin rich yellow, with an attractive blush of deep red; flesh yellow, deep red about the stone, juicy, meaty, often having a slight sprightliness, clinging; ripens the second week in September.

Eldred. 1. *Gard. Mon.* **18**:15. 1876. **2.** *Mich. Sta. Bul.* **169**:212, 213. 1899.

Eldred was named after its originator, a Mr. Eldred of Washington County, Texas. It is one of the earliest clings to ripen; glands globose; flowers medium in size; fruit large, roundish-ovate; skin creamy-white, with a red blush; flesh white, firm, mild; pit roundish-oval; ripens just before Hale Early.

Elisabeth Bonamy. 1. Thomas *Guide Prat.* 49. 1876. **2.** Mas *Pom. Gen.* **12**:176. 1883.

A French variety introduced in 1868 and named after Madame Elisabeth Bonamy. Glands reniform; flowers small; fruit very large, roundish, irregular, with a mamelon tip at the apex; pale yellow, with a deep carmine blush; flesh yellow; matures the middle of September.

Eliza I. 1. Elliott *Fr. Book* 283. 1854. **2.** Hoffy *N. Am. Pom.* **1**:Pl. 1860.

Gerard Schmitz, Philadelphia, Pennsylvania, exhibited this seedling in 1849. Leaves large, with reniform glands; fruit large, round; skin yellow, with a mottled red cheek; flesh yellow except at the stone; freestone; matures the last of September.

Eliza II. 1. *Mich. Hort. Soc. Rpt.* 187. 1880.

This is a seedling of Late Crawford, originating with C. C. Engle, Paw Paw, Michigan. Foliage rather glaucous; fruit large, roundish, tapering at the apex; color yellow, blushed with red; flesh bright yellow, red at the pit, tender, juicy, rich, vinous; ripens after Late Crawford.

Ellison. 1. *Mich. Hort. Soc. Rpt.* 314. 1889. **2.** *Ia. Hort. Soc. Rpt.* 510. 1900.

Ellison is another variety that reproduces itself from seed. It originated in Ohio. As it grows at this Station its only value is for canning. Tree not very productive; glands reniform;

flowers small; fruit above medium in size, resembling Chili in shape; apex with a recurved, mamelon tip; skin covered with long pubescence, greenish-yellow, with narrow splashes of dull red; flesh yellow, faint red at the pit, rather dry, mild to sprightly; quality fair; stone free, small, oval, shortly pointed, plump; ripens the middle of October.

Elma. 1. *Fla. Sta. Rpt.* **8**:89. 1896. **2.** Griffing Bros. *Cat.* 12. 1900.

A medium-sized clingstone of the Spanish type; ripens the last of July.

Elmira. 1. *Horticulturist* **3**:251. 1848-49. **2.** Downing *Fr. Trees Am.* 636. 1857.

Originated with Dr. M. W. Phillips, Edwards, Mississippi. Glands reniform; flowers small; fruit large, oval, depressed; suture shallow; skin heavily pubescent, creamy-white; flesh white, tinged with red at the stone to which it adheres, sweet, good; ripens early in August.

Elmo. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed as growing at the Florida Station.

Elodie. 1. *Pa. Fr. Gr. Assoc. Rpt.* 586. 1878.

A seedling of Chinese Cling not as susceptible to rot as its parent.

Elriv. 1. *Am. Pom. Soc. Rpt.* 45. 1897. **2.** *Del. Sta. Rpt.* **13**:96. 1901.

J. W. Kerr, Denton, Maryland, produced Elriv by crossing Rivers with Elberta, in 1888. Tree strong and productive; flowers large; fruit large, roundish to slightly oblong; suture very distinct; skin thin, tender, nearly entirely overlaid with bright red; flesh white, red at the pit, juicy, sprightly; quality good; pit large, oval, semi-clinging; ripens with St. John.

Elrose. 1. *Del. Sta. Rpt.* **13**:98. 1901.

Elrose is the result of a cross between Elberta and Mountain Rose made by J. W. Kerr, Denton, Maryland, in 1888. Flowers small; fruit oblong, irregular, large; suture distinct; skin almost entirely marbled with pale red; flesh firm, white; quality fine; stone plump, large; ripens with Mountain Rose.

Ely. 1. *Village Nur. Cat.* 9. 1914.

Ely is a large, yellow-fleshed peach of good quality, ripening just before Carman, according to the catalog of the Village Nurseries, Hightstown, New Jersey.

Emil Liebig. 1. Mathieu *Nom. Pom.* 394. 1889.

Listed in this reference.

Emma. 1. *Am. Pom. Soc. Rpt.* 134. 1897. **2.** *Ga. Sta. Bul.* **42**:235. 1898. **3.** *Am. Pom. Soc. Cat.* 32. 1899.

Emma, on the Station grounds, is unproductive and of poor quality. It has had a place on the American Pomological Society's fruit-list since 1899. Tree upright, rather tall; branchlets inclined to throw out short, spur-like shoots; glands reniform; fruit small, roundish-cordate; apex usually with a mucronate tip; skin thin, tough, deep yellow, with a mottled blush of dull carmine; flesh yellow, stained at the pit, firm, stringy, sprightly; pit small, ovate, plump, free; ripens at the end of August.

Emporia. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

Emporia is a very early variety originated by Mrs. L. Burns, near Emporia, Kansas.

Endicott. 1. *Ill. Hort. Soc. Rpt.* 159. 1889.

A freestone seedling of Oldmixon Cling which it resembles in shape; ripens with Hale Early.

English. 1. *Tex. Sta. Bul.* **39**:816. 1896.

The tree of English is vigorous but not productive. Glands globose; fruit medium in size, oval, with a pointed apex; flesh white, firm; quality fair; clingstone; ripens the middle of August.

English Swash. 1. *Horticulturist* **2**:401. 1847-48.

Leaves globose; flowers small; ripens the middle of September; moderately productive.

Enon. 1. *Ohio Sta. Bul.* **170**:174. 1906.

Fruit of medium size, globular, often oblate; suture shallow but distinct; color greenish-white, shaded and splashed with carmine; flesh white, moderately firm, melting; quality good; pit oval, short, free; ripens August 10th.

Equinox. 1. *Austin Nur. Cat.* 9. 1909.

A very large, yellow freestone, ripening about the third week in September, according to the Austin Nursery Company, Austin, Texas.

Ermine. 1. *Ont. Fr. Gr. Assoc. Rpt.* **28**:83. 1896.

Fruit of medium size, partially free; pit large; ripens early in August.

Ernoult. 1. *Ann. Pom. Belge* **2**:71, Pl. 1854.

Ernoult originated about 1844 near Liege, Belgium. Tree vigorous, productive; glands globose; fruit large, roundish; apex with a peculiarly wrinkled depression; skin downy, clear yellow, shaded with deep reddish-purple in the sun; flesh white, stained at the pit, melting, juicy, rich; freestone;

ripens the middle of September.

Ernst. 1. Ramsey *Cat.* 1913.

According to F. T. Ramsey and Son, Austin, Texas, Ernst originated with a Mr. Surties, Bexar County, Texas, about 1905. Fruit of medium size, white; freestone; ripens the middle of July.

Erzherzog Carl. 1. Dochnahl *Führ. Obstkunde* **3**:205. 1858.

A seedling of Gemeiner Lieblingspfirsich with which it is similar but larger, more deeply sutured, less pubescent and not as dark red; ripens early in September.

Erzherzog Johann. 1. Dochnahl *Führ. Obstkunde* **3**:205. 1858.

Archiduc Jean. **2.** Thomas *Guide Prat.* 48, 215. 1876.

A productive seedling of Gemeiner Lieblingspfirsich which it resembles. It is larger, more pointed, more deeply sutured, less pubescent, and not as dark a red as its parent; ripens early in September.

Espagne Jaune. 1. Leroy *Dict. Pom.* **6**:115 fig. 1879.

This variety was found about 1840 in the vicinity of Bayonne, Basses-Pyrenees, France. Some believe it to be a native of Spain. Tree vigorous; glands large, reniform; flowers of medium size; fruit medium in size, ovoid, somewhat cylindrical, halves unequal; suture distinct; apex with a mamelon tip; skin thick, yellow, spotted and washed with red; flesh yellow, tinged at the pit, fibrous, melting, very juicy, acidulated; stone adheres very slightly, small, ovoid, plump; matures the latter part of October.

Essex Mammoth. 1. *Ont. Sta. Rpt.* **7**:53. 1900.

Listed as having been grown in Canada.

Estella. 1. *Fla. Sta. Rpt.* **8**:89. 1896. **2.** *Glen St. Mary Nur. Cat.* 11. 1900. **3.** *Am. Pom. Soc. Cat.* 37. 1909.

Estella originated in western Florida. In 1909 it was added to the fruit-list of the American Pomological Society. Fruit almost round, very large; skin greenish-yellow, with a full, red cheek; flesh yellow; ripens in Florida early in September.

Esther. 1. *Ga. Hort. Soc. Rpt.* 21. 1877.

A Chinese Cling seedling of large size and excellent quality.

Esther Doom. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** *Austin Nur. Cat.* 9. 1909.

Esther Doom originated with Judge Doom, Austin, Texas. A fine, productive, yellow clingstone, ripening July 25th.

Evangelist. 1. *Ia. Hort. Soc. Rpt.* 306. 1899.

A hardy variety grown in Iowa.

Evans. 1. *Am. Pom. Soc. Rpt.* 91. 1899.

Evans No. 3. **2.** *Mo. State Fr. Sta. Rpt.* 12. 1905-06.

Evans is said to have the good characters of Elberta; ripens just after that variety is gone.

Evans Cling. 1. *Kan. Hort. Soc. Rpt.* 195. 1902-03.

A hardy clingstone grown in Iowa.

Everbearing. 1. *Am. Pom. Soc. Rpt.* 51. 1897. **2.** *U. S. D. A. Yearbook* 498, 499, 500, Pl. 61. 1905. **3.** *Am. Pom. Soc. Cat.* 37. 1909.

Everbearing originated in the garden of a Mrs. Page, Cuthbert, Georgia, in 1885, and was named and disseminated by P. J. Berckmans about 1897. A marked characteristic of this variety is that some trees have a long blossoming and fruiting period. It is too tender for the North but is recommended for southern peach-districts, having been placed on the fruit-list of the American Pomological Society in 1909. Tree vigorous, compact, productive; glands reniform; flowers large; fruit roundish-conical, large, the later-ripening fruits being smaller; cavity large, deep and abrupt; suture shallow, with a prominent apex; skin thick, tough, thickly covered with long pubescence, greenish-white, striped and mottled with purplish-red; flesh white, considerably stained and veined with red, meaty, juicy, subacid; stone oval, free; season July 1st to September or later in southern Georgia.

Excellente. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed but not described.

Excelsior. 1. *Am. Pom. Soc. Rpt.* 185. 1856. **2.** *Am. Pom. Soc. Cat.* 37. 1909. **3.** Waugh *Am. Peach Orch.* 201. 1913.

Prince's Excelsior. **4.** Downing *Fr. Trees Am.* 632. 1857.

Excelsior was grown more than half a century ago by William R. Prince, Flushing, New York. It has been confused with Crosby, this sort having been once known as Excelsior. Fruit large, roundish to roundish-oblate; suture a line, ending in a flattened depression at the base; color attractive, bright orange-yellow; flesh golden-yellow, very rich, juicy, aromatic, sweet, separating freely from the stone; quality very good; season the middle of October.

Exquisite. 1. *U. S. Pat. Off. Rpt.* 380. 1858. **2.** *Jour. Hort.* N. S. **7**:152. 1864. **3.** Downing *Fr. Trees Am.* 612. 1869. **4.** *Gard.*

Mon. **19**:114. 1877.

Pavie Georgia. **5.** Leroy *Dict. Pom.* **6**:218, 219 fig. 1879.

Exquisite originated in Georgia many years ago. It seems to have been sent to England and France by P. J. Berckmans, Augusta, Georgia. Leaves with globose glands; fruit large, roundish-oval, with a distinct suture; skin yellow, mottled with crimson in the sun; flesh yellow, red at the stone, free, tender, melting, juicy, vinous; ripens in September.

Extra Early. 1. *Gard. Mon.* **2**:337. 1860.

A seedling of Fay Early Anne which precedes its parent by three weeks; the fruit is small and fleshy, with a small pit.

Fabre. 1. Carrière *Var. Pêchers* 54. 1867.

Tree moderately vigorous, very productive; glands reniform; flowers very small; fruit large, roundish at the base; apex with a small, mamelon tip; skin blushed with deep red on a yellowish-white ground; flesh yellowish-white, coarse, melting, very juicy; pit large, oval, free; ripens early in September.

Fahnestock. 1. *Mag. Hort.* **13**:111. 1847.

A large-fruited seedling from A. Fahnestock, Lancaster, Ohio.

Fahnestock Mammoth. 1. *Mag. Hort.* **13**:111. 1847.

A large, yellow clingstone which originated with A. Fahnestock, Lancaster, Ohio.

Falcon. 1. *Tex. Sta. Bul.* **39**:816. 1896. **2.** Rivers *Cat.* 28. 1909-10.

Faucon. **3.** Thomas *Guide Prat.* 55, 218. 1876.

Falcon originated with Thomas Rivers, Sawbridgeworth, England, from a pit of White Nectarine. Fruit medium in size, roundish; cavity deep, wide; suture shallow; apex with a small, erect, mamelon tip; skin thin, creamy-white, blushed with dull red, with a few stripes, not very attractive; flesh white, tinged at the pit, meaty, sprightly; stone oval, moderately plump; ripens at this Station the middle of September.

Fame. 1. *Ala. Sta. Bul.* **156**:133. 1911.

Fame is an upright-growing tree, bearing yellow, freestone fruits of medium size; ripens July 18th; very susceptible to rot.

Fanning. 1. *Am. Pom. Soc. Rpt.* 92. 1883.

Fanning was exhibited in Philadelphia in 1883 by J. H. Ricketts of Newburgh, New York. Fruit medium in size, globular; skin striped and splashed with brownish-red on a yellowish-white ground; flesh greenish-white, melting, juicy, vinous, sprightly; very good; stone moderately plump, free.

Farrnbacher Lackpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:215. 1858.

Tree very productive; branches long and slender; glands reniform; flowers of medium size; fruit large, long, halves unequal; deeply sutured; skin whitish-yellow, washed and striped with red; flesh whitish-yellow, red near the stone, very tender, fibrous, vinous; freestone; ripens the middle of September.

Faut. 1. *Am. Gard.* **12**:565. 1891.

A Southern seedling. Tree strong, vigorous; fruit large; clingstone.

Favier. 1. Prince *Pom. Man.* **2**:34. 1832.

Favier was introduced by William Robert Prince from the

region of the Mediterranean. Blossoms small; fruit of medium size, roundish; suture usually but a line; skin overlaid with red, with a deeper hue in the sun; flesh pale yellowish-white, strongly colored at the pit, melting, juicy; freestone; ripens September 10th.

Favourite. 1. Coxe *Cult. Fr. Trees* 219. 1817. **2.** Downing *Fr. Trees Am.* 477. 1845.

Favourite Large Red Clingstone? **3.** *Lond. Hort. Soc. Cat.* 96. 1831.

Favourite Red. **4.** Prince *Pom. Man.* **2**:23. 1832.

Early Favourite? **5.** Mas *Pom. Gen.* **12**:185. 1883.

Glands small, globose, often lacking; flowers small; fruit large, oblong; skin white, rather downy, covered with dark red where exposed; flesh red at the stone, somewhat firm, juicy, vinous but not rich; ripens early in August.

Fay Early Anne. 1. *Cultivator* 3rd Ser. **1**:91. 1853. **2.** *Am. Pom. Soc. Rpt.* 41. 1856. **3.** *Ibid.* 78. 1862.

Anne Précoce de Fay. **4.** Mas *Le Verger* **7**:101, 102, fig. 49. 1866-73.

A seedling of Anne, grown by Lincoln Fay, Chautauqua County, New York. It held a place in the fruit-list of the American Pomological Society from 1862 until 1869. Tree hardy and productive; glands reniform; flowers small; fruit of medium size, roundish; skin creamy-white, sometimes faintly tinged with red where exposed; flesh white, juicy, rich; ripens two weeks before Early Crawford.

Fei Tau. 1. *W. N. Y. Hort. Soc. Rpt.* 21. 1909.

Cions of the Fei Tau peach were brought to America by

Frank N. Meyer, United States Department of Agriculture, from the province of Fei Tcheng, China.

Felicie. 1. Leroy *Dict. Pom.* **6**:117, 118 fig. 1879.

Charles Buisson, Tronche, Isère, France, grew this variety in 1863. Glands usually lacking; flowers small; fruit of medium size, roundish-oval, halves unequal, with a mamelon tip at the apex; faintly sutured; skin thick, heavily pubescent, whitish-yellow, washed and striped with carmine; flesh yellowish-white to the stone, firm, fibrous, juicy, vinous, with an after taste; stone small, ovoid, free; ripens the last of September.

Felt Rareripe. 1. Gregg *Fruit Cult.* 100. 1877.

The chief characteristic of this variety is that it reproduces itself from seed. It originated with Cyrus Felt, Monte Bello, Illinois; fruit large, yellow-fleshed, freestone; ripens the last of August.

Ferdinand. 1. *Fla. Sta. Rpt.* **8**:89. 1896. **2.** *Am. Pom. Soc. Cat.* 22. 1897. **3.** *Fla. Sta. Bul.* **73**:144. 1904.

Ferdinand is a seedling of Honey raised by G. L. Taber, Glen Saint Mary, Florida, in 1892. It was entered on the fruit-list of the American Pomological Society in 1897 but was dropped in 1899. Fruit roundish, slightly flattened, bulged on one side, large; apex short, blunt, recurved; suture but a line; skin velvety, thick, tough, dull yellow, well covered with dull red; flesh firm, meaty, white, streaked with red; flavor insipid, poor; stone clinging, oval, plump, short; season early in July.

Fetters. 1. *Gard. Mon.* **16**:315. 1874.

John Fetters, Lancaster, Ohio, raised this white-fleshed freestone from a pit of Lemon Cling.

Fine Jaboulay. 1. Mathieu *Nom. Pom.* 395. 1889. **2.** *Cat. Cong. Pom. France* 99 fig. 1906.

Thought to have originated with Armand Jaboulay, Oullins, Rhône, France. Leaves with reniform glands; flowers of medium size; fruit large, roundish, with a very small, mamelon tip at the apex; skin marbled and washed with red on a yellow ground; flesh white, melting, vinous, aromatic; quality very good; ripens the middle of September.

Finley October. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Grown near Seaford, Delaware.

Finley Superb. 1. *Am. Pom. Soc. Rpt.* 186. 1860.

Recommended for planting in Georgia.

Fisher. 1. *Mo. State Fr. Sta. Bul.* **12**:11. 1904.

A variety grown in Texas and Wright Counties, Missouri. Fruit large, round, yellow, blushed with red; clingstone; ripens in Missouri about the middle of September.

Fleenor. 1. *Ind. Hort. Soc. Rpt.* 25. 1864. **2.** *Ibid.* 60. 1870.

Fleenor originated in Indiana. Tree hardy, productive, slender; fruit large, oblong, white; quality good; clingstone; used for market and canning; ripens in October.

Flewellen. 1. Downing *Fr. Trees Am.* 636. 1857. **2.** *Am. Pom. Soc. Cat.* 30. 1875.

Flewellen is of American origin and held a place in the American Pomological Society's fruit-list from 1875 until 1897. Fruit large, globular, depressed at the apex; skin downy, yellowish-white, dark, dull purplish-red where exposed; flesh red at the pit, very juicy, sweet; desirable for an early cling; ripens early in August.

Florence. 1. *Ga. Sta. Bul.* **42**:235. 1898.

This variety is a moderate bearer but rots badly. Tree tall, with dense foliage, vigorous; fruit of medium size, globular, greenish-white; flesh white, adherent; quality fair to good; ripens the middle of August.

Florida. 1. *Am. Pom. Soc. Cat.* 36. 1909.

Florida Crawford. **2.** *Ibid.* 44. 1891. **3.** *Tex. Sta. Bul.* **39**:818. 1896.

Introduced by G. L. Taber, Glen Saint Mary, Florida, in 1891. The variety appeared on the fruit-list of the American Pomological Society in 1891 as Florida Crawford where it remained until 1899. In 1909 it reappeared as Florida. Fruit belongs to the Spanish type, very large, roundish-oblong, somewhat bellied, with a shallow suture; skin pale to deeper yellow, frequently blushed at the base; flesh stained at the pit, firm, juicy, vinous; freestone; ripens the last of July.

Florida Gem. 1. *Fla. Sta. Rpt.* **8**:86. 1896. **2.** *Fla. Sta. Bul.* **73**:145. 1904. **3.** *Am. Pom. Soc. Cat.* 36. 1909.

One of the best seedlings of Honey both for home and

commercial purposes. Listed by the American Pomological Society in its fruit-catalog of 1909. Fruit medium to large, oval, angular; suture indistinct, often wanting; apex conical, long, recurved; skin fuzzy, thin, tough, greenish-yellow, washed with deep red where exposed; flesh firm, juicy, white, pink at the stone, sweet, agreeable; stone free, elliptical, reddish; ripens the last of June.

Florida Own. 1. *Fla. Sta. Bul.* **14**:6. 1891.
2. *Ibid.* **62**:513. 1902.

Florida Own is a seedling of Peento, now out of cultivation. Fruit large, nearly round; skin white, overspread with carmine; flesh sweet, juicy, melting, semi-clinging; quality excellent; ripens with Peento.

Florin. 1. Wickson *Cal. Fruits* 313. 1889.

Florin is a California variety ripening with Late Crawford but superior in size and flavor; tree hardy, a rapid grower and free from curl.

Floss. 1. *N. Y. Sta. Rpt.* **15**:289. 1897.

Received at this Station for testing in 1894, from E. A. Riehl, Alton, Illinois. Fruit above medium, roundish-oblong; color greenish-white, with a few red dots; flesh white, moderately juicy, firm, adherent; quality good; season the middle of October.

Floyd. 1. *Ortiz Fruit Farm Cat.* 27. 1900.

According to the catalog of the Ortiz Fruit Farm, Mexico, Missouri, Floyd was found in Mexico, Missouri, by Wallace Bassford of that place. Tree very hardy; fruit hangs well, large; skin tough, creamy-white, blushed where exposed; flesh tender, white, juicy; freestone; ripens September 25th.

Flushing Heath. 1. Van Lindley *Cat.* 17. 1892.

This is a large, white-fleshed clingstone which ripens the

last of August, according to the Van Lindley Company, Pomona, North Carolina.

Ford. 1. Budd-Hansen *Am. Hort. Man.* **2**:345. 1903.

New Ford. **2.** *Mich. Sta. Bul. 118*:30. 1895. **3.** *Ibid.* **169**:213. 1899.

Probably originated in Delaware. Tree moderately vigorous, upright, with drooping branches; glands globose; flowers small; fruit large, roundish, yellow, blushed with red; flesh yellow, tinged at the pit, moderately juicy, firm, mild, sweet; quality good; pit free, oval, plump, pointed; ripens early in September.

Ford Choice. 1. *N. Y. Sta. Rpt.* **15**:289. 1897.

Ford Choice was received at this Station for testing in 1892 from J. S. Ford, Pittsford, New York. Fruit large, irregularly oval, with a shallow suture; skin yellow, with markings of dark red; flesh yellow, slightly stained with red at the pit which is nearly free, juicy, somewhat stringy, firm; quality good; ripens early in September.

Ford Late. 1. *Ill. Hort. Soc. Rpt.* 53. 1896. **2.** Budd-Hansen *Am. Hort. Man.* **2**:345. 1903.

Ford Late, as it fruits on the Station grounds, is of doubtful value. Trees vigorous, productive; leaves with small, globose glands; flowers appear early, large, pink; fruit large, oval, tapering, halves unequal, sides drawn in about the cavity; apex with a mucronate tip; skin covered with long, coarse pubescence, thin, tough, lemon-yellow to creamy, with a faint blush of pink; flesh white, neither very juicy nor stringy, sprightly; stone brown, free, large, obovate, with a wedge-shaped base; ripens early in October.

Ford No. 1. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** *Ibid.* **39**:807. 1896. **3.** *Mich. Sta. Bul.*

169:213. 1899.

Tree strong, spreading, productive if not too far south; glands few, reniform; fruit medium to large, roundish-elongated, faintly sutured; skin creamy-white, with a delicate wash of bright red; flesh creamy-white, tinged with red at the pit, juicy, tender, sprightly, vinous; quality good; pit plump, semi-clinging; ripens from the middle to the last of August.

Ford No. 2. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** *Ibid.* **39**:811. 1896. **3.** *Mich. Sta. Bul.* **169**:213. 1899.

Trees round-headed, fairly productive; glands globose; flowers small; fruit of medium size, roundish, slightly ovate; suture indistinctly marked; cavity broad, deep; color yellow, with a red cheek; flesh red at the stone, tender, vinous, juicy; stone oval, pointed, plump, free; quality good; ripens on the Station grounds the last of September.

Ford No. 3. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** *Mich. Sta. Bul.* **169**:214. 1899.

Described as follows as it grows on the Station grounds: Trees strong; glands reniform; flowers small; fruit of medium size, roundish; apex indistinct; skin greenish-yellow, with a thin bloom; flesh white, tinged with red at the pit, juicy, tender, vinous; stone free, plump, pointed; quality poor; ripens the last of October.

Ford Red. 1. *Mich. Sta. Bul.* **118**:30. 1895. **2.** *Ibid.* **169**:213. 1899.

Ford Red is thought to have originated in Delaware. Trees roundish, with an upright head, fairly productive; fruit medium-sized, slightly enlarged at the suture, generally oval; cavity deep, narrow; color creamy-white, with a slight blush; flesh white, reddish and rather bitter at the pit, juicy, tender, rich, mild; quality good; pit free, oval, pointed, quite plump; season early in September.

Ford Seedling. 1. *Lond. Hort. Soc. Rpt.* **5**:539. 1824. **2.** Lindley *Guide Orch. Gard.* 248. 1831.

Leaves doubly serrate, glandless; flowers large; fruit of medium size, slightly narrowed at the apex; skin yellowish-green, marbled with bright red; flesh yellow to the stone, juicy, with a rich, astringent flavor; freestone; ripens the middle of September.

Fords. 1. *Ga. Hort. Soc. Rpt.* 63. 1891.

A large, very early, white-fleshed freestone.

Fords Improved. 1. *Cal. Sta. Rpt.* 393. 1895-97.

A white-fleshed freestone of the Chinese type. It ripens early but is soft and is a poor keeper.

Forrester. 1. *Am. Pom. Soc. Cat.* 33. 1899. **2.** Waugh *Am. Peach Orch.* 202. 1913.

A large, round, good peach, from Georgia. Fruit yellowish-red; ripens in mid-season.

Four in One. 1. *Continental Pl. Cat.* 13. 1916.

According to the Continental Plant Company, Kittrell, North Carolina, this variety is the largest peach that grows and the firmest of the mid-summer varieties. Skin deep creamy and crimson, tough; flesh soft, juicy, melting.

Fourteen Ounce. 1. *Del. Sta. Rpt.* **5**:98. 1892. **2.** *Can. Exp. Farm Bul.* 2nd Ser. **3**:65. 1900.

A clingstone, listed but not described in these references.

Fox. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** *Ibid.* 33. 1899. **3.** *Mich. Sta. Bul.* **169**:214. 1899.

4. Budd-Hansen *Am. Hort. Man.* **2**:345. 1903.

Fox's Seedling. **5.** Downing *Fr. Trees Am.* 478. 1845.

Fox originated in New Jersey. The American Pomological Society listed the variety in its fruit-catalog in 1891 but dropped it in 1897, replacing it in 1899. Tree vigorous; glands globose; fruit medium in size, roundish, slightly compressed, with a small suture which extends nearly around the fruit; skin creamy-white, with a red blush; flesh white, red at the pit, free, melting, juicy, sweet, with a rich, vinous flavor; season the last of September.

Frances. 1. Budd-Hansen *Am. Hort. Man.* **2**:345, 346 fig. 1903. **2.** *Am. Pom. Soc. Cat.* 37. 1909. **3.** *Ala. Sta. Bul.* **156**:133. 1911. **4.** Waugh *Am. Peach Orch.* 202. 1913.

Francis. **5.** *U. S. D. A. Pom. Rpt.* 42. 1895.

There is doubt as to the place of origin of this peach. Most writers mention Ohio but a communication from Leon Sanders, Plain Dealing, Louisiana, states that the variety was found in that State by his father about 1895 and was introduced to the trade by L. T. Sanders and Son. Frances was added to the fruit-list of the American Pomological Society in 1909. Fruit large, roundish-oval, with a pronounced suture; apex prominent; skin yellow, washed and striped with bright red; flesh yellow, stained with red at the pit, melting, juicy, with a rich, vinous flavor; quality good; stone oval, free; season follows Elberta.

Frank. 1. Munson *Cat.* 14, Pl. 1915-16.

According to the Munson Nurseries, Denison, Texas, Frank was raised in 1903 by J. W. Stubenrauch, Mexia, Texas, from a pit of Elberta and named after Frank Holland of the *Farm and Ranch*. Fruit large, globular; skin yellow, covered with considerable rich red; clingstone; ripens two weeks after its parent.

Frankfort. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Listed in this reference.

Franklin. 1. *Mich. Sta. Bul.* **31**:58. 1887.

Listed as grown in Michigan at one time.

Franquières. 1. Thomas *Guide Prat.* 49. 1876. **2.** *Guide Prat.* 31. 1895.

Resembles Orchard Queen but is earlier, rounder, and higher in quality. Trees very vigorous and productive; glands reniform; fruit large, roundish, nearly covered with reddish-carmine; flesh very red at the stone, juicy; matures the first of September.

Franz Koelitz. 1. Mathieu *Nom. Pom.* 395. 1889. **2.** *Guide Prat.* 40. 1895.

An early, German variety without glands.

Fredenburgh. 1. *Gard. Mon.* **23**:303. 1881.

A large, very early sort, like Alexander in appearance and quality, raised by W. H. Fredenburgh, Kingston, New York.

Freehold. 1. *N. J. Hort. Soc. Rpt.* 47. 1884.

Freehold originated in Freehold, New Jersey; fruit large, with a red cheek; flesh white; freestone; of good quality; ripens the second week in November.

Free Mason. 1. *Gard. Mon.* **13**:26. 1871. **2.** Downing *Fr. Trees Am.* 1st App. 121. 1872.

A seedling of Early Rareripe, grown by Rev. R. W. Todd, Denton, Maryland. Tree very vigorous, spreading in its habit; leaves serrate, glandless; flowers small; fruit of medium size, roundish, inclining to oblong; skin white, shaded with red; flesh deep red at the stone, juicy; ripens immediately after Smock.

Freeman. 1. *Gard. Mon.* **10**:20, 21. 1868.

Freeman Late. **2.** *Ibid.* **19**:336. 1877.

Named after its originator, H. C. Freeman, Alto Pass, Illinois. The fruits resemble Smock of which it may be a seedling; however, it is later and higher in quality.

Freeman White. 1. *Ohio Hort. Soc. Rpt.* 45. 1867.

A variety of some repute in New Jersey. Resembles Heath Free but is larger; used for market.

French Blood Cling. 1. *Lond. Hort. Soc. Cat.* 104. 1831. **2.** Prince *Pom. Man.* **2**:33. 1832.

Wilder Blutpfirsich. **3.** Dochnahl *Führ. Obstkunde* **3**:194. 1858.

Leaves with reniform glands; flowers large; fruit of medium size, dark red; used for preserves; matures at the end of October.

French Chancellor. 1. Prince *Pom. Man.* **1**:189. 1831.

A variety of French origin. Fruit large, with a distinct suture; apex with a small, mamelon tip; skin fine red next the sun; flesh melting, sweet, with a pleasant flavor; ripens the first of September.

French Mignonne. 1. Miller *Gard. Dict.* 1752. **2.** Brookshaw *Pom. Brit.* **1**:Pl. 21 fig. 2. 1817.

Although bearing a close resemblance to Grosse Mignonne, this peach seems to be distinct. The chief points of difference are thicker skin, more brilliant color and more oblong form in the fruit of this variety.

French Willow Leaved. 1. Prince *Pom. Man.* **2**:12. 1832.

A Feuilles de Saule. **2.** Carrière *Var. Pêchers* 77, 78. 1867.

This tree has leaves resembling those of the willow. Leaves devoid of glands; flowers very small; fruit of medium size or larger, roundish, halves unequal; flesh white, red at the stone; pit large, free; ripens in October and only succeeds in a warm exposure.

Friers. 1. Rea *Flora* 211. 1676.

"Friers peach is an excellent fruit."

Fritzes Sämling. 1. Mathieu *Nom. Pom.* 395. 1889.

Listed in this reference.

Frogmore Golden. 1. Hogg *Fruit Man.* 221. 1866. **2.** *Flor. & Pom.* 89, Pl. 1878.

A Mr. Ingram, Frogmore, England, grew this variety from a pit of the Bellegarde peach crossed with Pitmaston Orange nectarine. Trees rather free from mildew; glands globose; fruit of medium size; of a deep apricot color, both in and out; flesh rich, vinous, tinged at the stone from which it separates; ripens early.

Frühe aus der Ortenau. 1. Mathieu *Nom. Pom.* 395. 1889.

Listed in this reference.

Frühe May von Brigg. 1. Lucas *Handb. Obst.* 475. 1893.

Tree strong and very productive; fruit very large, whitish-yellow, with a red blush; ripens the middle of July.

Frühe Mignonne. 1. *Lond. Hort. Soc. Cat.*

100. 1831. **2.** Mathieu *Nom. Pom.* 395. 1889.

Large Early Mignonne. **3.** Prince *Pom. Man.* **2**:10. 1832.

Early Mignonne. **4.** Kenrick *Am. Orch.* 211. 1832.

Frühe Lieblingspfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:202. 1858.

Early Grosse Mignonne. **6.** Hogg *Fruit Man.* 219. 1866. **7.** *Am. Pom. Soc. Cat.* 30. 1877. **8.** Leroy *Dict. Pom.* **6**:165 fig., 166. 1879.

Frühe Mignonne was first mentioned early in the Nineteenth Century as coming from the vicinity of Paris, France. It is a strain of Grosse Mignonne, but with smaller and earlier fruit. The American Pomological Society listed it in its fruit-catalog from 1877 until 1897. Glands small, globose; flowers large; fruit large, roundish, more or less ovoid, regular in outline, strongly sutured; usually with a mamelon tip; skin pale yellow, marbled with carmine; flesh whitish-green, red at the pit, melting, juicy, sweet, sprightly; stone roundish-oval, plump, nearly free; ripens early in August.

Früher Bergpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:200, 201. 1858.

Fruit large, oblate, halves unequal; deeply sutured; skin with a straw-yellow color, with dark red streaks, heavily pubescent; flesh white throughout, pleasing; stone small; ripens from the first to the middle of August.

Fruitland. 1. Downing *Fr. Trees Am.* 613. 1869.

Fruitland originated at Augusta, Georgia. Fruit large, obovate, tapering to a point; greenish-white, with a pale, mottled red cheek; flesh greenish-white, faintly red at the

stone, very juicy, vinous; freestone; matures early in September.

Fulkerson. 1. Elliott *Fr. Book* 283. 1854.

Of American origin, having been raised by R. P. Fulkerson, Ashland, Ohio, about 1851. Leaves without glands; fruit of medium size, obtuse, sides irregular and unequal; skin white, with a red cheek; flesh whitish-yellow, tinged at the stone, juicy, rich, high in quality; stone small, angular, flattened, free; ripens August 20th.

Fullers Galande. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Listed as having globose glands and small flowers.

Furness. 1. *Am. Pom. Soc. Rpt.* 59. 1869.

Mentioned as a good, late clingstone.

G. & A. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Fruit irregular in outline; yellow-fleshed; freestone; quality good; pit small; ripens the first of September.

G. Orange Cling. 1. *Ill. Hort. Soc. Rpt.* 206. 1896.

An inferior variety listed by the Illinois Horticultural Society; fruit of medium size; flesh yellow; quality fair.

Gaillard-Girerd I. 1. *Rev. Hort.* N. S. **7**:12. 1907.

Soon after the early American varieties of the Amsden and Hale Early type were introduced into France they were used in breeding new varieties. This peach is a white-fleshed freestone, resulting from a seed of Poirieux crossed with Hale Early.

Gaillard-Girerd II. 1. *Rev. Hort.* N. S. **7**:12. 1907.

Said to resemble closely its parent, Gaillard-Girerd I.

> **Gain de Montreuil. 1.** *Gard. Chron.* 68. 1848. **2.** Mas *Le Verger* **7**:123, 124, fig. 60. 1866-73.
>
> *Galande von Montreuil.* **3.** Lauche *Deut. Pom.* **6**:No. 6, Pl. 1882.

Alexis Lepère, Montreuil, France, grew this variety about 1846. Tree strong, unusually productive; leaves with both reniform and globose glands; flowers very small; fruit of medium size, roundish, depressed at the ends; suture distinct; apex with a small, mamelon tip; skin thin, with short pubescence, yellowish-white, with a red blush; flesh stained at the stone, firm, sweet; very good; stone adherent, elongated-oval, deeply furrowed; ripens the last of August.

> **Galande. 1.** *Pom. Mag.* **1**:26, Pl. 1828. **2.** Mas *Le Verger* **7**:189, 190, fig. 93. 1866-73. **3.** Leroy *Dict. Pom.* **6**:124, 125 fig., 126. 1879. **4.** Mathieu *Nom. Pom.* 396, 397. 1889.
>
> *Bellegarde.* **5.** Miller *Gard. Dict.* 1752. **6.** Lindley *Guide Orch. Gard.* 254, 255. 1831. **7.** Downing *Fr. Trees Am.* 471. 1845.
>
> *Grosse Noire de Montreuil.* **8.** *Ann. Pom. Belge* **1**:85, Pl. 1853.
>
> *Violette Galande.* **9.** Dochnahl *Führ. Obstkunde* **3**:210, 211. 1858.

The origin of this old variety is unknown. It apparently was known in France in the middle of the Seventeenth Century and was long and widely cultivated in that country under various names. The number of synonyms shows its popularity in France and England. Leaves crenate, with globose glands; flowers small; fruit large, round, regular, with a shallow suture; color pale yellowish-green, with a rich red cheek, often streaked with darker purple; flesh pale

yellow, rayed with red at the stone, melting, juicy, highly flavored, free; season the last of August.

Galande Pointue. 1. Mas *Le Verger* **7**:129, 130, fig. 63. 1866-73. **2.** Leroy *Dict. Pom.* **6**:127 fig., 128. 1879.

Spitze Galand Pfirsich. **3.** Mathieu *Nom. Pom.* 415. 1889. **4.** Gaucher *Pom. Prak. Obst.* No. 85, Tab. 77. 1894.

About 1805 a M. Dormeau of Montreuil, Seine, France, seems to have been growing this variety. Fruit large, roundish-oval, irregular; skin yellowish-white, partly covered and dotted with carmine; flesh whitish, somewhat red at the center, firm but tender, juicy, sweet, vinous; quality good; stone free; season early in August.

Galbraith. 1. *Ill. Hort. Soc. Rpt.* 167. 1871. **2.** *Mich. Hort. Soc. Rpt.* 498. 1871.

A variety from Illinois, recommended for market. Glands globose; flowers small; fruit of medium size, roundish; color white, with a red cheek; very good; ripens at the end of July.

Galland May. 1. *Greensboro Nur. Cat.* 22. 1898.

A very early variety with good shipping qualities, according to the Greensboro Nurseries, Greensboro, North Carolina.

Galveston. 1. *Tex. Sta. Bul.* **39**:805. 1896. **2.** *Am. Pom. Soc. Cat.* 33. 1899.

Galveston was placed on the fruit-list of the American Pomological Society in 1899; it comes from southern Texas. Tree very vigorous and productive, inclined to overbear; glands few, reniform; fruit of medium size, roundish; skin creamy, with a light red cheek; flavor subacid; ripens the last of July.

Gant Noir. 1. Mathieu *Nom. Pom.* 397. 1889.

Listed in this reference.

Garden Cling. 1. *U. S. D. A. Rpt.* 289. 1893.

Garden Cling on the Station grounds is not promising in fruit or tree characters. Fruit of medium size, roundish, compressed; skin thick, tough, greenish-white, more or less overspread with bright red; flesh white to the stone, juicy, sweet, rubbery; stone oval, smooth, plump; ripens early in October.

Gates Cling. 1. Wickson *Cal. Fruits* 312. 1889.

Originated and named by J. W. Gates, Vacaville, California. Trees tender; fruit large; skin too tender for shipping, silver-white, with a red blush; flesh white, firm; pit large, irregular.

Gather Late October. 1. Van Lindley *Cat.* 19. 1892.

A very late clingstone listed by Van Lindley, Pomona, North Carolina.

Gaylord. 1. Downing *Fr. Trees Am.* 614. 1869. **2.** *Tex. Sta. Bul.* **39**:812. 1896.

A peach grown in Mississippi by Dr. M. W. Phillips. Tree fairly vigorous, but not productive; glands large, round; flowers small; fruit resembles Crothers, large, round, with a pointed apex; skin creamy-white, heavily pubescent; flesh white, juicy, rich; freestone; ripens the middle of August.

Geary. 1. Budd-Hansen *Am. Hort. Man.* **2**:346. 1903.

Gearys Hold-On. **2.** *Gard. Mon.* **19**:174.

1877. **3.** Hood *Cat.* 31. 1905.

Hold-On. **4.** Fulton *Peach Cult.* 176. 1908.

Geary is said to be a seedling of Smock; on the Station grounds it ripens with it. Tree large, vigorous but not very productive, slightly drooping; leaves finely serrate, with large, reniform glands; flowers small, faded pink, darker at the edges; fruit above medium in size, oval, halves unequal; cavity deep, sides drawn up forming a prune-like neck; tip mucronate; skin tough, covered with short pubescence, golden-yellow, slightly splashed with darker red on a dull blush; flesh pale yellow, stained at the pit, rather dry, coarse, sweet; fair in quality; stone large, oval, flattened, more or less pointed, free.

Gebhardt. 1. *Mich. Sta. Sp. Bul.* **44**:41. 1910.

A locally known seedling of Hale Early grown by Benton Gebhardt, Oceana County, Michigan, about 1878. It is valued for high quality in fruit. Tree hardy and an early and regular bearer, not very susceptible to fungus; fruit above medium in size, roundish-oblong, flattened slightly at the ends; cavity broad; suture continuous, deeper at the ends; skin velvety, creamy-white, with a solid, dark crimson cheek; flesh creamy-white, tender, juicy, mild subacid, aromatic; quality very good; stone free; ripens just before Early Michigan.

Gem. 1. Munson *Cat.* 6. 1893. **2.** *Tex. Sta. Bul.* **39**:812. 1896.

Similar to Oldmixon Cling, but with more color in the cheek; glands reniform; season very late; unproductive.

Gemina. 1. *Mo. Hort. Soc. Rpt.* 181. 1895.

Mentioned as a very late and very hardy variety; recommended for Missouri.

General Bidwell. 1. Wickson *Cal. Fruits*

315. 1889.

A seedling named by the California Horticultural Society in 1886 and recommended for cultivation. Fruit larger than Orange Cling, yellow; flesh solid, juicy, rich; pit small, free; ripens between Late Crawford and Salwey.

General Custer. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

A seedling raised by E. F. Hynes, Kansas, about 1878.

General Grant. 1. Wickson *Cal. Fruits* 317. 1889. **2.** *Mich. Sta. Bul.* **169**:214. 1899.

Originated with W. W. Smith, Vacaville, California. Trees fairly strong; glands reniform; flowers small; fruit medium to large, roundish, tapering towards the apex; cavity narrow, deep; suture extends two-thirds around the fruit; skin pale creamy-white, with a mottled cheek; flesh red at the pit, moderately juicy, firm, vinous; pit roundish-oval, pointed, plump, adherent; ripens late.

General Greene. 1. *N. C. Sta. Rpt.* **12**:108. 1889. **2.** *Greensboro Nur. Cat.* 25. 1898.

A large, white-fleshed freestone, ripening the last of August. The variety originated in Guilford County, North Carolina.

General Harrison. 1. *Glen St. Mary Nur. Cat.* 20. 1906.

According to the Glen Saint Mary Nurseries, Glen Saint Mary, Florida, this variety was originated at Cocoa, Florida, by C. W. Harrison. Fruit above medium in size, shaped like the Honey seedlings without the long points; color light yellow, overlaid with red; flesh white; clingstone; ripens in July.

General Laudon. 1. Dochnahl *Führ. Obstkunde* **3**:205. 1858.

General Laudon is a seedling of Karl Schwarzenberg, raised about 1836. Tree productive; flowers large, pale red; fruit large, oval, deeply sutured; skin greenish-yellow, blushed; flesh white, vinous; freestone; ripens at the end of August.

General Taylor. 1. *Ga. Hort. Soc. Rpt.* 25. 1876. **2.** *Tex. Sta. Bul.* **39**:812. 1896.

General Taylor is an early clingstone of fair quality. Tree vigorous, productive; glands reniform; fruit of medium size, roundish-ovate; skin creamy-white, with a red cheek; ripens in Texas the last of June.

Genesee. 1. *W. N. Y. Hort. Soc. Rpt.* 16. 1883.

Fruit medium to large; flesh creamy-white, juicy; freestone; ripens in October.

Genueser. 1. Christ *Handb.* 591. 1817.

Pêche de Genes. **2.** Christ *Wörterb.* 351. 1802.

Genueser Aprikosenpfirsich. **3.** Dochnahl *Führ. Obstkunde* **3**:218. 1858.

Flowers small; fruit large, round, halves unequal; suture shallow; skin yellow, more or less mottled with clear red; flesh deep yellow, pleasing, melting; freestone; ripens early in October.

George Late. 1. *Cal. Bd. Hort. Rpt.* 73. 1891. **2.** *Cal. Nur. Cat.* 20. 1898.

George Late originated in Sacramento, California, where the fruit is much esteemed as a clingstone because of its rich color, large size and superior shipping qualities. The trees on the Station grounds have not yet fruited.

Georgia Press. 1. *Greensboro Nur. Cat.* 25. 1898.

Fruit large; flesh nearly white, juicy, acid; ripens in August, according to the Greensboro Nurseries, Greensboro, North Carolina.

Gest Superb. 1. Elliott *Fr. Book* 292. 1854.

An American variety bearing globose glands; fruit large, roundish; skin yellowish-white; flesh firm, subacid; ripens in September.

Gestreifter Blutpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:194. 1858.

Resembles Sanguinole but longer. Fruit striped; flesh clear red, not adhering to the pit; ripens early in October.

Gettysburg. 1. *Rural N. Y.* **62**:820, fig. 304. 1903.

Found and named by Earl Peters, Mount Holly Springs, Pennsylvania, who claims it to be the latest and best yellow-fleshed freestone in that vicinity.

Gibbon. 1. *Gard. Mon.* **21**:149. 1879.

Fruit large, oval, terminating in an acute, swollen tip; skin clear yellow, blushed; flesh yellow, melting, juicy; ripens the middle of August.

Gibbon October. 1. *Am. Pom. Soc. Cat.* 44. 1891. **2.** Griffing *Cat.* 10. 1910.

A seedling of the Spanish type from northern Florida. In 1891, it appeared on the fruit-list of the American Pomological Society but was soon dropped. It is one of the last white-fleshed, freestone peaches to mature, ripening at the last of September.

Gibson. 1. *Mich. Hort. Soc. Rpt.* 242. 1886. **2.** *Mich. Sta. Sp. Bul.* **44**:42. 1910.

A seedling raised by Eugene Gibson, New Richmond,

Michigan. The variety was said to be earlier than either Amsden or Alexander. It was thought by some to be identical with the Champion of Michigan. Leaves deeply serrate; susceptible to mildew.

Gibson Late. 1. *Gard. Mon.* **21**:362. 1879.

Gibson Late has small value as grown on the Station grounds. Tree neither vigorous nor productive; fruit medium to above in size, oblong-oval, sometimes roundish-oval, with a bulge along the suture; skin with considerable pubescence, greenish-yellow, with a faint blush; flesh light yellow, stained at the pit, juicy, coarse, stringy; quality fair; freestone; ripens the latter half of October.

Gibson Seedling. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed as grown in Texas.

Gillingham. 1. *Oregon Nur. Cat.* 35. 1913.

The Oregon Nursery Company, Orenco, Oregon, states that Gillingham resembles Early Crawford but ripens a few days later; the tree bears young and abundantly.

Gilman Early. 1. Kenrick *Am. Orch.* 199. 1841.

A variety ripening in August; productive.

Gilmore. 1. *Mo. Hort. Soc. Rpt.* 246. 1893.

This variety was found growing in Gilmore, Arkansas, by S. W. Gilbert, Thayer, Missouri; said to be "very early and good to look at but not fit to eat."

Gladstone. 1. Hogg *Fruit Man.* 448. 1884.

This is another variety grown by Thomas Rivers, Sawbridgeworth, England. Leaves glandless; flowers large; fruit very large, round, often oblate; suture shallow; skin

pale yellowish-green, with a faint red cheek; flesh white, tender, melting, vinous; freestone.

Glasgow. 1. *Rural N. Y.* **14**:119. 1863.

Glasgow is listed as a freestone grown in Missouri.

Glen. 1. *Glen St. Mary Nur. Cat.* 19. 1911.

Glen is a cross between Peento and Honey from Glen Saint Mary, Florida. Fruit two and one-half inches long, ending in a blunt point; deeply sutured; skin tough, yellow, often entirely covered with red; flesh light yellow, stained at the pit, firm; freestone; season early in June.

Glendale. 1. *Tex. Sta. Bul.* **39**:812. 1896.

Glendale, better known as Glendale Beauty, did not prove productive in Texas. Glands large, globose; fruit large, ovate, with an acute apex; skin yellow; flesh firm, sweet; freestone; ripens early in July.

Globe. 1. *Gard. Mon.* **27**:334. 1885. **2.** *Mich. Hort. Soc. Rpt.* 314. 1889. **3.** *Am. Pom. Soc. Cat.* 30. 1889. **4.** *Mich. Sta. Bul.* **169**:214. 1899.

Globe is a chance seedling from Berks Center, Pennsylvania. The tree is a rapid and vigorous grower and usually productive. It was placed on the fruit-list of the American Pomological Society in 1889 where it still remains. Glands globose; flowers small; fruit large, round, slightly ovate; cavity broad; skin yellow, with a red cheek; flesh yellow, vinous, sprightly; quality good; pit large, oval, plump, free; ripens at the last of September.

Gold Ball. 1. Bailey *Ann. Hort.* 184. 1892.

A large, yellow-fleshed clingstone introduced in 1892 by Ramsey & Son, Mahomet, Texas.

Gold Dust. 1. *Ill. Hort. Soc. Rpt.* 107. 1882.

2. *Boonville Nur. Cat.* 18. 1912.

Gold Dust originated with J. C. Evans, Howell County, Missouri. The peaches on the Station grounds are very attractive. Trees moderately productive; glands reniform, large; flowers appear in mid-season, small; fruit large, roundish-cordate, halves unequal; apex ends in a small, recurved, mamelon tip; skin thin but tough, heavily pubescent, golden-yellow, overspread with lively red and with few splashes of darker red; flesh tinged at the pit, juicy, meaty, sprightly; quality fair; stone adherent, large, oval to ovate, acutely pointed at the apex; ripens late in September.

Gold Mine. 1. Greening Bros. *Cat.* 85. 1901. **2.** *Mich. Sta. Sp. Bul.* **44**:45, Pl. 1910.

G. E. Prater, Paw Paw, Michigan, grew and introduced Gold Mine. It is a cross between Barnard and Late Crawford, resembling the latter parent. On the Station grounds the variety lacks productiveness; trees vigorous, hardy; glands small, globose; flowers appear in mid-season, small; fruit large, oval to cordate, halves decidedly unequal; apex with a large, mucronate tip; skin thick, tough, coarsely pubescent, greenish-yellow, blushed with dull red; flesh yellow except at the pit, juicy, coarse, sprightly, pleasing; quality good; pit free, large, ovate, plump, tinged with purple; ripens late in September.

Golden. 1. *Horticulturist N. S.* **7**:178. 1857.

Golden is a mediocre variety from Georgia.

Golden Ampère. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Golden Ball. 1. Elliott *Fr. Book* 292. 1854.

Golden Ball is of American origin. Glands globose; fruit large, roundish, orange-yellow; flesh stained at the stone,

juicy; freestone; ripens early in September.

Golden Belt. 1. *Kan. Hort. Soc. Rpt.* 195. 1902-03.

Listed as grown at one time in Kansas.

Golden Cling. 1. *Am. Pom. Soc. Rpt.* 147. 1881. **2.** Wickson *Cal. Fruits* 314. 1889. **3.** *Am. Pom. Soc. Cat.* 33. 1899. **4.** Waugh *Am. Peach Orch.* 202. 1913.

Golden Cling is one of the standard peaches of California. It has held a place on the fruit-list of the American Pomological Society since 1899. The variety originated with A. T. Hatch, Suisum Valley, California. Fruit large, oval, compressed, yellow-fleshed; quality good; season late; good for kitchen or market.

Golden Cuba. 1. *Mich. Sta. Bul.* **31**:58. 1887.

Listed as growing in Michigan.

Golden Eagle. 1. Hogg *Fruit Man.* 448. 1884.

Aigle doré. **2.** Thomas *Guide Prat.* 54. 1876.

Golden Eagle was raised by Thomas Rivers, Sawbridgeworth, England, as a second generation from Late Crawford. Leaves with reniform glands; flowers small; fruit very large, round, deeply sutured; skin deep orange, with a red cheek on the sunny side; flesh stained at the pit, tender, melting, rich; freestone; ripens at the end of September.

Golden Gate. 1. *New Haven Nur. Cat.* 7. 1899-1900.

Dr. Smith, Hermann, Missouri, originated Golden Gate. Fruit yellow; season follows Elberta according to the New Haven Nurseries, New Haven, Missouri.

Golden Purple. 1. Kenrick *Am. Orch.* 200. 1841.

Gold and Purple. **2.** Prince *Treat. Hort.* 17, 18. 1828. **3.** Carrière *Var. Pêchers* 43, 44. 1867.

Pourpre Dorée. **4.** Leroy *Dict. Pom.* **6**:239, 240 fig. 1879.

Golden Purple originated in Georgia and was sent out by P. J. Berckmans, Augusta, Georgia. Fruit of medium size, round, with a distinct suture; color golden-yellow, with a deep crimson blush; flesh greenish-yellow, slightly red at the pit, juicy, sweet, with a pleasant, aromatic flavor; stone free; season the last of July.

Golden Rareripe. 1. Kenrick *Am. Orch.* 192. 1841. **2.** *Jour. Hort. N. S.* **5**:188. 1863. **3.** Hogg *Fruit Man.* 448. 1884.

An American variety from Monmouth County, New Jersey, little known in America but listed by several English nurserymen. Glands reniform; flowers small; fruit resembles the Crawfords.

Golden Sweet Cling. 1. Stark Bros. *Cat.* 36. 1913.

Originated near Fort Smith, Arkansas. Fruit large, juicy and sweet, according to the catalog of Stark Brothers, Louisiana, Missouri.

Goode. 1. Budd-Hansen *Am. Hort. Man.* **2**:347. 1903.

Goode October. **2.** Downing *Fr. Trees Am.* 614. 1869.

This variety originated in South Carolina. Fruit large, round or slightly oblong; skin white, veined with red, heavily pubescent; flesh white, stained at the stone, juicy, vinous;

clingstone; matures early in October.

Gooding. 1. *Del. Sta. Rpt.* **13**:100, 101. 1901.

A Mr. Gooding, formerly of Smith County, Texas, originated this variety. It was introduced in 1892 by John F. Sneed, Tyler, Texas. The fruit resembles Mamie Ross but is a few days later.

Gordon. 1. Harrison *Cat.* 13. 1904.

Gordon is a very late variety from J. G. Harrison and Sons, Berlin, Maryland. The trees are not productive on the Station grounds. Glands small, globose; flowers appear late; fruit large, oval-cordate, halves unequal; apex tipped with a recurved, mamelon tip; skin tough, covered with short pubescence, creamy-white, blushed with lively red, with a few dull splashes; flesh white, tinged at the stone, juicy, tender, rich; quality very good; stone large, oval to obovate, flattened, wedge-shape at the base, free; ripens at the last of September.

Gorgas. 1. *Mag. Hort.* **19**:519. 1853. **2.** Downing *Fr. Trees Am.* 615, 616. 1857. **3.** Hoffy *N. Am. Pom.* No. 1, Pl. 1860. **4.** Leroy *Dict. Pom.* **6**:130, 131 fig. 1879.

Gorgas originated with Benjamin Gullis, Philadelphia, Pennsylvania, from a stone of Morris White planted in the fall of 1846. The variety first fruited in 1850. Tree vigorous, bearing glandless leaves; fruit moderately large, roundish, with a swollen point at the apex; suture indistinct; color yellowish-white, clouded and blotched with red on the cheek; flesh white, stained at the stone which is free, firm, juicy, sweet and agreeably flavored; quality very good; ripens late in September.

Goshawk. 1. *Jour. Hort.* 3rd Ser. **13**:494. 1886. **2.** Bunyard-Thomas *Fr. Gard.* 113. 1904.

Autour. **3.** Thomas *Guide Prat.* 55, 215. 1876.

Thomas Rivers, Sawbridgeworth, England, raised Goshawk from a seed of Coolidge impregnated with pollen from the Stanwick nectarine. On the Station grounds the trees are not vigorous; leaves devoid of glands; flowers large; fruit large; skin greenish-white, mottled with spots of dull red; flesh juicy, melting, brisk; ripens in mid-season.

Gough Late Red Clingstone. 1. Prince *Treat. Fr. Trees* 17. 1820.

Listed by Prince in 1820.

Governor. 1. *Am. Pom. Soc. Rpt.* 75. 1873.

Governor is a seedling of President which it surpasses in quality of fruit. It originated with L. E. Berckmans of Rome, Georgia, many years ago. Fruit very large, roundish, regular; skin white, nearly covered with red and with a dark red cheek; flesh white, melting, vinous, aromatic, free; quality good; ripens the middle of August.

Governor Briggs. 1. *Tex. Sta. Bul.* **39**:812. 1896.

Briggs. **2.** *Mich. Sta. Bul.* **169**:209. 1899.

The origin of this sort is unknown but it has been propagated in Michigan for some years under the name Briggs. Tree unproductive; glands globose, small; fruit medium to large, roundish-ovate, with a distinct suture; color yellow, with a red cheek; flesh yellow, red at the pit, juicy, tender, with a rich, vinous, sprightly flavor; quality good; pit free; season in Michigan the last of August.

Governor Campbell. 1. Ramsey *Cat.* 9. 1909.

This is an old, white clingstone which ripens in Texas about July 20th, as described by F. T. Ramsey and Son, Austin,

Texas.

Governor Garland. 1. *W. N. Y. Hort. Soc. Rpt.* 51. 1879. **2.** *Ibid.* 112. 1880.

The original Governor Garland tree grew six miles from Bentonville, Arkansas. The fruits are described as larger, earlier and inferior in flavor to Amsden.

Governor Hubbard. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed by the Texas Experiment Station.

Governor Lanham. 1. Ramsey *Cat.* 9. 1909.

Governor Lanham originated at Austin, Texas, and was introduced by F. T. Ramsey and Son, of that place. It resembles Elberta in size, shape and season but is a clingstone.

Governor Phelps. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

E. F. Hynes of Kansas introduced Governor Phelps; fruit large, yellow, clingstone.

Grand Admirable. 1. *Gard. Mon.* **3**:56. 1861. **2.** *Am. Pom. Soc. Cat.* 78. 1862.

An attractive clingstone from Louisville, Kentucky, first grown about 1840. On the Station grounds the trees are only fairly productive; glands small, globose; flowers appear early, small; fruit medium in size, roundish, inclined to oblate, angular, halves unequal; skin tough, covered with short pubescence, creamy-white, with a carmine blush and a few lively red mottlings; flesh tinged at the stone, juicy, moderately coarse, meaty, with a trace of sprightliness; fair in quality; stone oval, somewhat plump; ripens the last week in September.

Grand Carnation. 1. Parkinson *Par. Ter.* 580. 1629.

"Grand Carnation is like Carnation but greater and later, ripening the beginning of September."

Grand Monarque. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

This variety bears reniform glands and small flowers.

Grand Reporter. 1. *Weber Nur. Cat.* 14. 1900.

Grand Reporter was found by a Mr. Pfister, Creve Coeur Lake, Missouri. Tree hardy and productive, with fruit similar to Late Crawford but a week later, according to H. J. Weber, Nursery, Missouri.

Grandeville. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Leaves deeply serrate and glandless; flowers large.

Granger. 1. *Mich. Hort. Soc. Rpt.* 189. 1880.

A seedling grown by S. L. Staley about 1850 and later given to F. Granger, Monterey, Michigan. It is distinguishable from Late Crawford only by a slight difference in habit of tree; leaves large, with globose glands.

Grant Cling. 1. *Horticulturist* N. S. **7**:180. 1857.

A clingstone peach from J. T. Grant, Georgia. Fruit above medium in size, oblong, tapering; distinctly sutured; skin heavily pubescent, with a pale cream color, blushed considerably; flesh pale red at the stone, juicy, tender.

Grant Large Yellow. 1. Kenrick *Am. Orch.* 194. 1841.

Originated with a Mr. Grant, Philadelphia, Pennsylvania; ripens late.

Grauer-Pfirsich. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Graven Red Cheek Cling. 1. *Mag. Hort.* **13**:110. 1847.

A seedling from Holmes County, Ohio.

Graves. 1. *Gard. Mon.* **21**:362. 1879.

Graves Semi-Cling. **2.** *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

Graves Early. **3.** *Tex. Sta. Bul.* **39**:816. 1896.

A supposed hybrid between the apricot and peach by William Graves, Hazlehurst, Mississippi; larger and earlier than Alexander.

Gray. 1. *Ala. Sta. Bul.* **112**:171. 1900. **2.** *Ibid.* **117**:308. 1901. **3.** *Ibid.* **156**:133. 1911.

Tree vigorous, productive; fruit medium to large, rather long and flattened, with a prominent point at the apex; skin smooth, pale yellow, sprinkled with red; flesh yellow, thick, firm, rich; freestone; ripens the last of June; not recommended.

Great Eastern. 1. Downing *Fr. Trees Am.* 614. 1869.

Great Eastern originated in the Fruitland Nurseries, Augusta, Georgia. Glands globose; flowers small; fruit very large, round, often a trifle flattened; skin greenish-white, with a red cheek; flesh white, juicy, well-flavored; ripens the middle of July.

Great Northern. 1. *Ont. Sta. Rpt.* **3**:42.

1896.

Mentioned as growing in Ontario.

Great Western. 1. *Okla. Sta. Bul.* **2**:14. 1892. **2.** *Mich. Sta. Bul.* **169**:214. 1899.

Trees strong, round-headed, moderately productive; glands reniform; flowers small; fruit medium to large, roundish or slightly ovate; cavity narrow, deep; apex prominent; skin creamy-white; flesh juicy, white to the pit, firm, mild, slightly bitter; quality poor; pit adherent, roundish-oval, pointed, plump; season the early part of October.

Great White. 1. Parkinson *Par. Ter.* 580. 1629.

"The great white Peach is white on the outside as the meate is also, and is a good well rellished fruit."

Green Catharine. 1. *Lond. Hort. Soc. Cat.* 95. 1831. **2.** *Horticulturist* **1**:210, 258, 259. 1846-47. **3.** Leroy *Dict. Pom.* **6**:84 fig., 85. 1879.

W. R. Prince says, in the second reference, that Green Catharine was brought to notice by his grandfather. Glands small, globose; flowers small; fruit large, roundish, distinctly sutured; skin pale green in shade, becoming whitish-yellow, streaked with carmine; flesh greenish-white except at the stone, melting, fibrous, juicy, somewhat acid; stone free, plump; ripens at the end of August.

Green Rareripe. 1. *Horticulturist* **2**:401. 1847-48.

A productive and fine-flavored freestone adapted to New England. Glands globose; flowers small; fruit of medium size; ripens in September.

Green Winter. 1. Prince *Treat. Fr. Trees* 18. 1820. **2.** Prince *Pom. Man.* **2**:15. 1832.

Green Winter is of no value as a table fruit but makes beautiful preserves, the fruits retaining their green color; the flesh is firm and adheres closely to the stone; matures in October.

Gregory. 1. *Horticulturist N. S.* **5**:70. 1855.

Gregory Late. **2.** Hogg *Fruit Man.* 448. 1884.

Introduced by William Gregory, a nurseryman at Cirencester, England, about 1849. It is an excellent, late, melting peach, but does not color nor ripen well in ordinary seasons. Glands globose; flowers small; fruit large, ovate, pointed; skin greenish, with a red blush; flesh vinous, sugary, high in quality; ripens early in October.

Gresham. 1. *Cal. Sta. Rpt.* 357. 1895-97.

Listed in this reference.

Griffing No. 4. 1. Griffing Bros. *Cat.* 20. 1914.

The catalog of Griffing Brothers, Jacksonville, Florida, describes the fruit as large, roundish; skin golden yellow, nearly covered with red; flesh streaked with red near the pit, fine-grained, juicy, subacid; clingstone; ripens the last of June.

Grimes. 1. Munson *Cat.* 14. 1914-15.

Grimes is thought to be a second generation seedling from Mamie Ross, which it closely resembles. It originated with T. H. Graves, Anderson, Texas; ripens in Texas about June 20th, as described by the Munson Nurseries, Denison, Texas.

Griswold. 1. *Am. Pom. Soc. Rpt.* 205. 1858.
2. Elliott *Fr. Book* 297. 1859.

Fruit large, round, greenish-white, slightly tinged with red; flesh very juicy and highly flavored; ripens the middle of September.

Grosse Bourdine. 1. Thomas *Guide Prat.* 49. 1876

Listed in this reference.

Grosse Gallande. 1. Kenrick *Am. Orch.* 186. 1841.

Fruit large, attractive, roundish; color white, with a red blush; flavor excellent; ripens early in September.

Grosse Madeleine Lepére. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Grosse Mignonne. 1. Duhamel *Trait. Arb. Fr.* **2**:18, 19, Pl. X. 1768. **2.** *Pom. Mag.* **1**:23, Pl. 1828. **3.** Lindley *Guide Orch. Gard.* 258, 259. 1831. **4.** Downing *Fr. Trees Am.* 478. 1845. **5.** *Proc. Nat. Con. Fr. Gr.* 37, 51. 1848. **6.** Thomas *Guide Prat.* 40, 219. 1876. **7.** Leroy *Dict. Pom.* **6**:162, 163 fig., 164. 1879. **8.** Hogg *Fruit Man.* 449. 1884.

Grimwood's Royal George. **9.** Brookshaw *Pom. Brit.* **1**:Pl. 21, fig. 1. 1817.

Early Vineyard. **10.** Lindley *Guide Orch. Gard.* 257. 1831.

Neil's Early Purple. **11.** *Ibid.* 263, 264. 1831.

Royal Kensington. **12.** *Ibid.* 271. 1831.

Superb Royal. **13.** *Ibid.* 272, 273. 1831.

Gemeiner Lieblingspfirsich. **14.** Dochnahl *Führ. Obstkunde* **3**:201, 202. 1858.

Veloutée de Piémont. **15.** Thomas *Guide Prat.* 51. 1876.

Grosse Mignon Pfirsich. **16.** Mathieu *Nom. Pom.* 398, 399. 1889.

The numerous synonyms for this variety are an evidence of the esteem in which it was long held. It undoubtedly originated in France; according to Leroy it was mentioned by Merlet in 1667. During the reign of George the Third, Grimwood, of the Kensington Nursery, sent it out as Grimwood's Royal George. A Mr. Lee of Hammersmith, England, called it Early Vineyard; Shailer, of Chelsea, Superb Royal; Forsyth, a royal gardener at Kensington in 1784, called it Royal Kensington. Lindley described the same variety under several different names, apparently believing them to be distinct. At the first meeting of the American Pomological Society, in 1848, Grosse Mignonne was placed on the list of recommended fruits, a place it held until 1899 when it was dropped. Tree large, moderately vigorous, subject to mildew, productive; glands small, globose; fruit large, roundish, depressed and marked with a hollow suture at the top, which seems to divide it into two lobes; color pale greenish-yellow, mottled with red which deepens to brownish-red on the sunny side; flesh free, pale yellow, rayed with red at the stone, melting, juicy, with a rich, delicate, vinous flavor; quality good; ripens at the last of August.

Grosse Mignonne Lepére. 1. Mas *Pom. Gen.* **12**:185. 1883.

Listed in this reference.

Grosse Mignonne Saint-Cyr. 1. Thomas Guide Prat. 52. 1876.

A variety of doubtful value, bearing globose glands and medium-sized flowers.

Grosse Montagne Précoce. 1. *Mag. Hort.* **29**:53. 1863.

Another seedling from Thomas Rivers, Sawbridgeworth, England, which sprang from a seed of a very early,

clingstone peach; the fruit is large and early, but a clingstone.

Grosse de Stresa. 1. Thomas *Guide Prat.* 53. 1876.

Listed as received from Italy.

Grosse de Vitry. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Listed in this reference.

Grosser Blutpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:194. 1858.

Sanguine à gros fruit. **2.** Noisette *Man. Comp. Jard.* **2**:477, 478. 1860.

This variety differs from Sanguinole in being larger.

Grosster Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:220. 1858.

Flowers small, flesh-colored; fruit very large, roundish, lightly sutured; skin yellow, often without any red; flesh yellow to the stone, fine, sweet; clingstone; ripens at the end of August.

Grover Cleveland. 1. Wickson *Cal. Fruits* 314. 1889.

Grover Cleveland originated as a chance seedling with J. W. Gates, Vacaville, California. Tree hardy, prolific; fruit small, yellow, with a dark red cheek; flesh stained at the pit, firm; stone small, clinging; good for shipping and canning.

Grover Red. 1. *Ill. Hort. Soc. Rpt.* 188. 1881.

Grover Red is an early, white-fleshed freestone grown about Warsaw, Illinois.

Grubbs Cling. 1. *N. Mex. Sta. Bul.* **30**:243. 1899.

Tested at the New Mexico Experiment Station.

Guadalupe. 1. *U. S. D. A. Rpt.* 263. 1892. **2.** *Tex. Sta. Bul.* **39**:805. 1896.

G. Onderdonk, Nursery, Texas, grew Guadalupe from a peach of the Spanish type. Glands reniform; fruit roundish-oblate, conical, small; suture deep; apex prominent; skin covered with a short, persistent down, thick, tough, dull creamy-white; flesh tinged at the stone, vinous, aromatic; quality very good; clingstone; ripens in August in southern Texas.

Gudgeon. 1. *Can. Exp. Farms Rpt.* 301. 1890. **2.** *Mich. Sta. Bul.* **169**:215. 1899.

Tree upright, roundish, not very productive; glands reniform; flowers small; fruit medium to large, roundish; apex prominent; color creamy-white, with a bright red blush; flesh red at the stone, juicy, sprightly; quality fair; stone free, oval, pointed; season the first of October.

Guespin. 1. Thomas *Guide Prat.* 52. 1876.

A variety of doubtful merit, bearing reniform glands.

Guinn. 1. Ramsey *Cat.* 9. 1909.

According to F. T. Ramsey and Son, Austin, Texas, this variety was raised by a Mr. Guinn, Cherokee County, Texas. As grown on the Station grounds the fruits are very susceptible to brown-rot. Tree vigorous, moderately hardy; glands small, globose; flowers appear in mid-season; fruit of medium size, cordate, halves decidedly unequal; cavity deep and wide, with a mamelon tip at the apex; skin moderately thin and tough, covered with short, thick pubescence, deep yellow, blushed with dull red, with a few carmine mottlings; flesh tinged with red at the stone, juicy, coarse, firm, sprightly, moderately high in flavor, fairly good; stone

free, ovate, noticeably bulged; ripens the last of August.

Gulley. 1. Bailey *Ann. Hort.* 173. 1890.

Mentioned as introduced by A. G. Gulley of Michigan in 1890.

Gurney. 1. *Mich. Sta. Sp. Bul.* **44**:45, 46 fig. 1910.

One of the many late seedlings of the Chili type. Originated with C. A. Gurney, Hart, Michigan. On the Station grounds it grows as follows: Tree vigorous, spreading, an early bearer; fruit of medium size, conic, cleft into halves by a deep suture which extends beyond the apex; skin thick, tough, covered with short, thick pubescence, light yellow, with a faint red cheek; flesh light yellow, red at the pit, fine, juicy, mild subacid; quality very good; stone free.

Gustave Thuret. 1. Carrière *Var. Pêchers* 58. 1867.

The seed of this variety came from China and was planted about 1862 at Antipolis, Alpes-Maritimes, France, by Gustave Thuret. Tree moderately vigorous; leaves with small, reniform glands; flowers large; fruit very small, halves unequal; noticeably sutured, with a small, mamelon tip at the apex; skin whitish-yellow, with a red blush; flesh whitish-yellow, tinged at the pit, firm though tender, juicy, sweet; stone ovoid, often clinging; ripens the latter part of August.

Haas. 1. *Mich. Sta. Bul.* **104**:89. 1894. **2.** *Ibid.* **169**:215. 1899.

John Haas. **3.** *Mich. Hort. Soc. Rpt.* 313. 1889.

A variety from Delaware resembling Hale Early and ripening with it. Trees strong, spreading, moderately productive; glands reniform; flowers large; fruit medium to large, roundish, faintly sutured; cavity broad and deep; skin

creamy-white, partially washed and striped with red; flesh yellowish-white, juicy, tender, vinous; quality fair to good; pit small, oval, plump, free; season from the first to the middle of August.

Hacker Seedling. 1. *Am. Jour. Hort.* **3**:342. 1868.

Formerly grown about Makanda, Illinois.

Hague. 1. Harrison *Cat.* 18. 1910.

Hague is a large, yellow-fleshed freestone which ripens the last of August, according to J. G. Harrison, Berlin, Maryland.

Haines. 1. *Mich. Hort. Soc. Rpt.* 458. 1883.

Haines' Early Red. **2.** Downing *Fr. Trees Am.* 479. 1845. **3.** *Gen. Farmer* **8**:243. 1847. **4.** *Am. Pom. Soc. Cat.* 78. 1862.

Haines is an early peach from New Jersey. The variety has been confused with several other sorts. Tree hardy, vigorous, productive; glands globose; fruit of medium size, round, depressed at the base, with a distinct suture extending nearly around the fruit; skin pale yellowish-white, with deep red in the sun; flesh greenish-white, melting, very juicy, sweet, with a pleasant flavor; quality good; season the middle of August.

Hale. 1. Elliott *Fr. Book* 284. 1854.

Hale's Melocoton. **2.** Cole *Am. Fr. Book* 193. 1849.

Hale originated with a Col. E. Hale of Stowe, Massachusetts. Fruit moderately large, oblong, flattened at the base, with a slight suture on one side; color bright yellow; flesh yellow, rich, sweet; of excellent quality; freestone; ripens early in September.

Hale Oblong. 1. *Mich. Sta. Bul.* **104**:89. 1894. **2.** *Ibid.* **169**:215. 1899.

A seedling from C. C. Engle, Paw Paw, Michigan. Very similar to Hale Round and Hale but more productive; fruit larger and pit less adherent than Hale Early.

Hale Rareripe. 1. *La. Sta. Bul.* **3**:45. 1890.

Listed by the Louisiana Experiment Station.

Hale Round. 1. *Mich. Sta. Bul.* **104**:89. 1894. **2.** *Ibid.* **118**:35. 1895.

A seedling from C. C. Engle, Paw Paw, Michigan, very similar to Hale Oblong. Tree more productive; fruit larger and pit less adherent than Hale Early.

Hall. 1. *Fla. Sta. Bul.* **62**:514. 1902.

Hall Yellow. **2.** *Glen St. Mary Nur. Cat.* 13, 14. 1903.

Hall is a seedling of Angel. It was originated by R. C. Hall, Volusia County, Florida, about 1900. Many years ago a Mr. Hall of Maine originated a peach which he called Hall Down-Easter. Several writers since, have, in describing the Hall, of Florida, erroneously given its origin as Maine. Fruit large, roundish-oblate, sometimes inclined to oblong, bulged on one side; suture very shallow; apex rounded; skin yellow, washed with red; flesh yellow, red at the pit, with red lines radiating into the flesh, meaty, moderately juicy, with an agreeable acid flavor; quality good; stone free; season early.

Halliday. 1. *Ill. Hort. Soc. Rpt.* 166. 1895.

Halliday is a medium-sized, white-fleshed clingstone, which ripens about the first of August.

Halsteads Early. 1. *W. Va. Sta. Bul.* **82**:406. 1902.

Halsteads Early is a white-fleshed peach of medium size, ripening in West Virginia the last of August.

Hamner. 1. *Gard. Mon.* **18**:241. 1876.

A chance seedling clingstone which sprung up in Galveston, Texas.

Hance. 1. Budd-Hansen *Am. Hort. Man.* **2**:347. 1903. **2.** *Mich. Sta. Bul.* **169**:215. 1899.

Hance Golden Rareripe. **3.** *Am. Pom. Soc. Rpt.* 124. 1881.

Hance Golden. **4.** *Mich. Sta. Bul.* **104**:89. 1894.

Hance originated in New Jersey. Trees fairly strong, moderately productive; glands globose; flowers small; fruit medium to large, roundish; suture indistinct; cavity broad; color yellow, with a dark red cheek in the sun; flesh yellow, red at the pit, juicy, tender, vinous; quality good; pit free; season early September.

Hance Smock. 1. *Mich. Sta. Bul.* **104**:89. 1894. **2.** *Ibid.* **169**:215. 1899.

Hance Smock came from Delaware. Tree upright, quite vigorous; glands reniform; flowers small; fruit large, roundish to oval; deeply sutured near the apex, often extending beyond; color pale yellow, with a marbled cheek; flesh yellow except at the pit, moderately juicy, tender, vinous; quality good; pit large, oval, pointed, free; season early in October.

Hannah. 1. *Ind. Hort. Soc. Rpt.* 64. 1902.

Hannah sprung from a seed of Arkansas, grown by William Hannah, Greene County, Indiana. Flesh clear yellow, freestone; used for canning locally.

Hape Early. 1. *W. N. Y. Hort. Soc. Rpt.* 50. 1879.

Raised by Dr. Samuel Hape, Atlanta, Georgia; equal to any early, white variety known in 1879.

Hardy White Tuscany. 1. Wickson *Cal. Fruits* 317. 1889.

This variety is very susceptible to leaf-curl; fruit large, clear white, with a pale pink wash; flesh very firm, white to the pit.

Harker. 1. *Am. Pom. Soc. Cat.* 32. 1887.

Harker Seedling. **2.** *Ohio Hort. Soc. Rpt.* 9. 1857. **3.** Elliott *Fr. Book* 297. 1859. **4.** *Am. Pom. Soc. Cat.* 30. 1877.

A popular variety from New Jersey which appeared on the American Pomological Society's fruit-list in 1877 as Harker Seedling. In 1887 the name was changed to Harker and in 1891 the variety was dropped. Glands globose; flowers small; fruit large, roundish; flesh yellow, sweet, juicy; freestone; ripens early in September.

Harper Early. 1. *W. N. Y. Hort. Soc. Rpt.* 51. 1879. **2.** *Ibid.* 112. 1880.

Harper Early is said to have originated in Wilson County, Kansas. It is neither as large nor as early as Amsden.

Harris Early. 1. *Mich. Hort. Soc. Rpt.* 314. 1889.

Similar to Mountain Rose; a shy bearer.

Harris Winter. 1. *Gard. Mon.* **20**:340. 1878. **2.** *W. N. Y. Hort. Soc. Rpt.* 112. 1880.

Harris Winter is a late variety of value in the South but too late for cultivation in the North; originated in North

Carolina.

Harter Blutpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:194. 1858.

A dark red clingstone somewhat similar to Sanguinole; flowers and stone are small; ripens at the end of October.

Hartshorn. 1. Cole *Am. Fr. Book* 195. 1849.

J. Hartshorn, Reading, Massachusetts, introduced this seedling which is said to reproduce itself from seed. Fruit large, roundish-oval, rich yellow, deeply blushed; flesh rather coarse; clingstone; ripens the middle of September; good for preserves.

Hastings. 1. *Fla. Sta. Bul.* **73**:145. 1904.

Hastings is a Honey-like peach which originated with Griffing Brothers, Macclenny, Florida, about 1900. Fruit medium to large, oval, very irregular, with a recurved tip at the apex; cavity deep, abrupt; skin very fuzzy, thin, tough, dull greenish-yellow, washed and streaked with deep red; flesh red at the stone, firm, meaty, juicy, sweet; stone free, oval, plump, with a broad, recurved point; season the last of June.

Hastings Rareripe. 1. *Horticulturist* **2**:400. 1847-48.

Probably of New England origin. Leaves with globose glands; flowers small; fruit of medium size, roundish, often a little flattened; skin yellowish-white, with a purplish-red cheek; ripens the middle of September.

Hatch. 1. Cole *Am. Fr. Book* 192. 1849.

This variety originated in Franklin, Connecticut, with S. O. Hatch, and reproduces itself from seed. Fruit very large, roundish, pointed; suture shallow; skin deep yellow, blushed where exposed; flesh melting, sweet; excellent; freestone; ripens September 1st.

Hâtive d'Aikelin. 1. Thomas *Guide Prat.* 49. 1876.

Aikelin Frühpfirsich. **2.** Mathieu *Nom. Pom.* 386. 1889.

This peach originated in Württemberg, Germany; fruit of medium size, globular; skin deep purple on a whitish ground; of first quality; ripens late in August.

Hâtive de Chine. 1. Mathieu *Nom. Pom.* 400. 1889.

Listed in the reference given.

Hâtive de Ferrières. 1. Downing *Fr. Trees Am.* 617. 1857. **2.** Elliott *Fr. Book* 297. 1859.

A variety of French origin probably distinct from Grosse Mignonne. Fruit of medium size, roundish, with a shallow suture; skin white, nearly covered with rich red; flesh white, tinged with red at the stone, juicy, melting, with a sweet, rich, vinous flavor, free; season the last of August.

Hâtive de Gaillard. 1. Mathieu *Nom. Pom.* 400. 1889.

Listed in this reference.

Hâtive de Holland. 1. Mas *Le Verger* **7**:229, 230, fig. 113. 1866-73.

Frühe Hollandische. **2.** Mathieu *Nom. Pom.* 395. 1889.

Tree moderately vigorous; leaves with reniform glands; flowers large; fruit of medium size, roundish, flattened at the ends; skin thin, yellowish-white, striped with red; flesh white often to the pit, melting, juicy, sweet, aromatic; stone clinging, large for the size of the fruit, oval, acute at the base; ripens early in August.

Hâtive Lepère. 1. Mathieu *Nom. Pom.* 400. 1889.

Listed without description.

Hatt. 1. Thomas *Guide Prat.* 49. 1876.

Mentioned as received from France.

Haun Golden. 1. *Ont. Fr. Gr. Assoc. Rpt.* **25**:147. 1893.

Listed in this reference.

Haupt. 1. *Tex. Sta. Bul.* **39**:812. 1896. **2.** *Del. Sta. Rpt.* **13**:102. 1901.

Tree vigorous, unproductive; glands globose; fruit of medium size, oval, with a pointed apex; skin creamy-white, blushed with red; flesh rather acid; quality fair; stone clinging; ripens in Texas the last of July.

Haupt Seedlings. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Haupt August, Haupt October Free, and Haupt No. 14, are seedlings, listed but not described, originating with W. W. Haupt, Kyle, Texas.

Hawkins Winter. 1. *N. C. Sta. Rpt.* **12**:108. 1889.

Listed in this reference.

Heath Ringold. 1. *Ill. Hort. Soc. Rpt.* 206. 1896.

A small, red and white, freestone variety of no value.

Heckel. 1. Leonard Coates *Cat.* 7. 1910-11.

A yellow freestone raised by George Heckel, Morganhill, California, according to Leonard Coates of that place.

Heim Lackpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:215. 1858.

A seedling originating about 1855. Tree productive; glands reniform, large; flowers of medium size; fruit of medium size, roundish, somewhat flattened, halves unequal; deeply sutured; skin yellowish-white, with mottlings of purplish-red, heavily pubescent; flesh stained at the pit, tender, juicy, aromatic; stone free, oval, acutely pointed; ripens late in September.

Hemphill. 1. Hoopes Bros. & Thomas *Cat.* 16. 1907.

Hemphill originated with Judge Hemphill, West Chester, Pennsylvania, according to the catalog of Hoopes Brother and Thomas Company of that place. At Geneva this variety proves to be weak and unproductive. Fruit large, white, clingstone; season early in October.

Hemskirk. 1. Langley *Pomona* 105, Pl. 31 fig. 4. 1729. **2.** Lindley *Guide Orch. Gard.* 259. 1831.

A beautiful, early fruit from the Royal Gardens at Kensington, England. Leaves doubly serrate, glandless; flowers large, with a pale rose-color; fruit below medium in size, oblate, somewhat narrowed at the apex; skin greenish-yellow, with a bright red blush, marbled with deeper red; flesh faintly tinged at the pit, melting, juicy, vinous; stone free, small, nearly round, smooth; ripens at the end of August.

Henry Clay. 1. *Horticulturist* N. S. **3**:139. 1853.

A southern peach grown by Rev. A. B. Lawrence, Woodville, Mississippi. Leaves very large; fruit very large; skin creamy-white, with a deep crimson blush; flesh white, with the peculiar flavor of both strawberry and pineapple; pit small, free; ripens the last of July.

Henshaw. 1. *W. Va. Sta. Bul.* **82**:406. 1902.

A large, white peach with a red blush ripening the latter part of August.

Herbert. 1. Bailey *Ann. Hort.* 185. 1892.

A cross between Chinese Cling and Salwey, introduced by J. H. Jones, Georgia. Fruit large, yellow; clingstone; ripens about August 20th.

Hermione. 1. *Pa. Fr. Gr. Soc. Rpt.* 587. 1878.

A white-fleshed variety listed by the Pennsylvania Fruit-Growers' Society.

Hero. 1. Bailey *Ann. Hort.* 185. 1892.

Hero was introduced by J. H. Jones of Georgia. It is a seedling of Chinese Cling but larger, higher colored and freer from rot; ripens in Georgia July 20th.

Hewellay. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Hewellen. 1. *Cultivator* 3rd Ser. **4**:146. 1856.

A very early clingstone of southern origin.

Hicks Seedling. 1. Thomas *Guide Prat.* 54. 1876.

Listed as a variety of American origin.

Hilard. 1. *Tex. Sta. Bul.* **39**:816. 1896.

In Texas, Hilard proved a small, worthless variety ripening in October.

Hilborn. 1. *Can. Exp. Farms Rpt.* 301. 1890.

2. *Ibid.* 449. 1896.

One of the best peaches for British Columbia; fruit of medium size, globular; color creamy-yellow, with a red cheek; flesh juicy, tender; ripens the middle of August.

Hill Home Chief. 1. *Ohio Sta. Bul.* **170**:176, 1906.

A white-fleshed sort of no particular merit which ripens on the Station grounds about the middle of September. Tree open, hardy, unproductive; leaves with small, reniform glands; flowers appear in mid-season, small; fruit above medium in size, oval-cordate, halves slightly unequal; sides about the cavity drawn in, forming a prune-like neck; suture extends about three-quarters around the fruit; skin thin, tough, creamy, overlaid with a lively blush often becoming duller or even lacking; flesh stained at the pit, rather dry, firm, sprightly; stone free, obovate.

Hine Seedling. 1. Hooper *W. Fr. Book* 222. 1857.

Raised by Daniel Hine of Talmadge, Ohio, from Heath Cling. Earlier and better colored than its parent. Leaves with globose glands; flowers large; fruit large, round; flesh juicy, sweet; clingstone; ripens in September.

Hinkley Seedling. 1. *Ia. Hort. Soc. Rpt.* 366. 1908.

A hardy seedling from Iowa.

Hlubek Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:206. 1858.

Glands reniform; flowers large, white; fruit of medium size, roundish, deeply sutured; skin yellowish-white, with a dark red blush; flesh red at the stone, sweet, vinous; stone oval, free; ripens early in September.

Hobbs Early. 1. *Gard. Mon.* **3**:87. 1861.

O. T. Hobbs, Randolph, Pennsylvania, says this variety is a seedling of Fay Early Anne, originating at the American Garden of Experiments. The fruit is very early and the pit small.

Hobson. 1. *Del. Sta. Rpt.* **13**:102. 1901.

Hobson is a seedling of Mamie Ross grown by E. W. Kirkpatrick, McKinney, Texas. Fruit of medium size, oval, compressed; apex uneven, blunt; skin firm, thick, creamy-white, faintly blushed; flesh firm, moderately juicy, astringent; stone clinging, short, blunt; good for canning.

Hobson Choice. 1. *Ga. Sta. Bul.* **42**:236. 1898.

Originated on the grounds of the Georgia Experiment Station. It is very similar to Admiral Dewey. Tree low in habit, spreading; leaves with globose glands; fruit of medium size, globular, deep yellow; freestone; ripens the last of June.

Hoffmanns White. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Glands reniform; flowers small; fruit of medium size, whitish, with a red blush; flesh melting; quality good; ripens from the beginning to the middle of September.

Hoffmans Favorite. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Leaves with reniform glands; flowers small; fruit medium in size, melting, white; of second quality; ripens early in September.

Hoffner. 1. Elliott *Fr. Book* 292. 1854. **2.** Downing *Fr. Trees Am.* 617. 1869.

Originated near Cincinnati, Ohio. Glands globose; fruit medium to large, roundish; skin greenish-white, blushed; flesh yellowish-white, juicy; freestone; ripens in August.

Holderbaum. 1. *Rural N. Y.* **59**:706. 1900.

Holder. **2.** Budd-Hansen *Am. Hort. Man.* **2**:347. 1903.

Holderbaum originated in the mountains of Pennsylvania. The trees on the Station grounds are weak and only moderately productive. Leaves with small, globose glands; flowers appear in mid-season; fruit medium to above in size, roundish-oblate; cavity deep, narrow; suture deepens at the apex, often extending entirely around the fruit, with a mucronate tip at the apex; skin thin, tough, covered with short, thick pubescence, creamy-white, with a slight blush of red, often mottled with darker red; flesh white, tinged at the stone, juicy, melting, sprightly, rich; very good; stone free, rather small, oval; ripens at the end of August.

Hollister. 1. *Ill. Hort. Soc. Rpt.* 169. 1895.

Mentioned as a small, dry, white peach ripening in October.

Holsinger Salwey. 1. Stark Bros. *Cat.* 24. 1912.

According to Stark Brothers, Louisiana, Missouri, this variety is supposed to be an improved Salwey from the orchard of Major Frank Holsinger, Wyandotte County, Kansas. Rated by Mr. Holsinger as the best of forty-nine Salwey seedlings raised by him.

Holt Early. 1. *Ill. Hort. Soc. Rpt.* 188. 1881.

An early, white freestone from Warsaw, Illinois.

Honest Abe. 1. *Cal. Bd. Hort. Rpt.* 69. 1883. **2.** Wickson *Cal. Fruits* 312. 1891.

Honest Abe is a California variety from Healdsburg; said to be curl-proof. Fruit large, yellow, blushed; ripens between the Crawfords.

Honest John. 1. *U. S. Pat. Off. Rpt.* 299.

1854. **2.** *Am. Pom. Soc. Rpt.* 44. 1856. **3.** *Mich. Hort. Soc. Rpt.* 115. 1873. **4.** *Mich. Sta. Bul.* **59**:14. 1890. **5.** *Mich. Sta. Sp. Bul.* **44**:46. 1910.

Honest John is an old variety whose origin is given both as in western New York and as in Michigan. The Honest John grown in Michigan and disseminated by C. C. Engle of Paw Paw, is probably the true variety. Half a century ago it was grown extensively in peach-sections but inferior quality and small size of fruit condemn it. Several writers have confused Honest John with Large York, George IV and Haines but all of these are distinct. Tree large, vigorous; fruit large, roundish-oval, compressed; apex roundish or slightly pointed; color greenish-yellow changing to deep yellow, mottled and blushed with dull carmine; fresh yellow, tinged with red near the pit, moderately juicy, meaty yet tender, subacid, inferior in flavor; fair in quality; stone free; ripens in mid-season.

Honey. 1. *Horticulturist* N. S. **8**:456. 1858. **2.** *Jour. Hort.* N. S. **5**:188. 1863. **3.** Downing *Fr. Trees Am.* 617. 1869. **4.** Hogg *Fruit Man.* 450. 1884. **5.** *Am. Pom. Soc. Cat.* 30. 1889. **6.** *Fla. Sta. Bul.* **73**:141-143. 1904.

Montigny. **7.** Mas *Le Verger* **7**:69, 70, fig. 33. 1866-73. **8.** Carrière *Var. Pêchers* 59, 60. 1867. **9.** Leroy *Dict. Pom.* **6**:169, 170 fig. 1879.

Honey is a Chinese peach probably first raised in Europe from seed sent to the Jardin des Plantes at Paris, by de Montigny, Consul of France, at Shanghai. The name Honey may have been applied to it in England. It reproduces itself closely from seed and a number of slight variations from the original type have been found in America. The strain chiefly grown in this country was raised by Charles Downing from seed brought from China. Downing's seedlings failed but prior to their failure he had sent grafts from them to Henry

Lyons, Columbia, South Carolina, who grew some trees. The variety was probably disseminated in America from this source. In 1889 the American Pomological Society added Honey to its list of fruits. Tree vigorous, hardy and productive in the South; glands usually reniform but sometimes globose; fruit small to medium, oblong-oval, tapering at the apex into a long, sharp nipple or beak, and marked with a distinct suture; color whitish-yellow, washed and dotted with red, which deepens to almost a crimson blush; flesh creamy-white, streaked with red around the pit, juicy, very tender, melting, sweet, with a distinct, rich, honey-like flavor; quality very good; pit free; season in the South from the middle of June to the first of July.

Honey Cling. 1. *Cal. Sta. Rpt.* 369, 371, 373. 1892-94.

Fruit white, very highly colored and very sweet.

Honey Seedling. 1. *Fla. Sta. Rpt.* **8**:86, 89. 1896.

A seedling of Honey propagated by the Florida Station.

Honeywell. 1. *Mich. Hort. Soc. Rpt.* 299. 1875.

John Honeywell, Randolph, Ohio, raised this peach. Said to be earlier than Alexander.

Hoover Heath. 1. *Am. Pom. Soc. Cat.* 32. 1887. **2.** *Ga. Sta. Bul.* **42**:236. 1898.

Hoover Late Heath. **3.** *Am. Pom. Soc. Cat.* 28. 1873.

Hoover Late. **4.** *Mich. Hort. Soc. Rpt.* 297. 1875.

This variety is a seedling of Heath. It appeared on the fruit-list of the American Pomological Society in 1873 as Hoover Late Heath. In 1887 the name was changed to its present

form; in 1899 the variety was dropped. Tree low in habit, straggling, spreading; glands reniform.

Hopes Early Red. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed but not described.

Hopkinsville. 1. Downing *Fr. Trees Am.* 3rd App. 170. 1881.

Raised from seed by James Quisenburg, near Hopkinsville, Kentucky. Tree reproduces itself from seed; leaves without glands; flowers small; fruit large, oblong, with a mamelon tip at the apex; skin dull white, quite downy, mottled with red; flesh tinged with red at the stone, juicy, melting; freestone; ripens early in September.

Horton Delicious. 1. Downing *Fr. Trees Am.* 637. 1857.

Probably from Georgia. Fruit large, roundish, inclining to oval; suture shallow; skin moderately downy, creamy-white, with a faint blush; flesh white to the stone, with a Heath Cling flavor; quality best; ripens from the first to the middle of October.

Horton Rivers. 1. *W. N. Y. Hort. Soc. Rpt.* 73, 74. 1890.

Horton Rivers is a seedling of Early Rivers and is very similar to it. The trees did not prove hardy nor productive on the Station grounds. Tree dense and spreading; leaves long and broad, with reniform glands; blossoms appear early; fruit of medium size, roundish-oval, oblique; suture indistinct except at the ends; apex with a prolonged, recurved tip; skin thin, tough, covered with short, thick pubescence, creamy-white, with a slight blush usually near the cavity; flesh white, juicy, tender, sweet, sprightly, high in flavor; quality good; stone free, large, oval, faintly obovate, not very plump; ripens the third week in August.

Houpt October. 1. *Tex. Sta. Bul.* **39**:816. 1896.

Listed in this reference.

Howard. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

A seedling raised by E. F. Hynes of Kansas.

Howell Cling. 1. *Tex. Sta. Bul.* **39**:812. 1896.

Tree fairly vigorous and productive; glands small, reniform; fruit of medium size, roundish, creamy-white; clingstone; ripens the last of August.

Howers Frühpfirsich. 1. Mathieu *Nom. Pom.* 401. 1889.

Listed in this reference.

Hoyte Lemon Cling. 1. *Lond. Hort. Soc. Rpt.* **6**:414. 1826.

A seedling of Pineapple which originated with a Mr. Hoyte of New York City. Fruit very large, resembles Pineapple; ripens late.

Hubbard Early. 1. Elliott *Fr. Book* 298. 1859.

Hubbard Early is a medium-sized, white-fleshed peach of fair quality; season from July to August.

Hudson. 1. *Am. Gard.* **21**:693 fig. 1900.

Hudson is a yellow peach put out by H. S. Wiley, Cayuga, New York. The trees on the Station grounds were not productive; stone free; season very late.

Hudson November. 1. *Ala. Sta. Bul.* **11**:9. 1890.

Flowers large; fruit of medium size, white; flesh firm; clingstone; ripens late in October; easily injured by drouth.

Hughes I. X. L. 1. *U. S. D. A. Rpt.* 392. 1891. **2.** *Mich. Sta. Bul.* **118**:30. 1895.

Glands reniform; flowers large; fruit of medium size, greenish-yellow, mottled and striped with deep crimson; flesh lemon-yellow, mild subacid; clingstone; season late in October in the South where it may be profitable.

Hull Athenian. 1. Downing *Fr. Trees Am.* 638. 1857.

Named after Henry Hull, Jr., of Athens, Georgia. Fruit very large, oblong; suture but a line; skin very downy, yellowish-white, marbled with dull red where exposed; flesh white, pale red at the stone, firm, vinous; ripens in October.

Hull Late. 1. Leonard Coates *Cat.* 7. 1911.

According to Leonard Coates, Morganhill, California, this variety is a very late, market clingstone, valuable for shipping.

Hunter. 1. *Am. Pom. Soc. Rpt.* 95. 1854.

Hunter Favorite. **2.** *Horticulturist* **15**:491. 1860.

Dr. Hunter of Lincoln, North Carolina, raised this freestone peach; color yellow; stone small; season the last of September.

Husted Early. 1. *U. S. D. A. Pom. Rpt.* 42. 1895. **2.** *Mich. Sta. Sp. Bul.* **44**:47. 1910.

Husted Early, or Husted No. 16 as it was first called, is often confused with Early Michigan. Although they are very similar in fruit, the tree-characters are different. Glands globose; flowers large; fruit roundish, medium in size; skin woolly, greenish-white, with a crimson blush, thick,

tenacious; flesh fine-grained, juicy, subacid; stone oval, free; ripens in Georgia early in July.

Husted's Seedlings. 1. *Mich. Hort. Soc. Rpt.* 191. 1879.

In this reference are described several seedlings which were sent out by J. D. Husted, Lowell, Michigan, from a large number originated by him.

Husted No. 17. This variety is thought to have originated as a cross between Chili and Hale Early. Fruit large, creamy-white, marbled with dark red; flesh creamy-white, firm, melting, juicy, mild, sweet, rich; ripens early.

Husted No. 20. Fruit nearly large; color clear yellow, striped and shaded with dark red; flesh bright yellow, almost melting, very juicy, mild, vinous, rich.

Husted No. 22. Fruit medium to large, bright yellow, with a dull red blush; flesh pale yellow, delicate, melting, juicy, very mild, vinous.

Husted No. 26. Fruit large, clear yellow, with a dark red blush; flesh bright yellow, fine-grained, melting, juicy, rich, with a mild, vinous, almost almond flavor.

Husted No. 46. Fruit large, yellow, faintly marbled with dull red; flesh orange-yellow, dark red at the pit, firm, slightly fibrous, juicy, with a mild acid flavor.

Huston Seedling. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Listed as growing in Delaware.

Hutchinson. 1. *Gard. Mon.* **13**:31. 1871.

This fruit is similar in appearance to the old Red Rareripe. The variety is said to have borne regularly for forty years in the vicinity of Reading, Massachusetts.

Hyatt. 1. *Ill. Hort. Soc. Rpt.* 159. 1889. **2.** *Mich. Sta. Bul.* **118**:35. 1895.

Hyatt is very much like Hale Early but more highly colored and better flavored; when fully ripe it is nearly free from the pit.

Hybride Quétier. 1. *Rev. Hort.* 115. 1888.

This variety grew from a pit of Grosse Mignonne fertilized by an apricot. Fruit of medium size, pale yellow, very juicy; ripens in October.

Hydelberg. 1. *Kan. Hort. Soc. Rpt.* 228. 1910-11.

Hydelberg is a good, yellow peach ripening in Kansas about August 10th.

Hynds Yellow. 1. Munson *Cat.* 6. 1903-04.

Hynds Yellow is briefly described by the Munson Nurseries, Denison, Texas. It ripens earlier than Elberta. On the Station grounds it is a very mediocre sort. Tree vigorous, upright; leaves with small, globose glands; flowers appear in mid-season; fruit of medium size, roundish-oval, bulged near the apex, halves unequal; apex tipped with a small, recurved, mamelon point; skin covered with long, thick pubescence, thin, tough, light orange-yellow, with few stripes and splashes of dull red; flesh stained with red at the stone, juicy, firm, mild, not very pleasing; stone free, small, oval to ovate, usually bulged near the apex.

Hynes Nectar. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

This peach originated with E. F. Hynes, West Plains, Missouri. It is said by the originator to be a delicious freestone ripening a few days before Hynes.

Hyslop Cling. 1. Prince *Pom. Man.* **2**:27. 1832. **2.** Hooper *W. Fr. Book* 223. 1857. **3.** *Am. Pom. Soc. Cat.* 78. 1862.

This variety is named after David Hyslop, Brookline, Massachusetts, who disseminated cions of it as early as 1810. It was very desirable for northern climates and for that reason was placed on the fruit-list of the American Pomological Society in 1862 where it remained until 1897. Fruit large, roundish; skin white, with a crimson blush; flesh very juicy, vinous; ripens in October.

Hyslop Favorite. 1. *Okla. Sta. Bul.* **2**:14. 1892.

Listed as growing in Oklahoma.

Ice Mountain. 1. *Mich. Sta. Bul.* **118**:30. 1895. **2.** *Ibid.* **152**:197, 200. 1898.

A very late freestone from Delaware. Flowers large; glands reniform; fruit small though good; moderately productive.

Idaho Mammoth. 1. Stark Bros. *Cat.* 37. 1913.

According to Stark Brothers, Louisiana, Missouri, this peach is a large, yellow-fleshed freestone which originated with Major Manning of Idaho.

Imperatrice Eugenie. 1. Thomas *Guide Prat.* 49. 1876.

Glands globose; flowers of medium size; fruit large, of first quality; ripens at the end of September.

Imperial (Middleton). 1. Elliott *Fr. Book* 298. 1859.

An American variety of unknown origin. Fruit large, roundish, yellow mingled with red; flesh yellow, sweet, free; ripens the middle of September.

Imperial (Pettit). 1. Elliott *Fr. Book* 298. 1859.

Elliott mentions this variety as of American origin. Fruit large, roundish-oval, yellow, with red in the sun; flesh yellow, juicy, sweet, subacid, free; season the middle of September.

Improved Pyramidal. 1. *Am. Pom. Soc. Rpt.* 75. 1873.

The habit of this variety is similar to that of a Lombardy poplar; it often attains a height of thirty feet. The original tree was found in Kentucky by W. P. Robinson. Fruit medium to large; skin white, covered with carmine; flesh juicy, melting, vinous; quality best; matures August first.

Incomparable. 1. *Lond. Hort. Soc. Rpt.* **5**:549. 1824. **2.** Lindley *Guide Orch. Gard.* 275. 1831.

Pavie Admirable. **3.** Kenrick *Am. Orch.* 232. 1832.

Incomparable ripens with and is very similar to Catharine. The variety appeared on the list of fruits of the American Pomological Society from 1877 to 1897. Leaves crenate, with reniform glands; flowers small, pale; fruit large, roundish, with a slight swelling on one side; skin light yellow, pale red in the sun, becoming deep crimson; flesh tinged with red at the pit, juicy, sugary; stone roundish, nearly smooth, adherent.

Incomparable en Beauté. 1. Hogg *Fruit Man.* 224. 1866.

A showy fruit but only fair in quality. Glands round; flowers small; fruit large, round, depressed at the ends; skin pale

yellowish-green, streaked with crimson where exposed; flesh white, stained at the stone, melting, juicy, vinous; ripens the middle of September.

Incomparable Guilloux. 1. *Rev. Hort.* 478. 1905.

M. Guilloux, horticulturist at Saint-Genis Laval, Rhône, France, obtained this variety by crossing Bonouvrier and Amsden. Tree vigorous; leaves glandless; flowers small; fruit large, roundish, highly colored; flesh melting, juicy, sweet, aromatic; stone slightly adherent; ripens with Hale Early.

Indian. 1. *Wash. Bd. Hort. Rpt.* 139, 140. 1893.

A singular and peculiar fruit raised by a Mr. Coxe from a seed brought from Georgia. Tree a slow grower and moderately productive. Fruit large, roundish, broad and depressed; flesh bright yellow, of the texture of a very ripe pineapple, rich, juicy, and of a very excellent flavor; stone free.

Indian Chief. 1. *U. S. D. A. Rpt.* 290. 1893.

A seedling of Hughes I. X. L., evidently of the Spanish type; of little value. Trees on the Station grounds spreading, vigorous; leaves coarsely crenate; glands reniform; fruit large, roundish, pointed; cavity large, deep; surface rather harsh; skin thick, tough, dark yellow, striped and splashed; flesh yellow, streaked with red near stone and skin, firm, mild, subacid; stone oval, clinging; ripens in Louisiana the second week in August.

Indian Rose. 1. *N. J. Hort. Soc. Rpt.* 107. 1912.

Mentioned as growing in New Jersey.

Infant Wonder. 1. *W. N. Y. Hort. Soc. Rpt.* 114. 1880. **2.** *Mich. Sta. Bul.* **118**:35. 1895. **3.** *Ibid.* **169**:216. 1899.

Infant Wonder was raised by Captain Daniel Webster, Denison, Texas. Tree strong, spreading; glands globose; flowers small; fruit large, roundish; cavity narrow, deep; skin creamy-white, with a thin blush where exposed; flesh red at the pit, juicy, tender, vinous, with a slight bitterness; pit large, oval, pointed, free; ripens the last of August.

Ingold. 1. *Am. Pom. Soc. Cat.* 33. 1899.

Ingold Lady. **2.** *Gard. Mon.* **26**:80. 1884.

Ingold originated with Alfred Ingold, Guilford County, North Carolina. On the Station grounds the variety proved a very shy bearer, with fruit of fair size, high in quality. Tree upright-spreading, tall; leaves long, broad, with small, globose glands; flowers appear late; fruit roundish to cordate; cavity deep; apex somewhat pointed, with a recurved, mamelon tip; skin tough, covered with short, thick pubescence, pale yellow deepening to orange, with splashes of dull, dark red; flesh yellow, tinged at the stone, juicy, firm but tender, sweet, rich; very good; stone free, ovate-cordate, plump; ripens the last of August.

Ingraham. 1. *Am. Pom. Soc. Rpt.* 108. 1885.

Ingraham, named after its originator, was introduced by Joseph J. Robinson, Lamont, Michigan. Fruit of medium size, dull greenish-white, with a few spots and blotches of red; freestone; quality good; ripens the middle of September.

Ireland Choice. 1. *Okla. Sta. Bul.* **2**:14. 1892.

Listed by the Oklahoma Station.

Ironclad. 1. *Ia. Hort. Soc. Rpt.* 138. 1911.

A very hardy variety in Iowa; similar to Bailey in tree and fruit.

Isabella. 1. Rea *Flora* 211. 1676.

"Isabella peach is a fair reddish-yellow colour, and good taste."

Island. 1. Parkinson *Par. Ter.* 580. 1629.

"The Island peach is a faire Peach and of a very good rellish."

Ispahan. 1. Prince *Pom. Man.* **1**:180, 181. 1831. **2.** Kenrick *Am. Orch.* 215. 1832.

Ispahaner Strauchpfirsich. **3.** Dochnahl *Führ. Obstkunde* **3**:195. 1858.

This variety was discovered in 1799 by Brugniere and Oliver at Ispahan, Persia. The tree attains a height of twelve feet and forms a thick, round bush filled with numerous slender branches. Leaves from one to two inches long, finely serrated, devoid of glands; fruit spherical, whitish-green; flesh melting, juicy; freestone; matures the middle of September.

Italian. 1. Langley *Pomona* 107, Pl. 33, fig. 5. 1729.

Italienischer Lackpfirsich. **2.** Dochnahl *Führ. Obstkunde* **3**:212. 1858.

Pêche d'Italie. **3.** Thomas *Guide Prat.* 49. 1876.

The fruit of this variety is very similar to that of Chevreuse Hâtive but larger; its flowers are smaller; ripens the middle of September.

Italian Red. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Listed by Charles Wright, Seaford County, Delaware.

Italienischer Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:208. 1858.

Flowers large; fruit large, roundish, noticeably sutured, creamy-white, with a faint blush; flesh aromatic; clingstone; ripens early in August.

Ives Blood Free. 1. *Can. Exp. Farms Rpt.* 404. 1894. **2.** Billings *Cat.* 22. 1906.

Medium to large in size, blood-red throughout. Tree hardy, productive; glands reniform; flowers large.

J. Van. 1. Van Lindley *Cat.* 60. 1913.

Originated about 1900 with W. E. Johnson, Silver City, North Carolina. It is probably a seedling of Elberta, which variety precedes it in ripening, according to. J. Van Lindley, Pomona, North Carolina.

Jack Ross. 1. *Tex. Sta. Bul.* **8**:34. 1889.

The Texas Experiment Station lists this variety.

Jackson Cling. 1. Downing *Fr. Trees Am.* 638. 1857. **2.** *Horticulturist* N. S. **7**:178. 1857.

This peach is a seedling raised many years ago by Mrs. L. A. Franklin, Athens, Georgia. Fruit large, oblong, with a large, swollen apex; color dark yellow, covered with a dark red blush; flesh orange-yellow, dark red at the pit, firm, juicy, sprightly, rich; good; season the last of August.

Jacques. 1. Hovey *Fr. Am.* **2**:57, Pl. 1851. **2.** *Am. Pom. Soc. Cat.* 78. 1862.

Jacques' Yellow Rareripe. **3.** Prince *Treat. Hort.* 18. 1828. **4.** Kenrick *Am. Orch.* 223. 1832.

Jacques' Rareripe. **5.** Downing *Fr. Trees Am.* 631. 1857.

Jaques. **6.** Elliott *Fr. Book* 275. 1854. **7.** *Am.*

Pom. Soc. Cat. 37. 1909.

This variety originated or was introduced by Colonel Jacques, Somerville, Massachusetts, at least a hundred years ago. It held a place in the fruit-list of the American Pomological Society from 1862 to 1891 when it was dropped but in 1909 was replaced. Leaves crenate, with reniform glands; fruit large, roundish, often compressed, with a shallow suture; skin yellow, much streaked and mottled with red; flesh yellow, red at the pit, free, melting, juicy, with a sweet yet sprightly flavor; season the middle of September.

Jacques Late. 1. *Mich. Sta. Bul.* **169**:217. 1899.

Tree vigorous, roundish, with large leaves bearing globose glands; fruit medium to large, roundish-ovate; suture shallow; color creamy-white, with a light red blush; flesh creamy-white, red at the pit, free, tender, juicy, rather acid, slightly bitter; quality good; season the last of September.

Jakobi-Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:220. 1858.

Flowers medium in size; fruit of medium size, roundish, faintly sutured; skin clear yellow, blushed with red; flesh firm, aromatic; matures at the end of July.

Jane. 1. *Mag. Hort.* **19**:516. 1853. **2.** Downing *Fr. Trees Am.* 617. 1857.

Originated with Isaac B. Baxter, Philadelphia, Pennsylvania. Fruit large, roundish-oblate; color yellowish-white, with a red cheek; quality very good; freestone; ripens at the last of September.

Japan Nos. 1, 2 and 3. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Three varieties listed by the Delaware Station.

Japan Nos. 7 and 10. 1. *Col. O. Hort. Soc. Rpt.* 151. 1893.

Varieties sent out by Lovett's Nursery Company, Little Silver, New Jersey; both are small, late clingstones unworthy of cultivation.

Japan No. 9. 1. *Col. O. Hort. Soc. Rpt.* 150. 1893.

A medium-sized, white, freestone of good quality; very susceptible to rot.

Japan Dwarf. 1. *Mich. Sta. Bul.* **129**:24. 1896. **2.** *Am. Pom. Soc. Cat.* 37. 1909.

Japan Blood. **3.** *Ga. Hort. Soc. Rpt.* 54. 1892. **4.** *Miss. Sta. Bul.* **93**:13. 1905.

Japan Dwarf Blood. **5.** *Tex. Sta. Bul.* **39**:819. 1896. **6.** Budd-Hansen *Am. Hort. Man.* **2**:348. 1903.

Japan Dream. **7.** *Winfield Nur. Cat.* 14, 15. 1915.

This variety was introduced about a quarter of a century ago from Japan. It is dwarf in habit of growth and comes into bearing early, frequently two years from planting. Japan Dream, said to be a superior strain of this variety, seems to be in every way identical. Tree low, dwarfish, spreading, with a compact head, productive; fruit medium in size, roundish, somewhat flattened and pointed at the apex; color attractive greenish-yellow, mostly overspread with crimson; flesh blood-red, juicy, acid until fully ripe when it becomes very good; stone free; season very early.

Japanese Early. 1. *N. Y. Sta. Rpt.* **15**:289. 1897.

Leaves large, with globose glands; fruit of medium size, roundish; skin light greenish-yellow, with considerable dull

purplish-red; flesh white to the pit, moderately juicy, insipid; stone free, of medium size; ripens the middle of August.

Japanese Wonder. 1. *La. Sta. Bul.* **112**:31. 1908.

An inferior variety, ripening in Louisiana the last of June.

Jarle Late. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:66. 1900.

Jarle Late White. **2.** *Can. Exp. Farms Rpt.* 404. 1894.

Tree a moderate grower.

Jarrell Late Yellow. 1. *Del. Sta. Rpt.* **5**:98. 1892.

Listed in this reference.

Jarretts Late White. 1. *Pa. Hort. Soc. Rpt.* 48. 1882.

Listed as growing in Pennsylvania.

Jaune d'Agen. 1. Thomas *Guide Prat.* 49. 1876.

Listed as an excellent variety; glands reniform.

Jaune de Barsac. 1. Mathieu *Nom. Pom.* 401. 1889.

Listed in this reference.

Jaune de Bertholon. 1. Mas *Pom. Gen.* **12**:159, 160, fig. 16. 1883.

An old variety from Toulouse, Haute-Garonne, France. Leaves with large, reniform glands; flowers large; fruit of medium size, irregularly roundish-ovoid; skin thin, tender,

yellow, purple where exposed; flesh deep yellow, stained at the pit, tender, melting, sweet; stone large for the size of fruit, free; ripens at the end of August.

Jaune des Capucins. 1. Mas *Pom. Gen.* **12**:135, 136, fig. 4. 1883.

A variety raised from seed in the gardens of the Capuchin Monks, Toulouse, Haute-Garonne, France. Tree vigorous; leaves with large, reniform glands; flowers small; fruit large, roundish, deeply sutured; cavity large, deep; skin thin, fine, clear yellow, deep red where exposed; flesh deep yellow, stained at the stone, melting, aromatic; quality excellent; stone of medium size, oval, nearly free; ripens the first half of September.

Jaune d'Espagne. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Jaune Hâtive de Doué. 1. Thomas *Guide Prat.* 44. 1876.

Tree vigorous; glands reniform; flowers small; fruit large, roundish-oval; skin yellow, with a red blush; flesh melting, juicy, agreeable; ripens the last of August.

Jaune de Mezen. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Jellico. 1. *Texas Nur. Cat.* 4. 1913.

According to the Texas Nursery Company, Sherman, Texas, Jellico is a white, oblong clingstone, very fine for canning; matures in August.

Jennings. 1. *Franklin Davis Nur. Cat.* 21. 1907.

The Franklin Davis Nursery Company, Baltimore, Maryland, states that Jennings originated in Richmond, Virginia. On the Station grounds the fruit is very similar to Elberta but ripens later. Tree vigorous, productive; leaves large, with reniform glands; flowers appear in mid-season; fruit large, oval-cordate, halves unequal, with a faint drawing in of the sides about the cavity; apex often with a recurved, mamelon tip; skin thick, tough, covered with thick, coarse pubescence, lemon-yellow to darker, with a lively red blush becoming duller, attractive; flesh light yellow, stained at the pit, juicy, stringy, resembles Elberta; stone free, large, oval to ovate, more or less purple.

Jersey Mixon. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Exhibited at the World's Fair in 1893.

Jersey Pride. 1. *Rural N. Y.* **53**:7. 1894.

Jersey Pride originated with the Newark Nursery, Newark, New Jersey.

Jersey Yellow. 1. *Mich. Sta. Bul.* **129**:24. 1896. **2.** *Ibid.* **169**:217. 1899.

Trees spreading; glands reniform; flowers small; fruit of medium size, roundish-oval, enlarged on one side of the suture; cavity narrow, deep; distinctly sutured; color clear yellow, slightly blushed; flesh red at the pit, moderately juicy, mild, often slightly bitter; stone plump, free; quality fair; matures early in October.

Jewel. 1. *Fla. Sta. Rpt.* **8**:86. 1896. **2.** *Fla. Sta. Bul.* **62**:514, 515. 1902. **3.** *Am. Pom. Soc. Cat.* 37. 1909.

Jewel, one of the leading commercial peaches of Florida, is a seedling of Waldo. It originated with T. K. Godbey, Waldo, Florida. Fruit oblong, medium to large; cavity abrupt; suture frequently lacking; apex bluntly pointed, short, recurved; skin velvety, creamy, washed with red where exposed; flesh

white, faintly stained at the stone, juicy, sweet; stone free, reddish, oval, one inch long; ripens two weeks earlier than Waldo.

Johnson Late Purple. 1. Brookshaw *Pom. Brit.* **1**:Pl. 24, fig. 1. 1817.

This variety is peculiarly marked with large, strong, dark blotches and heavy pubescence. It received its name from its originator, a gardener at Kew Green, England. The tree is an excellent bearer and ripens its fruit late in August.

Jones. 1. *Mich. Sta. Bul.* **118**:30. 1895. **2.** *Ibid.* **169**:217. 1899.

Tree strong, roundish-upright; glands globose; flowers small; fruit large, inclined to ovate; cavity deep; suture distinct, two-thirds around fruit; color yellow, with a mottled cheek of dark red; flesh yellow, red at the pit, juicy, vinous; pit long, oval, nearly free; quality fair to good; ripens the middle of September.

Jones Cling. 1. *Ga. Sta. Bul.* **42**:237. 1898.

Listed as a round-topped, dense tree, with medium-sized leaves and reniform glands.

Jones Early. 1. *Mag. Hort.* **13**:447, 448. 1847.

Raised by S. T. Jones, Staten Island, New York. Leaves crenate, with small, globose glands; fruit of medium size, roundish, oblique at the apex; suture shallow, extending around the fruit; skin yellowish-white, tinged with pale red in the sun; flesh yellowish-white, stained at the stone, tender, juicy, rich; stone small, free; ripens early in August.

Jones Large Early. 1. *Mag. Hort.* **13**:447. 1847.

Another of S. T. Jones' seedlings; leaves with reniform glands; fruit large, roundish, flattened at the ends; suture

deep; skin clear white, blushed with crimson where exposed; flesh white, pink at the stone, juicy, rich, sprightly; stone of medium size; ripens early in August.

Jones No. 34. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

Fruit medium to small, roundish; cavity broad; skin bright yellow, downy; flesh stained at the stone, mild, firm, rather dry, poor in quality; freestone; ripens at this Station early in September.

Jose Sweet. 1. Kenrick *Am. Orch.* 200. 1841. **2.** *Horticulturist* **2**:400. 1847-48.

A peach of delicious flavor but not very attractive outwardly; greenish-white, with a dull cheek. Flowers small; glands globose; ripens the last of September.

Josephine. 1. *Mich. Hort. Soc. Rpt.* 188. 1880.

Josephine is a seedling of Late Crawford grown by C. C. Engle, Paw Paw, Michigan, about 1875. On the Station grounds the fruit ripens early in October. Tree hardy, vigorous, productive; leaves with crenate margins and globose glands; fruit large, roundish; cavity broad; suture shallow; skin orange-yellow, with a heavy, dark red blush, considerably mottled, heavily pubescent; flesh stained at the stone, juicy, rich, vinous; quality good; stone large, elliptical, free.

Joys Early. 1. *N. J. Hort. Soc. Rpt.* 107. 1912.

Joys Early was introduced by R. G. Joyce of New York. The variety was grown for a time in New Jersey.

Judd. 1. *Mich. Sta. Sp. Bul.* **44**:49. 1910.

This is a cross between Chili and Barnard made by G. E. Prater, Jr., Paw Paw, Michigan. It is said to be an

improvement over its parents.

Jühlke Liebling. 1. Lauche *Deut. Pom.* **VI**:No. 13, Pl. 1882.

Raised from seed by August Fritze of Werder, near Potsdam, Prussia, Germany, in 1870. Tree vigorous, bears early; leaves of medium size, with small glands; flowers large, rose-colored; fruit large, globular, strongly sutured; skin heavily pubescent, thin, pale yellow, with a red blush; flesh yellowish-white, melting, aromatic, sweet; freestone; ripens at the end of August.

Julia. 1. *Am. Pom. Soc. Rpt.* 205. 1858.

A southern variety.

June Beauty. 1. *Cal. Sta. Rpt.* 408. 1892-93. **2.** *Fla. Sta. Bul.* **62**:515. 1902.

June Beauty originated with Peter C. Minnich, Waldo, Florida, from a seed of Peento. Fruit medium to large, roundish-oblong; stone semi-clinging; ripens the middle of June in Florida.

June Elberta. 1. Stark Bros. *Cat.* 43. 1914.

June Elberta was introduced by Stark Brothers, Louisiana, Missouri. In the hands of some growers it is thought to be Arp, which it closely resembles.

June Rose. 1. *Mich. Sta. Bul.* **104**:89. 1894. **2.** *Ibid.* **118**:30, 35. 1895. **3.** *Tex. Sta. Bul.* **39**:812. 1896. **4.** *Del. Sta. Rpt.* **13**:103. 1901.

June Rose is a seedling of Rivers crossed with Mountain Rose grown by T. V. Munson, Denison, Texas. Tree fairly vigorous and productive; glands globose; flowers large; fruit of medium size, roundish; suture distinct; skin greenish-white, with a red cheek; flesh white, stained at the stone, juicy, tender, vinous; freestone; ripens in Texas about the

middle of June.

Juneripe. 1. Childs *Cat.* 147. 1905.

A variety listed by J. L. Childs, Floral Park, New York. A large, handsomely colored, yellow peach ripening at the end of June.

Juno I. 1. Berckmans *Cat.* 13. 1899. **2.** *Del. Sta. Rpt.* **13**:103, 104. 1901.

Dr. L. E. Berckmans, Augusta, Georgia, raised Juno I from a seed of General Lee in 1879. Fruit large, deep yellow, mottled; flesh fine, juicy, subacid; ripens the middle of August in Georgia.

Juno II. 1. *Mich. Hort. Soc. Rpt.* 188. 1880.

This is another of C. C. Engle's seedlings of Late Crawford grown at Paw Paw, Michigan. Tree hardy, vigorous, productive; leaves long, broad, with globose glands; fruit very large, round, compressed; skin yellow, dark red in the sun; flesh slightly stained at the pit, vinous, juicy, rich; clingstone; ripens October first.

Kallola. 1. *Can. Exp. Farms Rpt.* 301. 1890. **2.** Lovett *Cat.* 41. 1893. **3.** *Mich. Sta. Bul.* **118**:30, 35. 1895.

Kaloola Free. **4.** *La. Sta. Bul.* **68**:843. 1894.

A seedling of Chinese Cling; glands reniform; flowers large; fruit large, roundish-oval; skin white, tinged in the sun; flesh greenish-white, faintly stained about the pit, tender, juicy, vinous; quality fair; freestone; ripens the middle of September.

Kalo Cling. 1. *La. Sta. Bul.* **68**:843. 1894.

Grown about Calhoun, Louisiana.

Karl Schwarzenberg. 1. Dochnahl *Führ.*

Obstkunde. **3**:205. 1858.

Charles Schwarzenberg. **2.** Thomas *Guide Prat.* 48. 1876.

A seedling of Early Purple, introduced about 1827. Trees vigorous; glands globose; flowers large; fruit large, roundish, strongly sutured; skin whitish-yellow, with a red blush; flesh white throughout, fine, juicy, aromatic; freestone; ripens early in September.

Katherine. 1. *Del. Sta. Rpt.* **13**:104. 1901.

The origin and parentage of Katherine are unknown. Said to be the earliest, good, clingstone peach; tree prolific and productive.

Katie. 1. *Am. Pom. Soc. Cat.* 44. 1891.

Katie held a place on the fruit-list of the American Pomological Society from 1891 until 1897. Fruit small, greenish-white; late in ripening.

Kay. 1. *Ill. Hort. Soc. Rpt.* 203. 1879.

Recommended in Hancock County, Illinois.

Keene Favorite. 1. *Ill. Hort. Soc. Rpt.* 156. 1880.

A variety that does well about Centralia, Illinois.

Keevit Cling. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:66. 1900.

Listed as a medium grower in Canada.

Keith. 1. *U. S. D. A. Rpt.* 290. 1893.

Keith is a seedling of Peento ripening a little later than its parent. It originated with Robert Keith, Waldo, Florida. Fruit roundish-oval, of medium size; suture deep near the base; cavity deep; skin thick, tender, greenish-yellow,

mottled and shaded with red; flesh white, tinged at the stone, tender, melting, subacid, slightly bitter; quality good; stone plump, oval, clinging.

Kelley Early. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

Raised by H. M. Kelley, Irving, Illinois; said to ripen three weeks before Amsden.

Kelly Surprise. 1. *Texas Nur. Cat.* 5. 1913.

A semi-clingstone, yellow-fleshed variety ripening in June, according to the Texas Nursery Company, Sherman, Texas.

Kelsey Cling. 1. *Mich. Hort. Soc. Rpt.* 188. 1880.

Named after its originator, Stephen Kelsey, Three Rivers, Michigan. Tree vigorous; leaves crenate, with reniform glands; fruit of medium size, roundish; skin with a light coat of pubescence, creamy-white, with a marbled cheek; flesh stained at the pit, tender, firm, juicy, rich; ripens with Heath Cling.

Kenrick Clingstone. 1. Kenrick *Am. Orch.* 185. 1835.

A variety of New England origin first fruiting in 1833. Fruit large, roundish-oblong, pointed at the apex; color golden-yellow, with a red cheek; flesh yellow, juicy, sweet, vinous, excellent; season the last of September.

Kent I. 1. *U. S. D. A. Pom. Rpt.* 42, 43. 1895. **2.** *Mich. Sta. Sp. Bul.* **44**:48. 1910.

J. D. Husted called this peach, his seedling No. 18, Kent, in honor of the county in Michigan where it originated. Glands globose; fruit roundish, above medium in size; skin rather harsh, with short down, greenish-white, washed, mottled and striped with crimson; flesh stained at the stone, tender yet firm, juicy, subacid; ripens in Georgia early in July.

Kent II. 1. Berckmans *Cat.* 9. 1908-09.

The catalog of P. J. Berckmans, Augusta, Georgia, describes this peach as a new clingstone originating with L. W. Kent, Augusta, Georgia; skin very tough but peels readily; flesh yellow, buttery; ripens in Georgia August 1st to 15th.

Kernloser Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:220. 1858.

Tree productive; flowers small; fruit large; flesh red; clingstone; ripens early in September.

Kerr. 1. *Am. Pom. Soc. Cat.* 22. 1897.

Jessie Kerr. **2.** *Mich. Hort. Soc. Rpt.* 314. 1889.

Kerr is a southern variety said to be larger and earlier than Alexander. It originated in Maryland. It was added to the fruit-list of the American Pomological Society in 1897. The fruit is of medium size and a freestone.

Kerr Dwarf. 1. *U. S. D. A. Pom. Rpt.* 43. 1895.

Kerr Cling No. 1? **2.** *U. S. D. A. Rpt.* 392. 1891.

The tree is semi-dwarf in habit, with dense foliage; glands reniform; fruit large, roundish; suture shallow; skin yellow, washed, mottled and splashed with red, thick, tough; flesh stained slightly about the pit, firm, juicy, mild subacid, sprightly; stone large, oval, adherent; matures early in September.

Kestrel. 1. Bunyard *Cat. Fr. Trees* 35. 1913-14.

Kestrel is a variety raised by Thomas Rivers, Sawbridgeworth, England. Fruit large, rich crimson; flesh tender, juicy; ripens early in August.

Kew Seedling. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Glands globose; flowers small; fruit of second size, pale yellow and dark red; flesh melting; of second quality; matures early in September.

Keyport. 1. *Am. Pom. Soc. Cat.* 22. 1897.

Keyport White. **2.** *Mich. Pom. Soc. Rpt.* 411. 1871. **3.** *Am. Pom. Soc. Cat.* 30. 1875. **4.** *N. J. Hort. Soc. Rpt.* 42. 1878.

Keyport originated in the garden of Joseph Beer, Keyport, New Jersey, about 1852. In 1875 it was given a place on the fruit-list of the American Pomological Society as Keyport White; later the name was changed to Keyport. Tree a good grower and a heavy bearer; leaves with reniform glands; fruit large, freestone; ripens very late.

Kibby Golden. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

Fruit above medium in size, distinctly sutured; light yellow, approaching white, almost entirely overspread with light pink; flesh decidedly tinged with red, changing to whitish toward the pit, soft, coarse, juicy, sweet; fair in quality; ripens the middle of September.

Kilbourn. 1. *Mo. Hort. Soc. Rpt.* 419. 1885. **2.** *Ill. Hort. Soc. Rpt.* 159. 1889.

Because of hardiness, this peach is sometimes called Canada Iron Clad. Fruit large; flesh adheres to the stone; ripens with Hale Early.

King Solomon. 1. Smith Bros. *Cat.* 15. 1913.

Said by Smith Brothers, Concord, Georgia, to be one of the best late, yellow peaches; larger than Elberta. It was propagated for many years in Georgia from seed; ripens

there the last of September.

Kinnaman Early. 1. *Gard. Mon.* **20**:236. 1878. **2.** *W. N. Y. Hort. Soc. Rpt.* 51. 1879.

This variety originated with Samuel Kinnaman of Delaware; fruit of medium size, roundish; skin pale brownish-red on a pale greenish ground; flesh greenish-white to the stone, juicy, sweet; very good; adheres partially to the pit; ripens a few days earlier than Alexander.

Kite. 1. *Fla. Sta. Bul.* **62**:515. 1902.

Kite is a Peento seedling which originated with Robert Kite, Waldo, Florida, about 1885. Fruit of medium size, roundish; cavity large, abrupt; suture wide, extending beyond the apex; skin velvety, thick, creamy, washed with red; flesh creamy, pink at the pit, firm, tender, juicy; quality medium, lacks character; clingstone; season the first of June.

Kitrells Favorite. 1. *Pa. Hort. Soc. Rpt.* 48. 1882.

Listed in this reference.

Kleine Charlestowner Ananaspfirsche. 1. Christ *Wörterb.* 350. 1802. **2.** Christ *Handb.* 601. 1817.

Very similar to Pineapple but smaller and more aromatic.

Kleiner Blutpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:193, 194. 1858.

Sanguine à petit fruit. **2.** Noisette *Man. Comp. Jard.* **2**:478. 1860.

Smaller and more heavily pubescent than Sanguinole.

Klondike. 1. *Rural N. Y.* **56**:662. 1897. **2.** *Am. Pom. Soc. Cat.* 37. 1909.

Klondike is a chance seedling found in York County,

Pennsylvania about 1885. The tree on the Station grounds is only a moderate producer and its fruit is not as good as Champion. It was put on the fruit-list of the American Pomological Society in 1909. Tree upright-spreading, open; leaves broad, with small, globose glands; flowers small; fruit of medium size, roundish-oval, halves unequal, compressed; sides inclined to draw in about the cavity; apex with a small, mamelon tip; skin thin, tender, with short pubescence, creamy-white, splashed and blushed with dark red; flesh stained at the pit, juicy, melting, sweet though sprightly, high in flavor; quality good; stone nearly free, oval; ripens the third week in September.

Kohler Cling. 1. *Kan. Hort. Soc. Rpt.* 38. 1902-03.

Large, yellow; ripens with Heath Cling.

Knapp Castle Seedling. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Fruit very much like Noblesse, large; leaves glandless; flowers large; skin pale green and red; flesh melting; quality good; ripens at the end of August.

Knight Early. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Fruit of medium size; leaves with globose glands; flowers large; skin pale green, blushed with dark red; flesh melting; quality good; ripens the middle of August.

Knight Mammoth. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed in this reference.

Knight Markley Admirable. 1. *Gard. Chron.* 1009. 1871.

Raised by G. Darby, Markley, Sussex, England; fruit oval, with a prominent, mamelon tip at the apex; freestone.

Knowles Hybrid. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

As this variety grows on the Station grounds it is not very promising. Fruit above medium in size, irregular; suture indistinct; skin rich yellow, blushed with carmine; flesh coarse, leathery, sweet; quality fair; clingstone; ripens at the end of September.

Kraus 4 & 16. 1. *Mich. Sta. Bul.* **143**:184. 1897.

Two varieties listed in this reference.

Krengelbacher Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:205. 1858.

Fruit large, similar in shape to a walnut, ribbed; skin greenish-yellow; flesh white, pleasantly subacid; ripens in September.

Krummel. 1. *Ill. Hort. Soc. Rpt.* 210. 1906.

Krummel Late. **2.** Weber & Son *Cat.* 15. 1900.

Krummel October. **3.** *Ill. Hort. Soc. Rpt.* 223. 1904.

Krummel was found by a Mr. Krummel of St. Louis, Missouri. It is said to be one of the best of the very late, yellow freestones.

Kruse Kent. 1. Bunyard *Cat. Fr. Trees* 35. 1913-14.

Raised from Sea Eagle by a Mr. Kruse, late of Truro, Cornwall County, England. Flowers very dark; fruit large, white-fleshed, very late; a great improvement over its parent.

La Belle. 1. *W. N. Y. Hort. Soc. Rpt.* 111.

1880.

A seedling raised by E. F. Hynes, Kansas.

La Chalonnaise. 1. Mathieu *Nom. Pom.* 402. 1889.

Listed in this reference.

La Fleur. 1. *Mich. Hort. Soc. Rpt.* 197. 1883. **2.** *Mich. Sta. Bul.* **169**:218. 1899. **3.** *Mich. Sta. Sp. Bul.* **44**:50, 51 fig. 1910.

This is a seedling of Chili which originated with G. H. La Fleur, Mill Grove, Michigan. It is popular in some places in Michigan because of hardiness. Tree vigorous, productive; glands reniform; flowers large; fruit medium to large, oval to oblong, usually irregular or lopsided; suture continuous; skin heavily pubescent, thick, tenacious, light yellow, with a bright crimson cheek; flesh golden yellow, stringy, moderately juicy, mild subacid; quality very good; stone free; season between Late Crawford and Smock.

La France. 1. *Cal. Sta. Rpt.* 407. 1892-93. **2.** *Cat. Cong. Pom. France* 104 fig. 1906.

M. Boussey, a nurseryman at Montreuil-sous-Bois, France, first propagated this variety. Glands globose; fruit very large, roundish, deeply sutured; skin thinly pubescent, clear red; flesh white, juicy, aromatic; quality very good; freestone; ripens early in August.

La Grange. 1. Kenrick *Am. Orch.* 194. 1841. **2.** Downing *Fr. Trees Am.* 480. 1845. **3.** *Am. Pom. Soc. Cat.* 78. 1862.

Tardive d'Oullins. **4.** Mas *Le Verger* **7**:39, 40, fig. 18. 1866-73. *5.* Leroy *Dict. Pom.* **6**:141, 142 fig., 143. 1879.

La Grange originated about 1840 with John Hulse, Burlington, New Jersey. A few years later a French sort,

Tardive d'Oullins, said to have been found at Oullins, Rhône, France, made its appearance. The two were found to be the same. In 1862, La Grange was placed on the fruit-list of the American Pomological Society where it remained until 1891 and was reentered in 1909. Its lateness, size and productiveness have won it a good name among growers in New Jersey. Leaves with reniform glands; flowers small; fruit large, oblong; skin greenish-white; flesh pale, juicy, melting, rich, sweet; freestone; ripens at the end of September.

La Magnifique. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed as growing in Texas.

La Reine. 1. *Tex. Sta. Bul.* **39**:805. 1896.

La Reine was introduced by G. L. Taber, Glen Saint Mary, Florida, in 1889. Tree vigorous, but not recommended in Texas; fruit rather small, oblong; skin greenish, with a red cheek; flesh red at the stone, adherent; ripens early in August.

La Rieva. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed in this reference.

Lady Anne Stewart. 1. *Lond. Hort. Soc. Rpt.* **6**:414. 1826.

Fruit of medium size, white, with a slight blush, very juicy, rich; stone free, flat, hollow at one end; ripens the middle of September.

Lady Farham. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed as growing in Texas.

Lady Lindsey. 1. Munson *Cat.* 16. 1914-15.

A seedling grown by Mrs. George Lindsey, Greenville,

Texas. It is a large, yellow-fleshed clingstone, ripening between Munson Cling and Levy, according to the catalog of T. V. Munson, Denison, Texas.

Lady Palmerston. 1. Thomas *Guide Prat.* 49. 1876. **2.** Hogg *Fruit Man.* 451. 1884.

Raised by Thomas Rivers, Sawbridgeworth, England, from a pit of Pineapple nectarine. Leaves with reniform glands; flowers small; fruit large, greenish-yellow, marked with crimson; flesh pale yellow, rich, melting; freestone; matures late in September.

Lafayette I. 1. Kenrick *Am. Orch.* 230. 1832.

A large, yellow-fleshed clingstone; ripens late in August; sometimes called Meiggs Lafayette.

Lafayette II. 1. *Mich. Sta. Bul.* **152**:199. 1898.

This is another of C. C. Engle's seedlings from Paw Paw, Michigan.

Lafayette Free. 1. Kenrick *Am. Orch.* 190. 1841.

Introduced about 1840 from Monmouth County, New Jersey. Fruit large, round, dark crimson where exposed; flesh very juicy, stained with crimson throughout; freestone; ripens the last of August.

Lakeside Cling. 1. *Ohio Hort. Soc. Rpt.* 29. 1888-89.

A variety from Ottawa County, Ohio.

Lancaster. 1. *U. S. D. A. Rpt.* 391. 1891.

Lancaster Yellow Rareripe. **2.** *Am. Pom. Soc. Rpt.* 85. 1854.

Raised by Dr. H. A. Muhlenberg, Lancaster County, Pennsylvania. Fruit large, free, very juicy.

Lane. 1. *Austin Nur. Cat.* 1913.

According to the Austin Nursery Company, Austin, Texas, Lane is a large, golden clingstone raised by a Mr. Lane, Jacksonville, Texas; ripens with Elberta.

Langier. 1. *Lond. Hort. Soc. Cat.* 97. 1831.

Listed in this reference.

Langlicher Blutpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:193. 1858.

Very similar to Sanguinole but the fruit is longer and ripens earlier.

Lantheaume. 1. Mathieu *Nom. Pom.* 408. 1889. **2.** *Guide Prat.* 40. 1895.

Glands reniform; fruit large to very large, of a beautiful yellow, deepening on maturity; flesh firm, sweet, juicy, aromatic; clingstone; ripens the last of October.

Laporte. 1. Mas *Le Verger* **7**:159, 160, fig. 78. 1866-73.

Obtained from a seed of Belle de Vitry by A. M. Laporte near Lyons, Rhône, France. Leaves with very large, reniform glands; flowers small; fruit large, slightly oval, tapering to the apex; suture extends beyond the apex; skin thin, tender, creamy, washed and strongly splashed with deep red; flesh white, stained darker nearer the pit, juicy, sugary, melting; stone large for the size of the fruit; freestone; ripens at the end of August.

Larents. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed in this reference.

Large Early. 1. *Lond. Hort. Soc. Cat.* 97.

1831. **2.** Cole *Am. Fr. Book* 193. 1849. **3.** Hooper *W. Fr. Book* 224. 1857.

This name has been incorrectly used as a synonym of Large Early York. Tree hardy, vigorous, productive; fruit large, roundish, flattened at the base; suture distinct; skin whitish, with a red cheek, purple in the sun; flesh white, red at the stone, delicate, sweet, rich; quality good; stone very small; season the last of August.

Large Early Mignonne. 1. Thomas *Guide Prat.* 49. 1876. **2.** Hogg *Fruit Man.* 451. 1884.

Raised by Thomas Rivers, Sawbridgeworth, England, in 1865 from a pit of Belle Beausse. Glands round; flowers large; fruit very large; skin pale straw-yellow, blushed where exposed; flesh melting, very juicy, rich.

Large-Fruited Mignonne. 1. *Lond. Hort. Soc. Cat.* 100. 1831.

A large-flowered variety with glandless, serrate leaves.

Large White Cling. 1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Downing *Fr. Trees Am.* 495. 1845. **3.** *Am. Pom. Soc. Cat.* 211. 1856.

New York White Cling. **4.** *Lond. Hort. Soc. Rpt.* **6**:410. 1826.

Williams New York? **5.** *Lond. Hort. Soc. Cat.* 105. 1831.

This variety was raised about 1807 by David Williamson of New York. It soon became very popular among the clingstones in New England and held a place in the fruit-list of the American Pomological Society from 1856 until 1891. Tree hardy and a regular bearer; glands globose; flowers small; fruit large, round; suture slight; skin white, with a light red cheek; flesh tender, melting, juicy, sweet; ripens the first half of September.

Larkin Early. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

Raised by D. F. Larkin, Hunts Station, Tennessee. Said to be as fine as Large Early York and earlier than Alexander.

Larkin Trophy. 1. *Am. Pom. Soc. Rpt.* 161. 1881.

Listed as growing in northern Texas.

Last of Season. 1. *Utah Sta. Bul.* **18**:13. 1892.

Listed in this reference.

Late Barnard. 1. *Mich. Sta. Bul.* **169**:218. 1899.

Tree strong, roundish-upright, with drooping branches, fairly productive; fruit medium to large, roundish-oval, compressed near the suture; cavity narrow, deep; skin yellow, with a dark red cheek; flesh red at the pit, firm, juicy, rich, sweet; quality good; stone large, plump, free; season the middle of September.

Late Catherine. 1. Prince *Treat. Fr. Trees* 17. 1820.

Ripens in October.

Late Delaware. 1. *Pa. Dept. Ag. Rpt.* 149. 1895.

Listed in this reference.

Late Devonian. 1. *Garden* **53**:35. 1898. **2.** Bunyard-Thomas *Fr. Gard.* 113. 1904. **3.** Bunyard *Cat. Fr. Trees* 36. 1913-14.

Raised by Messrs. Veitch, Exeter, England, from a pit of Belle de Vitry crossed with Royale; introduced in 1894. The tree is very hardy and the fruit is winning a place among

the good, late varieties of England. Glands globose; flowers large, rich pink; fruit large; skin rather woolly, greenish-yellow, with bright red marblings; flesh juicy, pale red at the stone, melting, brisk; freestone; ripens the middle of September.

Late Elberta. 1. *Kan. Hort. Soc. Rpt.* 38. 1902-03. **2.** Stark Bros. *Cat.* 35. 1914.

This variety on the Station grounds seems to be identical with Elberta in tree and fruit-characters.

Late Free White. 1. *Am. Jour. Hort.* **8**:49. 1870.

This is a large, palatable peach, ripening about October 15th.

Late Mignonne. 1. Prince *Pom. Man.* **1**:187. 1831.

Mignonne Tardive. **2.** Mas *Le Verger* **7**:79, 80, fig. 38. 1866-73.

The origin of Late Mignonne is doubtful; it is thought to be an American strain of Grosse Mignonne. Glands small, globose; flowers large; fruit large, roundish-truncate, noticeably sutured; skin tender, heavily pubescent, greenish-white, more or less covered with deep purple; flesh white, stained with purple around the pit, melting, sweet; stone small, ovoid, free; matures the first of September.

Late Morris White. 1. Thomas *Guide Prat.* 54. 1876. **2.** *Cal. Sta. Rpt.* 393. 1895-97.

This peach differs from Morris White only in time of maturity, this sort being later. The fruit is large and of good quality, ripening in September.

Late October. 1. *Wash. Bd. Hort. Rpt.* 149. 1891-92.

One of the latest varieties of the season.

> **Late Purple. 1.** Duhamel *Trait. Arb. Fr.* **2**:17, 18, Pl. IX. 1768. **2.** Liegel *Anweisung* 71. 1822. **3.** Prince *Pom. Man.* **1**:191. 1831. **4.** Leroy *Dict. Pom.* **6**:243, 244 fig., 245. 1879.
>
> *Späte Purpurfarbige Pfirsiche.* **5.** Sickler *Teutsche Obst.* **8**:308-313, Tab. 16. 1797.
>
> *Grosse Pourprée.* **6.** *Lond. Hort. Soc. Cat.* 102. 1831.
>
> *Später purpurrothe Lackpfirsich.* **7.** Dochnahl *Führ. Obstkunde* **3**:213. 1858.
>
> *Pourprée tardive à petites fleurs?* **8.** Thomas *Guide Prat.* 50. 1876.

An old variety mentioned as early as 1714 by French writers. Tree productive; glands usually reniform; flowers small, with an intense rose-color; fruit of medium size, roundish, halves unequal; skin very pubescent, whitish, deep purple where exposed; flesh stained at the pit, fine, melting, juicy, vinous; of first quality; stone free, plump, roundish; ripens the middle of September.

> **Late Red Magdalen. 1.** Prince *Pom. Man.* **1**:185. 1831.

This variety has been confused with Royal George but is distinct. It ripens much later. Flowers small; fruit of medium size, highly colored and well-flavored; ripens the last of October.

> **Late Robinson Crusoe. 1.** Kenrick *Am. Orch.* 192. 1841.

This peach was raised by Dr. Coxe, Philadelphia, Pennsylvania, from a stone brought from Crusoe's Island of Juan Fernandez. Tree very productive; fruit large, round,

white, with a pale red wash; ripens the first of October.

Late Rose. 1. *Wright Nur. Cat.* 14. 1892.

This is a New Jersey variety of small value in the Station orchard. Fruit of medium size, roundish-oval, often compressed, bulged along the suture; skin greenish-white, with an unattractive blush; flesh stained at the pit, juicy, coarse and stringy; quality good; freestone; ripens the first week in October.

Late Serrate. 1. *Am. Jour. Hort.* **3**:344. 1868.

A late, freestone peach grown by W. C. Flagg, Alton, Illinois; ripens about October 15th.

Late White. 1. *Mich. Sta. Bul.* **104**:89. 1894. **2.** *Ibid.* **169**:218. 1899.

A seedling from C. C. Engle, Paw Paw, Michigan. Tree fairly vigorous, drooping; glands reniform; flowers small; fruit medium to large, roundish-oval, slightly compressed near the suture; apex prominent; suture distinct; color creamy-white, bright red in the sun; flesh red at the pit, juicy, sprightly, vinous; quality good; pit free, large, plump, oval; ripens late in September.

Late Yellow Alberge. 1. Prince *Pom. Man.* **2**:22. 1832. **2.** Downing *Fr. Trees Am.* 496. 1845.

Algiers yellow winter clingstone. **3.** Prince *Treat. Fr. Trees* 18. 1820.

October yellow clingstone. **4.** *Ibid.* 17. 1820.

Algiers Yellow. **5.** Prince *Pom. Man.* **2**:16. 1832.

Late Yellow Alberge is a very late, clingstone peach highly esteemed in southern France. At one time it was much

grown in America but was superseded by Heath Cling. Leaves with reniform glands; flowers large; fruit of medium size, roundish-oval, distinctly sutured; skin downy; flesh yellow to the stone, very firm, juicy, sweet; matures in October.

Laura. 1. *Fla. Sta. Rpt.* **8**:89. 1896. **2.** *Fla. Sta. Bul.* **62**:515. 1902.

A seedling of Peento. Fruit very large, nearly round; flesh white, sweet, juicy; quality excellent; clingstone; ripens about with Peento.

Laura Cling. 1. Weber & Sons *Cat.* 19. 1906.

Laura Cling is identical with Krummel except that it is a clingstone while Krummel is a freestone. It originated in Missouri, according to H. J. Weber & Sons, Nursery, Missouri.

Laurenel. 1. *Gard. Mon.* **12**:158. 1870.

A seedling from Monroe, Ohio; said to be larger and earlier than Hale Early.

Laurent de Bavay. 1. Carrière *Var. Pêchers* 75, 76. 1867.

Probably of Belgian origin. Tree vigorous, a strong grower; glands globose; flowers large; fruit very large, roundish, halves unequal; skin heavily pubescent, pale yellow, washed with deep red; flesh white, red at the stone, melting, juicy, sweet; stone large, oval, free; ripens late in September.

Lawrence. 1. *Am. Pom. Soc. Rpt.* 52. 1871.

Introduced by W. K. Tipton, Jerusalem, Ohio, who says it is superior to Hale Early in flavor and a week earlier.

Lawton. 1. *Am. Pom. Soc. Rpt.* 127. 1875.

Raised by C. W. Lawton, Seattle, Washington, from a seed imported from England; fruit very large and ripens early.

Leader. 1. Burbank *Cat.* 1912-13.

According to Luther Burbank, Santa Rosa, California, Leader is of the Muir-Crawford type ripening in California in July; freestone.

Leatherbury Late. 1. *Pa. Hort. Assoc. Rpt.* 48. 1882.

Listed in this reference.

Leatherland Late. 1. *N. Mex. Sta. Bul.* **30**:243. 1899.

Listed by the New Mexico Station.

Lemon Cling. 1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Floy-Lindley *Guide Orch. Gard.* 188. 1846. **3.** *Am. Pom. Soc. Cat.* 78. 1862.

Large Yellow Pine Apple. **4.** Coxe *Cult. Fr. Trees* 224. 1817.

Kennedy Carolina. **5.** Prince *Treat. Fr. Trees* 17. 1820.

Kennedy Lemon Cling. **6.** *Lond. Hort. Soc. Cat.* 98. 1831.

Pine Apple Clingstone. **7.** Hoffy *Orch. Comp.* **1**:Pl. 1841-42.

Englischer Lackpfirsich. **8.** Dochnahl *Führ. Obstkunde* **3**:215. 1858.

Pavie Citron. **9.** Leroy *Dict. Pom.* **6**:216. 1879.

Lemon Cling dates back to before the Revolutionary War. From all accounts it originated in South Carolina, probably

in Charleston. A number of seminal varieties, all very similar to Lemon Cling, are cultivated; all of these some writers combine under the name Lemon Cling. Robert Kennedy introduced the fruit into New York about 1800 where it became known as Kennedy's Carolina or Kennedy's Lemon Clingstone. The variety is very popular in many sections, especially California, as a canning peach. It was placed on the fruit-list of the American Pomological Society in 1862. Tree vigorous, highly productive, bears regularly; leaves crenate, with reniform glands; flowers small, deep red; fruit large, oval, resembling a lemon; apex terminating in a large nipple; skin deep yellow, brownish-red where exposed; flesh firm, with a deep, lemon color, red at the stone, juicy, sprightly, vinous, with an agreeable acidity; very good when perfectly ripe; stone clings; ripens in September.

Lemon Clingstone (Hoyte). 1. *Lond. Hort. Soc. Cat.* 98. 1831.

Leaves with globose glands; flowers small; fruit large; skin yellow and dark red; of second quality; ripens at the end of September.

Leny Winter. 1. *Gard. Mon.* **23**:18. 1881.

A large, yellow peach; will keep through November if gathered before a hard frost.

Leona. 1. *Austin Nur. Cat.* 4. 1912.

Similar to a bright-colored Elberta but earlier and more productive, according to the catalog of the Austin Nursery Company, Austin, Texas.

Léonie. 1. Leroy *Dict. Pom.* **6**:143, 144 fig. 1879.

Charles Buisson raised Léonie from seed about 1863 at Tronche, Isère, France. Leaves glandless; flowers of medium size; fruit medium in size, roundish-oval; suture deep; skin thin, whitish-yellow, carmine where exposed; flesh red at

the stone, melting, juicy, aromatic; of second quality; stone small, plump, roundish-oval, free; ripens the last half of September.

Lenoir. 1. Downing *Fr. Trees Am.* 621. 1869.

Lenoir is of medium size, round, halves unequal; skin white, washed and splashed with red; flesh juicy, aromatic; freestone; ripens the middle of August.

Leopard. 1. *Tex. Sta. Bul.* **39**:816. 1896.

A worthless, southern variety similar to Blood Cling.

Leopold I. 1. Kenrick *Am. Orch.* 195. 1841.

Leopold Clingstone. **2.** *Am. Pom. Soc. Cat.* 78. 1862.

Leopold I originated at Smithfield, Virginia. It was put on the fruit-list of the American Pomological Society in 1862. Fruit very large, round, yellow, juicy; ripens in August.

Leopold II. 1. *Jour. Hort.* N. S. **3**:370. 1862. *2. Pom. France* **6**:No. 9, Pl. 9. 1869. **3.** *Am. Pom. Soc. Cat.* 18. 1871.

Leopold Magdalene. **4.** Dochnahl *Führ. Obstkunde* **3**:199, 200. 1858.

Leopold Free. **5.** *Am. Pom. Soc. Cat.* 32. 1869.

This peach was introduced by a M. Van Orlé, Villerne, Belgium. The variety was brought to America and appeared on the fruit-list of the American Pomological Society from 1869 until 1899. Tree vigorous, productive; glands globose; flowers large; fruit large, roundish, slightly attenuated at the base; suture distinct; skin yellowish-white, richly colored with carmine; flesh white, stained at the pit, melting, sweet, aromatic; quality very good; pit slightly

adherent, oval; ripens the middle of September.

Lepère. 1. Carrière *Var. Pêchers* 38, 39. 1867.

Tree vigorous, very productive; leaves with reniform glands; flowers small, rose-colored; fruit large, globular; cavity deep; skin thinly pubescent, blood-red where exposed; flesh whitish-yellow, blood-red at the pit, firm, juicy, aromatic; quality good; pit roundish-oval, clinging; ripens at the end of August.

Leroy Winter. 1. *Mo. Hort. Soc. Rpt.* 276. 1896.

A late, yellow variety from Missouri.

Lewenau Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:207. 1858.

A seedling of Admirable, raised about 1851. Glands reniform; flowers large, white; fruit roundish, flattened, strongly sutured; skin greenish-yellow, heavily pubescent; flesh white, red at the stone, sprightly; stone free, sharply pointed; matures the middle of September.

Lewis. 1. *Mich. Hort. Soc. Rpt.* 279. 1882. **2.** *Am. Pom. Soc. Cat.* 33. 1899. **3.** *Mich. Sta. Sp. Bul.* **44**:52. 1910.

Early Lewis. **4.** *Kan. Hort. Soc. Rpt.* 195. 1902-03.

Lewis is the only white-fleshed seedling which appeared from about one hundred Chili pits, planted by N. W. Lewis, Allegan County, Michigan. The variety was placed on the fruit-list of the American Pomological Society in 1899 where it still remains. Tree vigorous, bears early, productive, but subject to leaf-curl; glands reniform; flowers large; fruit medium to large, roundish, slightly flattened at the ends, a trifle irregular; suture shallow; skin smooth, thin, tough, creamy-white, splashed and mottled with

crimson; flesh white, juicy, vinous; quality good; stone free, large; season immediately following Hale Early.

Libra. 1. *Garden* **64**:109. 1903. **2.** Bunyard *Cat. Fr. Trees* 36. 1913-14.

A seedling raised by R. D. Blackmore and introduced by Will Taylor, Hampton, England. The fruits are large, very juicy; ripen in July.

Liefmanns. 1. Mathieu *Nom. Pom.* 403. 1889.

Listed in this reference.

Liermann Pfirsich. 1. Lauche *Ergänzungsband* 711 fig., 712. 1883.

Tree vigorous, productive; fruit very large, globular, surface irregular; suture deep, dividing the fruit unevenly; skin tender, yellowish-white, without a blush; flesh tender, juicy, sweet, aromatic; stone roundish, flattened at the base; ripens on a west wall toward the end of August.

Lilard October. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed as growing on the Station grounds.

Lillian. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Exhibited at the World's Fair in 1893 from Illinois.

Limon. 1. *Lond. Hort. Soc. Cat.* 98. 1831.

Listed in this reference.

Lina Hauser. 1. Mas *Pom. Gen.* **12**:186. 1883.

Lina Lackpfirsich. **2.** Dochnahl *Führ. Obstkunde* **3**:214, 215. 1858.

Glands reniform; flowers small, white; fruit large, roundish, halves unequal, greenish-yellow and dark red; flesh stained at the pit, aromatic; freestone; ripens the middle of September.

Lincoln. 1. Cole *Am. Fr. Book* 194. 1849.

Lincoln originated in Lincoln, Massachusetts, about 1800. Tree hardy, productive; glands globose; fruit very large, roundish; suture prominent; skin rich yellow, with considerable dark purplish-red; flesh tinged at the stone, juicy, rich, sweet; freestone; ripens the middle of September.

Lincoln Cling. 1. *Horticulturist* **15**:491. 1860.

A spicy-flavored clingstone from a Dr. Hunter, Lincoln, North Carolina; fruit yellow, with a prominent, mamelon tip at the apex.

Lindley I. 1. Thomas *Guide Prat.* 49. 1876.

Glands reniform; flowers pale red; fruit very large; matures in September.

Lindley II. 1. *Am. Pom. Soc. Rpt.* 238, 239. 1911.

Lindley II was found in a block of Elbertas by J. Van Lindley, Pomona, North Carolina. Flesh yellow, firm, free; ripens with Hiley.

Linzey White. 1. *Mo. Hort. Soc. Rpt.* 246. 1893.

Grown by S. W. Gilbert of Iowa.

Lipscomb. 1. *Tex. Sta. Bul.* **39**:813. 1896.

Lipscomb is vigorous but not productive; glands reniform; fruit small, round; color yellow, with a red cheek; flavor

subacid; stone semi-clinging; ripens the last of June in Texas.

Lisle. 1. Miller *Gard. Dict.* 1752. **2.** Prince *Pom. Man.* **2**:21. 1832.

Fruit roundish, of medium size; skin violet where exposed; flesh melting, vinous, pale yellow except about the pit; clingstone; ripens early in September.

Little Anne. 1. *Ill. Hort. Soc. Rpt.* 167. 1871.

Little Anne, ripening ten days earlier than Hale Early, was discarded on account of the small size of the fruit and tenderness of the tree.

Lizzie. 1. *U. S. D. A. Yearbook* 114, 115, 116, Pl. X. 1913.

Lizzie originated with J. W. Stubenrauch, Mexia, Texas, from an Elberta seed probably fertilized with Bell October. Tree thrifty, productive; fruit globular to obovate, sides often unequal, medium to large; suture shallow except at the cavity; skin tough, rich yellow, striped with light red; flesh stained at the pit, firm, meaty, juicy, vinous; good to very good; stone broad, obovate, large, free; ripens two weeks after Elberta.

Lock Cling. 1. *Ill. Hort. Soc. Rpt.* 248. 1884. **2.** *Mich. Sta. Bul.* **118**:30. 1895.

Lock Late. **3.** *Ill. Hort. Soc. Rpt.* 77. 1893.

Glands reniform; flowers small; fruit yellow, late, clingstone.

Lockwood. 1. Ilgenfritz *Cat.* 24, fig. 1896.

Lockwood is one of the earliest, yellow freestones, ripening three weeks before Early Crawford.

Lodge. 1. Harrison *Cat.* 17. 1904.

According to the catalog of J. G. Harrison, Berlin, Maryland, Lodge originated in Kent County, Delaware. On the Station grounds the tree is vigorous but only moderately productive; leaves fairly broad; margin finely serrate, with small, globose glands; flowers appear early, of medium size, pale pink, darker at the edge; fruit medium in size, cordate, halves unequal, compressed; cavity abrupt, often with red markings; suture shallow; apex with a mucronate tip; skin thin, tough, covered with thick pubescence, creamy-white, with an attractive, lively red blush; flesh white, stained about the stone, juicy, stringy, melting, sprightly, pleasing; quality good; stone nearly free, large for the size of the fruit, oval, flattened at the base; ripens the last of August.

Lone Ark. 1. *N. Mex. Sta. Bul.* **30**:243. 1899.

Listed in this reference.

Lone Tree. 1. *Ia. Hort. Soc. Rpt.* 420. 1898. **2.** *Am. Pom. Soc. Cat.* 38. 1909.

Lone Tree is one of many seedlings that thrive about Lone Tree, Iowa. In 1909 it was put on the fruit-list of the American Pomological Society. Fruit of medium size, yellow, without any blush; quality good; pit very small, free; ripens about September 10th.

Long Leaved. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Longhurst. 1. Green *Cat.* 18. 1893. **2.** *Mich. Sta. Bul.* **169**:218. 1899. **3.** *Can. Hort.* **29**:105. 1906. **4.** *Am. Pom. Soc. Cat.* 38. 1909.

Longhurst originated on the Niagara Peninsula, Canada. It was added to the fruit-list of the American Pomological

Society in 1909. Trees very hardy, productive; glands globose; flowers large; fruit medium in size, oval, halves unequal, very pubescent, unattractive; suture indistinct; apex prominent; color yellow, with a red blush; flesh red at the pit, fibrous, vinous, sprightly; pit free, oval, pointed; ripens the last of September.

Longworthy. 1. *Tex. Sta. Bul.* **39**:813. 1896.

Longworthy Late Rareripe. **2.** *U. S. Pat. Off. Rpt.* 415. 1858.

Tree vigorous but a shy bearer; glands reniform; fruit small, round, pale white, with a red cheek; flavor pleasant subacid; clingstone; ripens the last of July in Texas.

Lonoke. 1. *Tex. Sta. Bul.* **8**:34. 1889. **2.** Munson *Cat.* 6. 1893.

Flowers large; fruit large, yellow; clingstone; ripens late; sure bearer.

Lord Fauconberg Mignonne. 1. Lindley *Guide Orch. Gard.* 261, 262. 1831.

An old English variety known as early as 1769. Leaves doubly serrate, without glands; flowers small; fruit above medium in size, ovate, deeply sutured, pale yellow, with wide splashes of deep, dull red; flesh yellowish-white, red at the stone, juicy; stone free, rather flat; ripens the middle of September.

Lord Palmerston. 1. Hogg *Fruit Man.* 225. 1866. **2.** Downing *Fr. Trees Am.* 621. 1869. **3.** Lauche *Ergänzungsband* 715 fig., 716. 1883. **4.** Hogg *Fruit Man.* 452. 1884.

Palmerston. **5.** *Mich. Sta. Bul.* **169**:222. 1899.

This variety was raised by Thomas Rivers, Sawbridgeworth, England, from a pit of Princess of Wales. Fruit large, roundish, inclined to oval, with a distinct suture; color yellowish-white, with a red blush; flesh creamy-white, red at the pit which is somewhat adherent, juicy, firm, mild; quality good; season the last of September.

Lorentz. 1. Reid *Cat.* 33 fig. 1894. **2.** *Mich. Sta. Bul.* **169**:204, 219. 1899. **3.** *Ont. Fr. Exp. Sta. Rpt.* **7**:54. 1900. **4.** Budd-Hansen *Am. Hort. Man.* **2**:350. 1903. **5.** *Am. Pom. Soc. Cat.* 38. 1909.

Lorentz is supposed to have come from a seedling tree found about 1889 in the orchard of Fred Lorentz, Marshall County, West Virginia. It was introduced about 1894 by E. W. Reid, Bridgeport, Ohio. Fruit of medium size, roundish, compressed, with a shallow suture; color yellow, blushed with red; flesh yellow, red at the pit, juicy, tender, mild, free; quality good; season early October.

Lottie. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Grown by the Florida Experiment Station.

Loudon. 1. Carrière *Var. Pêchers* 60, 61. 1867.

Tree moderately vigorous, very productive; glands reniform; flowers very large; fruit large, oblate; skin downy, marbled with deep red; flesh whitish-yellow, stained near the pit, melting, juicy, aromatic, sweet; stone free, oval; ripens at the end of August.

Louisiana. 1. *Am. Pom. Soc. Cat.* 38. 1909.

Listed by the American Pomological Society; fruit large, round, white; freestone.

Love All. 1. Lovett *Cat.* 39. 1889.

According to J. T. Lovett, Little Silver, New Jersey, this variety is a large, yellow peach from California; excellent for canning.

Lovejoy Cling. 1. *Am. Pom. Soc. Rpt.* 191. 1860.

Recommended for planting in Mississippi.

Lovell. 1. Wickson *Cal. Fruits* 314. 1889. **2.** *Am. Pom. Soc. Cat.* 33. 1899. **3.** *Mich. Sta. Bul.* **169**:219. 1899.

Lovell is a chance seedling raised and named by G. W.

Thissell of California in 1882. The fruit cans, ships and dries well. Tree fairly vigorous, drooping; glands globose; flowers small; fruit of medium size, roundish, compressed; suture distinct, extending beyond the apex; skin bright yellow, with a faint, marbled blush; flesh yellow to the pit, juicy, tender, vinous; pit small, roundish-oval, free; ripens the last of September in Michigan.

Lovell White Madison. 1. *Okla. Sta. Bul.* **2**:14. 1892.

Listed in this reference.

Lovett. 1. *Am. Pom. Soc. Cat.* 38. 1909.

Lovett White. **2.** *Mich. Hort. Soc. Rpt.* 314. 1889. **3.** *Mich. Sta. Bul.* **169**:219. 1899.

The American Pomological Society listed this variety in its catalog of 1909. Tree strong, roundish-upright, productive; glands reniform; flowers small; fruit large, roundish; suture distinct; skin creamy-white, with considerable bloom; flesh creamy-white to the pit, juicy, tender, sprightly; pit free; ripens the last of September; valuable for canning purposes.

Lowes Favorite. 1. *Mich. Hort. Soc. Rpt.* 105. 1903.

A peach of the Crawford type originating in Oceana County, Michigan.

Lowets White. 1. *Guide Prat.* 42. 1895.

Fruit large, white, sweet; very late.

Lows Large Melting. 1. *Lond. Hort. Soc. Cat.* 98. 1831.

Allied to Royal George but not as good; leaves glandless; flowers small; fruit large; color pale yellowish-green, with a red cheek; flesh melting; quality fair; ripens early in September.

Lucia. 1. *U. S. D. A. Rpt.* 391. 1891.

A large, globular fruit, yellow, shaded with rich purplish-red; flesh red at the stone, mild subacid; best of quality; clingstone; season the end of September.

Luizet Dwarf. 1. *Am. Jour. Hort.* **6**:249. 1869.

In 1861, Gabriel Luizet, Ecully, Rhône, France, grew this dwarf from a seed of Grosse Mignonne. Tree dwarf, vigorous, productive; leaves large, deeply serrate, glandless; fruit small, oval, surface uneven, halves unequal; skin nearly smooth, bright red where exposed; flesh yellowish-white, red at the stone, juicy, sprightly; stone free, deeply furrowed.

Lulu I. 1. *Cult. & Count. Gent.* **45**:536. 1880.

A very early seedling from Batavia, New York; fruit globular; clingstone; ripens before Amsden.

Lulu II. 1. *Tex. Sta. Bul.* **39**:806. 1896.

Lulu II belongs to the so-called Spanish group; tree hardy, productive; glands numerous, globose; fruit small, greenish-yellow; flavor rather acid; quality poor.

Luton. 1. *Tex. Nur. Cat.* 12. 1909.

The Texas Nursery Company, Sherman, Texas, states that this variety was grown from seed at Ector, Texas, by J. T. Luton; fruit large, oblong; clingstone; ripening a week before Elberta.

Luttichau. 1. *Glen St. Mary Nur. Cat.* 26. 1913.

It is reported in the Glen Saint Mary Nursery Catalog, Glen Saint Mary, Florida, that Baron H. Von Luttichau, Earleton, Florida, originated this variety. Fruit large, oval; skin waxy,

greenish-white, washed or blushed with red, thin, tough; flesh tinged at the pit, firm, juicy, sweet; pit free; season the last of May.

Lydon Cling. 1. Harrison *Cat.* 18. 1910.

Lydon Cling is a large, firm, yellow peach ripening about the middle of August, according to J. G. Harrison, Berlin, Maryland.

Lynn Lemon Cling. 1. J. R. Johnson *Cat.* 6. 1894.

Fruit large, with a red cheek; of excellent quality; ripens the last of September, as described in the catalog of J. R. Johnson, Coshocton, Ohio.

Lyon. 1. Downing *Fr. Trees Am.* 622. 1869.

A seedling originating with George Husman, Hermann, Missouri. Fruit large, round, somewhat irregular; suture a red streak; skin smooth, yellowish-white, marbled with deep red; flesh veined with red, deep at the stone, juicy, sweet, vinous; freestone; ripens early in August.

Lyon Cling. 1. Wickson *Cal. Fruits* 317. 1889.

Lyon Mammoth Cling. **2.** *Del. Sta. Rpt.* **5**:98. 1892.

From W. M. Williams, Fresno, California; flesh white to the stone; late.

McAllister. 1. *Okla. Sta. Bul.* **2**:14, 1892. **2.** *Pa. Sta. Bul.* **37**:10. 1896.

Listed as succeeding on either high or low land.

M'Clish. 1. *Pacific Nur. Cat.* 10. 1906.

According to the Pacific Nursery Company, Tangent, Oregon, M'Clish is of the Orange Cling type ripening just

after Early Crawford but is larger, sweeter and richer; used by the California canneries.

McCollister. 1. *Mich. Sta. Bul.* **31**:58. 1887.
2. *U. S. D. A. Pom. Rpt.* 43. 1895.

McCollister on the Station grounds is neither hardy nor productive but is relatively free from leaf-curl. Trees large, with a slight drooping tendency; leaves long, large, with small, globose glands; flowers appear in mid-season; fruit large, irregular in outline, roundish-cordate, oblique, halves decidedly unequal; cavity deep and wide; suture often extends two-thirds around the fruit; apex with a small, mamelon tip; skin thick, tough, blushed with dull red on a deep lemon-yellow ground, attractive; flesh stained with red at the stone, firm, coarse, noticeably stringy, moderately sweet but not rich; stone free, ovate, bulged near the apex; ripens the first of September.

McConnell Seedling. 1. *Can. Hort.* **18**:417. 1895.

A very hardy seedling grown in Essex County, Canada.

McCormick. 1. *Mich. Hort. Soc. Rpt.* 189. 1880.

This peach was found by W. H. McCormick, Clyde, Michigan. Tree similar to Late Crawford; glands reniform; fruit nearly round; flesh deep yellow to the stone which is small and free; ripens just ahead of Late Crawford.

McCowan Cling. 1. Wickson *Cal. Fruits* 314. 1889.

Dr. McCowan, Ukiah, California, raised this variety. It is free from leaf-curl; must be carefully thinned for size; flesh yellow, stained at the pit; good for canning.

McCoy Free. 1. *Winfield Nur. Cat.* 15. 1915.

The Winfield Nursery Company, Winfield, Kansas, states that this variety is a large, yellow freestone, ripening two weeks after Elberta.

McCoy Seedling. 1. J. R. Johnson *Cat.* 6. 1894.

Originated with Henry McCoy, Coshocton County, Ohio; very similar to Wonderful, according to J. R. Johnson, Coshocton, Ohio.

McDevitt. 1. Wickson *Cal. Fruits* 318. 1889. **2.** *Am. Pom. Soc. Cat.* 34. 1899.

McDevitt is a yellow cling which originated with Neal McDevitt, Placer County, California. In 1899 it was added to the fruit-list of the American Pomological Society.

McIntosh. 1. *Ga. Sta. Bul.* **42**:238. 1898. **2.** *Am. Pom. Soc. Cat.* 38. 1909.

McIntosh is a peach from Georgia which was placed on the fruit-list of the American Pomological Society in 1909. At this Station, it is a light bearer and susceptible to leaf-curl. Tree with a drooping tendency; glands usually globose; flowers appear in mid-season; fruit medium in size, roundish-oval, tapers toward the apex, halves equal; cavity deep, wide, abrupt; suture shallow; apex with a mucronate tip; skin thin, tough, pale creamy-yellow, blushed with light red becoming deeper, attractive; flesh white, stained near the pit, juicy, stringy, melting, vinous, aromatic; stone with a clinging tendency, large, oval; ripens the last of August.

McIntyre Late Free. 1. Wickson *Cal. Fruits* 315. 1889.

Approved by the growers in several counties in California; fruit large, yellow; of California origin.

McKay Late. 1. *Rural N. Y.* **62**:835. 1903.

This is a very late, yellow freestone, originating about 1890

with the late W. L. McKay, Geneva, New York. Tree upright-spreading to slightly drooping, hardy; glands reniform; flowers appear in mid-season; fruit large, oval, angular; halves decidedly unequal; sides drawn in about the cavity, which is shallow and narrow; apex with a mucronate tip; skin heavily pubescent, thick, tough, pale yellow, usually with blush near the cavity but often without; flesh stained at the pit, juicy, coarse, stringy, sprightly; stone large, oval, plump, acutely pointed at the apex; ripens in October.

McKevitt. 1. Wickson *Cal. Fruits* 315. 1889. **2.** *Mich. Sta. Bul.* **169**:220. 1899. **3.** *Am. Pom. Soc. Cat.* 38. 1909.

This white clingstone is widely distributed in California and in 1909 was added to the fruit-list of the American Pomological Society. It originated on the farm of A. McKevitt, Vaca Valley, California. Tree upright, roundish; glands globose; flowers small; fruit large, roundish-oval; apex prominent; color creamy-white, marbled with bright red; flesh moderately juicy, faintly tinged with red at the pit, firm, sweet, highly flavored; stone oval, pointed; ripens in mid-season.

McKinley. 1. *Ia. Hort. Soc. Rpt.* 420. 1898.

A white peach from a Mr. Calkins, Iowa City, Iowa.

McKinnel. 1. *Ala. Sta. Bul.* **156**:134. 1911.

An upright, rank-growing tree with heavy foliage, productive but susceptible to rot; fruit roundish, medium to large; apex sharply pointed; flesh yellowish-white, fine, juicy; quality very good; ripens the last of May.

McKinney. 1. *Ala. Sta. Bul.* **117**:309. 1901.

A promising new variety; tree a strong grower, fairly productive; fruit medium to large; flesh white, firm, juicy, sweet; clingstone; ripens the last of June.

McLide Seedling. 1. *Ont. Fr. Gr. Assoc. Rpt.*

App. 37. 1901.

Exhibited at the Pan American Exposition.

McNair Late. 1. *Mo. State Fr. Sta. Bul.* **3**:38. 1902.

A good variety for commercial or home use in Missouri.

McNeil. 1. *Utah Sta. Bul.* **18**:13. 1892.

Listed in this reference.

McNeil Early. 1. King Bros. *Cat.* 14. 1915.

This sort was found by Frank McNeil, Dansville, New York, and was introduced by King Brothers of that place in 1913. Fruit white-fleshed; a perfect freestone; one of the first to ripen.

Macon. 1. *Mich. Hort. Soc. Rpt.* 450. 1879.

A variety with fruit of fair quality, valued in Lenawee County, Michigan.

McShaw. 1. Bailey *Ann. Hort.* 185. 1892.

A large, clingstone peach ripening in October.

Madame d'Andrimont. 1. Mas *Le Verger* **7**:77, 78, fig. 37. 1866-73.

Probably originated about Liége, Belgium. Leaves glandless; flowers large; fruit large, spherical, depressed at the ends; suture shallow; skin downy, pale yellow, bright red in the sun; flesh white, stained about the pit, melting, juicy, aromatic; stone free, large; ripens the middle of August.

Madame Bernède. 1. Mathieu *Nom. Pom.* 403. 1889.

Listed in this reference.

Madame Daurel. 1. Mathieu *Nom. Pom.* 403. 1889.

Listed in this reference.

Madame Gaujard. 1. Koch *Deut. Obst.* 540. 1876. **2.** Lauche *Deut. Pom.* **VI**:No. 23, Pl. 1882.

Originated in 1858 with N. Gaujard, Ghent, Belgium. Flowers small; fruit large, roundish; suture more or less distinct; skin very pubescent, thin, clear yellow, with a purplish-red blush; flesh white, stained at the pit, juicy, sweet; stone free, broadly oval; ripens in September.

Madame Malfilâtre. 1. Mathieu *Nom. Pom.* 403. 1889.

Listed in this reference.

Madame Pynaert. 1. *Gard. Mon.* **29**:46. 1887.

Madame Edouard Pynaert. **2.** Mathieu *Nom. Pom.* 403. 1889.

A large, dark red peach of superior quality, raised in Belgium about 1881.

Madeira. 1. Elliott *Fr. Book* 285. 1854.

Hill Madeira. **2.** Coxe *Cult. Fr. Trees* 224. 1817.

Madeira Freestone. **3.** *Horticulturist* **4**:243. 1849-50.

Madeira was raised by Henry Hill, Philadelphia, Pennsylvania, from a pit brought from Madeira. Fruit large, whitish, with a pale red cheek; flesh highly flavored, melting, juicy; freestone; ripens in September.

Madeleine Blanche d'Anoot. 1. Thomas *Guide Prat.* 52. 1876.

A variety bearing globose glands.

Madeleine Blanche de Doué. 1. Mathieu *Nom. Pom* 403. 1889.

Listed in this reference.

Madeleine Blanche de Loisel. 1. Thomas *Guide Prat.* 44. 1876.

Often included incorrectly with the White Madeleine.

Madeleine Hariot. 1. Thomas *Guide Prat.* 40. 1876.

Tree vigorous, productive; leaves glandless; fruit large, ovoid, somewhat pointed at the base; greenish-yellow, striped and marbled with deep carmine; flesh white to the pit, juicy, vinous; matures at the end of August.

Madeleine Hâtive a Moyennes Fleurs. 1. Mas *Le Verger* **7**:173, 174, fig. 85. 1866-73.

This sort is thought by Leroy to be Royal Charlotte. Probably the only difference is in its ripening, this variety ripening early in August.

Madeleine à Mamelon. 1. *Lond. Hort. Soc. Cat.* 98. 1831.

Listed in this reference.

Madeleine Paysanne. 1. Mas *Le Verger* **7**:99, 100, fig. 48. 1866-73.

This is an old French sort often confused with Bollweiler Magdalene of some authors. Tree vigorous, productive; leaves glandless; flowers large; fruit large, spherical, depressed at the ends, distinctly sutured; cavity large; skin finely pubescent, pale yellow, with a deep purple blush; flesh whitish-yellow, stained about the pit, melting, aromatic, sweet; pit small for the size of fruit, free.

Madeleine Striée. 1. Mathieu *Nom. Pom.* 404. 1889. **2.** *Guide Prat.* 40. 1895.

Tree very productive; leaves glandless; fruit large, roundish; skin thin, whitish-yellow, striped with red in the sun; flesh fine, melting, sweet, aromatic; ripens the last of August.

Madeleine Superbe de Choisy. 1. *Le Bon Jard.* 327. 1882.

This variety originated with a M. Gravier of Choisy-le-Roi, France. Fruit very large, roundish, blushed with deep red where exposed; flesh white, purple at the stone, melting, sweet, aromatic; stone small, free; matures the last of September.

Madison County Mammoth. 1. *Mo. State Fr. Sta. Rpt.* 11. 1901.

This is a variety from Missouri which ripens too late in New York. The tree in the Station orchard is upright, moderately vigorous, very productive; glands reniform; fruit of the Chili type but more irregular and broader; cavity small; suture extends beyond the apex; skin heavily pubescent, whitish, with considerable mottling; flesh stained at the pit, moderately juicy, tough, leathery; flavor and quality fair; stone slightly elliptical, decidedly clinging; ripens the last of October.

Magdala. 1. *Am. Jour. Hort.* **6**:250. 1869. **2.** Hogg *Fruit Man.* 452. 1884.

Thomas Rivers, Sawbridgeworth, England, raised Magdala in 1865 from a seed of Orange nectarine. Leaves with reniform glands; flowers large; fruit of medium size, inclining to oval; skin nearly smooth, creamy-white, marbled with crimson; flesh tender, melting, rich; freestone; ripens the last of August.

Magdalen Clingstone. 1. Prince *Pom. Man.* **1**:198. 1831.

Pavie Madeleine. **2.** Duhamel *Trait. Arb. Fr.* **2**:13. 1768.

This sort is a variation of White Magdalen. Some writers list it as identical with Smith Newington. Leaves devoid of glands; flowers large; fruit of medium size, broadly globular; suture shallow, deepening toward the base; skin pale yellowish-white, marbled and streaked where exposed; flesh firm, pale yellowish-white to the stone, juicy, sugary; stone clings, shortly ovate, thick; ripens early in September.

Maggie I. 1. *Am. Pom. Soc. Cat.* 22. 1897. **2.** *Ibid.* 38. 1909.

Maggie Burt. **3.** *Tex. Sta. Bul.* **8**:34. 1889.

Maggie I. or Maggie Burt as it was first called, was put on the fruit-list of the American Pomological Society in 1897. It is a large, oval, white-fleshed clingstone from Texas.

Maggie II. 1. *Fla. Sta. Rpt.* **8**:86. 1896. **2.** *Fla. Sta. Bul.* **62**:516. 1902.

Peter C. Minnich, Waldo, Florida, originated this variety which resembles and ripens with Bidwell Early. Fruit medium to large, roundish-oblong; cavity open, abrupt, suture but one-quarter around the fruit; apex rounded; skin velvety, thick, light yellow; washed with red; flesh firm, white, juicy; quality very good; stone partly clinging, large, oval.

Magistrate. 1. Elliott *Fr. Book* 293. 1854.

A fruit of American origin; glands reniform; fruit large; skin greenish-white, with a red cheek; flesh juicy but not high in quality; freestone; ripens in September.

Magnifique de Daval. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed but not described.

Magnum Bonum. 1. *Rural N. Y.* **14**:119. 1863.

Listed as a good peach for Missouri.

Maid of Malines. 1. *Gard. Chron.* 204. 1848.

Pucelle de Malines. **2.** *Am. Pom. Soc. Cat.* 30. 1875. **3.** Leroy *Dict. Pom.* **6**:249 fig., 250. 1879.

Jungfern-Magdalene. **4.** Dochnahl *Führ. Obstkunde* **3**:199. 1858.

Jungfrau von Mecheln. **5.** Gaucher *Pom. Prak. Obst.* No. 87, Tab. 19. 1894.

This variety from Belgium held a place on the fruit-list of the American Pomological Society from 1875 until 1897. Tree vigorous, productive; glands lacking; flowers large; fruit large, roundish, depressed; suture well marked; skin very downy, clear yellow, highly colored where exposed; flesh yellowish-white, stained at the stone, melting, juicy, sugary; freestone; ripens at the end of August.

Malden. 1. Elliott *Fr. Book* 286. 1854.

Early Malden. **2.** *Mag. Hort.* **14**:537. 1848.

Leaves glandless; flowers small; fruit medium in size, roundish, compressed, one side enlarged; suture distinct; skin white, with a red cheek; juicy, sprightly; freestone; matures the last of August.

Malta. 1. Miller *Gard. Dict.* 1752. **2.** *Pom. Mag.* **1**:No. 15, Pl. 1828. **3.** *Am. Pom. Soc. Cat.* 78. 1862. **4.** Leroy *Dict. Pom.* **6**:157 fig., 158. 1879.

Malta is supposed to have originated in Malta or in Italy but the Italians did not mention it until it had been known in

France for some time, Merlet having described it in 1667. It was early introduced into America and held a place on the fruit-list of the American Pomological Society from 1862 until 1891. Leaves doubly serrate, without glands; flowers large, pale; fruit of medium size, depressed at the apex; suture broad and shallow; skin dull green, broadly marbled with dull purplish-red; flesh greenish-yellow, stained with red near the pit, juicy, rich, vinous; stone free, oval, pointed; ripens at the end of August.

> **Malte de Gouin. 1.** Thomas *Guide Prat.* 41, 221. 1876. **2.** Mas *Pom. Gen.* **12**:129, 130, fig. 1. 1883.

The fruit is larger and the quality better than that of Malta. Tree productive; leaves glandless; fruit spherical, striped and marbled with reddish-purple; flesh white to the stone, melting, juicy, aromatic; stone small for the size of the fruit, free; ripens the first of September.

> **Malte de Lisieux. 1.** Carrière *Var. Pêchers* 82. 1867.

The fruits of this variety differ from Malta in their higher color, larger size and heavier pubescence.

> **Malte Saint Julien. 1.** Thomas *Guide Prat.* 50. 1876.

A glandless variety listed by Thomas.

> **Mammoth. 1.** *Lond. Hort. Soc. Rpt.* **6**:410, 411. 1826.

This old peach was found in New York City a century ago by M. Brevoort. The stone, which is large for the size of the fruit, is remarkable for always having two kernels. The variety comes true from seed. Fruit large, greenish-yellow; stone free; ripens at the end of September.

> **Mammoth Cling. 1.** Kenrick *Am. Orch.* 184. 1835.

Fruit large, of a pale color, red where exposed; very juicy and fine.

Mammoth Freestone. 1. *Am. Pom. Soc. Cat.* 28. 1873.

A large, very late variety listed in the fruit-catalog of the American Pomological Society from 1873 until 1897.

Mammoth Golden. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Listed as once grown in Illinois.

Mammoth Heath. 1. Stark Bros. *Cat.* 52. 1899.

According to the catalog of Stark Brothers, Louisiana, Missouri, Mammoth Heath is supposed to be a strain of Heath Cling from Missouri. On the Station grounds the trees are unproductive and susceptible to leaf-curl; glands reniform; fruit above medium in size, halves unequal; cavity deep and wide; apex with a small, mamelon tip; suture often extends beyond the apex; skin thin, tender, unusually woolly, creamy-white, occasionally with a slight blush; flesh meaty, juicy, pleasing; stone oval, flattened at the base; ripens the second week in October.

Mammoth Melocoton. 1. Thomas *Guide Prat.* 54. 1876.

A large fruit of first quality, ripening in September.

Man. 1. Parkinson *Par. Ter.* 582. 1629.

"The Man peach is of two sorts, the one longer than the other, both of them are good Peaches but the shorter is the better relished."

Mandelartige Magdalene. 1. Dochnahl *Führ. Obstkunde* **3**:198. 1858.

The leaves of this variety are glandless; flowers usually large; fruit of medium size, elongated, almond-like; skin yellowish-green; flesh white, stained at the pit, pleasantly subacid; stone free; ripens the middle of September.

Mandls Magdalene. 1. Dochnahl *Führ. Obstkunde* **3**:199. 1858.

Lorenz Mandl. **2.** Mathieu *Non. Pom.* 403. 1889.

A seedling from Liegel, raised about 1851. Leaves glandless; flowers usually large, white; fruit large, roundish-oblate, halves unequal, deeply sutured; skin greenish-white, with a reddish-brown blush; freestone; ripens the middle of August.

Manning. 1. *Mag. Hort.* **13**:441. 1847.

J. F. Allen grew and named this variety after Robert Manning of Salem, Massachusetts.

Marcella. 1. *U. S. D. A. Pom. Rpt.* 25. 1894.

Marcella originated with E. T. Daniels, Kiowa, Kansas. On the Station grounds the trees are unproductive and susceptible to leaf-curl. Tree vigorous, upright-spreading or slightly drooping; glands reniform; flowers appear late; fruit large, roundish to oval, halves decidedly unequal; cavity shallow, sides slightly drawn in; apex roundish, with a mucronate tip; skin covered with long, thick pubescence, thin, tough, golden-yellow, with a few splashes, if any, of dark red; flesh faintly red at the pit, stringy, slightly subacid; fair in quality; stone large, oval or obovate; matures the first of October.

Marguerite. 1. Thomas *Guide Prat.* 43, 221. 1876.

Saint Marguerite. **2.** Mas *Le Verger* **7**:41, 42, fig. 19. 1866-73.

Originated at Liége, Belgium. Tree vigorous; leaves devoid of glands; flowers large; fruit medium to above, roundish-ovoid, small, with a mamelon tip at the apex; skin thin, greenish-yellow, with a dark red blush; flesh white to the stone, juicy, sweet, aromatic; stone large, ovoid, free; matures toward the end of July.

Marie de la Rochejaquelein. 1. Thomas *Guide Prat.* 50. 1876. **2.** Mas. *Pom. Gen.* **12**:177, 178. 1883.

Resembles Orchard Queen; leaves with reniform glands; flowers small.

Marie Talabot. 1. Mathieu *Nom. Pom.* 404. 1889.

Listed in this reference.

Marionville Cling. 1. Stark Bros. *Cat.* 38. 1913.

A productive, white clingstone from Marionville, Missouri, according to Stark Brothers, Louisiana, Missouri.

Mark Chili. 1. *Mich. Sta. Sp. Bul.* **44**:55 fig. 1910.

Mark Chili is a Chili seedling raised by W. D. Markham, Hart, Michigan. The fruit is similar to that of its parent but is larger and later. Tree vigorous, free from diseases; flowers large; fruit large, oblong, decidedly ribbed; suture continuous, deepening toward the apex; skin heavily pubescent, thick, tough, light yellow, with a rich, dark cheek of solid red; flesh deep yellow, red at the pit, melting, juicy, brisk subacid; stone oval, free; very good in quality.

Markham. 1. *Mich. Sta. Sp. Bul.* **44**:53, 54 fig. 1910.

W. D. Markham, Hart, Michigan, raised this Chili seedling about 1880. It is very similar to Early Crawford which it

follows in ripening. In the Station orchard the trees are vigorous, spreading, not very productive; leaves broad, with very small, globose glands; flowers appear in mid-season; fruit of medium size, roundish, halves decidedly unequal on some specimens; cavity deep, with radiating streaks of red; suture but a line until near the apex; skin heavily pubescent, tenacious, golden yellow, with a blush varying in size and shade; flesh tinged with red at the pit, tender, stringy, sweet, rich in flavor; quality good; stone large, broadly oval, flattened near the base, apex ending in a long point.

Marks Cling. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed as growing at the Texas Experiment Station.

Marlborough. 1. Brookshaw *Hort. Reposit.* **1**:27, Pl. 14. 1823.

Marlborough was found in the garden of the late Duke of Marlborough near Brentford, England. Leaves long, narrow, not affected by mildew; blossoms large; fruit roundish; skin thin, white, with a brilliant red blush; flesh stained at the pit, with a pineapple flavor; ripens about August 10th.

Marquis of Downshire. 1. *Gard. Chron.* 1506. 1870. **2.** Hogg *Fruit Man.* 453. 1884.

Royal Ascot. **3.** *Garden* **52**:307. 1898.

This peach was raised at East Hempsted Park, Berkshire, England, and was distributed by the Royal Ascot Nurseries. Glands globose; flowers large; fruit medium in size, slightly oblate, uneven in outline; suture distinct; skin greenish-yellow, with a light red cheek, mottled with darker red where exposed; flesh stained at the pit, tender, juicy, melting, sweet; freestone; ripens late.

Marquise de Brissac. 1. Thomas *Guide Prat.* 53. 1876. **2.** Leroy *Dict. Pom.* **6**:159 fig., 160. 1879.

This variety was found in the vicinity of Angers, France, and

named after the Marquise de Brissac. Glands small, reniform; flowers of medium size; fruit large, oval-roundish, with a noticeable, mamelon tip at the apex; distinctly sutured; skin thick, heavily pubescent, pale yellow, with a few splashes of carmine; flesh greenish-white, stained at the stone, juicy, melting, very sweet, vinous; very good; stone free, large; matures early in October.

Marshall. 1. *Mich. Sta. Bul.* **118**:30. 1895. **2.** *Ibid.* **169**:219. 1899.

Marshall Late. **3.** *Can. Exp. Farms Rpt.* 451. 1896.

Marshall comes from and is known only in Ohio. Tree fairly vigorous, roundish-upright; glands reniform; flowers small or medium; fruit medium to large, roundish, slightly oblong; suture distinct, two-thirds around the fruit; skin pale yellow, mottled with red; flesh deep red at the pit, moderately juicy, firm, with a slight acid taste; quality good; stone free; matures the last of September.

Martha Fern Cling. 1. Stark Bros. *Cat.* 38. 1913.

A white-fleshed clingstone from Pike County, Missouri, according to Stark Brothers, Louisiana, Missouri.

Martindale. 1. *Kan. Hort. Soc. Rpt.* 52. 1901.

Raised by a Mr. Martindale of Kansas. Tree very hardy; fruit white, very sweet, rich and juicy; freestone; ripens early in August.

Mary. 1. *Am. Pom. Soc. Cat.* 33. 1899. **2.** Budd-Hansen *Am. Hort. Man.* **2**:351 1903.

Mary Choice. **3.** Thomas *Guide Prat.* 44, 217. 1876.

Mary is a good dessert and market sort grown in New Jersey

and Maryland. It was placed on the fruit-list of the American Pomological Society in 1899. Fruit large, oblong; flesh yellow, firm, very good; freestone; season late.

Mary Choice (Kerr). 1. *Del. Sta. Rpt.* **5**:99. 1892.

Listed in this reference.

Marydel. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Listed in this reference.

Maryland Early. 1. *Gard. Mon.* **18**:273. 1876.

A seedling from Frederick City, Maryland. One of the earliest to ripen in that locality.

Masicot. 1. *Am. Pom. Soc. Cat.* 32. 1889.

Mascotte. **2.** *Fla. Sta. Bul.* **62**:516. 1902.

Griffing Brothers raised Masicot from a seed of Waldo. It first fruited in 1894 and was put on the fruit-list of the American Pomological Society in 1889. Fruit two and one-half inches high, nearly round; color creamy-yellow, washed or flecked with carmine, becoming deeper; flesh creamy-white, stained at the stone, juicy, subacid; freestone; ripens a few days later than Waldo.

Mathews. 1. Budd-Hansen *Am. Hort. Man.* **2**:351. 1903. **2.** *Am. Pom. Soc. Cat.* 38. 1909.

Mathews Beauty. **3.** *Rural N. Y.* **57**:610. 1898.

Matthews Beauty. **4.** *Am. Pom. Soc. Rpt.* 51. 1897. **5.** *W. N. Y. Hort. Soc. Rpt.* 13. 1907.

Matthews. **6.** *Rural N. Y.* **59**:706. 1900.

Mathews is supposed to be a cross between Elberta and Smock which originated with J. C. Mathews, Cuthbert, Georgia. Fruit large, roundish; color golden yellow, with streaks of red and a crimson cheek; flesh yellow, firm, juicy, mild, free; quality good; season early in August.

Maule Early. 1. Black *Cat.* 16. 1907. **2.** *Ill. Hort. Soc. Rpt.* 203. 1911. **3.** Black *Cat.* 5. 1913.

According to the statement of Joseph H. Black, Son and Company, Hightstown, New Jersey, this variety is a seedling of Mamie Ross. It was introduced in the fall of 1906 by this company. Tree vigorous, productive; fruit medium in size, roundish-oval, with a shallow suture; color creamy-white, mottled and striped with considerable bright red; flesh white, firm, juicy, sweet, semi-adherent; quality good; season early.

Maurice Desportes. 1. Leroy *Dict. Pom.* **6**:160 fig., 161. 1879.

This peach was raised about 1871 by Baptiste Desportes from a seed of Grosse Mignonne and named after his son, Maurice. Tree vigorous, productive; glands small, globular; flowers of medium size; fruit medium in size, globular, compressed at both ends; suture, wide, shallow; skin tender, covered with short hairs, washed with red on a pale yellow ground; flesh white, faintly red at the pit, melting, very juicy, acidulated, aromatic; very good; stone small, plump, free; ripens the middle of August.

May Choice. 1. *Batavia Nur. Cat.* 27. 1905.

A very desirable peach ripening immediately after Early Crawford which it resembles but excels in quality, according to the Batavia Nurseries, Batavia, New York.

May Peach. 1. *Cultivator* 3rd Ser. **4**:146. 1856.

A very early, white-fleshed peach which may be Kleiner

Weisser Frühpfirsich.

Mayflower. 1. *Am. Pom. Soc. Cat.* 38. 1909. **2.** *Ala. Sta. Bul.* **156**:134. 1911. **3.** *N. J. Hort. Soc. Rpt.* 100. 1911. **4.** *Rev. Hort.* 66, 67. 1911.

Tree productive; fruit of medium size, oval, with a pointed apex; color greenish-white, with a dark red blush; flesh greenish-white, juicy, tender, subacid, adherent; quality fair; season very early.

Melocotone. 1. Parkinson *Par. Ter.* 580. 1629.

Malacotune. **2.** Langley *Pomona* 107, Pl. 33 fig. 4. 1729.

Fruit yellowish-green, with a deep red blush; flesh firm, clinging, with a pleasant flavor; ripens early in September.

Melting. 1. Elliott *Fr. Book* 293. 1854.

An unproductive variety of American origin; glands globose; fruit large; flesh white, stained with red at the stone; freestone; ripens in September.

Mena. 1. *Mo. State Fr. Sta. Rpt.* 13. 1905-06.

Mena is a semi-free peach, with yellow flesh, ripening the middle of August.

Mendenhall. 1. *Ia. Hort. Soc. Rpt.* 426. 1898.

This is a white-fleshed seedling, bearing regularly near Des Moines, Iowa.

Merlin. 1. Rivers *Cat.* 29. 1909-10.

Emérillon. **2.** Thomas *Guide Prat.* 55, 218. 1876.

Merlin is a large, luscious, pale peach from a pit of Frühe Mignonne; flavor rich; ripens early in August.

Merriam. 1. Cole *Am. Fr. Book* 197. 1849.

E. Merriam, Roxbury, Massachusetts, first grew this variety; glands globose; fruit large, short-oval, light yellow, with a bright red cheek; flesh tinged at the stone, melting, very sweet, juicy; ripens October 1st.

Merriman. 1. *Mich. Sta. Sp. Bul.* **44**:56, 57. 1910.

Found on the Merriman farm near Bangor, Michigan. A yellow freestone ripening just after Smock.

Merveille de New-York. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Merveille d'Octobre. 1. Thomas *Guide Prat.* 50. 1876.

A good, late peach of unknown origin; glands globose; flowers small.

Metelka. 1. Thomas *Guide Prat.* 50. 1876.

A variety from Hungary; glands reniform; flowers medium in size.

Meyer. 1. *Mich. Sta. Sp. Bul.* **44**:56 fig. 1910.

A variety grown from seed by H. F. W. Meyer, Mears, Michigan. Tree vigorous, hardy, reasonably free from diseases; fruit ripens with Gold Drop but larger; flesh yellow, free.

Meyers Rareripe. 1. *Am. Gard.* **11**:715. 1890.

This variety originated in Alameda, California.

Michigan I. 1. *Mich. Hort. Soc. Rpt.* 187. 1880.

C. C. Engle, Paw Paw, Michigan, introduced this variety about 1879 as a seedling of Late Crawford. Fruit yellow, juicy, vinous, ripening just before Late Crawford.

Michigan II. 1. *Mich. Sta. Sp. Bul.* **44**:57. 1910.

Raised many years ago by B. Hathaway, Little Prairie Ronde, Michigan; fruit large, yellow-fleshed; freestone.

Michigan Chili. 1. *Cornell Sta. Bul.* **74**:373. 1894.

Listed as grown near Newark, New York.

Michigan Nos. 1, 2 and 3. 1. *Ont. Sta. Rpt.* **1**:19. 1894.

Listed in this reference.

Michelin. 1. Mathieu *Nom. Pom.* 404. 1889.

Listed in this reference.

Mid September. 1. *Mo. State Fr. Sta. Rpt.* 14. 1905-06.

This is a lemon-yellow freestone which ripens early in September.

Middleton Imperial. 1. *Ohio Hort. Soc. Rpt.* 37. 1864.

This variety is said to have come from New Jersey; resembles Susquehanna.

Mid-Season Favorite. 1. *N. Y. Sta. Rpt.*

12:613. 1893.

Tree upright-spreading, vigorous; glands reniform; fruit of medium size, irregular in shape; suture distinct; skin pale, light yellow, with a moderate amount of bright red; flesh white, with red markings near the pit, juicy, tender, not firm, sweet; quality good; stone small, broad, thick, free; ripens the last of August.

Mifflin Pennsylvania. 1. Kenrick *Am. Orch.* 227. 1832.

This name is given to a variety from Colonel Carr of Bartram's Botanic Garden; highly spoken of by the Philadelphia Horticultural Society.

Mignonne (**American**). **1.** *Lond. Hort. Soc. Cat.* 99. 1831.

Leaves with reniform glands; flowers small; fruit large; skin pale yellowish-red; flesh melting; of second quality; ripens at the end of September.

Mignonne Bosselée. 1. Thomas *Guide Prat.* 50, 221. 1876.

A variety with globose glands, listed in this reference.

Mignonne Dubarle. 1. Hogg *Fruit Man.* 225. 1866. **2.** Thomas *Guide Prat.* 50, 221. 1876.

This is a very early form of Grosse Mignonne which ripens about eight days earlier than Early Grosse Mignonne. Glands round; flowers large; fruit of medium size, roundish, inclining to oval, distinctly sutured; apex mamelon; skin nearly entirely covered with bright red; flesh tender, melting, very juicy.

Mignonne Frizee. 1. Prince *Pom. Man.* **2**:10. 1832.

Pêcher à fleurs frisée. **2.** Poiteau *Pom. Franc.* **1**:No. 13, Pl. 1846.

Krauser Lieblingspfirsich. **3.** Dochnahl *Führ. Obstkunde* **3**:204. 1858.

The principal traits distinguishing this variety are found in its flowers, which are curled and frizzled; the leaves have globose glands; fruit ripens at the end of August.

Mignonne Purple. 1. *Lond. Hort. Soc. Cat.* 100. 1831.

Listed in this reference.

Mignonne de Saint Loup. 1. Mathieu *Nom. Pom.* 404. 1889.

Mentioned in this reference.

Mikado. 1. Capps Bros. *Cat.* 2. 1908.

Mikado, a gold-medal peach at the St. Louis Exposition, was introduced by Capps Brothers, Mt. Pulaski, Illinois. On the Station grounds it is a light producer and is susceptible to mildew and leaf-curl. Tree above medium in size, dense-topped; leaves large, with reniform glands; flowers appear in mid-season; fruit above medium in size, roundish, slightly cordate, angular, halves decidedly unequal; cavity deep, wide; apex with a recurved, mamelon tip; skin thick, tough, covered with short pubescence, with splashes of dull red mingled with a lighter blush on a light yellow ground; flesh stained at the stone, juicy, stringy, moderately coarse, sprightly; quality good; stone large, ovate, broad, plump, with a clinging tendency; ripens the middle of October.

Miller. 1. *Am. Pom. Soc. Cat.* 38. 1909.

Miller Cling. **2.** Budd-Hansen *Am. Hort. Man.* **2**:351. 1903.

The American Pomological Society lists this variety in its

fruit-catalog for 1909. Fruit large, yellow, firm.

Miller Cling. 1. *Ga. Sta. Bul.* **42**:238. 1898.

An early, white-fleshed cling of much promise, listed in this reference.

Millhiser. 1. *N. Y. Sta. Rpt.* **12**:613. 1893.
2. Hood *Cat.* 34. 1905.

This variety originated with M. Millhiser, Richmond, Virginia. As it grows in the Station orchards it is of doubtful value, being only a fair yielder and somewhat susceptible to leaf-curl. Tree large, vigorous, the lower branches slightly drooping; leaves fairly broad, with globose glands; flowers appear in mid-season; fruit of medium size, roundish-oval, halves unequal; cavity deep, abrupt; suture deepens at the apex; skin tough, covered with short, coarse pubescence, creamy-white, with a slight blush; flesh white to the stone, juicy, moderately coarse, tender, stringy, sweet and aromatic; of fair quality; stone large, broadly oval, plump, nearly free; ripens the last of September.

Millionaire. 1. E. D. Smith *Cat.* 30. 1898.

E. D. Smith, Winona, Ontario, Canada, reports that this variety is a Canadian seedling found near St. Catharines. Fruit large, yellow; freestone; ripens a week later than Early Crawford.

Miner. 1. *Tex. Sta. Bul.* **39**:816. 1896.

Tree fairly vigorous; glands reniform; fruit of medium size, oval, with a large apex, yellow; flesh subacid, pleasant; ripens early in July.

Minerva. 1. *Mich. Sta. Bul.* **143**:185. 1897.

Listed among the fruits grown in Michigan.

Minion. 1. Langley *Pomona* 101, Pl. 28 fig. 2. 1729.

"Minion abounds with fine juice and firm pulp which adheres to the stone; ripens on a South wall July 20."

Minnie. 1. *Mich. Sta. Bul.* **143**:185. 1897.

Minnie is a stray variety planted on the grounds of the Michigan Agricultural College in 1892. It is a freestone, ripening in Michigan the last of September.

Minot. 1. *U. S. D. A. Pom. Rpt.* 43. 1895.

Fruit of medium size, oblique, oval; cavity broad, oval, deep; suture deep; skin thick, velvety, rich yellow, with a crimson cheek; flesh yellow to the stone, sprightly subacid; stone large, oval, free; ripens the last of September.

Mint Free. 1. *Mo. State Fr. Sta. Rpt.* 14. 1905-06.

Mint Free is described as a greenish-white clingstone, ripening throughout July.

Miss May. 1. *W. N. Y. Hort. Soc. Rpt.* 114. 1880.

Miss May originated with a Mr. Carroll, Dresden, Texas; fruit large, of first quality and very late.

Miss Percival. 1. *Gard. Mon.* **21**:336. 1879.

A large, white freestone; very productive.

Missouri Apricot. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Listed in this reference.

Missouri Beauty. 1. *Mo. State Fr. Sta. Bul.* **3**:32. 1902.

Listed as grown in Missouri.

Missouri Mammoth. 1. *Mo. Hort. Soc. Rpt.*

410. 1865.

This variety, as grown in Missouri, resembles Columbia of which it is believed to be a seedling.

Mitchell. 1. *Ia. Hort. Soc. Rpt.* 47. 1899. **2.** *Ibid.* 217. 1901. **3.** *Am. Pom. Soc. Rpt.* 251. 1903.

Mitchell originated in Iowa with M. J. Graham of Adel; it is one of the few hardy sorts grown in Iowa. Fruit of medium size, slightly oval; suture distinct but not deep; apex conical; skin white, with a red cheek; flesh streaked with red and red at the pit, melting, juicy; stone free, of medium size; quality fair; ripens the last of September.

Mitchell Mammoth. 1. *U. S. Pat. Off. Rpt.* 380. 1858. **2.** *Am. Pom. Soc. Cat.* 30. 1875.

This peach, of Southern origin, won a place in the fruit-list of the American Pomological Society in 1875 which it held until 1897; fruit large, late in ripening; flesh white; clingstone.

Mobray Heath Cling. 1. *Peachland Nur. Cat.* 12. 1892.

According to the Peachland Nurseries, Seaford, Delaware, this variety is a beautiful, white cling from Dorchester County, Maryland.

Modena. 1. Rea *Flora* 210. 1676.

"Modena is an excellent peach of a yellowish color and comes clean from the stone."

Modeste. 1. Thomas *Guide Prat.* 50. 1876.

A large and good peach with small flowers and globose glands.

Mogneneins. 1. Baltet *Cult. Fr.* 237. 1908.

Listed in this reference.

Molden White. 1. Downing *Fr. Trees Am.* 621. 1857. **2.** *Am. Pom. Soc. Cat.* 78. 1862.

This sort originated on Molden Mountain on the Chesapeake, where it is valued for its lateness. From 1862 until 1897 it held a place in the fruit-catalog of the American Pomological Society. Fruit large, oblong; suture distinct; skin creamy-white, rarely with a tinge of red; flesh white to the stone, juicy, sweet, melting; freestone; ripens at the end of September.

Monfrein. 1. Christ *Wörterb.* 352. 1802.

This is a peach with firm, yellow flesh, not very juicy but sweet.

Monsieur Jean. 1. Coxe *Cult. Fr. Trees* 218. 1817.

This variety ripens in July and August; fruit oval, greenish-white, with a red cheek.

Monstrous Free. 1. Prince *Pom. Man.* **2**:36. 1832. 2. Kenrick *Am. Orch.* 187. 1841.

Tree moderately productive; fruit very large, round, highly colored where exposed; flesh rich, juicy, sweet; ripens early in September.

Monstrous Lemon. 1. Prince *Pom. Man.* **2**:29. 1832.

Largest Lemon. **2.** *Lond. Hort. Soc. Cat.* 98. 1831.

Tree vigorous; flowers small; fruit very large; ripens in October.

Monstrueuse de Saverdun. 1. Thomas *Guide Prat.* 50. 1876.

Probably of French origin; glands reniform.

Montagne Tardive. 1. Thomas *Guide Prat.* 50. 1876.

An English variety.

Montauban. 1. Miller *Gard. Dict.* 1752. **2.** Lindley *Guide Orch. Gard.* 263. 1831.

Montabon. **3.** Langley *Pomona* 102, Pl. 28 fig. 4. 1729.

Tree productive; leaves doubly serrate, glandless; flowers large, pale; fruit medium in size, with a small suture; skin greenish-yellow, covered with deep red in the sun; flesh white to the stone, melting, juicy, rich, freestone; ripens the middle of August.

Montgomery Late. 1. Downing *Fr. Trees Am.* 621. 1857. **2.** *Am. Pom. Soc. Cat.* 30. 1875.

This variety, of American origin, was listed by the American Pomological Society from 1875 until 1897. Glands reniform; flowers large; fruit large, round, depressed at the apex; suture shallow but distinct; skin downy, yellowish-white, with a dull red cheek; flesh red at the stone, very juicy, melting; freestone; ripens the first of September, lasting nearly a month.

Monticola. 1. *Tex. Sta. Bul.* **39**:813. 1896.

A good market peach but unproductive; glands reniform; fruit large, round; color beautiful yellow, with a deep red cheek; pleasant acid flavor.

Montreal. 1. Brookshaw *Hort. Reposit.* **2**:191, 192, Pl. 100 fig. 2. 1823.

This peach originated in Montreal, France. The fruit is nearly black and the variety is often called "The Black Peach

of Montreal." The peach has a rich flavor, thin skin, and a remarkably small stone, close to which the flesh is red. It ripens the latter part of September when most other peaches are gone.

Moore Favorite. 1. Cole *Am. Fr. Book* 193. 1849. **2.** Fulton *Peach Cult.* 186. 1908.

Moore. **3.** *Mich. Sta. Bul.* **169**:220. 1899.

According to Cole, this peach originated with H. K. Moore, Chelsea, Massachusetts. Fulton claims that it is a native of Delaware, and that it originated with J. V. Moore, Odessa. Tree hardy, vigorous, productive; fruit large, roundish, slightly oval, with a shallow suture; skin creamy-white, with a clear red blush; flesh white, red at the pit, juicy, tender, with a rich, vinous flavor; pit free; season early September.

Moore June. 1. Downing *Fr. Trees Am.* 621. 1857.

Moore June originated at Athens, Georgia. Glands reniform; flowers small; fruit below medium in size, globular; suture shallow; cavity deep; skin yellowish, nearly covered with dots and marblings of deep red; flesh white, red at the pit and often near the skin, juicy, vinous, pleasantly flavored; freestone; ripens the last of June.

Moore Rareripe. 1. Kenrick *Am. Orch.* 200. 1841.

A large, round, productive peach of excellent quality, ripening in September.

Moore Seedling. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

This is a small, yellow-fleshed freestone of little value.

Morello. 1. Rea *Flora* 210. 1676.

"Morello peach is a fair, red-sided fruit, and parts from the

stone."

Morris County. 1. *Mich. Sta. Bul.* **118**:30, 36. 1895. **2.** *Ibid.* **169**:220. 1899.

This peach is similar to Morris White but ripens later. Tree strong, spreading; glands reniform; fruit of medium size, roundish; suture a line; apex prominent; skin creamy-white, with a red cheek; flesh creamy-white, red at the pit, moderately juicy, tender, with a mild but somewhat astringent flavor; quality fair; stone oval, free; ripens the middle of September.

Morris Red. 1. Elliott *Fr. Book* 275. 1854.

Red Rareripe. **2.** Coxe *Cult. Fr. Trees* 219, 220. 1817. **3.** Prince *Pom. Man.* **2**:14. 1832.

Morris Red Rareripe. **4.** Downing *Fr. Trees Am.* 480. 1845. **5.** Cole *Am. Fr. Book* 192, 193. 1849. **6.** Hooper *W. Fr. Book* 225, 226. 1857.

Morris Red Freestone. **7.** Floy-Lindley *Guide Orch. Gard.* 189. 1846.

Morris Red has been confused with George IV and Red Rareripe but is distinct. Prince believed that the variety came from Europe while Downing considered it of American origin. It seems to have been disseminated by Robert Morris, Philadelphia, Pennsylvania. Tree vigorous, productive; glands globose; flowers small; fruit large, roundish, depressed at the apex, with a distinct suture; skin pale greenish-white, with a bright red cheek; flesh pale greenish-white, quite red at the pit, juicy, melting, with a rich, sweet flavor; freestone; ripens the last of August.

Morrisania. 1. Hogg *Fruit Man.* 226. 1866.

Morrisania Pound. **2.** *Lond. Hort. Soc. Rpt.* **6**:410. 1826.

Hoffman Pound. **3.** Floy-Lindley *Guide Orch. Gard.* 189. 1846.

Martin Hoffman claims this variety originated with him at York Island, and that buds were taken by Gouverneur Morris of Morrisania, near New York City. Glands globose; flowers small; fruit very large, heavy, nearly round; flesh light yellow, firm, compact, juicy, rich, aromatic; stone free, large; ripens the middle of September.

Mother Porter. 1. Wickson *Cal. Fruits* 315. 1889.

W. W. Smith found this seedling in the yard of a Mrs. Porter, Napa, California. The fruit is yellow-fleshed to the pit to which it clings.

Mountain Cling. 1. *Ia. Hort. Soc. Rpt.* 120. 1898.

Mentioned as grown in Iowa for home use.

Mountain Rareripe. 1. *N. J. Hort. Soc. Rpt.* 39, 40. 1884.

Mountain Rareripe resembles Oldmixon Cling in general appearance and ripens about with it. It is recommended as a profitable variety for market.

Mountain White. 1. *Mich. Sta. Bul.* **31**:58. 1887.

Listed by the Michigan Experiment Station.

Mountaineer. 1. *Lond. Hort. Soc. Cat.* 100. 1831. **2.** Hogg *Fruit Man.* 226. 1866.

Mountaineer is a coarse peach raised from a pit of Red Nutmeg crossed with Early Violet nectarine. Glands globose; flowers large; fruit large, roundish, somewhat pointed at the apex; skin smooth, pale yellow and dark red; flesh red at the stone, melting, juicy, rich; freestone; matures early in

September.

Mr. Gladstone. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:67. 1900.

Listed as a weak grower.

Mrs. Hunley. 1. Downing *Fr. Trees Am.* 623. 1869.

This variety, of southern origin, comes from the Fruitland Nursery, Augusta, Georgia. Leaves with reniform glands; flowers small; fruit of medium size, one-sided, pale yellow; flesh yellow, rich, melting; ripens late in September.

Mrs. Poinsett. 1. *Horticulturist* **4**:276. 1849-50. **2.** Elliott *Fr. Book* 285. 1854.

This variety is the result of crossing Blood Cling with some yellow freestone. It was named after Mrs. J. R. Poinsett of South Carolina. The limbs are inclined to be pendant; leaves with globose glands; fruit globular; suture distinct; skin yellow, veined with red; flesh yellow, juicy, melting; stone partially clinging; ripens early in September.

Munson Cling. 1. Munson *Cat.* 6. 1904-05.

This is a seedling of Elberta with which it ripens; the fruit is more spherical. It was grown by T. V. Munson, Denison, Texas.

Munson Free. 1. Munson *Cat.* 7. 1904-05.

This is another Elberta seedling grown by T. V. Munson, Denison, Texas. On the Station grounds the fruit ripens with Elberta and just after it. Tree upright, unproductive, quite spreading; leaves large, leathery, with reniform glands; flowers appear in mid-season, of medium size, reddish-pink; fruit large, oval-conic, halves unequal, sides drawn in about the cavity; cavity shallow; suture shallow; apex with a recurved, mamelon tip; skin thin, tough, with long, coarse pubescence, lemon-yellow, with narrow splashes and stripes

of darker red; flesh red at the pit, juicy, stringy, firm, sprightly in some cases; quality good; stone free, large, oval-pointed, winged.

Murat. 1. *U. S. D. A. Rpt.* 290. 1893.

This is another seedling of Late Crawford grown by C. C. Engle, Paw Paw, Michigan. As tested in the Station orchard, it is of doubtful value. Tree spreading; glands reniform; flowers small; fruit of medium size, roundish, bulged; suture shallow except at the apex; surface velvety, yellow, washed and mottled with red; flesh stained at the pit, melting, juicy, vinous, sprightly; quality very good; stone above medium in size, oval, free; season late.

Murray Malacatune. 1. Kenrick *Am. Orch.* 200. 1841.

Listed as a large, fine fruit.

Murrays Early Anne. 1. Prince *Pom. Man.* **2**:24. 1832.

According to Prince, this is a seedling of Anne.

Muscade de Montauban. 1. Thomas *Guide Prat.* 50. 1876.

A productive variety devoid of glands, with medium-sized flowers and large fruit; ripens late.

Muscogee. 1. *Am. Pom. Soc. Rpt.* 75. 1873.

Muscogee was raised by J. C. Cook, Columbus, Georgia. Fruit large, roundish or a little one-sided; skin dingy, pale yellow, striped like Columbia; flesh white, faintly red at the stone, melting, juicy, buttery, rich; quality very good; pit small, round, free; matures the middle of August.

Musi. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Growing at De Funiak Springs, Florida.

Musk. 1. Rea *Flora* 211. 1676.

"Musk peach is a large, good tasted beautiful fruit."

Müskirter Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:218. 1858.

Tree very productive; flowers small; fruit of medium size, round, yellow, with a light red blush; flesh firm, vinous; ripens at the end of July.

Musser. 1. *Gard. Mon.* **19**:274. 1877. **2.** Stoll *Pomologie* Pl. 52 fig. 2. 1888.

A variety from Pennsylvania; fruit globular, more flattened near the stem; suture broad; cavity deep; skin somewhat woolly, white except where washed with red; flesh very juicy, vinous, sugary, somewhat fibrous; stone clinging, small; ripens very early.

Muyzerwinkel. 1. Thomas *Guide Prat.* 50, 221. 1876.

Listed in this reference.

My Choice. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Listed as exhibited by the Illinois Station.

Myer Seedling. 1. *N. Y. Sta. Rpt.* **8**:352. 1889.

A freestone, making fair sauce but not rich.

Myers. 1. *Ia. Hort. Soc. Rpt.* 238. 1906.

Myers is one of the hardy seedlings from Iowa.

Myers Rareripe. 1. *Am. Gard.* **11**:715. 1890.

A variety from Alameda, California.

Mystery. 1. *Mich. Sta. Bul.* **169**:221. 1899.

Yellow Mystery. **2.** Lovett *Cat.* 39. 1889.

A variety from Maryland ripening a week before Troth. Tree moderately vigorous, fairly productive; fruit large, roundish, compressed; cavity narrow, deep; suture indistinct; skin dark yellow, with a dark red cheek; flesh red at the pit, juicy, coarse but tender, vinous; freestone.

Nain Aubinel. 1. Leroy *Dict. Pom.* **6**:176, 177 fig. 1879.

This dwarf originated with a M. Aubinel, a nurseryman at Grenade, Haute-Garonne, France, about 1846, but was not introduced until some years later. Tree dwarf in habit; branches short; leaves with large, reniform glands; flowers small; fruit of medium size, roundish-oval, irregular, halves unequal; apex with a mamelon tip; skin thick, yellow, purple in the sun, heavily pubescent; flesh red at the stone, melting, juicy, sweet, vinous; of second quality; stone free, of medium size, oval, plump; ripens the first of September.

Nall. 1. *Mich. Hort. Soc. Rpt.* 314. 1889.

Nall originated with a Mr. Nall, Louisville, Kentucky. It is described as a strong grower and sure bearer. The fruit is a yellow cling.

Namaper. 1. *Ont. Sta. Rpt.* **4**:71. 1897. **2.** *Ibid.* **7**:54. 1900.

A promising market sort, very productive and vigorous, little subject to leaf-curl; fruit large, oval, resembling Elberta but ripens a week later.

Nancy. 1. *Mich. Sta. Sp. Bul.* **44**:57. 1910.

Nancy was named by Peter Collier, Adrian, Michigan, about 1900. The fruit is large and ripens late; has no special merit.

Nanticoke. 1. *Pa. Hort. Soc. Rpt.* 48. 1882.

2. *Mo. Hort. Soc. Rpt.* 406. 1890.

A profitable, yellow freestone; upright grower.

Napoleon. 1. Downing *Fr. Trees Am.* 624. 1869.

Supposed to have originated near Macon, Georgia; glands reniform; flowers small; fruit of medium size, round; skin very downy, dark red; flesh pink, juicy, rich; freestone; ripens the last of July.

Nash. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Listed in this reference.

National. 1. Burbank *Cat.* 1912-13.

A giant Muir-Crawford peach. Tree strong, productive; fruits ripen before the Crawfords, according to Luther Burbank, Santa Rosa, California.

Native Seedling. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed in this reference.

Natural Seedling No. 81. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed in this reference.

Navar. 1. Rea *Flora* 210. 1676.

"Navar peach is of a whitish color and comes clean from the stone."

Near. 1. *Mich. Sta. Sp. Bul.* **44**:58 fig. 1910.

Near originated with John Near, Shelby, Michigan. It is a seedling of Chili, probably fertilized by Early Crawford. It ripens a week ahead of Chili and is considered promising but has not yet been disseminated.

Nectar. 1. Barnes Bros. *Cat.* 4. 1913.

According to Barnes Brothers, Yalesville, Connecticut, Nectar was received in a shipment from Texas. Tree thrifty, hardy; flowers large; fruit of medium size; skin and flesh yellow, nearly free; ripens before Greensboro.

Nectarine. 1. *Jour. Hort.* N. S. **15**:208. 1868. **2.** Hogg *Fruit Man.* 454. 1884.

Thomas Rivers, Sawbridgeworth, England, grew this peach from a pit of the Grand Noir nectarine. Leaves with reniform glands, small; flowers large; fruit very large, ovate, terminating in a pointed nipple; skin nearly smooth like a nectarine, yellow, with a mottled, red cheek; flesh semi-transparent, red at the stone, melting, brisk, rich; freestone; ripens the middle of September.

Need. 1. *Mich. Sta. Bul.* **118**:31. 1895. **2.** *Ibid.* **169**:221. 1899.

Tree moderately strong, round, upright; glands reniform; flowers small; fruit of medium size, roundish, slightly ovate; suture extends two-thirds around the fruit; flesh yellow, stained at the stone, juicy, tender, mild, vinous; quality fair; season the last of August.

Neil (Marshall). 1. *Mich. Sta. Bul.* **118**:31. 1895. **2.** *Ibid.* **169**:221. 1899.

Tree moderately vigorous, unproductive; fruit of medium size, roundish, irregular, with a suture distinct only at the apex; color yellow, with a light marbling of red; flesh yellow, tender, moderately juicy, mild and pleasant, free; of fair quality; season early October.

Nelson. 1. *Am. Pom. Soc. Rpt.* 161. 1881. **2.** *Tex. Sta. Bul.* **39**:813. 1896.

A small, late cling of little value in Texas.

Nelson Seedlings. 1. *Mo. State Fr. Sta. Rpt.*

1:11, 12. 1901. **2.** *Ibid.* 14. 1905-06.

These seedlings are mentioned by numbers 1, 2, 4 and 5, numbers 4 and 5 being yellow-fleshed freestones.

Nettie Corbet. 1. Van Lindley *Cat.* 17. 1892.

According to J. Van Lindley, Pomona, North Carolina, Robert Corbet, Gates County, North Carolina, originated and named this peach after his daughter, Nettie. Fruit large, of a dingy yellow color; freestone; ripens in August.

New Bellegarde. 1. Lindley *Guide Orch. Gard.* 264, 265. 1831.

New Bellegarde is very similar to Galande but is probably distinct. Fruit medium in size, slightly oblong, with a very shallow suture; color pale yellow, marbled and shaded with deep red; flesh pale yellow, red at the pit, melting, juicy, highly flavored, free; ripens the first of September.

New England Cling. 1. *Rural N. Y.* **14**:119. 1863.

A very profitable clingstone and uniformly productive.

New Golden Purple. 1. Kenrick *Am. Orch.* 190. 1841.

A variety from Virginia where it is highly esteemed; fruit large, yellow-fleshed, stained with red at the stone; freestone; ripens two weeks before Heath Cling.

New Globe. 1. *Green River Nur. Cat.* 15. 1899.

Tree vigorous; fruit golden-yellow, large, freestone, according to the Green River Nurseries, Bowling Green, Kentucky.

New Noblesse. 1. Lindley *Guide Orch.*

Gard. 249. 1831.

New Noblesse was grown at one time about Brentford, England. Leaves doubly serrate, glandless; flowers large; fruit of medium size, oval, with an obscure suture; skin pale greenish-yellow, marbled where exposed; flesh greenish-yellow to the stone from which it separates, juicy, rich; ripens early in September.

New White Rareripe. 1. *Lond. Hort. Soc. Cat.* 103. 1831.

Listed but not described.

New York Early Lemon Clingstone. 1. *Lond. Hort Soc. Rpt.* **6**:413, 414. 1826.

A seedling of the Lemon Clingstone; fruit larger and ripens a fortnight earlier than that of its parent.

Newhall. 1. Wickson *Cal. Fruits* 313. 1889.

Sylvester Newhall, San Jose, California, was the originator of this variety; tree hardy, vigorous, not affected by leaf-curl; fruit large; flesh deep yellow, juicy, vinous, rich; ripens a week before Late Crawford.

Newman. 1. Cole *Am. Fr. Book* 194. 1849.

A seedling from Charles Newman, Reading, Massachusetts; fruit large, round; flesh white, juicy, melting, sweet; ripens the last of September.

Newington (of America). 1. *Lond. Hort. Soc. Cat.* 100. 1831. **2.** *Ga. Hort. Soc. Rpt.* 25. 1876.

This is an unproductive clingstone ripening at the end of September. The glands are globose and the fruit is of first size but the sort is unworthy cultivation.

Nicarde. 1. Baltet *Cult. Fr.* 238. 1908.

A variety grown in France.

Nichols. 1. *Am. Pom. Soc. Cat.* 38. 1909.

Nichols Orange Cling. **2.** Wickson *Cal. Fruits* 314. 1889.

This is a productive clingstone which originated with Joseph Nichols, Niles, California. In 1909 it gained a place on the fruit-list of the American Pomological Society.

Nicholson Smock. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Grown on the Delaware Station grounds.

Nicols Beauty. 1. *Peachland Nur. Cat.* 14. 1892.

A large, yellow variety from Delmar, Delaware, according to the Peachland Nurseries, Seaford, Delaware.

Nina Cling. 1. Harrison *Cat.* 18. 1910.

According to J. G. Harrison and Sons, Berlin, Maryland, Nina Cling is a yellow peach of high quality ripening about the middle of August.

Nivette. 1. Langley *Pomona* 103, 104, Pl. XXX fig. IV. 1729. **2.** Prince *Pom. Man.* **1**:196, 197. 1831. **3.** Poiteau *Pom. Franc.* **1**:No. 24, Pl. 1846.

Nivette Veloutée. **4.** Duhamel *Trait. Arb. Fr.* **2**:39, 40, Pl. 28. 1768. **5.** Mas *Le Verger* **7**:135, 136, fig. 66. 1866-73. **6.** Leroy *Dict. Pom.* **6**:197, 198 fig., 199. 1879.

White Rareripe. **7.** *Horticulturist* **1**:210, 258. 1846-47.

The origin of Nivette is unknown. It is a very old variety and seems to have been popular in the Old World for many

years. In America, where it was first known early in the Nineteenth Century, it became confused with Morris White. The distinguishing characters between the two are: Morris White has reniform glands and white flesh while Nivette has globose glands and flesh which is red at the pit. Tree vigorous, upright, productive; fruit large, roundish, more or less elongated, flattened a little at the base, having a distinct suture, which so divides the fruit that one side is more projecting than the other; apex a mamelon point; color yellowish-white, occasionally tinged with some red veins and with a blush on the sunny side; flesh white, with red veins around the stone, very juicy, melting, with a rich, sweet, vinous flavor; quality good to very good; stone free, oval; season the last of September.

Nix. 1. *Austin Nur. Cat.* 10. 1909.

Nix Late Cling. **2.** *Cultivator* 3rd Ser. **4**:146. 1856.

Nix Late White. **3.** *Ga. Hort. Soc. Rpt.* 25. 1876.

Nix October. **4.** *N. C. Sta. Rpt.* **12**:108. 1889.

Nix Late. **5.** J. S. Kerr *Cat.* 5. 1898.

An old, southern peach highly esteemed at one time.

Noblesse. 1. Langley *Pomona* 101, Pl. 28 fig. 3. 1729. **2.** Lindley *Guide Orch. Gard.* 249, 250. 1831. **3.** *Pom. Mag.* **2**:95, fig. 1839. **4.** *Am. Pom. Soc. Cat.* 78. 1863.

Noblest. **5.** Miller *Gard. Dict.* 1752.

Edlepfirsche. **6.** Christ *Handb.* 592. 1817.

Mellish Favorite. **7.** Kenrick *Am. Orch.* 178. 1835.

Edle Magdalene. **8.** Dochnahl *Führ.*

Obstkunde **3**:198. 1858.

Noblesse is a very old, English variety. It was added to the fruit-list of the American Pomological Society in 1862 where it remained until 1897. Leaves doubly serrate, glandless; flowers large, pale; fruit large, roundish, terminating in an acute nipple at the apex; skin pale yellowish-green, marbled with dull red, with streaks and blotches of darker red; flesh pale white to the stone, melting, juicy, highly flavored; stone large, obovate, free; ripens at the end of August.

Noblesse Early. 1. *Lond. Hort. Soc. Cat.* 101. 1831.

Listed in this reference.

Noblesse of Oatlands. 1. *Lond. Hort. Soc. Cat.* 101. 1831.

Listed in this reference.

Nonpareil. 1. Elliott *Fr. Book* 293. 1854.

Scotts Nonpareil. **2.** Thomas *Am. Fruit Cult.* 301. 1849. **3.** *Am. Pom. Soc. Cat.* 78. 1862.

Nonpareil originated in Burlington, New Jersey. The fruit resembles that of Late Crawford but is sweeter. Nonpareil was on the fruit-list of the American Pomological Society from 1862 until 1871. Glands globose; ripens the middle of September.

Normand. 1. *Mich. Sta. Bul.* **104**:90. 1894. **2.** *Ibid.* **169**:222. 1899.

Normand Choice. **3.** Lovett *Cat.* 34. 1891.

Tree strong, upright; glands reniform; fruit of medium size, roundish to oval; flesh creamy-white to the stone, firm, mild; stone slightly adherent; quality fair; season early October.

North China No. 2. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

Received at this Station from the Iowa Agricultural Experiment Station, Ames, Iowa. Fruit small, round, greenish-white, mottled with dull red; flesh juicy, sweet, good, free; ripens the first of September.

Norton Late. 1. *Kan. Hort. Soc. Rpt.* 50. 1901.

This is a fine, large peach resembling Elberta, ripening the last of September; obtained from J. I. Norton, Salina, Kansas.

Norvell Mammoth. 1. *Ind. Hort. Soc. Rpt.* 64. 1902.

A seedling clingstone raised by Dr. H. V. Norvell, Bloomfield, Indiana. Fruit larger than Heath Cling; ripens the middle of September.

Novalis. 1. Wickson *Cal. Fruits* 309. 1889.

Novalis is a seedling of Peento which originated with S. M. Gass, San Diego, California. Fruit slightly oblong; flesh white; ripens with the Alexander to which it is superior in flavor.

Nugent June. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880. **2.** *Am. Pom. Soc. Cat.* 34. 1883.

This variety originated with E. J. Nugent, Ottawa, Kansas. It was on the fruit-list of the American Pomological Society from 1883 until 1891. Fruit very early, yellow; clingstone.

Number 2. 1. *Kan. Hort. Soc. Rpt.* 80. 1898.

This sort is a seedling of Marcella grown by E. T. Daniels, Kiowa, Kansas. It resembles Late Crawford but ripens the last of October.

Number 34 H. 1. *Mich. Sta. Bul.* **104**:90. 1894.

Listed as having reniform glands; flowers large; flesh yellow; ripening the middle of September.

Number 83. 1. *Fla. Sta. Rpt.* **8**:86. 1896.

Listed in this reference.

Nutmeg. 1. Parkinson *Par. Ter.* 582. 1629.

"The Nutmeg peach is of two sorts, one that will be hard when it is ripe and eateth not so pleasantly as the other, which will be soft and mellow; they are both small peaches having very little or no resemblance at all to a nutmeg except in being a little longer than round and are early ripe."

Oblong. 1. *Mich. Hort. Soc. Rpt.* 458. 1883.

Glands reniform; flowers small; fruit large, roundish-oval, yellowish-red; ripens at the end of September.

Oceana. 1. *Mich. Sta. Bul.* **194**:46. 1901. **2.** *Mich. Sta. Sp. Bul.* **44**:58. 1910.

Oceana was grown from a pit of Chili by B. F. Garver, Oceana County, Michigan. Fruit large, yellow; ripens just after Barnard.

October Beauty. 1. *Am. Pom. Soc. Rpt.* 161. 1881. **2.** *Ga. Sta. Bul.* **42**:239. 1898.

Tree upright, dense; leaves very large, with globose glands; clingstone; of little value.

October Free. 1. *Mo. State Fr. Sta. Rpt.* 14. 1905-06.

A yellow freestone, ripening in Missouri about September 13th.

October White. 1. *Am. Gard.* **11**:715. 1890.

This is a late, white-fleshed peach which originated as a sport from Myers Rareripe.

October White Clingstone. 1. Prince *Treat. Fr. Trees* 17. 1820.

Listed in this reference.

October Yellow. 1. *Am. Jour. Hort.* **3**:334. 1868.

A rather small, yellow, freestone peach of good quality, ripening in Illinois early in October. It may be the October Free from Missouri.

Octoberta. 1. *Austin Nur. Cat.* 10. 1909.

T. Heep, Austin, Texas, raised this variety about 1909, probably from a pit of Elberta. The fruit ripens in September and October, according to the Austin Nursery Company, Austin, Texas.

O'Gwynne. 1. *Am. Pom. Soc. Rpt.* 205. 1858.

Listed as growing in the south.

Oignies. 1. *Ann. Pom. Belge* **7**:45, 46, Pl. 1859.

There is a difference of opinion as to the origin of this variety but it is generally believed to have come from seed in the province of Hainaut, Belgium. Tree vigorous, productive; fruit large, roundish; suture large but shallow; skin heavily pubescent, greenish-yellow, more or less colored with red; flesh yellowish-white, colored at the stone, melting, juicy; stone oval, medium in size, free; ripens early in September.

Old English. 1. *Tex. Sta. Bul.* **8**:34. 1889.

Listed by the Texas Experiment Station.

Old Newington. 1. Langley *Pomona* 104, Pl. 31 fig. 1. 1729. 2. Prince *Pom. Man.* **2**:9, 10. 1832.

Newington. **3.** Parkinson *Par. Ter.* 580. 1629.

Large Newington. **4.** Coxe *Cult. Fr. Trees* 226. 1817.

Newington Magdalene? **5.** Dochnahl *Führ. Obstkunde* **3**:200. 1858.

Old Newington was at one time a favorite cling in England, having been cultivated there for over two hundred years. Flowers large; leaves doubly serrate, glandless; fruit large, globular, with a slight suture; skin pale yellowish-white, with a red cheek; flesh pale yellowish-white, stained with deep red at the stone, firm, juicy, rich; ripens the middle of September.

Old Royal Charlotte. 1. Lindley *Guide Orch. Gard.* 250, 251. 1831.

Old Royal Charlotte has been known in England since about 1760. Leaves doubly serrate, glandless; flowers large, pale; fruit of medium size, roundish, narrowed at the apex; skin pale greenish-yellow, marbled with deep red; flesh white to the stone, soft, vinous; stone obtuse, free; ripens from the middle to the last of August.

Old Settler. 1. *Ia. Hort. Soc. Rpt.* 532. 1898.

A hardy variety grown in Iowa.

Olden. 1. *U. S. D. A. Rpt.* 392. 1891.

This white-fleshed freestone ripens the first of September in southern Missouri.

Olga. 1. *Am. Pom. Soc. Rpt.* 41. 1877.

A seedling of Lady Parham raised by L. E. Berckmans, Rome, Georgia, about 1873.

Onderdonk. 1. *Am. Pom. Soc. Cat.* 46. 1891. **2.** *Tex. Sta. Bul.* **39**:806. 1896. **3.** Budd-Hansen *Am. Hort. Man.* **2**:353. 1903. **4.** *Ala. Sta. Bul.* **156**:134. 1911.

Onderdonk's Favorite. **5.** *Am. Pom. Soc. Rpt.* 160. 1881.

Onderdonk bears the name of its originator, G. Onderdonk, Nursery, Texas. Tree vigorous and productive in the south; leaves with reniform glands; fruit of medium size, oblong, flattened, with a pointed apex; color lemon-yellow; flesh yellow, slightly acid, moderately tender; quality fair; pit free; ripens in the south the first of August.

Opoix. 1. *Rev. Hort.* 103. 1901.

Opoix is a Russian variety named in honor of a French gardener, a M. Opoix. Tree vigorous; leaves with reniform glands; flowers small; fruit large, roundish, distinctly sutured; flesh white, vinous, juicy, sweet; freestone; ripens early in October.

Orange Cling. 1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Downing *Fr. Trees Am.* 497. 1845. **3.** *Gard. & For.* **6**:520. 1893. **4.** *Am. Pom. Soc. Cat.* 34. 1899.

Orange. **5.** Kenrick *Am. Orch.* 228. 1832.

In California this variety is said frequently to produce a second crop of small, inferior fruit. Leaves serrate, often without glands; fruit large, round, with a distinct suture; skin deep orange, with a dark red cheek; flesh dark yellow,

firm, juicy, with a vinous flavor; season September.

Orange Free. 1. *Del. Sta. Rpt.* **5**:99. 1892. **2.** Thomas *Am. Fruit Cult.* 690. 1897.

A medium-sized, round, freestone, with yellow flesh.

Orange Smock. 1. *U. S. D. A. Rpt.* 290. 1893.

Regarded by J. W. Kerr, Denton, Maryland, as superior to any other peach of the Smock type. The tree is stocky and productive and the fruit ripens in Maryland about September 5th.

Orchard Queen. 1. *Gard. Chron.* 237. 1848. **2.** Koch *Deut. Obst.* 539. 1876. **3.** Leroy *Dict. Pom.* **6**:258 fig., 259, 260. 1879.

Monstrueuse de Doué. **4.** *Horticulturist* N. S. **5**:70. 1855.

Monstrous of Douay. **5.** *Mich. Hort. Soc. Rpt.* 33. 1874.

This variety originated with Jamin Lorèze, near Doué, Maine-et-Loire, France, about 1847. Tree very hardy, productive; glands reniform; flowers small. Fruit valuable for the market, with its large size and firm flesh; oval, distinctly sutured; skin yellowish-white, blushed with purplish-red where exposed; flesh white, stained near the pit, firm, juicy, sprightly; stone free, large, ovoid, plump; matures late in August.

Ord. 1. *Lond. Hort. Soc. Cat.* 101. 1831.

Ord is allied to Chancellor. Glands reniform; flowers small; skin greenish-yellow; flesh melting; of second quality; ripens at the beginning of September.

Oriole. 1. *La. Sta. Bul.* **21**:612. 1893. **2.** *Del. Sta. Rpt.* **13**:105. 1901.

Oriole originated with Dr. L. E. Berckmans, Augusta, Georgia, about 1876 from a pit of General Lee. On the Station grounds the variety is a fair producer but the fruit is only good for pickling. Tree inclined to spread, vigorous; leaves broad, nearly flat, serrate; glands reniform; flowers appear in mid-season, large, pink; fruit large, oval to roundish-oval; cavity deep, narrow; suture shallow, deepening at the apex which ends in a mucronate tip; skin thick, tough, covered with coarse, thick pubescence; color golden-yellow, with a varying blush and often with splashes of duller red; flesh light yellow, stained at the pit, moderately juicy, meaty, coarse, sprightly; stone clinging, oval, pointed, winged; ripens the third week in September.

Orlando. 1. *La. Sta. Bul.* **22**:681. 1893. **2.** *Ibid.* **27**:943. 1894.

Fruit of medium size; color white, with a red cheek; flesh stained near the pit; clingstone; ripens in Louisiana early in June.

Orleance. 1. Rea *Flora* 210. 1676.

"Orleance red peach is a fine fruit, and leaves the stone."

Orleans. 1. *W. N. Y. Hort. Soc. Rpt.* 158. 1898.

Orleans is best known in Orleans County, New York, where it originated with Julius Harris of Ridgeway. On the Station grounds the trees are not very productive. Trees upright, slightly spreading, open; leaves numerous, rugose at the midrib, slightly curled up; glands small and globose; flowers appear late, small; fruit large, roundish-oval to roundish-conic, halves unequal, bulged at the apex; cavity deep; suture shallow; apex often tipped with a mucronate point; skin tough, covered with thick pubescence, greenish-yellow, becoming almost orange, slightly splashed with dull red forming a mottled blush; flesh tinged with red about the pit, juicy, coarse, stringy, sweet, mild, high-flavored; very good in quality; stone free, large, ovate, conspicuously winged;

ripens the middle of September.

Orman. 1. *Tex. Sta. Bul.* **8**:34. 1899. **2.** *Am. Pom. Soc. Cat.* 38. 1909.

Listed by the American Pomological Society as having originated in Texas.

Oro. 1. *U. S. D. A. Rpt.* 263. 1892.

Oro was brought to notice by C. S. Bell, Oroville, California. Glands reniform; fruit large, oblate-conic; skin thin, tender, yellow, with a bright red blush; flesh reddish-yellow, melting, juicy, vinous, subacid; freestone; ripens in California the last of September.

Ortiz Cling. 1. *Boonville Nur. Cat.* 19. 1912.

This clingstone ripens in September and attains the size of Elberta. It is excellent for preserving.

Oscar. 1. Greening Bros. *Cat.* 81. 1899.

Oscar Black Prince. **2.** *Ont. Sta. Rpt.* **43**. 1899.

This variety is from Greening Brothers, Monroe, Michigan. The fruit is much like that of Alexander but darker in color and perhaps is a little better in quality; it ripens about two weeks later than Alexander.

Osceola. 1. Mas *Le Verger* **7**:233, 234, fig. 115. 1866-73. **2.** Downing *Fr. Trees Am.* 629. 1869.

A peach of the Indian type which originated in Macon County, Georgia. Glands reniform; flowers large; fruit of medium size, roundish, compressed at the ends; apex tipped with a mamelon point; skin thick, golden-yellow, with a red cheek; flesh stained with dull red at the pit, fibrous, sweet, pleasant; stone free, roundish-oval, plump; matures late in September.

Osprey. 1. Hogg *Fruit Man.* 455. 1884.

Orfraie. **2.** Thomas *Guide Prat.* 55, 222. 1876.

Osprey originated with Thomas Rivers, Sawbridgeworth, England, about 1860 from a seed of Pitmaston Orange nectarine. Leaves with globose glands; flowers small; fruit very large, oblate, distinctly sutured; skin creamy, with a crimson stain where exposed; flesh tender, melting, deeply stained at the pit to which it clings, sprightly.

Ostrander Early. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

This variety originated in Rochester, New York. The fruit resembles that of Early Crawford but is ten days earlier.

Ostrander Late. 1. *Mich. Sta. Bul.* **118**:31. 1895. **2.** Brown Bros. *Cat.* 35. 1900.

Listed as a yellow-fleshed freestone, bearing globose glands; ripens in November.

Overheiser. 1. *Mich. Sta. Sp. Bul.* **44**:59. 1910.

This is a variety from western Michigan resembling Honest John but the peach lacks the flavor and aroma of the fruit of Honest John.

Oviedo. 1. *Tex. Sta. Bul.* **39**:819. 1896. **2.** *Fla. Sta. Bul.* **73**:149. 1904. **3.** *Am. Pom. Soc. Cat.* 38. 1909.

S. J. Kennard, Waldo, Florida, grew Oviedo from a pit of Honey about 1892. In 1909 the variety appeared in the list of the American Pomological Society. Tree a rapid grower, productive; fruit roundish-oblong, bulged on one side; skin thin, tough, becoming smoother on ripening, greenish-yellow, marbled with dull red where exposed; flesh firm, meaty, white, stained at the pit, medium juicy, sweet,

agreeable; quality very good; stone free, elliptical, curved, with a recurved point; season late in June in Florida.

Owen. 1. Cole *Am. Fr. Book* 195. 1849. **2.** Elliott *Fr. Book* 287. 1854.

J. Owen found this variety in his garden at Cambridge, Massachusetts. Glands globose; fruit very large, roundish; flesh yellow, tinged at the pit, tender, juicy; freestone; ripens the last of September.

Oxford. 1. *Concord Nur. Cat.* 16. 1899.

According to the Concord Nurseries, Concord, Georgia, this variety is a very desirable peach for home or market to follow Elberta; flesh firm, crisp, adherent.

Ozark Queen. 1. *Mo. State Fr. Sta. Rpt.* **1**:11. 1901.

Listed in this reference.

Padley. 1. Brookshaw *Pom. Brit.* **1**:Pl. 24 fig. 2. 1817. **2.** Brookshaw *Hort. Reposit.* **1**:33, Pl. 17 fig. 1. 1823.

Padley was raised by William Padley, once a gardener for the King of England, at Hampton Court, England. It is described as being a peach with delicious flavor, ripening the first of August.

Palestine. 1. *Tex. Nur. Cat.* 4. 1913.

Briefly described by the Texas Nursery Company, Sherman, Texas, as a very large, round, yellow clingstone, ripening from August to September.

Pansy. 1. *U. S. D. A. Pom. Rpt.* 43. 1895. **2.** *Mich. Sta. Bul.* **169**:222. 1899.

Fruit large, roundish-oblong, compressed, with a shallow suture; color yellow, washed and blushed with deep red;

flesh yellow, tinged with red at the stone which is free, tender, melting, juicy, mild subacid; quality fair to good; season the middle of August.

Paragon. 1. Elliott *Fr. Book* 287. 1854.

Prince's Paragon. **2.** Kenrick *Am. Orch.* 200. 1841. **3.** Downing *Fr. Trees Am.* 624. 1857.

Paragon was probably first introduced by William R. Prince, Flushing, New York. Tree vigorous, productive; glands globose; fruit large, roundish-oval; skin yellowish-green, shaded with red; flesh white, red at the pit, juicy, sweet, rich, free; season the middle of September.

Parfumée de Montauban. 1. Mathieu *Nom. Pom.* 408. 1889.

Listed in this reference.

Parham. 1. *Am. Pom. Soc. Cat.* 22. 1897.

Lady Parham. **2.** Elliott *Fr. Book* 299. 1859. **3.** Downing *Fr. Trees Am.* 619. 1869. **4.** *Am. Pom. Soc. Cat.* 18. 1871.

Parham appeared in the fruit-list of the American Pomological Society in 1871 as Lady Parham; in 1897 the name was changed to Parham. The variety originated with Thomas Affleck of Mississippi. Glands reniform; flowers small; fruit of medium size, roundish, halves unequal, distinctly sutured; skin yellowish-white; flesh pale red at the stone, firm, rich, vinous; freestone; ripens the middle of October.

Parker. 1. Wickson *Cal. Fruits* 311. 1889. **2.** *Ohio Hort. Soc. Rpt.* 9. 1910.

Originated about 1885 as a seedling of Early Crawford in the orchard of J. C. Parker, near San Diego, California. Fruit large, oblong, swollen on one side of the suture which is quite prominent; skin yellow, with a dark red cheek; flesh

yellow, red at the pit which is free, juicy, with an agreeable, acid flavor; ripens the first of October.

Parks. 1. *Am. Pom. Soc. Cat.* 38. 1909. **2.** Waugh *Am. Peach Orch.* 206. 1913.

Parks' Cling. **3.** *Gard. Mon.* **13**:56, 313, 348. 1871.

Parks originated by chance on the grounds of A. L. Parks, Alton, Illinois. Fruit large, roundish-oblate, with a deep suture extending entirely around the fruit; skin light creamy-yellow, nearly covered with red; flesh adherent, creamy-white, stained with red along the veins and at the stone, very juicy; of fair quality; season very late.

Parnell. 1. *Gard. Mon.* **22**:275. 1880.

Said to have been originated by J. H. Parnell, West Point, Georgia. Fruit large, dark red, very juicy and of an excellent flavor, with a small, free pit; season early.

Parson Early. 1. Wickson *Cal. Fruits* 310. 1889. **2.** Munson *Cat.* 6. 1905-06.

This peach is supposed to be of California origin. It is a large, freestone fruit, with a red cheek and white flesh, ripening early, and the tree is an abundant bearer.

Pass-Violet. 1. Langley *Pomona* 103, Pl. XXX fig. III. 1729.

Fruit of an orange color, faintly dotted with brownish-red; flesh very red around the stone which is free; ripens early in August.

Patterson. 1. *Am. Gard.* **11**:379. 1890.

Said to have originated in Greenfield, Indiana, some time prior to 1888. Fruit uniformly large, greenish-yellow, overspread with considerable red; flesh yellow, juicy, of fair quality; season the last of September.

Pau. 1. Duhamel *Trait. Arb. Fr.* **2**:41, 42. 1768. **2.** Leroy *Dict. Pom.* **6**:204, 205 fig., 206. 1879.

Lackpfirsich von Pau. **3.** Dochnahl *Führ. Obstkunde* **3**:211. 1858.

Pau is an old sort spoken of early in the Seventeenth Century. Leaves with small, globose glands; flowers of medium size; fruit very large, roundish; cavity large; suture distinct; skin heavily pubescent, yellowish-white, marbled and striped with reddish-brown; flesh white, stained near the pit, melting, fibrous, juicy, sprightly; quality fair; stone free, large, ovoid, plump; ripens at the end of September.

Paul Boynton. 1. *N. Y. Sta. Rpt.* **15**:290. 1896.

Received at this Station in 1889 from the Greenmont Nurseries, Dansville, New York. A large, roundish-oval, yellowish-red peach of fair quality, ripening the last of October.

Pavie Abricotée. 1. Carrière *Var. Pêchers* 44. 1867.

Aprikosenartiger Härtling. **2.** Mathieu *Nom. Pom.* 387. 1889.

Tree moderately vigorous, productive; leaves with reniform glands; flowers small; fruit medium to above in size, oblate; suture deep; skin deep orange, intense red where exposed; flesh yellow, red about the stone, melting, fibrous, juicy, sugary, aromatic; stone clinging, oval; ripens early in September.

Pavie Alberge. 1. Duhamel *Trait Arb. Fr.* **2**:11. 1768.

Yellow Alberge Clingstone. **2.** Prince *Pom. Man.* **2**:22. 1832.

Herz-Pfirsiche. **3.** *Deut. Obstcabinet* **7**:Pl. 6. 1858.

Härtling Aprikosenpfirsich. **4.** Dochnahl *Führ. Obstkunde.* **3**:219. 1858.

Pavie Alberge Jaune. **5.** Leroy *Dict. Pom.* **6**:209, 210 fig., 211. 1879.

Tree medium in size, productive; leaves large, with reniform glands; flowers variable, rose-colored; fruit large, roundish, somewhat flattened, with a moderately deep suture; skin lightly pubescent, yellow, marbled with dark purplish-red; flesh golden-yellow, red at the pit which is closely adherent, juicy, sweet, aromatic; of fair quality; ripens the last of September.

Pavie Demming. 1. Leroy *Dict. Pom.* **6**:216. 1879.

Sent out in 1860 by P. J. Berckmans, Augusta, Georgia. Fruit large, with a yellowish-orange color, dotted and washed with dark red; season late.

Pavie Duff Jaune. 1. Leroy *Dict. Pom.* **6**:216, 217. 1879.

According to Leroy this peach was sent out in 1860 by P. J. Berckmans, Augusta, Georgia. Fruit large, greenish-white, with a deep red blush, ripening the last of August.

Pavie Duperron. 1. Mas *Le Verger* **7**:63, 64, fig. 30. 1866-73.

According to Mas, this peach was raised from seed of Malta by a M. Duperron, near Pont-de-Veyle, Ain, France. Fruit large, roundish-oval; skin yellowish-white, with considerable red in the form of a blush; flesh clinging, yellow, deep red near the pit, sweet, somewhat aromatic; quality good; ripens in October.

Pavie Genisaut. 1. *Mag. Hort.* **20**:570.

1854.

Listed as a yellow, clingstone peach coming from Bordeaux, France, many years ago.

Pavie d'Italie Très Hâtif. 1. Liegel *Syst. Anleit.* 185. 1825.

Listed in this reference as a desirable fruit.

Pavie de Jalagnier. 1. *Lond. Hort. Soc. Cat.* 101. 1831.

Listed in this reference.

Pavie Jaune. 1. Duhamel *Trait. Arb. Fr.* **2**:34. 1768. **2.** Christ *Wörterb*. 355. 1802. **3.** Kenrick *Am. Orch.* 230. 1832. **4.** Poiteau *Pom. Franc.* **1**:No. 35, Pl. 1846.

Grosser Pavien-Aprikosenpfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:219, 220. 1858.

Pavie Alberge. **6.** Noisette *Man. Comp. Jard.* **2**:481. 1860.

Pavie Jaune should not be confused with Pavie Alberge which ripens later. Tree vigorous; glands reniform; flowers small, faintly colored; fruit very large, round, a little flattened; suture shallow, wide; skin heavily pubescent, dark yellow, blushed, marbled with darker red; flesh yellow, red about the pit, firm, not fibrous, vinous, juicy; quality good; stone adherent, oval, obtuse at the ends; ripens the middle of September.

Pavie Mazères. 1. Mas *Le Verger* **7**:227, 228, fig. 112. 1866-73.

This peach is a chance seedling found by a M. Mazères, Toulouse, France. Fruit large, roundish, irregular; skin yellowish-white, with a deep blush; flesh clinging, white,

stained deep red at the pit, juicy, sweet and pleasantly flavored; season from the middle to the last of October.

Pavie Mirlicoton. 1. Leroy *Dict. Pom.* **6**:223. 1879.

A variety once grown in France but long since lost to cultivation.

Pavie Muy-Swantzel. 1. Leroy *Dict. Pom.* **6**:224 fig., 225. 1879.

Originated in America and introduced into France about 1850 by D. Dauvesse, Orleans, Loiret, France. Fruit of medium size, roundish, compressed at the base, with a distinct suture; color greenish-white, washed, striped and dotted with red; flesh white, tinged with red near the pit which is adherent, juicy, firm, sweet, with a pleasant, aromatic flavor; ripens the last of July.

Pavie de Pamiers. 1. Prince *Pom. Man.* **2**:13, 14. 1832. **2.** Carrière *Var. Pêchers* 45. 1867. **3.** Leroy *Dict. Pom.* **6**:225 fig., 226, 227. 1879.

Pavie de Pamiers is of French origin and was introduced into America in 1832 by William Robert Prince, Flushing, New York. Fruit large, roundish, flattened at the ends, with a large, distinct suture; skin white, with an attractive, red blush; flesh white, red at the stone, firm but tender, juicy, sweet; quality good; ripens in the south of France early in August.

Pavie de Pompone. 1. Miller *Gard. Dict.* 1752. **2.** Downing *Fr. Trees Am.* 498. 1845.

3. *Am. Pom. Soc. Cat.* 30. 1877. **4.** Leroy *Dict. Pom.* **6**:229, 230 fig., 231. 1879.

Pavy Royal. **5.** Langley *Pomona* 105, Pl. 32 fig. 2. 1729.

Pavie rouge de Pomponne. **6.** Duhamel *Trait. Arb. Fr.* **2**:37, 38, Pl. 26. 1768.

Monströse Härtling. **7.** Christ *Handb.* 599, 600. 1817.

Monstrous Pavie. **8.** Coxe *Cult. Fr. Trees* 220. 1817.

Riesenpfirsche. **9.** Liegel *Syst. Anleit.* 185. 1825.

Monstreuse. **10.** Prince *Treat. Hort.* 17. 1828.

Monstrous Pomponne. **11.** Prince *Pom. Man.* **1**:197. 1831.

Monströser Lieblingspfirsich. **12.** Dochnahl *Führ. Obstkunde* **3**:207, 208. 1858.

This old French variety was spoken of by many early writers. Among these was Arnauld d'Andilly who raised the first fruits in 1655 at his home, the Pompone estate, Seine-et-Marne, France. It was early introduced into America and in 1877 was added to the fruit-list of the American Pomological Society where it remained for twenty years. Duhamel mentions a Red Pavie that differs from this variety only in that it ripens earlier and is smaller. Tree vigorous; leaves crenate, with reniform glands; flowers large; fruit very large, somewhat oval, with a well-defined suture; apex with a mamelon tip; skin an intense red on a yellowish-white ground; flesh firm, red at the pit; stone adherent, small for the size of fruit; ripens in dry seasons from the middle to the end of October.

Pavie Tardif. 1. Kenrick *Am. Orch.* 233, 234. 1832. **2.** Poiteau *Pom. Franc.* **1**:No. 36, Pl. 1846.

Fruit large, compressed at the sides, with a distinct suture; skin yellow, washed with a red blush; flesh yellow, red at

the pit, juicy, with a pleasant flavor; ripens the last of October.

Pavie Très-Tardif Madame Vergé. 1. Mathieu *Nom. Pom.* 409. 1889.

Listed in this reference.

Pavien Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:208. 1858.

Tree hardy and productive; fruit moderately large, of a yellowish-straw color, with a dark reddish-purple blush; flesh firm, very juicy, with a pleasant, vinous flavor; ripens in September.

Pavier Pleureur. 1. Leroy *Dict. Pom.* **6**:228 fig., 229. 1879.

Pêcher Pleureur. **2.** Carrière *Var. Pêchers* 51, 52. 1867.

Trauerpfirsich. **3.** Mathieu *Nom. Pom.* 416. 1889.

This curious old peach of unknown origin has been known for nearly a century. It is said to reproduce itself from seed. Fruit of medium size, roundish, regular; skin clear yellow, washed with red; flesh greenish-white, red at the pit, juicy, with a sharp, bitter flavor; clingstone; ripens the last of September.

Payne. 1. *Mich. Sta. Sp. Bul.* **44**:60 fig. 1910. **2.** *U. S. D. A. Yearbook* 428, 429, Pl. 35. 1910.

Payne originated in 1901 as a sprout from a peach-stock in the orchard of E. B. Payne and Sons, near Cloverdale, Michigan. Fruit large, round, with a shallow suture; color yellow, blushed and splashed with crimson; flesh yellow, slightly stained with red at the pit, melting, tender, juicy, with a pleasant, subacid flavor; quality good; stone free;

ripens the last of August.

Peach de Pavie. 1. Rea *Flora* 210. 1676.

Said to be a good, yellow peach.

Peach du Troas. 1. Parkinson *Par. Ter.* 582. 1629.

"The peach *du Troas* is a long and great whitish yellow Peach, red on the outside, early ripe, and is another kinde of Nutmeg Peach."

Pearce. 1. Greening Bros. *Cat.* 82. 1899. **2.** *Ont. Fr. Exp. Sta. Rpt.* **7**:55. 1900.

According to Greening Brothers, Monroe, Michigan, this variety was raised by P. S. Pearce, Catawba Island, Ohio. Fruit large, roundish; skin yellow, blushed with red; flesh yellow, free, with excellent flavor and good quality; season the middle of September.

Pearl I. 1. *Horticulturist* N. S. **7**:178. 1857.

Originated many years ago with Mrs. L. A. Franklin, Athens, Georgia. Fruit large, round, creamy-white, with a rich red cheek; flesh adherent, white but red at the pit, firm, juicy, vinous, excellent; season the last of August.

Pearl II. 1. *U. S. D. A. Rpt.* 290. 1893. **2.** *Mich. Sta. Sp. Bul.* **44**:61. 1910.

This peach is said to be a cross between Late Crawford and Hale Early, originating with C. C. Engle, Paw Paw, Michigan. Fruit large, roundish, slightly elongated, with a shallow suture; color creamy-white, slightly shaded with crimson stripes; flesh free, creamy-white, juicy, melting, fibrous, with a rich, vinous flavor; season the middle of September.

Pearson No. I. 1. *Jour. Hort.* N. S. **15**:114. 1868.

Raised by a Mr. Pearson, Chilwell, England. Fruit large, yellow; flesh deep orange-yellow, very melting, juicy, pleasantly flavored; quality good.

Pêche Baboud. 1. Mas *Pom. Gen.* **12**:171, 172. 1883.

Leaves of medium size, with reniform glands; flowers very small; fruit large, irregularly ovoid, surface uneven; apex with a mamelon tip; skin fine, with heavy pubescence, pale yellow, blushed with intense purple in the sun; flesh white, stained about the pit, slightly acidulated, aromatic; stone large, nearly free; ripens the middle of August.

Pêche de Bisconte. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Pêche Blonde. 1. Poiteau Pom. Franc. **1**:No. 26, Pl. 1846.

Leaves small, with reniform glands; flowers large; fruit of medium size, elongated, with rugose surface; skin yellow, blushed and striped with clear red; flesh white, stained faintly at the pit, vinous; stone large, long; ripens at the end of August.

Pêche de Brahy. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Pêche Everardt. 1. *Rev. Hort.* 316. 1889.

Fruit large, regular, spherical; flesh orange-yellow, stained at the pit, juicy; ripens at the end of August.

Pêche Grosse Violette. 1. *Ann. Pom. Belge* **3**:89, Pl. 1855.

Tree productive; fruit large, round, distinctly sutured; skin

with a deep red blush on a greenish-yellow ground; flesh white, red at the pit, sweet, vinous, aromatic; matures the middle of September.

Pêche d'Ile. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Pêche d'Ispahan. 1. Poiteau *Pom. Franc.* **1**:No. 7, Pl. 1846.

This peach was raised from seed brought to Paris, France, from Asia, about 1800, by a French naturalist, Olivier. Fruit small, nearly round, marked with a deep suture; skin greenish-white; flesh greenish-white, juicy, fibrous, with a delicious flavor when fully mature; season the middle of September.

Pêche Jaune Hâtive de Doné. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed but not described.

Pêche de Lion. 1. Christ *Wörterb.* 351. 1802.

A beautiful, somewhat elongated fruit, with firm, yellow flesh; freestone; ripens at the end of October.

Pêche du Quesnoy. 1. Thomas *Guide Prat.* 52. 1876.

Said to resemble Grosse Mignonne.

Pêche Quétier. 1. *Flor. & Pom.* 216. 1876.

Said to be a seedling of an English variety, raised by a M. Quétier, Meaux, Seine-et-Marne, France. Fruit large, round, with a distinct suture; skin yellow, with a deep red blush; flesh free, yellow, sweet, vinous, excellent; season late.

Pêche Reine des Tardives. 1. *Rev. Hort.*

324, 325, Pl. 1889.

Raised from a pit of Baltet which it resembles. Fruit large, oval, sides often unequal; skin yellow, washed with considerable red; flesh free, yellow, with red veins extending through it, juicy, with a sweet, aromatic flavor; season very late.

Pêche Rouge de Mai. 1. *Rev. Hort.* 276, Pl. 1888.

Fruit roundish-oblate, somewhat irregular; skin almost entirely covered with bright red; flesh white, semi-free, very juicy, sweet, with a pleasant, vinous flavor; ripens the beginning of August.

Pêche de Sainte-Anne. 1. Thomas *Guide Prat.* 51, 223. 1876. **2.** *Guide Prat.* 35, 210. 1895.

Originated in the Province of Lombardy, Italy. Fruit large, beautifully colored with dark red; flesh yellow, red at the pit, fibrous, sweet; ripens the first of August.

Pêche Souvenir de Pierre Tochon. 1. *Rev. Hort.* 246, 247. 1906.

This peach was raised in 1891 but its parentage is unknown. Fruit very large, regular; color yellow, blushed with red; flesh yellowish-white, juicy, sweet; purplish-red next the pit which is free; quality very good; ripens the middle of September.

Pêche de Syrie. 1. Mas *Le Verger* **7**:7, 8, fig. 2. 1866-73. **2.** *Pom. France* **6**:No. 26, Pl. 26. 1869. **3.** Leroy *Dict. Pom.* **6**:283, 284 fig., 285. 1879.

D'Egypt. **4.** *Mag. Hort.* **20**:270. 1854.

Syrische Pfirsich. **5.** Mathieu *Nom. Pom.* 416. 1889.

This variety probably originated from a peach-pit brought to France from Egypt about 1802 by a M. Barral, a surgeon in the French army. Fruit medium in size, roundish-oval, with a moderately deep suture; skin pale yellow, washed with dark red; flesh yellowish-white, tinged with red at the center, juicy, sweet, with a pleasant, vinous, aromatic flavor; quality good; stone free; ripens from the first to the middle of September.

Pêche Théophile Sueur. 1. *Rev. Hort.* 574, 575, Pl. 1909.

Arthur Chevreau, a horticulturist at Montreuil-sous-Bois, France, obtained this variety from a peach-pit which he planted in 1897. Tree vigorous, productive; fruit medium to large, roundish, with a highly colored surface; flesh white, with red veins at the center, juicy, sweet; good to very good in quality; stone free; season early in September.

Pêche Tondu. 1. *Rev. Hort.* 261, 262. 1888.

Originated at Montreuil, France, in 1878. Tree vigorous, productive; glands reniform; fruit large, oval; skin blushed with deep red; flesh white, stained at the pit, sweet, aromatic; ripens at the end of September.

Pêche de Trianon. 1. Thomas *Guide Prat.* 51. 1876.

Listed in this reference.

Pêche de Vérone. 1. Christ *Wörterb.* 356. 1802. **2.** Mas *Le Verger* **7**:239, 240, fig. 118. 1866-73. **3.** Leroy *Dict. Pom.* **6**:298 fig., 299. 1879.

This peach originated about 1830 in Verona, Venetia, Italy. Fruit large, roundish-oval, with a distinct suture; skin yellowish-white, dotted and washed with red in the sun; flesh free, white, tinged with purplish-red at the pit, juicy, sweet, with a pleasant, vinous flavor; ripens the first of September.

Pêche de Verviers. 1. Thomas *Guide Prat.* 52. 1876.

A glandless variety with rose-colored flowers.

Pêche de Vigne Blanche. 1. Baltet *Cult. Fr.* 236. 1908.

Listed as a pubescent, freestone variety.

Pêche de Vigne Jaune. 1. Baltet *Cult Fr.* 236. 1908.

This is also a freestone peach with pubescent skin.

Pêche de Vigne Rouge. 1. Baltet *Cult. Fr.* 236. 1908.

Still another pubescent, freestone peach.

Pêche Vineuse Jaune. 1. Carriére *Var. Pêchers* 63. 1867.

Said to have been obtained in France by a M. Morel. Fruit large, roundish, somewhat flattened; skin yellowish-orange, with a carmine blush; flesh free, pale yellow, purplish-red at the pit, juicy, sweet, aromatic; season the middle of August.

Pêcher à Bois Jaune. 1. Decaisne *Jard. Fruit.* **7**:Pl. 1872-75. **2.** *Rev. Hort.* 516. 1889.

This variety originated in the vicinity of Toulouse, Haute Garonne, France, and is valued both for its fruit and as an ornamental. Fruit of medium size, nearly round, often depressed at the base, with a distinct suture; skin orange-yellow, dotted and washed with red; flesh free, yellow, somewhat red about the pit, juicy, sweet and aromatic; ripens the last of September.

Pêcher Douteux. 1. Carrière *Var. Pêchers* 102. 1867.

The tree of this variety has many characteristics of the almond while the fruit resembles the peach. Fruit of medium size, marked with a deep suture; skin yellowish-white, blushed with red; flesh free, white, slightly tinged with red at the pit, rather sweet and aromatic, with an agreeable flavor; season very late.

Pêcher à Fleur Semi-Double. 1. Duhamel *Trait. Arb. Fr.* **2**:42, 43, Pl. XXX. 1768.

Pêcher à Fleurs Doubles. **2.** Poiteau *Pom. Franc.* **1**:No. 25, Pl. 1846.

This curious old peach has double flowers and bears its fruits in clusters of from one to four. Fruit small, roundish, with a well-marked suture; skin pale yellow, washed with clear red; flesh greenish-white, often red at the pit, fibrous, juicy, sweet, with an agreeable flavor; ripens the last of September.

Pêcher Hâtif de Chine. 1. Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Said to resemble Honey in certain characters. Fruit medium in size, roundish; color greenish-yellow, with a red blush; flesh free, white or sometimes tinged with red, juicy, often with an astringent flavor; ripens the last of July.

Pêcher Hybride Quétier. 1. *Rev. Hort.* 115. 1888. **2.** *Ibid.* 42, 43. 1889.

This peach originated with a M. Quétier, Meaux, Seine-et-Marne, France, as a cross between Grosse Mignonne and an apricot. Tree vigorous; glands reniform; fruit of medium size, somewhat flattened, with a deep suture; skin greenish-yellow, marbled with red; flesh strongly adherent to the stone, white, juicy, firm, with a sweet, aromatic flavor; ripens early in October in France.

Pêcher Nain à Fleur Double. 1. Duhamel *Trait. Arb. Fr.* **2**:45, 46. 1768.

Said to be a dwarf, double-flowering peach seldom bearing fruit and useful only as an ornamental.

Pêcher Nain d'Orléans. 1. *Rev. Hort.* 42 fig. 18, 43, 44. 1908.

According to the reference this peach was mentioned by Louis Ligier in 1714. Fruit of medium size, round, with a deep suture; skin pale greenish-yellow, with a red blush; flesh white, tinged red at the pit which is adherent, moderately sweet, not of high flavor.

Pêcher Petite Madeleine. 1. Carrière *Var. Pêchers* 78, 79. 1867. **2.** Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Leaves glandless; flowers small; fruit small, round, slightly depressed; skin greenish-white, marbled with red; flesh free, white, dark red at the stone, very juicy, sweet, with a pleasant, aromatic flavor; ripens the middle of August.

Pêcher Thuret. 1. Decaisne *Jard. Fruit* **7**:Pl. 1872-75.

This peach was raised in 1862 by Gustave Thuret, Antibes, Alpes Maritimes, France, from a seed sent from China. Fruit large, with a distinct suture on one side; skin yellow, washed with dark red; flesh yellowish-white, red at the pit which is usually free, juicy, sweet, pleasantly flavored; season the last of August.

Peck Orange Cling. 1. Wickson *Cal. Fruits* 314. 1889.

In the reference Luther Burbank says that this variety is an improved seedling of Orange Cling, originated at Healdsburg, California. Fruit large, with yellow flesh; valuable for market or drying.

Pendleton. 1. *Ga. Sta. Bul.* **42**:240. 1898. **2.** Berckmans *Cat.* 13. 1899.

A very large, yellow, clingstone peach of good quality, ripening the first of September.

Penelope. 1. Hoffy *N. Am. Pom.* **1**:Pl. 1860.

This peach originated with Isaac Baxter, Philadelphia, Pennsylvania. Fruit large, roundish; skin greenish-white, slightly stained with red; flesh greenish-white, red at the pit which is free, juicy, rich; quality very good; season the middle of September.

Peninsula. 1. *Mich. Sta. Bul.* **169**:223. 1899. **2.** Budd-Hansen *Am. Hort. Man.* **2**:353. 1903.

Peninsula Yellow. **3.** *Del. Sta. Rpt.* **5**:99. 1892.

Fruit large, roundish, often inclined to oval, with a shallow suture; color yellow, washed with red; flesh yellow, red at the pit which is free, juicy, firm, with a vinous, sprightly flavor; ripens the middle of September.

Pennington. 1. *Okla. Sta. Bul.* **2**:14. 1892.

Listed in this reference.

Peregrine. 1. *Garden* **64**:126, 127, 157. 1903. **2.** *Ibid.* **69**:334. 1906.

This variety is supposed to be a seedling of the Spencer nectarine, raised by Thomas Rivers and Son, Sawbridgeworth, England, and introduced about 1906. Fruit large, with a bright crimson color; flesh melting and juicy, with a pleasant flavor; season early August.

Perfection. 1. *Chico Nur. Cat.* 26. 1904.

According to the Chico Nursery Company, Chico, California, Perfection originated near Weston, Umatilla County, Oregon. Fruit large, yellow, with a beautiful blush; flesh yellow, red at the pit, thick, fine-grained; season early in

September.

Period Early Nutmeg. 1. *Lond. Hort. Soc. Cat.* 101. 1831.

Listed in this reference.

Persian Cling. 1. Wickson *Cal. Fruits* 317. 1889. **2.** *Fancher Creek Nur. Cat.* 27. 1906.

This variety is supposed to have originated from a seed of Heath Cling at Visalia, California. Fruit large, with clear white skin; flesh white to the pit, very firm, sweet; valuable for canning; ripens with its parent.

Persique. 1. Miller *Gard. Dict.* 1752. **2.** Duhamel *Trait. Arb. Fr.* **2**:40, 41, Pl. XXIX. 1768. **3.** Coxe *Cult. Fr. Trees* 229, 230, fig. 15. 1817. **4.** Prince *Pom. Man.* **2**:13. 1832. **5.** Leroy *Dict. Pom.* **6**:236, 237. 1879.

Grosse Perseque. **6.** Kenrick *Am. Orch.* 232. 1832.

Persique Clingstone. **7.** Prince *Pom. Man.* **2**:36. 1832.

Persischer Lackpfirsich. **8.** Dochnahl *Führ. Obstkunde* **3**:215. 1858.

Persée. **9.** *Le Bon Jard.* 329. 1882.

Persique is a very old variety of unknown origin, the name having often been confused with other sorts. Fruit large, oblong, somewhat angular, often with small protuberances over the surface and with a distinct swelling at the apex; skin velvety, with considerable red; flesh white, light red next the stone, juicy, melting, with a rich, agreeable flavor; stone large, free; ripens from the last of September to early October.

Peruvianischer Blutpfirsich. 1. Dochnahl

Führ. Obstkunde **3**:194. 1858.

Fruit large, dark red, almost black; flesh dark red; ripens at the end of September.

Pesca Mandorla. 1. *Gard. Chron.* 907. 1858.

Exhibited at the Imperial and Royal Horticultural Society, Tuscany, Italy.

Pesca Melo. 1. *Gard. Chron.* 907. 1858.

Also exhibited at the Imperial and Royal Horticultural Society, Tuscany, Italy.

Peter Cling. 1. *Am. Pom. Soc. Rpt.* 152. 1883.

Listed in this reference as coming from Washington County, Texas.

Petite Bourdine. 1. Mas *Pom. Gen.* **12**:141, 142, fig. 7. 1883.

Fruit of medium size, elongated-oval; skin pale yellowish-white, washed with deep red; flesh white, striped with dark red at the pit which is free, juicy, firm, sweet, with a pleasant, aromatic flavor; season the middle of September.

Petite Imperial. 1. *Am. Pom. Soc. Cat.* 30. 1877.

Petit Imperial Mammoth White. **2.** *Am. Pom. Soc. Rpt.* 155. 1858.

Petit's Imperial. **3.** *Mag. Hort.* **30**:208. 1864.

A large, white, moderately juicy, vinous peach with reniform glands, ripening rather late.

Petite Mignonne. 1. *Traité des Pêchers* **8.** 1750. **2.** Prince *Pom. Man.* **1**:174, 175.

1831. **3.** Mathieu *Nom. Pom.* 402. 1889.

Double de Troyes. **4.** Duhamel *Trait. Arb. Fr.* **2**:8, 9, Pl. IV. 1768. **5.** Leroy *Dict. Pom.* **6**:107, 108 fig., 109. 1879.

Kleine Lieblingspfirsche. **6.** Christ *Handb.* 596, 597. 1817.

Grosse rothe Frühpfirsche. **7.** Liegel *Syst. Anleit.* 179, 180. 1825.

Kleiner lieblicher Lackpfirsich. **8.** Dochnahl *Führ. Obstkunde* **3**:213, 214. 1858.

Besides being larger than Red Nutmeg, with which it is sometimes confused, this variety has small flowers of a very pale rose-color. It was first spoken of by the French in 1670. Leaves with small, reniform glands; fruit small, globose; skin thin, white, with some red; flesh stained at the pit, firm, sweet, aromatic; stone free, small, ovoid, plump; matures early in August.

Petite Pavie d'Ounous. 1. *Mag. Hort.* **26**:152, 153. 1860.

Tree small; fruit nearly round, marked with a distinct suture; skin yellowish-white, dotted with a rose-color; flesh white, streaked with red at the stone which is adherent, firm, juicy, subacid and somewhat insipid; season very late.

Petite Violette Hâtive. 1. Duhamel *Trait. Arb. Fr.* **2**:26, 27, Pl. XVI, fig. 2. 1768.

Fruit large, nearly round; skin yellowish-white, with a reddish-violet blush; flesh whitish-yellow, red at the pit, juicy, sweet, with a vinous, aromatic flavor; season the first of September.

Pettingill Early. 1. *Rural N. Y.* **14**:119. 1863.

Said to have originated in Missouri from seed brought from New Hampshire and planted in 1852. A bright, attractive fruit.

Pfirsich-Nectarine. 1. Lauche *Deut. Pom.* **VI**:No. 16, Pl. 16. 1882.

This variety was raised from a nectarine seed about 1860 by Thomas Rivers, Sawbridgeworth, England. Fruit large, roundish, slightly compressed; skin practically smooth on the sides but with fine pubescence at the base and apex, yellowish-white, with a dark red blush; flesh white, red at the pit, firm, juicy; quality good; season the middle of September.

Pfirsiche mit Nicht Ablöslichem Stein. 1. *Deut. Obstcabinet* **7**:Pl. 35. 1858.

Fruit oval, with a deep suture; skin pale yellow, washed with purplish-red; flesh whitish-yellow, red at the pit, melting, with a pleasant, subacid flavor; season the middle of October.

Pfirsiche von Pau. 1. *Deut. Obstcabinet* **7**:Pl. 11. 1858.

Fruit large, round, with a shallow suture; color pale green, with some red; flesh white, red at the pit, melting, juicy, subacid and pleasant; ripens the middle of October.

Phfleiger. 1. Elliott *Fr. Book* 293. 1854.

An unproductive variety which bears large, yellow, freestone fruit with good flavor and which ripens in September.

Phillips Cling. 1. Wickson *Cal. Fruits* 317. 1889. **2.** Waugh *Am. Peach Orch.* 206. 1913.

Phillips. **3.** *U. S. D. A. Rpt.* 392. 1891.

This peach originated with Joseph Phillips, Sutter County, California, and was introduced by J. T. Bogue of Marysville. Fruit large, round, slightly compressed; color lemon-yellow, lightly shaded with red; flesh yellow, firm, juicy, with a sweet flavor; quality good; season the first of September.

Piasa. 1. *Ill. Hort. Soc. Rpt.* 166. 1895.

Said to produce a large, attractive yellow, freestone peach of good quality, but not sweet, ripening August first.

Pickett. 1. *Mich. Sta. Bul.* **118**:31. 1895. **2.** *Ibid.* **169**:223. 1899.

Said to have originated in Missouri. Fruit of medium size, roundish, slightly inclined to ovate; skin yellow, with a red blush; flesh clinging, yellow, red at the pit, firm, juicy, with a mild, sprightly flavor; quality fair; ripens the last of September.

Picquet Late. 1. Downing *Fr. Trees Am.* 627. 1869. **2.** *Horticulturist* **28**:151, 375. 1873.

Originated with Antoine Picquet, Belair, Georgia. Glands reniform; fruit large, round, often somewhat flattened and one-sided; skin yellow, with a red cheek; flesh yellow, melting, sweet, rich and aromatic; stone free; ripens early in September.

Piel Pfirsich. 1. Thomas *Guide Prat.* 53. 1876. **2.** Mathieu *Nom. Pom.* 410. 1889.

Listed as a worthy, German variety.

Pierce Seedling. 1. *Del. Sta. Rpt.* **5**:99. 1900.

Listed without a description.

Pignutt Late. 1. *Ga. Hort. Soc. Rpt.* 9. 1877.

This variety is said to have been disseminated in southern Illinois, where it proved to be a superior sort.

Pinckney. 1. Kenrick *Am. Orch.* 200. 1841.

A very large, excellent, late peach.

Pineapple. 1. Prince *Treat. Fr. Trees* 17. 1820.

Charlestowner Ananaspfirsche. **2.** Christ *Wörterb.* 350. 1802.

Grosse Charlestowner Ananaspfirsche. **3.** Christ *Handb.* 600, 601. 1817.

Pineapple Clingstone. **4.** *Lond. Hort. Soc. Rpt.* **6**:414. 1826.

Ananas-Aprikosenpfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:220. 1858.

Pineapple, according to Christ, is a seedling of Alberge introduced from South Carolina some time previous to 1800. When perfectly ripe, the juice is rich and lively and has the flavor of a pineapple.

Pingree. 1. *Rural N. Y.* **57**:21. 1898.

Listed in this reference.

Pitmaston Seedling Noblesse. 1. *Lond. Hort. Soc. Cat.* 101. 1831.

Listed but not described.

Plant. 1. *Ga. Sta. Bul.* **42**:240. 1898. **2.** Berckmans *Cat.* 13. 1899.

Plant Cling. **3.** *Am. Pom. Soc. Rpt.* 134. 1897.

Plant is an attractive peach of unknown origin. Tree low,

compact, only moderately healthy, unproductive; fruit very large, round, lemon-yellow, with a red blush; flesh pale yellow, juicy, coarse, sweet but of poor quality; clingstone; ripens from July 25th to August 10th.

Plowden. 1. *Horticulturist* **26**:288. 1871. **2.** *Gard. Mon.* **13**:245, 246, 278, 343. 1871.

Plowden originated about sixty miles below Washington, D. C. The fruit resembles that of Hale Early but ripens about ten days earlier. Fruit large, roundish; flesh white, very juicy; quality good; stone free.

Pocahontas. 1. *Am. Pom. Soc. Rpt.* 205. 1858.

Listed in this reference.

Poinsett. 1. *Horticulturist* **4**:277. 1849-50. **2.** Elliott *Fr. Book* 287. 1854.

Originated in South Carolina. Leaves glandless; fruit large, roundish-oval, with a pointed apex; color ruddy yellow; flesh firm, juicy; clingstone; season September.

Pond Late. 1. *Tex. Nur. Cat.* 13. 1909.

According to the Texas Nursery Company, Sherman, Texas, this peach originated and was introduced by E. W. Kirkpatrick, McKinney, Texas. Fruit large, roundish-oblong; skin yellow; flesh yellow, free; of good quality; season September.

Pond Seedling. 1. *Ill. Hort. Soc. Rpt.* 179. 1886.

A large, desirable, hardy, late peach, ripening about September 25th.

Poole Island. 1. *Utah Sta. Bul.* **18**:14. 1892.

Listed in this reference.

Poole Large Yellow. 1. Kenrick *Am. Orch.* 194. 1841. **2.** Downing *Fr. Trees Am.* 491. 1845. **3.** *Ont. Fr. Exp. Sta. Rpt.* **7**:54. 1900.

Pool Favorite. **4.** *Mo. Hort. Soc. Rpt.* 97. 1910.

This peach originated near Philadelphia, Pennsylvania, about 1840. Fruit large, roundish, with a distinct suture; skin deep yellow, with a dark red cheek; flesh free, yellow, red at the pit, rich, juicy, of excellent flavor; ripens from the last of September to early October.

Porpree. 1. Langley *Pomona* 105, Pl. XXXII fig. III. 1729.

Pourprée. **2.** Knoop *Fructologie* **2**:87. 1771.

Porpree, according to some authors, resembles Rossanna. Tree very branchy, productive; leaves sharply serrate; flowers small, purple; fruit large, round, often irregular; skin slightly pubescent, purplish; flesh purple, juicy, vinous; quality good; pit adherent, purplish; ripens the last of August.

Port Royal. 1. *Lond. Hort. Soc. Cat.* 102. 1831.

Listed in this reference.

Porter. 1. *Ill. Hort. Soc. Rpt.* 203. 1879.

Listed in this reference.

Portugal. 1. Rea *Flora* 211. 1676. **2.** Miller *Gard. Dict.* 1752. **3.** Lindley *Guide Orch. Gard.* 277. 1831.

Portugiesische Pfirsche. **4.** Christ *Handb.* 597. 1817.

Leaves usually glandless; fruit large, round; skin pale

yellow, dark red in the sun; flesh white, faint red at the stone which is closely adherent, firm, with a rich, vinous flavor; ripens the middle of September.

Potomac Heath. 1. *Am. Pom. Soc. Rpt.* 127, 128. 1854.

This large, late peach of good quality is said to have been brought to notice by John Dowling, Fairfax, Virginia.

Pound Hardy. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:67. 1900.

Mentioned in the reference as being a tree of medium growth.

Pourpre de Frogmore. 1. *Guide Prat.* 38. 1895.

Of English origin. Glands globose; fruit medium in size, roundish, very largely covered with deep purple; flesh white, melting, sweet, refreshing; matures the second half of September.

Pourprée du Grand-Jardin. 1. Thomas *Guide Prat.* 50. 1876.

Glands globose; flowers of medium size; fruit large, red; of first quality; ripens late in August.

Pourprée Hâtive. 1. Duhamel *Trait. Arb. Fr.* **2**:19, 20; Pl. XI. 1768.

This variety is distinct from Grosse Mignonne with which it has been confused. Fruit large, round, with a deep suture; color a deep, mottled red in the sun; flesh white, red at the pit, juicy, vinous, pleasantly flavored.

Pourprée Joseph Norin. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed by Mas.

Pourprée Tardive de Lyon. 1. Mathieu *Nom. Pom.* 410. 1889.

Listed in this reference.

Powell. 1. *Okla. Sta. Bul.* **2**:14. 1892.

Powell's Mammoth. **2.** *Del. Sta. Rpt.* **5**:99. 1892.

Mentioned in these references.

Powers September. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed in this reference.

Prächtige von Choisy. 1. Gaucher *Pom. Prak. Obst.* No. 89, Tab. 7. 1894.

Fruit large or very large, roundish-oval, with a distinct suture; skin greenish-yellow, with a deep, mottled blush; flesh whitish throughout, juicy, melting, pleasant-flavored; season the last of September.

Prachtvolle Blutpfirsich. 1. Mathieu *Nom. Pom.* 411. 1889.

Sanguine Grosse Admirable. **2.** Carrière *Var. Pêchers* 64. 1867.

Glands reniform; flowers large; fruit of medium size; skin covered with a grayish pubescence, marbled and streaked with deep red; flesh deep red, juicy, moderately sweet; stone red, oval; ripens at the end of September.

Prado. 1. Thomas *Guide Prat.* 50, 222. 1876.

Glands reniform; flowers small; fruit large, ripening the last of September.

Präsident Griepenkerl. 1. Mathieu *Nom.*

Pom. 411. 1889.

Mentioned in this reference.

Pratt. 1. *Cult. & Count. Gent.* **52**:746. 1887.
2. *Mich. Sta. Bul.* **169**:223. 1899.

Said to have been brought to notice by J. H. Hale, South Glastonbury, Connecticut. Fruit of medium size, roundish, compressed, with a distinct suture; color yellow, with a red cheek; flesh yellow, red at the pit, juicy, tender, mild; quality good; pit free; ripens the last of August.

Précoce de Bagnolet. 1. *Rev. Hort.* 103. 1901.

This peach was raised from seed of Grosse Mignonne Hâtive a number of years ago by a M. Savart, Bagnolet, Seine, France. Fruit large, flattened, with a small suture; skin white, slightly rose-colored in the sun; flesh white, juicy, sweet, vinous; quality good; stone free; ripens a few days earlier than Hale Early.

Précoce de Beauregard. 1. Baltet *Cult. Fr.* 237. 1908.

Said to grow in the vicinity of Hyeres, Var, France.

Précoce de Bonpas. 1. Baltet *Cult. Fr.* 237. 1908.

Said to grow in the Pyrenees Mountains.

Précoce de Chartreuse. 1. *Mag. Hort.* **20**:271. 1854.

Fruit of medium size, highly colored; skin fine; flesh delicate, melting, vinous; ripens early in September.

Précoce de Croncels. 1. Baltet *Cult. Fr.* 249, fig. 150. 1908.

Fruit large, yellowish-amber, tinted with purplish-red; flesh

juicy, firm, with an agreeable flavor; ripens the first of August.

Précoce Gaudin. 1. Mathieu *Nom. Pom.* 411. 1889.

Listed in this reference.

Précoce de Mezen. 1. Thomas *Guide Prat.* 52. 1876.

Said to have bell-shaped flowers and reniform glands.

Précoce du Périgord. 1. Thomas *Guide Prat.* 50. 1876.

Fruit large and of good quality.

Précoce de Saint-Assicle. 1. Mathieu *Nom. Pom.* 411. 1889.

St. Ascycles. **2.** *Cal. Sta. Rpt.* 393. 1895-97.

Said to be of French origin.

Precocious. 1. *Gard. Mon.* **17**:368. 1875.

According to the reference, this is a seedling which grew with J. Lewis, Alvin, Illinois, about 1873. Said to have bloomed when three months old.

Premier. 1. *Jour. Hort.* N. S. **33**:80. 1877. **2.** Hogg *Fruit Man.* 456. 1884.

This peach is a cross between Grosse Mignonne and Bellegarde, raised in the Royal Gardens, Frogmore, England. Fruit large, round; suture shallow, terminated at the apex with a sharp nipple; skin nearly covered with purplish-red, becoming very dark in the sun; flesh juicy, tender, melting, with a rich, pleasant flavor; stone free.

President. 1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Prince *Pom. Man.* **2**:33, 34. 1832.

3. *Pom. Mag.* **2**:54, Pl. 1839. **4.** Elliott *Fr. Book* 278. 1854.

Präsidenten-Lackpfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:211. 1858.

President originated at Bedford, New York, nearly a century ago and has long since passed from cultivation. Tree healthy, productive, bearing leaves with globose glands; fruit large, roundish-oval, with a shallow suture; skin pale yellowish-green, with a red cheek; flesh white, red at the pit which is free, juicy, sweet, highly flavored; ripens the middle of September.

President Church. 1. Downing *Fr. Trees Am.* 623, 624. 1857. **2.** *Horticulturist* N. S. **7**:179. 1857. **3.** Mas *Le Verger* **7**:221, 222, fig. 109. 1866-73. **4.** Leroy *Dict. Pom.* **6**:245, 246 fig. 1879.

Church. **5.** *Ga. Hort. Soc. Rpt.* 62. 1891.

This variety was raised by Rev. A. Church, President of Franklin College, Athens, Georgia. Glands reniform; fruit large, roundish, inclining to oval; suture often a mere line; skin pale yellow, mottled and washed with dark red; flesh white, pale red at the pit, juicy, melting, with a delicious flavor; stone free; season the middle of September.

President Lyon. 1. *Mich. Hort. Soc. Rpt.* 187. 1880.

This variety was raised from a seed of Early Crawford planted in 1870 by C. C. Engle, Paw Paw, Michigan. Tree hardy, vigorous, productive; glands reniform; fruit similar to Early Crawford but larger.

Preston. 1. *Del. Sta. Rpt.* **5**:99. 1892. **2.** Thomas *Am. Fruit Cult.* 690. 1897. **3.** *Del. Sta. Rpt.* **13**:105, 106. 1901.

Preston originated with a Mr. Preston, near Greensboro,

North Carolina, and was introduced by J. Van Lindley of Pomona. Its parentage is unknown. Fruit large, creamy-yellow, with a red cheek; flesh light yellow, juicy, adherent; quality good; ripens two weeks later than Chinese Cling.

Price. 1. *Tex. Sta. Bul.* **39**:808, 809. 1896.

Fruit of medium size, roundish, slightly pointed; color greenish-white, with a light red cheek; freestone; season the first of August.

Pride of Autumn. 1. Thomas *Guide Prat.* 50. 1876.

This peach has rose-colored flowers, reniform glands and ripens in October.

Pride of Franklin. 1. *Rural* N. Y. **46**:352. 1887. **2.** *Am. Pom. Soc. Rpt.* 198. 1899.

Said to be grown extensively in New Jersey. Fruit large, round, with yellow skin and flesh; freestone; quality good; resembles Late Crawford and ripens about five days later.

Pride of Idaho. 1. Chase *Cat.* 20. 1895. **2.** *N. Y. Sta. Rpt.* **15**:290. 1897.

According to the R. G. Chase Company, Geneva, New York, this peach originated in the mountains of Western Idaho. Fruit of medium size, having a yellow skin, with a slight blush; ripens after Late Crawford.

Pride of Northboro. 1. *Ia. Hort. Soc. Rpt.* 434. 1904.

Said to have done well in the vicinity of Shenandoah, Iowa.

Prince Blood Clingstone. 1. Prince *Pom. Man.* **2**:32. 1832.

A superior variety of its class raised by William Prince; used mostly for preserves, compotes, and pickles. Flowers small;

fruit large, oval; skin very downy, dark purplish; flesh crimson; flavor indifferent.

Prince Climax. 1. Downing *Fr. Trees Am.* 641. 1857.

Said to have originated on the farm of George Mitchell, Flushing, New York. Tree very productive; fruit large, oval; skin yellow, mottled with a crimson cheek; flesh yellow, very rich, aromatic, with a pineapple flavor; stone adherent; ripens from the middle to the end of September.

Prince Eugène. 1. Hogg *Fruit Man.* 228. 1866.

Eugen von Savoyen. **2.** Dochnahl *Führ. Obstkunde* **3**:205. 1858.

Prinz Eugen. **3.** Thomas *Guide Prat.* 50, 223. 1876.

Similar to Early Purple, of which it is a seedling, but smaller and more deeply sutured. Tree vigorous and very productive; ripens the middle of August.

Prince John. 1. Elliott *Fr. Book* 302. 1859. **2.** Leroy *Dict. Pom.* **6**:246, 247 fig. 1879.

This variety is of American origin and was sent to France in 1860 by P. J. Berckmans, Augusta, Georgia. Fruit large, roundish or roundish-oval; skin orange-yellow, with a deep red blush; flesh deep yellow, firm, very juicy, with a delicious flavor; stone free; ripens the middle of September in France.

Prince Late Yellow Freestone. 1. Bridgeman *Gard. Ass't.* **Pt. 3**:107, 108. 1857.

A beautiful, greenish-yellow fruit, tinged with red, having a firm, rich flesh.

Prince of Wales. 1. Hogg *Fruit Man.* 229. 1866. **2.** *Am. Hort. Ann.* 79, 80. 1870. **3.** *Am. Pom. Soc. Cat.* 30. 1877.

Prinz von Wales. **4.** Gaucher *Pom. Prak. Obst.* No. 90, Tab. 17. 1894.

Thomas Rivers, Sawbridgeworth, England, raised this peach from a seed of Pitmaston Orange nectarine. It fruited first in America with James H. Ricketts, Newburgh, New York, in 1869. The variety held a place in the American Pomological Society's fruit-list from 1877 to 1891. Tree vigorous, bearing leaves with reniform glands; fruit of medium size, roundish, slightly flattened, with one side enlarged; suture distinct, extending beyond the apex; skin creamy-white, shaded and mottled with red in the sun; flesh white, stained red at the stone from which it freely separates, juicy, tender, melting, sweet, with a rich, vinous flavor; ripens early in September.

Princess Paragon. 1. *Horticulturist* N. S. **7**:177. 1857.

Fruit large, oval, with one side larger than the other; skin yellowish-white, dotted and nearly overspread with red; flesh white, melting, juicy; quality good; freestone; ripens the middle of August.

Princess of Wales. 1. Hogg *Fruit Man.* 229. 1866. **2.** *Am. Hort. Ann.* 80. 1870. **3.** *Jour. Hort.* N. S. **24**:471. 1873. **4.** *Am. Pom. Soc. Cat.* 30. 1877.

Princesse de Galles. **5.** Leroy *Dict. Pom.* **6**:248 fig., 249. 1879.

Prinzessin von Wales. **6.** Lauche *Deut. Pom.* **VI**:No. 17, Pl. 1882.

Princess. **7.** *Mich. Sta. Bul.* **169**:223. 1899.

This peach is another seedling raised by Thomas Rivers, Sawbridgeworth, England, about 1863, from a seed of Pavie

de Pompone. It first fruited in America some six years later with James H. Ricketts, Newburgh, New York. The American Pomological Society listed the variety in its fruit-catalog from 1877 until 1897. Tree vigorous, with leaves having globose glands; fruit large, round, narrowing towards the apex which is terminated by a nipple; suture indistinct; skin creamy-white, shaded with a red cheek; flesh free, white, red at the stone, juicy, melting, sweet, good; ripens the last of September.

Princesse Marie. 1. Hogg *Fruit Man.* 228, 229. 1866. **2.** *Le Bon Jard.* 328, 329. 1882.

Prinzessin Marie von Württemberg. **3.** Koch *Deut. Obst.* 540. 1876.

Tree vigorous, with glandless leaves; fruit of medium size, roundish; skin yellowish-white, dotted with pale red and shaded with dark red; flesh yellowish-white, rayed with red at the pit, melting, juicy, with a rich, vinous flavor; stone free; season the middle of September.

Prize. 1. *Am. Pom. Soc. Cat.* 34. 1899. **2.** *Mich. Sta. Bul.* **169**:223. 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:354. 1903.

Fruit large, roundish, with a slight suture; skin yellow, more or less blushed with thin red; flesh free, yellow, red at the pit, juicy, very tender, with a vinous, sprightly flavor; ripens from the middle to the last of September.

Probst Friedrich Pfirsich. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Professeur Vilaire. 1. Baltet *Cult. Fr.* 238. 1908.

Listed in this reference.

Proudfoot. 1. Mas *Pom. Gen.* **12**:137, 138,

fig. 5. 1883.

Probably originated with a Dr. Proudfoot, Cleveland, Ohio. Fruit large, roundish-conic; skin greenish-yellow, washed with dark red; flesh yellow, rather dark red at the pit which is free, juicy, sweet, tender, with a pleasant, aromatic flavor; ripens from the first to the middle of October.

Pry Favorite. 1. *W. Va. Sta. Bul.* **82**:406. 1902.

Said to ripen earlier than Lorentz.

Pullen. 1. Fulton *Peach Cult.* 177. 1908.

Pullen's Seedling. **2.** *Gard. Mon.* **3**:215, 216 fig. 1861.

Raised by Isaac Pullen, Hightstown, New Jersey. Fruit very large, compressed; color yellow, blushed with dark red; flesh yellow, with an excellent flavor; ripens the last of September.

Purdy. 1. *Mich. Hort. Soc. Rpt.* 279. 1882.

Valued for the size and attractiveness of the fruit; ripens just before Late Crawford.

Purple Peach. 1. *Gard. Mon.* **25**:305. 1883.

This is a seedling, valued chiefly as an ornamental.

Pyramidal. 1. Leroy *Dict. Pom.* **6**:250, 251 fig., 252. 1879.

This peach which was found near Poissy, Seine-et-Oise, France, in 1823, is valued chiefly as an ornamental. Fruit small, roundish-oval, irregular; skin yellowish-white, marbled with deep carmine; flesh yellowish-white, slightly red at the pit, juicy, very sweet; quality good; stone free; season the first of September.

Quaker. 1. *Augustine Nur. Cat.* No. **43**:7.

1910.

According to Augustine and Company, Normal, Illinois, this peach was found in northwestern Iowa about 1900, by Colonel Milton L. Haney, and was later introduced by the firm named. Tree hardy; fruit of medium size; of fair quality.

Quality. 1. *U. S. D. A. Rpt.* 290. 1893. **2.** *Am. Pom. Soc. Rpt.* 73. 1895.

Originated with J. W. Kerr, Denton, Maryland. Fruit medium to large, roundish; color white, with a red cheek; flesh free, creamy-white, tinged with red at the stone, juicy, melting, vinous, sprightly; quality very good; season the last of August.

Queen. 1. *Mo. State Fr. Sta. Rpt.* **1**:11. 1901.

Mentioned as growing on the Missouri Station grounds.

Queen Caroline. 1. *Lond. Hort. Soc. Cat.* 102. 1831.

Listed in this reference.

Queen of Delaware. 1. Fulton *Peach Cult.* 178. 1908.

Originated in Delaware. Tree vigorous; fruit large, attractive white, with a red blush; flavor excellent.

Queen Olga. 1. *Can. Exp. Farms Bul.* 2nd Ser. **3**:67. 1900.

Königin Olga. **2.** *Gard. Chron.* 437. 1885. **3.** Lucas *Handb. Obst.* 476. 1893.

Queen Olga is a seedling of Willermoz grown at Reutlingen, Württemberg, Germany. Larger and earlier than its parent; flesh yellow, stained about the pit from which it separates

readily.

Queen of the South. 1. *Fla. Sta. Bul.* **62**:517. 1902.

This peach is supposed to be a seedling of Peento and has been replaced by better sorts. Fruit large, roundish-oblong, with a shallow suture; skin dark yellow, washed with dull red; flesh yellow, red at the pit, firm, juicy, sweet, slightly acid, pleasant; stone free; season July.

Queenes. 1. Parkinson *Par. Ter.* 582. 1629.

"The Queenes Peach is a faire great yellowish browne Peach, shadowed as it were over with deepe red, and is ripe at Bartholmew tide, of a very pleasant good taste."

Quetier. 1. Mathieu *Nom. Pom.* 411. 1889. **2.** *Guide Prat.* 41. 1895.

Glands reniform; fruit large; flesh yellow, tender, juicy, sweet, vinous, with a pleasant flavor; stone free; ripens from the first to the middle of October.

Quince. 1. Rea *Flora* 211. 1676.

"Quince Peach is something of that fashion, yellow and good."

R. S. Stevens. 1. *Mich. Sta. Bul.* **169**:225. 1899. **2.** *W. N. Y. Hort. Soc. Rpt.* 114. 1900.

This peach is a seedling which originated on the grounds of late congressman, R. S. Stevens, Attica, New York. On the Station grounds the tree is rather strong, hardy, fairly productive; glands reniform; fruit of medium size, roundish, compressed; suture distinct; apex a mere point; skin yellow, with a dark red cheek; flesh deep yellow, red at the pit, tender, very mild, vinous, juicy; quality good; pit very small, nearly round, plump; season early September.

Radclyffe. 1. Thomas *Guide Prat.* 55. 1876.

Obtained from a seed of Desse Tardive grown by Thomas Rivers, Sawbridgeworth, England. Fruit very large, with a pale color and excellent flavor; ripens the last of September.

Ragan Smock. 1. *Am. Pom. Soc. Rpt.* 94. 1881.

This variety is a seedling of Smock raised by Z. S. Ragan, Independence, Missouri. The fruit has golden flesh, ripens late and is a delicious, semi-clingstone peach.

Ragan Yellow. 1. *Can. Exp. Farms Rpt.* 404. 1894.

Listed in this reference.

Rainbow. 1. *Can. Hort.* **24**:486 fig., 487. 1901.

Rainbow was raised from a peach-pit brought from Mackinac Island, Michigan, in 1897 by David Sare, London, Ontario, Canada. Fruit large, with an attractive straw-color, mottled with purplish-red; flesh yellow, with pink markings, juicy, pleasant-flavored; stone nearly free.

Raisin. 1. *Tex. Sta. Bul.* **39**:813. 1896. **2.** Munson *Cat.* 16. 1914-15.

According to T. V. Munson and Son, Denison, Texas, this peach is supposed to be the result of a cross between Columbia and Heath Cling. Fruit small, oval, with an acute apex; skin dull yellowish-white, mottled with reddish-brown; flesh adherent, white, tinted with red, with a subacid flavor; quality good; ripens the middle of August in Texas.

Rambouillet. 1. Rea *Flora* 211. 1676. **2.** Miller *Gard. Dict.* 1752. **3.** Christ *Wörterb.* 355. 1802. **4.** Lindley *Guide Orch. Gard.* 268. 1831. **5.** Leroy *Dict. Pom.* **6**:254. 1879.

This variety was raised about 1670 near Paris, France, and

evidently was named in honor of Marquis de Rambouillet of Paris. It was introduced into England in 1729 where it was grown for many years. Fruit of medium size, elongated-oval, with a deep suture; skin pale yellow, with a fine, red blush; flesh yellow, deep red at the pit which is free, juicy, with a pleasant, vinous flavor; ripens the middle of September.

Ramsey Early Cling. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

Originated by A. M. Ramsey, Mahomet, Texas; the fruit is said to excel Alexander.

Ramsey Late. 1. *Austin Nur. Cat.* 4. 1912.

According to F. T. Ramsey and Son, Austin, Texas, this peach originated with Mr. Ramsey near Bowie, Texas. The tree is productive and the fruit is a white clingstone resembling Heath Cling; the fruit ripens in September.

Ranck. 1. *Ohio Hort. Soc. Rpt.* 51 fig. 1888-89.

This is a seedling of Early Crawford which originated with Martin A. Ranck about 1886. Fruit of medium size, roundish-oblate; color pale creamy-yellow, splashed and shaded with red; flesh free, nearly white, slightly red at the pit, juicy, moderately firm, with a rich, high flavor; ripens from the middle to the last of August.

Raymaekers. 1. Leroy *Dict. Pom.* **6**:256, 257 fig. 1879. **2.** Hogg *Fruit Man.* 457. 1884.

Raymaekers' Magdalene. **3.** Dochnahl *Führ. Obstkunde* **3**:199. 1858.

This peach was probably raised in Belgium about 1825. Fruit large, roundish, somewhat depressed, with a distinct suture; skin greenish-yellow, with a deep crimson blush; flesh greenish-white, stained with red at the pit from which it separates, juicy, melting, vinous; quality good; ripens early in September.

Raymond Cling. 1. *Horticulturist* N. S. **7**:179. 1857. **2.** *Am. Pom. Soc. Cat.* 28. 1873.

Ray. **3.** Downing *Fr. Trees Am.* 628. 1869.

This variety, grown by Dr. H. Ray, Yalobusha County,

Mississippi, is a seedling of an old Indian peach. In 1873, it was listed in the American Pomological Society's fruit-catalog but was dropped in 1897. The variety should not be confused with Ray, a sort of more recent origin. Glands reniform; fruit of medium size, roundish, with a shallow suture; apex pointed; skin creamy-white, shaded and spotted with red; flesh white, juicy, vinous, well-flavored; ripens the last of August.

Read Seedling. 1. *Ohio Hort. Soc. Rpt.* 167 fig. 1886-87.

This variety was first brought to public notice in 1886 by Professor M. C. Read, Hudson, Ohio. Fruit of medium size, with white, juicy flesh which is red near the stone; quality good; stone free; season early September.

Reagen. 1. *Tex. Sta. Bul.* **39**:813, 814. 1896.

Fruit large; color greenish-white, with a red cheek; flavor pleasantly acid; stone free; season the last of July in Texas.

Red Bird. 1. Bradley Bros. *Cat.* 31. 1913. **2.** Waugh *Am. Peach Orch.* 206. 1913.

According to Bradley Brothers, Makanda, Illinois, the tree of this variety is hardy and bears early and abundantly; fruit large, with bright, glowing red color and fine quality; ripens early.

Red Ceylon. 1. *Del. Sta. Rpt.* **5**:99. 1892. **2.** *Glen St. Mary Nur. Cat.* 13. 1900.

Fruit large, with a dull green color; flesh blood-red to the stone from which it separates freely, a little too acid for most palates but excellent for cooking; of the Peento type and productive in southern Florida.

Red Magdalen. 1. Langley *Pomona* 100, Pl. 27 fig. **5.** 1729. **2.** Brookshaw *Pom. Brit.* **1**:Pl. 26 fig. 3. 1817. **3.** Lindley *Guide Orch.*

Gard. 268, 269. 1831.

Madeleine Rouge. **4.** Duhamel *Trait. Arb. Fr.* **2**:14, 15, Pl. VII. 1768. **5.** *Pom. France* **6**:No. 7, Pl. 7. 1869.

Madeleine de Courson. **6.** *Pom. Mag.* **1**:30, Pl. 1828. **7.** Lindley *Guide Orch. Gard.* 262. 1831. **8.** Leroy *Dict. Pom.* **6**:150, 151, fig. 152. 1879.

Coursoner Magdalene. **9.** Dochnahl *Führ. Obstkunde* **3**:196. 1858.

Rothe Magdalene. **10.** *Ibid.* **3**:196, 197. 1858.

Rote Magdalenenpfirsich. **11.** Mathieu *Nom. Pom.* 412. 1889.

This variety, probably known for over two centuries, has been confused with several other old sorts and, as the numerous synonyms show, has been grown under various names. Leaves doubly serrate, glandless; flowers large; fruit of medium size, roundish, compressed, with a long, deep suture; skin pale yellow, with a deep red blush; flesh white, stained with red at the stone which is free, juicy, melting, vinous, rich; quality good; ripens the first of September.

Red Nectarine. **1.** *Gard. Chron.* 1466. 1873.

Mentioned as a hardy, free-bearing, Syrian variety.

Red Nutmeg. **1.** Langley *Pomona* 100. 1729. **2.** Lindley *Guide Orch. Gard.* 251. 1831. **3.** Prince *Pom. Man.* **1**:174. 1831. **4.** Downing *Fr. Trees Am.* 482. 1845.

Avant-Pêche Rouge. **5.** Duhamel *Trait. Arb. Fr.* **2**:7, 8, Pl. III. 1768. **6.** Leroy *Dict. Pom.* **6**:50, 51. 1879. **7.** Mas *Pom. Gen.* **12**:163,

164, fig. 18. 1883.

Scarlet Nutmeg. **8.** Prince *Treat. Fr. Trees* 16. 1820.

Rothe Frühpfirsche von Troyes. **9.** Liegel *Anweisung* 68. 1822.

Kleiner Rother Frühpfirsich. **10.** Dochnahl *Führ. Obstkunde* **3**:203, 204. 1858.

Rote Frühpfirsich. **11.** Mathieu *Nom. Pom.* 412. 1889.

Red Nutmeg, probably known more than two centuries ago, has little to recommend it aside from its earliness. Tree moderate in growth, rather dwarf, having large, rose-colored flowers and leaves with reniform glands; fruit small, roundish, with a distinct suture; skin pale yellow, with a bright, rich red cheek; flesh yellowish-white, usually red at the stone which is free, juicy, sweet but with a musky flavor; ripens from the middle to the last of July.

Red Peach. 1. Parkinson *Par. Ter.* 580. 1629.

"The red Peach is a faire Peach, and of a very good relish."

Red Rareripe. 1. Kenrick *Am. Orch.* 221. 1832. **2.** Downing *Fr. Trees Am.* 485, 486. 1845. **3.** Fulton *Peach Cult.* 188. 1908.

Early Red Rareripe of Rhoades. **4.** Kenrick *Am. Orch.* 220. 1832.

Early Red Rareripe. **5.** *Ibid.* 184. 1841.

This peach has often been confused with Early York and Morris Red Rareripe. The fruit is larger and broader and ripens a week later than the first and its serrate, glandless leaves serve to distinguish it from the latter. Because of its similarity to Royal George, it is supposed to be an American

seedling of that variety. Leaves serrate, glandless; flowers small; fruit large, roundish but broad and depressed; suture broad, extending nearly around the fruit; skin white, mottled with red dots, with a rich, dark red cheek; flesh white, red at the stone, juicy, melting, rich, highly flavored; ripens from the middle to the last of August.

Red River. 1. *Del. Sta. Rpt.* **5**:99. 1892. **2.** *Tex. Sta. Bul.* **39**:814. 1896. **3.** *Ont. Fr. Exp. Sta. Rpt.* **7**:55. 1900. **4.** *Am. Pom. Soc. Cat.* 39. 1909.

Introduced by T. V. Munson and Son, Denison, Texas. Fruit large, roundish; skin creamy-white, with a fine red cheek; flesh creamy-white, juicy, fine-grained, with a pleasant flavor; quality good; pit nearly free; ripens the first of August.

Red Seedling. 1. *Mich. Sta. Bul.* **118**:37. 1895. **2.** *Ibid.* **169**:224. 1899.

Supposed to have originated at South Haven, Michigan. Fruit of medium size, roundish, with a distinct suture; color creamy-white, with a bright red blush; flesh creamy-white, slightly red at the pit from which it separates, juicy, tender, with a mild, vinous flavor; season from the middle to the last of August.

Redding. 1. *Ga. Sta. Bul.* **42**:240, 241. 1898.

Originated at the Georgia Experiment Station, Experiment, Georgia. Glands globose; fruit of medium size, roundish; color deep yellow, with a red blush; flesh free, yellow, firm, juicy, melting; quality good; ripens the first of July in Georgia.

Reed. 1. *U. S. D. A. Pom. Rpt.* 43. 1895.

Reed Early Golden. **2.** *Gard. Mon.* **26**:308. 1884.

Fruit large, roundish, with a shallow suture; skin yellow, blushed and striped with red; flesh yellow, tinged with red at the stone which is free, tender, mild subacid, rich; quality very good; ripens the last of August.

Reeks. 1. *Mich. Hort. Soc. Rpt.* 279. 1882.

Reeks ripens with Amsden and Alexander; is larger and fully as attractive as these sorts.

Reeves Mammoth. 1. *Fla. Sta. Rpt.* **8**:89. 1896. **2.** *Glen St. Mary Nur. Cat.* 13. 1900.

This sort is said to have originated in Orange County, Florida. It is advertised as a fine, large, productive, freestone peach, ripening early in August.

Regan Pride. 1. *Ill. Hort. Soc. Rpt.* 95. 1882.

Listed in this reference as a good variety.

Ren. 1. *Tex. Sta. Bul.* **39**:814. 1896.

Tree vigorous but not productive; glands large, reniform; fruit of medium size, round, with an acute point; color yellow, splashed with red; flavor pleasant acid; stone clinging; ripens the last of June in Texas.

Rendatler. 1. Carrière *Var. Pêchers* 81. 1867. **2.** Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Belle Mousseuse. **3.** Thomas *Guide Prat.* 52, 216. 1876.

Fruit large, nearly round, with a distinct suture; skin pale yellow, with an attractive, red blush; flesh yellowish-white, tinged with red at the pit which is free, juicy, tender, sweet, with a pleasant flavor; ripens in Paris the last of August.

Reuinsiela. 1. *Ariz. Sta. Bul.* **15**:62. 1895.

Listed in this reference.

Rey. 1. Mathieu *Nom. Pom.* 412. 1889.

Mentioned in this reference.

Reynolds. 1. *Mo. State Fr. Sta. Bul.* **12**:10, 11, Pl. 8. 1904.

Fruit large, more oblate than Elberta; skin yellow, with a red blush; flesh yellow, of the texture of Elberta but juicier and better flavored; season ten days earlier than Elberta.

Richardson Mammoth. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Listed as growing in the Delaware Station Experiment orchard on the farm of Charles Wright, near Seaford, Delaware.

Richmond. 1. Tilton *Jour. Hort.* **8**:328, 329 fig. 1870. **2.** Downing *Fr. Trees Am.* 1st App. 122. 1872. **3.** *Am. Pom. Soc. Cat.* 30. 1877.

Richmond is one of a large number of seedlings raised by Dr. E. W. Sylvester, Lyons, New York. It was placed upon the fruit-list of the American Pomological Society in 1877 where it still remains. Glands reniform; fruit medium to large, roundish, slightly compressed, with a distinct suture; skin yellow, shaded and mottled with dark, rich red; flesh yellow, red at the stone which is free, juicy, melting, sweet, vinous; quality very good; ripens the last of September.

Rickets. 1. Langley *Pomona* 106, Pl. XXXII fig. IV. 1729.

First propagated by a Mr. Rickets. Fruit light yellow, with a vermilion blush; flesh white, red at the pit, juicy, melting, sweet; ripens the last of August.

Riepper. 1. *N. Mex. Sta. Bul.* **30**:235. 1899.

Said to ripen in September in New Mexico.

Rigaudière. 1. Leroy *Dict. Pom.* **6**:260, 261 fig. 1879.

Raised in 1863 by Auguste Boisselot, Nantes, Loire-Inférieure, France. Fruit above medium in size, round, with a distinct suture; color clear yellow, mottled and washed with dark red; flesh free, white, red at the pit, juicy, with a sweet, aromatic flavor; ripens the first of August.

Ringold. 1. *Tex. Sta. Bul.* **39**:814. 1896. **2.** *Mich. Sta. Bul.* **169**:224, 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:354. 1903.

Ringold Mammoth Cling. **4.** *Am. Pom. Soc. Rpt.* 161. 1881.

Said to be taking the place of Heath Cling in Ohio and Michigan. Fruit large, roundish, Somewhat ovate; skin creamy-white; flesh entirely white, tender, rich, sprightly; quality good; clingstone; season early October.

Rival. 1. *Fla. Sta. Bul.* **62**:517. 1902.

Fruit roundish-oblong, flattened at the base and apex; color pale yellow, washed with dull red; flesh free, yellow, red at the pit, juicy, firm, with an agreeable, sweet, slightly acid flavor; season July.

River Bank. 1. *Utah Sta. Bul.* **18**:14. 1892. **2.** *Mich. Sta. Bul.* **169**:224. 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:354. 1903.

Tree vigorous and hardy; fruit large, roundish-oval, slightly compressed; color greenish-yellow, with a dark red blush; flesh yellowish-white, juicy, tender, mild; quality good; pit semi-free; ripens the last of July.

Rivers Early York. 1. *Mag. Hort.* **34**:89. 1868. **2.** Downing *Fr. Trees Am.* 630. 1869. **3.** *Jour. Hort. N. S.* **17**:58. 1869. **4.** Hogg *Fruit Man.* 458. 1884.

This variety is a seedling of Early York, raised many years ago by Thomas Rivers, Sawbridgeworth, England. It differs from its parent chiefly in having globose glands on its leaves. Tree not as susceptible to mildew as is Early York; fruit of medium size roundish; skin marbled with red; flesh melting, juicy, with a nectarine flavor; stone free; quality good; season in England, early August.

Robena. 1. *U. S. D. A. Rpt.* 209, Pl. IV. 1893. **2.** *Mich. Sta. Bul.* **143**:186. 1897.

Raised about 1887 by Dr. Thomas Taylor, Washington, D. C. Tree productive; glands reniform; fruit large, roundish, with a long, shallow suture; skin yellow, shaded with red and crimson; flesh free, yellow, tinged with red at the pit, juicy, melting, mild subacid, vinous; quality good; season early October.

Robert. 1. *Ga. Sta. Bul.* **11**:44. 1891. **2.** Ibid. **42**:241. 1898. **3.** *Am. Pom. Soc. Cat.* 39. 1909.

Glands large, globose; fruit large, roundish, with a lemon-yellow color; flesh semi-clinging, white but red at the pit, juicy, with a rich, vinous flavor; ripens early in August.

Robert Lavallée. 1. *Guide Prat.* 41. 1895.

Fruit large, oval; color deep red in the sun; flesh yellowish-white, red around the pit which is nearly free, juicy, sweet, with a vinous flavor; ripens the middle of September.

Roberta. 1. *U. S. D. A. Rpt.* 392. 1891.

Fruit of medium size, roundish; color reddish-yellow, washed with dark red; flesh free, reddish-yellow, with a rich, vinous flavor; ripens from the first to the middle of August.

Robertson. 1. Mathieu *Nom. Pom.* 412. 1889.

Listed in this reference.

Robinson Crusoe. 1. Kenrick *Am. Orch.* 228. 1832. **2.** Bridgeman *Gard. Ass't.* Pt. **3**:108. 1857.

Early Robinson Crusoe. **3.** Kenrick *Am. Orch.* 184. 1841.

This peach was raised long ago by a Dr. Coxe, Philadelphia, Pennsylvania, from a pit brought from Juan Fernandez Island in the Pacific Ocean. Fruit large, round; skin pale yellow, with a light red blush; flesh very juicy, sweet and delicious; ripens early in September.

Rockey. 1. *Rural N. Y.* **63**:130, fig. 59. 1904.

Introduced by J. W. Rockey, Miamisburg, Ohio. Fruit large, roundish; color yellow, with a blush; flesh yellow, sweet, free; ripens in southern Ohio about the middle of October.

Rodgers. 1. *U. S. D. A. Rpt.* 290, 291. 1893.

Said to have come from W. C. Rodgers, Nashville, Arkansas. Fruit below medium in size, oblong, pointed, irregular; skin dull yellowish-white, striped and blushed with red; flesh adherent, dull yellowish-white, with some red at the stone, firm, mild, sweet; quality good; season the middle of November in Arkansas.

Rodman Red. 1. Kenrick *Am. Orch.* 196. 1841. **2.** Downing *Fr. Trees Am.* 630. 1869.

Rodman's Cling. **3.** Hooper *W. Fr. Book* 229. 1857.

Fruit large, roundish-oblong; skin almost white, nearly covered with red; flesh white, red near the pit, juicy, firm, with a vinous, aromatic flavor; season the last of September.

Rogers I. 1. *Gard. Mon.* **19**:115. 1877.

This peach, which originated in Newbury, Massachusetts, is supposed to be a seedling of Early Crawford. It resembles its parent but is earlier and sweeter; ripens the middle of September.

Rogers II. 1. *Del. Sta. Rpt.* **13**:107. 1901.

This variety is a seedling of Chinese Cling, having originated with a Mr. Rogers, near McKinney, Texas. Fruit of medium size, round; color creamy-white, with a full red cheek; flesh free, white, tender, melting, mild subacid; good; ripens just before Mamie Ross.

Roman. 1. Parkinson *Par. Ter.* 582. 1629.
2. Rea *Flora* 211. 1676.

Said to be a very good, yellow peach.

Romorantin. 1. Leroy *Dict. Pom.* **6**:261, 262 fig. 1879.

Jaune de Romorantin. **2.** Carrière *Var. Pêchers* 62. 1867.

As its name indicates, this variety originated in Romorantin, Loir-et-Cher, France. Fruit medium to large, roundish, with unequal sides and a distinct suture; skin greenish-yellow, shaded with dark red; flesh white, red at the pit, very juicy, vinous, sweet; quality good; stone free; season the middle of September.

Romorantin à Chair Rouge. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference without description.

Ronde de Vallabrêques. 1. *Lond. Hort. Soc. Cat.* 103. 1831.

Listed in this reference.

Rose Aromatic. 1. Downing *Fr. Trees Am.*

630. 1869.

Originated with J. F. Nesmith, Indian Town, South Carolina. Fruit of medium size, oblong, one side enlarged; suture distinct; skin yellow, washed with red; flesh white, red near the pit which is free, rather dry, with an aromatic flavor; season the last of July.

Rosebank. 1. Elliott *Fr. Book* 279. 1854. **2.** Downing *Fr. Trees Am.* 625. 1857.

Originated with James Dougall, Windsor, Canada. Fruit large, round, with a deep suture; skin greenish-white, with a mottled, dark red cheek; flesh free, white, juicy, melting, rich, excellent; season varies from the last of August to early September.

Rosedale. 1. *Tex. Sta. Bul.* **39**:816. 1896.

Originated in southern Texas. A small, yellow, subacid, clingstone peach, ripening the last of August.

Rosen-Magdalene. 1. Dochnahl *Führ. Obstkunde* **3**:200. 1858.

Fruit of medium size, roundish, with a shallow suture; skin greenish-yellow, rarely tinged with red; flesh firm, moderately juicy; ripens the last of September.

Rosenburg Cling. 1. Wickson *Cal. Fruits* 315. 1889.

This large, yellow, clingstone peach originated on Kings River, Fresno County, California. It is said to be productive and superior to Lemon Cling.

Roser. 1. *Ill. Hort. Soc. Rpt.* 179. 1886. **2.** *Mich. Sta. Bul.* **169**:224. 1899.

Fruit of medium size, roundish, inclining to ovate; skin creamy-white; flesh free, white, juicy, tender, sprightly; quality fair; season early October.

Roseville. 1. *Mich. Sta. Bul.* **169**:225. 1899.

Roseville Cling. **2.** Wickson *Cal. Fruits* 315. 1889.

Originated in Placer County, California. Fruit large, roundish-oval; color creamy-white; flesh adherent, creamy-white, red at the pit, juicy, firm, vinous, rich; quality good; season the last of September.

Rossanna. 1. Miller *Gard. Dict.* 1752. **2.** Duhamel *Trait. Arb. Fr.* **2**:11, Pl. VI. 1768. **3.** Forsyth *Treat. Fr. Trees* 29. 1803. **4.** Lindley *Guide Orch. Gard.* 269. 1831.

Rozanna. **5.** Langley *Pomona* 101, Pl. XXVII fig. 111. 1729.

Roussaine. **6.** Knoop *Fructologie* **2**:88. 1771.

Alberge-Aprikosenpfirsich. **7.** Dochnahl *Führ. Obstkunde* **3**:217, 218. 1858.

Rossanna, though called Alberge by several writers, is a distinct variety. Tree a medium grower, very productive; flowers small, pale, dull red; leaves crenate; glands reniform; fruit of medium size, roundish, slightly larger and more flattened than Alberge; suture prominent; apex terminating in a short nipple; skin yellow, almost entirely overlaid with deep purple; flesh deep yellow, red at the pit, firm, often mealy, sweet, vinous; stone small, free; ripens the middle of September.

Round Transparent. 1. Prince *Pom. Man.* **1**:188. 1832.

This peach is distinct from Grosse Mignonne although very similar in most characters. The chief differences between the two are that this sort has reniform glands and smaller fruit. The variety was introduced to America from France about 1825 by William Robert Prince, Flushing, New York.

Roussane Berthelane. 1. Leroy *Dict. Pom.* **6**:265, 266 fig. 1879.

Fruit large, roundish-oval, with a pronounced suture; skin clear greenish-yellow, with a dark red blush; flesh white, very juicy, tender, sweet, with a pleasant flavor; stone free; season the middle of September.

Roussanne Nouvelle. 1. Mas *Pom. Gen.* **12**:180. 1883.

Fruit very large, round; skin very pubescent, deep red; flesh white, free; ripens the last of August.

Royal Charlotte. 1. Prince *Treat. Fr. Trees* 16. 1820. **2.** *Lond. Hort. Soc. Cat.* 103. 1831.

New Royal Charlotte. **3.** Lindley *Guide Orch. Gard.* 265. 1831.

Mittelgrossblühende Magdalene. **4.** Dochnahl *Führ. Obstkunde* **3**:197. 1858.

Madeleine à moyennes fleurs. **5.** Mas *Le Verger* **7**:151, 152, fig. 74. 1866-73.

Madeleine Hâtive. **6.** Leroy *Dict. Pom.* **6**:152, 153 fig., 154. 1879.

This English peach originated in Kew Gardens and at first was known as Kew. Leaves doubly serrate, glandless; flowers of medium size, dark red; fruit above medium in size, ovate; skin pale greenish-white, with a deep red, marbled cheek; flesh white, stained at the pit, melting, juicy; stone ovoid, free; ripens early in September.

Royal George. 1. Christ *Wörterb.* 356. 1802. **2.** *Pom. Mag.* **3**:119, Pl. 1830. **3.** Lindley *Guide Orch. Gard.* 270. 1831. **4.** Prince *Pom. Man.* **1**:179, 180. 1831. **5.** Downing *Fr. Trees Am.* 485. 1845. **6.** Hogg

Fruit Man. 459, 460. 1884. **7.** Mas *Le Verger* **7**:121, 122. fig. 59. 1866-73.

Millet's Mignonne. **8.** Lindley *Guide Orch. Gard.* 262, 263. 1831.

Königliche Magdalene. **9.** Dochnahl *Führ. Obstkunde* **3**:197. 1858.

König Georgs Pfirsich. **10.** Mathieu *Nom. Pom.* 402. 1889.

It is very doubtful if the variety here described as Royal George is the original variety. According to Hogg the first mention of Royal George is by Switzer who said, in 1724, that it was raised by a Mr. Oram, Brompton Lane, England. At this time George the First was on the throne and, no doubt, the peach was named for him. The variety became popular but was difficult to propagate since it united with peach stocks very poorly. Hence, nurserymen substituted Millet's Mignonne, a new sort at that time which had been introduced by a Mr. Millet, North End, Fulham, England. The original Royal George was probably a seedling of Grosse Mignonne and but little different from that variety in many characters. The long list of synonyms given Royal George by writers attests the length of time this name has been extant and the confusion surrounding its identity. Flowers small; leaves serrate, without glands; fruit large, round, somewhat depressed, with a moderately deep suture; skin very pale yellowish-white, sprinkled with many red dots and marbled with deep red; flesh pale yellowish-white, very red at the stone from which it separates, very juicy, melting, rich and highly flavored; usually ripens the first of September.

Royal George Clingstone. 1. Prince *Pom. Man.* **2**:20. 1832.

Differs from Royal George by being more oblong in shape and having flesh adherent to the stone.

Royal George Mignonne. 1. Lindley *Guide*

Orch. Gard. 270, 271. 1831.

According to Lindley, this variety is reported to have been raised from seed by a friend of a Mr. Ronalds, Brentford, England. Although it closely resembles Royal George, Lindley says they are distinct.

Royal Vineyard. 1. Thomas *Guide Prat.* 53. 1876.

An English variety, ripening a week before Barrington; glands reniform.

Royale. 1. Rea *Flora* 212. 1676. **2.** Duhamel *Trait. Arb. Fr.* **2**:35, 36, Pl. 24. 1768. **3.** Leroy *Dict Pom.* **6**:267 fig., 268. 1879.

Late Admirable. **4.** Langley *Pomona* 106, Pl. 32, fig. 5. 1729. **5.** Lindley *Guide Orch. Gard.* 260, 261. 1831. **6.** *Am. Pom. Soc. Cat.* 28. 1873.

Könglecher Lackpfirsich. **7.** Dochnahl *Führ. Obstkunde* **3**:209. 1858.

Royale is an old French sort which originated about 1644 near Port-Royal-des-Champs, France. It resembles Admirable of which it is a seedling and has been confused more or less with Belle de Vitry, Bourdine and Teton de Venus, all of which are listed separately in this text. In 1873 there appeared a Late Admirable in the fruit-list of the American Pomological Society which is identical with Royale. Leaves crenate, with globose glands; flowers small, pale red; fruit large, roundish, inclining to oval; suture deep; apex with a small, pointed nipple; skin pale greenish-yellow, marbled and streaked with dark red; flesh whitish, stained at the pit, melting, juicy; freestone; ripens at the end of September.

Royale de Barsac. 1. Baltet *Cult. Fr.* 237. 1908.

Listed in this reference.

Rüdiger Starhemberg. 1. Dochnahl *Führ. Obstkunde* **3**:205. 1858.

A seedling of Karl Schwarzenberg which it closely resembles; ripens at the end of September.

Ruding Late. 1. *Mich. Hort. Soc. Rpt.* 460. 1883.

Glands reniform; flowers small; fruit large, roundish-conic; skin white, with a red blush; freestone; quality good; season the middle of September.

Rumbullion. 1. Brookshaw *Pom. Brit.* **1**:Pl. 27 fig. 2. 1817. **2.** Brookshaw *Hort. Reposit.* **2**:99, Pl. 53. 1823.

Rumbolion. **3.** Langley *Pomona* 106. 1729.

Fruit large, light yellow, with a red blush; flesh yellow, light red at the pit, juicy, with a rich, vinous flavor; ripens early in September.

Runde Feine Durchsichtige. 1. Liegel *Anweisung* 69. 1822.

Fruit yellowish-white, blushed with attractive red; flesh white, red at the pit, sweet but with a slight subacid flavor.

Runyon Orange Cling. 1. Wickson *Cal. Fruits* 314. 1889.

Said to have originated with a Mr. Runyon on the Sacramento River, California, and to surpass Orange Cling. Glands globose; fruit very large, yellow, with a dark crimson cheek; flesh rich, sweet, with a vinous flavor.

Rupley. 1. *Tex. Sta. Bul.* **39**:817. 1896.

Said to have been originated by T. V. Munson, Denison, Texas. Tree vigorous, productive; glands globose; fruit

small, oval, with a light orange color; flavor fair; clingstone; ripens the middle of July in Texas.

Russell. 1. *U. S. D. A. Rpt.* 291. 1893. **2.** *Am. Pom. Soc. Cat.* 34. 1899. **3.** Budd-Hansen *Am. Hort. Man.* **2**:355 fig. 1903. **4.** *U. S. D. A. Yearbook* 429, Pl. LIII. 1911.

Russet No. 1. **5.** *Gard. & For.* **8**:349. 1895.

J. M. Russell, Wymore, Nebraska, grew Russell from a stone of Chili which may have been fertilized by Alexander. The variety first fruited in 1893. In 1899, it was added to the fruit-list of the American Pomological Society. Fruit large, roundish-oblong; color creamy-white, shaded and washed with crimson; flesh greenish-white, with yellow veins, red at the pit, juicy, very melting, mild subacid, rich; quality very good; stone free; season in Nebraska a month later than Alexander.

Russell No. 3. 1. *Neb. Hort. Soc. Rpt.* 277. 1901.

Listed as a promising seedling in Nebraska.

Russet. 1. Parkinson *Par. Ter.* 580. 1629.

"The russet Peach is one of the most ordinary Peaches in the Kingdome, being of a russet colour on the outside, and but of a reasonable rellish, farre meaner then many other."

Russian. 1. *Col. O. Hort. Soc. Rpt.* **IV**:No. 4, 76. 1889.

Flowers small; fruit small, round, with a white skin; flesh white, of good quality; ripens the middle of August.

Rutter. 1. *Tex. Sta. Bul.* **39**:814. 1896.

Listed as a small, late, worthless variety.

S. G. French. 1. *N. Mex. Sta. Bul.* **30**:224.

1899.

Said to ripen about the middle of July in New Mexico.

Saint-Barthélemy. 1. Mas *Pom. Gen.* **12**:133, 134, fig. 3. 1883.

This peach is a chance seedling found by the Barthère Brothers in a garden at Toulouse, Haute Garonne, France. Fruit large, roundish-oval; skin greenish-yellow, marbled, with dark brownish-red; flesh yellow, streaked with dark red around the pit, juicy, sweet, aromatic; quality good; season the last of August.

Saint Catherine. 1. *Pa. Fr. Gr. Assoc. Rpt.* 586. 1878.

Listed in this reference.

St. Clair. 1. *Ohio Sta. Bul.* **170**:180. 1906.

Fruit medium to large, round, irregular; color greenish-white, shaded with red; flesh greenish-white, red at the pit which is free, firm, moderately juicy; quality good; ripens the middle of September.

Saint Fagus. 1. *Lond. Hort Soc. Cat.* 104. 1831.

Listed in this reference.

St. Helena. 1. *Ga. Hort. Soc. Rpt.* 21. 1877.

This is a seedling of Chinese Cling and is said to be of good size and excellent quality.

Saint James. 1. Parkinson *Par. Tex.* 580. 1629.

Thought by Parkinson to be the same as the Queenes peach.

St. Joseph Yellow Rareripe. 1. *Mich. Hort. Soc. Rpt.* 227, 229. 1874.

Grown by a Mr. Pike of Royalton, Michigan, and once considered valuable in that section.

St. Louis. 1. *U. S. Pat. Off. Rpt.* 257. 1854. **2.** Hooper *W. Fr. Book* 230. 1857.

A large, yellow, native peach.

Saint Marie. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

Listed in this reference.

St. Mary. 1. *Ga. Hort. Soc. Rpt.* 21. 1877.

This is a seedling of Chinese Cling and is said to be of excellent quality.

St. Michael. 1. Kenrick *Am. Orch.* 200. 1841. **2.** *Horticulturist* N. S. **7**:178. 1857. **3.** Mathieu *Nom. Pom.* 409. 1889.

Glands reniform; fruit very large, round; skin bright yellow, striped and marbled with dull red; flesh yellow, streaked with red near the apex but not at the stone, sweet, juicy; quality very good; clingstone; season early September.

Sallie Worrell. 1. *Gard. Mon.* **20**:311. 1878. **2.** Downing *Fr. Trees Am.* 3rd App. 171, 172. 1881.

Worrell. **3.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903.

This peach was raised from seed by Mrs. Sallie Worrell, Wilson, North Carolina; introduced by C. W. Westbrook of the same place. Tree vigorous, productive, bearing glandless, serrate leaves; fruit large, roundish, with one side enlarged; suture shallow but distinct; skin creamy-white, shaded and mottled with light red; flesh free, white, red at the pit, juicy, melting, slightly vinous; of excellent quality; ripens the last of September.

Sallville. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Sanders. 1. *Ga. Hort. Soc. Rpt.* 16. 1878. **2.** *Tex. Sta. Bul.* **39**:806. 1896.

Saunders. **3.** *Am. Pom. Soc. Rpt.* 151. 1881.

Fruit small, ovate, with an acute apex; color creamy-white; flesh yellowish-green, adherent, with a peculiar, vinous flavor; season the first of August in Texas.

Sangmel. 1. *Tex. Sta. Bul.* **39**:819. 1896. **2.** *Glen St. Mary Nur. Cat.* 13. 1900.

Sangmel is a seedling of Honey introduced by G. L. Taber, Glen Saint Mary, Florida, about 1892. Fruit above medium in size, roundish-oblong, pointed; skin white, overspread with red; flesh streaked with red; clingstone; ripens the last of June in the South.

Sanguine. 1. Leroy *Dict. Pom.* **6**:272, 273 fig., 274. 1879.

Cardinale. **2.** *Lond. Hort. Soc. Cat.* 95. 1831. **3.** Dochnahl *Führ. Obstkunde* **3**:194. 1858.

Cardinal de Furstemberg. **4.** Mas *Pom. Gen.* **12**:185. 1883.

Sanguine made its appearance in France early in the Seventeenth Century, being first described by Claude Sainte-Etienne. The Chartreux Monks, about 1704, gave this variety the name Cardinal de Furstemberg. Unfortunately this name was also given to Cardinale causing much confusion. Sanguine differs from the Sanguinole in ripening earlier and in having smaller flowers. Glands reniform; flowers of medium size, intensely rose-colored; fruit large, roundish-oblate, faintly sutured; skin orange-yellow, nearly entirely overlaid with deep carmine; flesh firm, fibrous, flesh-colored, with deeper streaks of red, juicy, rather acid;

stone plump, ovoid, free; ripens early in September or the last of August.

Sanguine de Jouy. 1. Mas *Le Verger* **7**:95, 96, fig. 46. 1866-73.

Pêche de Vigne. **2.** Leroy *Dict. Pom.* **6**:299. 1879.

This is an old seedling found in a vineyard at Jouy-aux-Orches near Metz, France. Leaves devoid of glands; flowers small; fruit medium in size, ovoid, faintly mamelon at the apex; flesh marbled with red, melting, sugary; quality good; stone free, small; ripens from the middle to the end of September.

Sanguine de Manosque. 1. Carrière *Var. Pêchers* 65, 66. 1867.

Sanguine de Manosque drew its name from the locality of the same name in Basses-Alpes, France, where Carrière believed it to have originated. He described it as having large flowers; glands globose; fruit large, roundish-oblong; skin streaked with violet; flesh red, melting, juicy; stone large, russet, obovate, free; ripens in August.

Sanguinole. 1. Duhamel *Trait. Arb. Fr.* **2**:43. 1768. **2.** Leroy *Dict. Pom.* **6**:275, 276 fig., 277. 1879.

Bloody Monsieur. **3.** Rea *Flora* 211. 1676.

Bloody. **4.** Langley *Pomona* 107, Pl. 72 fig. 6. 1729.

Scarlet. **5.** Coxe *Cult. Fr. Trees* 230. 1817.

French Blood. **6.** Prince *Pom. Man.* **1**:198, 199. 1831.

Gemeiner Blutpfirsich. **7.** Dochnahl *Führ. Obstkunde* **3**:193. 1858.

Sanguinolente. **8.** Noisette *Man. Comp. Jard.* **2**:477. 1860.

Gewöhnliche Blutpfirsich. **9.** Mathieu *Nom. Pom.* 397. 1889.

This beet-red peach is very similar to Sanguine. It is needless to say that the two have been much confused. It was first described as Pêche Beterave by Friar Triquel in 1659. Glands small, reniform; flowers large; fruit roundish, more or less elongated; skin thick, adhering to the pulp; flesh dark red, rather dry, bitter, not very agreeable; stone free, small, ovoid; ripens early in October.

Sanguinole Melting. 1. *Lond. Hort. Soc. Cat.* 104. 1831.

Glands reniform; flowers large; fruit large; flesh melting, of second quality; matures the last of September.

Sanguinole Pitmaston. 1. *Lond. Hort. Soc. Cat.* 104. 1831.

Leaves with reniform glands; flowers large; fruit small, dark red; flesh melting; ripens at the end of September.

Sargent. 1. Kenrick *Am. Orch.* 223, 224. 1832.

Sargent's Rareripe. **2.** Prince *Treat. Hort.* 18. 1828. **3.** Prince *Pom. Man.* **2**:26. 1832.

Sargent originated with Daniel Sargent, Boston, Massachusetts. Fruit medium in size, round; color pale yellow, tinged with a red blush; flesh yellow, juicy, sweet, excellent; ripens the first of September.

Savoy. 1. Rea *Flora* 210. 1676.

Early Savoy. **2.** *Jour. Hort.* N. S. **3**:370. 1862. **3.** Hogg *Fruit Man.* 220. 1866.

This is a large, early peach, having a deep red blush and fine, melting flesh.

Sawyer. 1. *Am. Pom. Soc. Rpt.* 46. 1897.

A variety grown by W. N. Blackington, Denmark, Iowa. Fruit large, roundish; color golden yellow, blushed and splashed with red; flesh yellow, red at the pit which is free, mild subacid; quality very good; season the middle of September.

Scarlet Admirable. 1. *Lond. Hort. Soc. Cat.* 93. 1831.

Listed in this reference.

Scarlet Anne. 1. *Lond. Hort. Soc. Cat.* 104. 1831.

Said to have small leaves and large flowers.

Scheuster Choice. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Listed in this reference.

Schieski. 1. Mathieu *Nom. Pom.* 413. 1889.

Mentioned by Mathieu.

Schley. 1. *Am. Pom. Soc. Rpt.* 170. 1899.

This is a productive, yellow, freestone peach of very good quality, ripening ten days earlier than Elberta.

Schlomer Early. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:67. 1900.

Tree medium in growth.

Schlössers Frühpfirsich. 1. Lucas *Handb. Obst.* 3rd Ed. 475. 1893.

Fruit large, roundish, with a red blush; flesh tender and of good quality; ripens from July to August.

Schmidberger Pfirsich. 1. Lauche *Deut. Pom.* **VI**:No. 19, Pl. 1882.

Schmidberger's Magdalene. **2.** Dochnahl *Führ. Obstkunde* **3**:199. 1858.

Fruit large, roundish, compressed at the base and apex; skin yellowish-white, dotted and mottled with dull red; flesh white, stained red at the pit, tender, juicy, with a delicate, aromatic flavor; season the last of August.

Schofields Seedling. 1. *N. Y. Sta. Rpt.* **9**:347. 1890.

Planted for trial at this Station in 1890.

Schofields White. 1. *N. Y. Sta. Rpt.* **9**:347. 1890.

Placed in the orchard of this Station for testing in 1890.

Schöne Pavie. 1. Mathieu *Nom. Pom.* 414. 1889.

Listed in this reference.

Schöne von Vilvorde. 1. Mas *Pom. Gen.* **12**:186. 1883.

Mentioned without a description.

Schöne Wächterin. 1. Liegel *Anweisung* 70. 1822. **2.** Dochnahl *Führ. Obstkunde* **3**:210. 1858.

Fruit large, purplish-red, with much reddish-black in the sun; flesh whitish-yellow, pink at the stone and often under the skin, with a pleasant, musky flavor; ripens the last of August.

Schöne von Westland. 1. Koch *Deut. Obst.* 540. 1876.

Schöne aus Westland. **2.** Lauche *Deut. Pom.* **VI**:No. 25, Pl. 1882.

Fruit large, roundish; skin dull yellowish-white, with a red blush; flesh whitish-yellow, with red at the pit, very tender, sweet; quality good; season September.

Schöner Peruanischer Lackpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:213. 1858.

Fruit large, roundish-oval; skin yellow, with a deep red blush; flesh yellow, tender, good; season the first of September.

Scott. 1. *Mich. Sta. Bul.* **169**:225. 1899. **2.** *Mich. Sta. Sp. Bul.* **44**:61. 1910.

Alexander Hamilton, Allegan County, Michigan, introduced this variety. Leaves bear globose glands; flowers small; fruit large, yellow-fleshed, separating from the pit; ripens late.

Scott October. 1. Downing *Fr. Trees Am.* 632. 1869. **2.** *Am. Pom. Soc. Cat.* 28. 1873.

Scott Cling? **3.** *Del. Sta. Rpt.* **5**:99. 1892.

Scott. **4.** *Tex. Sta. Bul.* **39**:814. 1896.

This sort originated with Jacob C. Lyons, Columbia, South Carolina. It is a pale yellow clingstone, ripening very late.

Scotts Early Red. 1. Downing *Fr. Trees Am.* 487. 1845.

Downing reports the peach of this variety excellent and the tree a prolific bearer; from New Jersey. Leaves with obscure, globose glands; flowers small; fruit of medium size, roundish; suture distinct; skin pale greenish-white, mottled with red; flesh very juicy, rich; ripens the middle of August.

Scotts Magnate. 1. Downing *Fr. Trees Am.* 626. 1857.

A variety of Red Rareripe; glands reniform; fruit very large, round, depressed; skin pale yellow, with a dark red cheek; flesh white, luscious and well-flavored; ripens early in September.

Scotts Nectar. 1. Downing *Fr. Trees Am.* 626. 1857.

Another seedling from Red Rareripe; glands globose; fruit large, pale yellow, with a bright red cheek; flesh white; matures early in September.

Scruggs. 1. *Del. Sta. Rpt.* **5**:99. 1892. **2.** *Tex. Sta. Bul.* **39**:814. 1896.

Scruggs originated with J. W. Stubenrauch, Mexia, Texas, and later was introduced by T. V. Munson, Denison, Texas. Fruit medium in size, ovate; skin yellow, with a small, red blush; flesh light yellow, moderately tender and juicy, flavor insipid; stone semi-clinging; season late.

Sea Eagle. 1. *Gard. Mon.* **23**:211. 1881. **2.** *Flor. & Pom.* 152. 1882. **3.** Hogg *Fruit Man.* 460. 1884.

Aigle de Mer. **4.** Thomas *Guide Prat.* 54, 215. 1876.

Sea Eagle was raised by Thomas Rivers, Sawbridgeworth, England, from a seed of Early Silver. Fruit large, round and regular in shape, with a slight suture; skin pale lemon-yellow, with a deep red blush; flesh free, pale yellowish-white, stained with deep red next the stone, juicy, melting, with a rich, vinous flavor; ripens the last of September.

Seiders. 1. *Del. Sta. Rpt.* **13**:107. 1901.

This is a seedling of Thurber which originated with F. T. Ramsey, Austin, Texas. It is a medium-sized, round, yellow

clingstone, ripening the middle of July.

Selby Cling. 1. Bridgeman *Gard. Ass't Pt.* *3*:110. 1857.

Fruit large; skin white, with a red blush; flesh melting, juicy, with a peculiar, rich flavor; ripens the last of September.

Sellers Cling. 1. *Del. Sta. Rpt.* **5**:99. 1892.

Sellers' Golden Cling. **2.** Wickson *Cal. Fruits* 314. 1889.

This variety originated on the farm of S. A. Sellers, Contra Costa County, California. It is a very large, rich, clingstone, with golden color, ripening with Late Crawford.

Sellers Free. 1. *Am. Pom. Soc. Rpt.* 141. 1883.

Said to be desirable along the California coast.

Semis de Madeleine. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Semis de Pêche d'Egypte. 1. Mas *Pom. Gen.* **12**:186. 1883.

Mentioned by Mas without a description.

Semis de Plowden. 1. Mathieu *Nom. Pom.* 414. 1889.

Mentioned by Mathieu.

Sener. 1. *Mich. Sta. Bul.* **118**:31. 1895. **2.** *Ibid.* **169**:225. 1899.

This is an unproductive, Michigan variety. Fruit large, nearly round or obscurely ovate; color yellow, blushed and

marbled with red; flesh yellow, red at the pit, very juicy, tender, with a mild, vinous flavor; stone free; season the middle of September.

Sernach. 1. Prince *Pom. Man.* **2**:35. 1832.

Pêche de Sernach. **2.** *Mag. Hort.* **1**:149. 1835.

Probably originated at Tarascon, Bouches du Rhône, France. Fruit medium in size, oval; skin yellowish-white, with a bright red blush; flesh free, pale yellowish-white, with some red at the pit, juicy, rich, pleasant; ripens early in September.

Serrate Ispahan. 1. *Am. Pom. Soc. Rpt.* 185. 1858.

Listed in this reference.

Shannon Cling. 1. Johnson *Cat.* 1894.

According to J. R. Johnson, Coshocton, Ohio, this peach originated in Coshocton County. It is a large, attractive, yellow clingstone of good quality, ripening the last of September.

Sharpe Nos. 1, 2 and 3. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

These three seedlings were raised by a Mr. Sharpe, Wooster, Ohio, and all are said to excel Alexander.

Shaw Mammoth. 1. *Va. Sta. Bul.* **2**:9. 1889.

Growing in the Virginia Station orchard in 1889.

Sheester. 1. *Okla. Sta. Bul.* **2**:15. 1892.

Listed in this reference.

Shelby. 1. *Ga. Sta. Bul.* **11**:44. 1891.

Mentioned in this reference.

Shepherd Early. 1. *Am. Pom. Soc. Rpt.* 154. 1883.

Mentioned in this reference as an excellent freestone.

Sherfey Early. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

This variety was raised by Raphael Sherfey, Gettysburg, Pennsylvania, who recommends it.

Sherman October. 1. *Mich. Hort. Soc. Rpt.* 313. 1889.

Said to have originated in Maryland. Tree vigorous, productive; fruit large; skin white, without a blush; quality good; valuable for shipping; season the middle of October.

Shinn Rareripe. 1. Wickson *Cal. Fruits* 312. 1889.

Originated with James Shinn, Niles, California. Fruit large, with a very dark red surface; flesh sweet, rich, white, red at the stone which is free; quality good for market; ripens soon after Early Crawford.

Shipler. 1. J. S. Kerr *Cat.* **4.** 1898. **2.** *Del. Sta. Rpt.* **13**:107. 1901.

This variety is a seedling of Chinese Cling originated by A. L. Shipler, Denison, Texas. It is described as a yellow clingstone, resembling Elberta and ripening in Texas about the middle of July.

Shipley. 1. *Mich. Sta. Bul.* **169**:225. 1899.

Shipley's Late Red. **2.** *Okla. Sta. Bul.* **2**:15. 1892. **3.** Fulton *Peach Cult.* 176. 1908.

Fruit medium to large, roundish-ovate, compressed; color pale yellow, with a red cheek; flesh free, pale yellow, juicy,

tender, with a sprightly, vinous flavor; quality fair; season the middle of September.

Shipley Rareripe. 1. *Ill. Hort. Soc. Rpt.* 166. 1895.

Fruit medium to large; flesh white, free; ripens early in August.

Shockley Early. 1. *Am. Pom. Soc. Cat.* 28. 1873.

This variety appeared in the fruit-list of the American Pomological Society from 1873 to 1897.

Shop. 1. *U. S. D. A. Pom. Rpt.* 43, 44. 1895.

This peach grew near a building used as a shop by E. A. Riehl, Alton, Illinois. Fruit large, roundish; color creamy-white, with a slight blush; flesh white, with yellow veins, stained red at the stone, juicy, very tender, melting, sweet; quality good; stone free; season the middle of September.

Siebolt. 1. Elliott *Fr. Book* 295. 1854.

Siebolt is a moderately large, freestone, greenish-yellow peach with a red blush, which has yellowish-white flesh and ripens in September.

Sieulle. 1. Hogg *Fruit Man.* 232. 1866. **2.** Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Fruit large, roundish, inclining to oval; skin coarsely pubescent, greenish-yellow, with a dark red blush; flesh tender, juicy, rich; yellowish-white, deeply stained with red at the pit which is free; quality good; season the last of September.

Sill. 1. *Augustine Nur. Cat.* No. 43, 7. 1910.

According to Augustine and Company, nurserymen at Normal, Illinois, Sill originated about 1904 with W. H. Sill,

at Normal, as a seedling of Elberta. The fruit resembles Elberta but is larger, a little higher colored and ripens from a week to ten days later.

Silvan Seedling. 1. *Mag. Hort.* **13**:110. 1847.

Said to be an attractive peach of good quality.

Silver Medal. 1. *Mich. Hort. Soc. Rpt.* 460. 1883. **2.** Fulton *Peach Cult.* 175, **176.** 1908.

Tree vigorous; fruit roundish-oblate; skin white, with an occasional blush; flesh white, free and of good quality; season the last of September.

Simms. 1. *Ala. Sta. Bul.* **156**:134. 1911.

Fruit medium in size, round; color yellow, splashed with red stripes; flesh yellow, moderately juicy, subacid; quality good; freestone; ripens the last of July in Alabama.

Simon. 1. *Neb. Hort. Soc. Rpt.* 175. 1895.

Imported from China. Fruit round, flattened at the ends, of medium size; skin dark red; flesh yellow, hard, with a bitter-almond flavor; quality poor.

Sims. 1. Smith Bros. *Cat.* 14. 1913.

According to Smith Brothers, Concord, Georgia, this peach resembles Columbia. The fruit is large with dark veins through its yellow flesh, of fine quality and ripens early in August. Said to come true from seed.

Sites Old Zack. 1. Elliott *Fr. Book* 287. 1854.

Old Zack. **2.** *Ohio Hort. Soc. Rpt.* 4. 1855.

Originated at Columbus, Ohio. Fruit nearly large; skin yellow, with a dull red cheek; flesh yellow, juicy, separating freely from the stone; season early September.

Skinner Superb. 1. Elliott *Fr. Book* 287. 1854.

This is a very good freestone peach which originated in the South, where it ripens in early August:

Slane. 1. Rea *Flora* 211. 1676.

Listed as a large, good, yellow peach.

Slappey. 1. Budd-Hansen *Am. Hort. Man.* **2**:356. 1903. **2.** *Am. Pom. Soc. Cat.* 39. 1909. **3.** *Ala. Sta. Bul.* **156**:134, 135. 1911.

Fruit medium in size, roundish, inclining to conic; color golden yellow, shaded with red and crimson; flesh yellow, somewhat mealy, sweet; quality good; pit free; ripens the last of June in Alabama.

Sleeper Dwarf. 1. *Jour. Hort.* N. S. **29**:554. 1875. **2.** *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

This dwarf peach originated with W. M. Sleeper, Oxford, Indiana. Tree dwarf and compact in habit of growth; fruit medium to large; skin greenish-white, tinged with crimson; flesh juicy, sweet, rich; season October.

Slindon Park. 1. *Gard. Chron.* 941. 1865. **2.** *Ibid.* 364. 1866.

A. Stewart, Slindon Park, England, raised this variety from a pit of Late Admirable. It is a large, late, freestone peach, having very good flavor.

Sloan Carolina. 1. *Tex. Sta. Bul.* **8**:35. 1889.

Listed in this reference.

Slocum Early. 1. Elliott *Fr. Book* 295. 1854.

Glands globose; fruit large; color yellow, shaded with red;

flesh yellow; ripens in August.

Small White Magdalen. 1. Prince *Pom. Man.* **1**:186. 1831.

Small White. **2.** Parkinson *Par. Ter.* 580. 1629.

Fruit small; skin white, dotted with red; flesh white, melting, juicy, sweet; season the middle of August.

Smeigh. 1. *Am. Pom. Soc. Rpt.* 46. 1897.

Raised by Daniel Smeigh, Lancaster, Pennsylvania. Fruit nearly large, roundish-conic; skin white, washed and mottled with red; flesh adherent, white, red at the pit, firm, compact, sweet, rich; season very late.

Smith. 1. Ramsey *Cat.* 5. 1915.

According to F. T. Ramsey and Son, Austin, Texas, this variety originated in Lampasas County, Texas, more than forty years ago. It is said to be a regular and abundant bearer of deliciously sweet fruit.

Smith Favorite. 1. Cole *Am. Fr. Book* 195. 1849. **2.** Downing *Fr. Trees Am.* 633. 1857.

Raised by Calvin Smith, Lincoln, Massachusetts. Glands reniform; fruit large, roundish, with a deep suture; skin yellow, nearly covered with deep, rich red; flesh yellow, juicy, sweet, rich, delicious; freestone; season from the middle to the last of September.

Smith Indian. 1. Ramsey *Cat.* **4.** 1912.

According to F. T. Ramsey and Son, Austin, Texas, this is a seedling which originated in Austin. It is a large, red-fleshed, juicy clingstone ripening the last of July.

Smith Newington. 1. Langley *Pomona* 101, Pl. 28 fig. 1. 1729. **2.** Downing *Fr. Trees*

Am. 498. 1845.

Early Newington. **3.** Miller *Gard. Dict.* 1752.

New York Early Newington. **4.** Coxe *Cult. Fr. Trees* 218. 1817.

Weisser Härtling. **5.** Liegel *Anweisung* 72. 1822.

Härtlings Magdalene. **6.** Dochnahl *Führ. Obstkunde* **3**:200. 1858.

Pavie Blanc (*Gros*). **7.** Leroy *Dict. Pom.* **6**:213 fig., 214. 1879.

Smith Newington was never much grown in America but was at one time widely grown in England as an early clingstone. Flowers large; leaves serrate, without glands; fruit medium in size, oval; skin pale straw-color, with a lively red blush; flesh firm, juicy, pale yellow, stained red at the pit to which it adheres; of very good quality; ripens the last of August.

Smithson. 1. *Ont. Fr. Gr. Assoc. Rpt.* 1st App. 37. 1901.

Listed in this reference.

Smooth-Leaved Royal George. 1. Lindley *Guide Orch. Gard.* 271, 272. 1831. **2.** Kenrick *Am. Orch.* 224. 1832.

This peach seems to have originated with a Mr. Lee, Hammersmith, England. Glands globose. Fruit large, nearly round, yellowish-white, blushed with a beautiful, deep red on carmine; flesh yellowish-white, deep red next the pit, melting, juicy, sweet, with a high, vinous flavor; ripens early in September.

Smoothstone. 1. *Mag. Hort.* **13**:110. 1847.

Listed in this reference.

Smyrna. 1. Rea *Flora* 211. 1676.

Mentioned as a good, yellow peach.

Sneed. 1. *Gard. & For.* **6**:279. 1893. **2.** *U. S. D. A. Pom. Rpt.* 44. 1895. **3.** *Am. Pom. Soc. Cat.* 22. 1897. **4.** *Mich. Sta. Bul.* **169**:226. 1899. **5.** *Del. Sta. Rpt.* **13**:107, 108. 1901. **6.** *Rev. Hort.* 350, 594, 595, Pl. 1904.

Sneed originated about 1885 in the yard of Judge John L. T. Sneed, Nashville, Tennessee, and is said to be a seedling of Family Favorite. According to the references the variety has been grown in the southwest under the names Peebles and Bowers. Sneed was added to the fruit-list of the American Pomological Society in 1897. Tree vigorous, moderately productive; fruit of medium size, roundish-oval, with a shallow suture; color greenish-white, washed and mottled with bright red; flesh greenish-white, often stained with red under the skin, juicy, tender, melting, mild subacid, often slightly bitter; quality fair; stone small, clinging; season the middle to the last of July.

Snow. 1. Kenrick *Am. Orch.* 224. 1832. **2.** Downing *Fr. Trees Am.* 486, 487. 1845. **3.** *Am. Pom. Soc. Cat.* 78. 1862. **4.** Thomas *Am. Fruit Cult.* 426. 1897.

Neige. **5.** Thomas *Guide Prat.* 40, 221. 1876.

This unique peach is of American origin. The blossoms and the fruit are white, without a trace of color, and the flesh is white to the stone. Tree hardy, productive; glands reniform; flowers small, white; fruit large, round, with a slight suture; skin thin, clear white; flesh white to the pit, juicy, melting, rich, sprightly, free; ripens the first of September.

Snow Cling. 1. *Horticulturist* **7**:177. 1857.

Snow. **2.** *Tex. Sta. Bul.* **39**:817. 1896.

Fruit small, round, creamy-yellow, sweet, juicy, clingstone; glands small, globose; ripens early.

Snow Favorite. 1. *Can. Hort.* **23**:381. 1900.

This peach originated in Syracuse, New York; it ripens with Early Crawford. Fruit of large size and high color; flavor excellent and quality good.

Snow Orange. 1. *Mich. Hort. Soc. Rpt.* 114, 115, 321. 1873. **2.** *Am. Pom. Soc. Cat.* 30. 1875. **3.** *Mich. Sta. Sp. Bul.* **44**:61, 62. 1910.

Snow. **4.** *Mich. Sta. Bul.* **169**:226. 1899. **5.** Budd-Hansen *Am. Hort. Man.* **2**:356. 1903.

Snow Orange was introduced by L. P. Hall, Paw Paw, Michigan, more than fifty years ago and is supposed to be a seedling which originated upon the farm of a Mr. Snow of that place. Tree moderately vigorous and productive; glands obscurely reniform; flowers small; fruit of medium size, roundish-oval, compressed; suture distinct; apex slightly pointed; color yellow, with a dull red cheek and slight mottlings of red; flesh yellow, red at the pit, juicy, tender, sweet, sometimes with a slight bitter taste; quality good; pit free, large, plump; ripens the last of August.

Sobiesky Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:205. 1858.

Fruit roundish-oval; skin yellow, with a red blush; flesh white, sweet, with a vinous flavor; ripens the last of August.

Solomon. 1. *Kan. Hort. Soc. Rpt.* 195. 1902-03.

Listed in this reference.

Soulard Cling. 1. *Am. Pom. Soc. Rpt.* 122. 1854.

Mentioned as a very good, native peach.

Southern Early. 1. *Mich. Hort. Soc. Rpt.* 314. 1889. **2.** *Mich. Sta. Bul.* **169**:226. 1899.

Originated in South Carolina. Fruit of medium size, roundish, compressed at the suture which is distinct; skin yellow, nearly covered with dark red; flesh yellow, red at the pit, moderately firm, with a pleasant, rich, sprightly flavor; quality good; stone free; season the last of August.

Southwick. 1. Fulton *Peach Cult.* 175. 1908.

Southwick's Late. **2.** *Am. Pom. Soc. Rpt.* 52. 1871. **3.** Downing *Fr. Trees Am.* 1st App. 122. 1872.

Southwick is an accidental seedling found on the grounds of T. T. Southwick, Dansville, New York. Fruit large, roundish, with a distinct suture; skin yellowish-white, dotted and streaked with red; flesh white, separating freely from the stone, very juicy, melting, with a fine, delicate flavor; season the last of September.

Souvenir de Gérard Galopin. 1. *Guide Prat.* 42. 1895.

Tree vigorous, productive; glands globose; fruit very large, with a purplish-black color; flesh juicy, good, yellow, red at the pit which is free; ripens the first of September.

Souvenir de Java. 1. *Mag. Hort.* **20**:271. 1854. **2.** Mas *Le Verger* **7**:149, 150, fig. 73. 1866-73.

Andenken an Java. **3.** Mathieu *Nom. Pom.* 387. 1889.

This variety was raised in the vicinity of Liége, Belgium, about 1849 by Madam Brahy. It was so called by a M. Papeleu because of courtesies shown him while in Java by Madam Brahy's father. Branches slender; leaves with

reniform glands; flowers small, rose-colored; fruit above medium in size, globular, slightly depressed at the ends; cavity deep; skin thin, separating from the flesh, whitish-yellow, purple where exposed; flesh yellow, crimson at the pit, melting, vinous; stone small, oval, slightly obovate, free; ripens the last of August.

Souvenir de Jean-Denis Couturier. 1. *Rev. Hort.* 108, 109. 1891.

This peach was grown about 1856 by Jean-Denis Couturier at Montreuil, Seine, France. Fruit large, roundish; skin yellowish-white, with a fine red blush; flesh white, red at the pit from which it separates, juicy, sweet, with a pleasant, aromatic flavor; ripens the last of August.

Souvenir de Jean Rey. 1. Carrière *Var. Pêchers* 63. 1867.

Andenken an Jean Rey. **2.** Mathieu *Nom. Pom.* 387. 1889.

This is a variety raised by Jean Rey, a nurseryman, Toulouse, France. Leroy combines this variety with Schöne Toulouserin. Tree vigorous; leaves with reniform glands; flowers small, rose-colored; fruit medium, globular; suture shallow; skin strongly pubescent, pale yellow, deep red where exposed; flesh yellow, melting, juicy, aromatic; stone russet, obtuse, free; ripens early in September.

Spanish. 1. Prince *Pom. Man.* **2**:32. 1832. **2.** Kenrick *Am. Orch.* 183. 1835.

Spanish Clingstone. **3.** Prince *Treat. Fr. Trees* 17. 1820.

Fruit large, round; skin white, with a red blush; flesh adherent, very juicy, sweet, vinous, excellent; ripens early in October.

Späte Mignot Pfirsich. 1. Mas *Pom. Gen.* **12**:186. 1883.

Tardive des Mignots. **2.** Carrière *Var. Pêchers* 60. 1867.

Fruit large, roundish, depressed at the base; skin white, washed with bright red; flesh free, white, red at the stone, juicy, sweet, pleasant-flavored; season early in September.

Später Lackpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:216. 1858.

Fruit large, roundish, compressed at the ends; skin yellowish-white, with some red; flesh yellow, red at the pit, juicy, moderately firm; good; season late in October.

Spath Seedling. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:68. 1900.

Said to be a tree of medium growth.

Spence. 1. Ramsey *Cat.* 10. 1909.

According to F. T. Ramsey and Son, Austin, Texas, this variety originated in Austin. The fruit resembles that of Mamie Ross but is larger and has a better flavor. The flesh is inclined to be mealy; ripens the last of June in Texas.

Spottswood. 1. *Del. Sta. Rpt.* **5**:99. 1892. **2.** *Mich. Sta. Bul.* **169**:226. 1899. **3.** *Del. Sta. Rpt.* **13**:108. 1901.

This peach originated with the late Judge Campbell, Pensacola, Florida, from a pit brought from Japan in 1860 by W. A. Spottswood, a Fleet Surgeon in the United States Navy. P. J. Berckmans, Augusta, Georgia, introduced the variety about 1868. Fruit medium in size, roundish, inclining to oval; color creamy-white; flesh white, red at the pit which is free, juicy, tender, mild, vinous; quality good; season early in September.

Spring Grove. 1. *Pom. Mag.* **3**:97, Pl. 1830. **2.** Lindley *Guide Orch. Gard.* 272. 1831. **3.** Prince *Pom. Man.* **2**:17, 18. 1832. **4.** Hogg

Fruit Man. 232. 1866.

Schnellwachsender Lieblingspfirsich. **5.** Dochnahl *Führ. Obstkunde* **3**:206. 1858.

This peach was raised by T. A. Knight, Downton Castle, Wiltshire, England, from a stone of Grosse Mignonne which had been fertilized by Red Nutmeg. Leaves crenate, with globose glands; fruit medium in size, round, with a shallow suture; color greenish-yellow, with a bright crimson blush; flesh greenish-yellow to the stone from which it separates, juicy, rich and pleasantly flavored; ripens the last of August.

Squaw. 1. *Tex. Sta. Bul.* **39**:817. 1896.

This is a small, inferior, yellow, freestone peach with small, reniform glands, ripening in Texas the last of July.

Staley. 1. Wickson *Cal. Fruits* 318. 1889. **2.** Budd-Hansen *Am. Hort. Man.* **2**:356. 1903.

Staley originated as a sucker from a peach-root in Selma, Fresno County, California, and was introduced by F. M. Nevins of Selma. Fruit very large, elongated, somewhat flattened laterally; color creamy-white with touches of light red; flesh white, juicy, tender; quality very good; pit free; season late in California.

Stanley. 1. Griffing Bros. *Cat.* 11 fig. 1900. **2.** *Fla. Sta. Bul.* **73**:151. 1904.

Stanley is a seedling of Honey which originated in the nursery of Griffing Brothers, Macclenny, Florida. The variety is subject to brown-rot and is a poor shipper. Fruit roundish-oblong, medium to large; cavity deep, open; apex short, conical, nearly straight or a mere point; skin thick, greenish-white, washed with deep red on the sunny side; flesh white, rather soft, easily breaking down, sweet, insipid, with a tinge of bitter around the stone; quality no more than fair; stone clinging, oblong, plump; ripens the middle of June in Florida.

Stanwick Early York. 1. *Gard. Mon.* **17**:365. 1875.

This is a productive variety but the fruit is small and not very attractive and drops badly in dry weather.

Stark Early Elberta. 1. Stark Bros. *Cat.* 46, 47. 1914.

Goldfinch. **2.** Barnes Bros. *Cat. 5.* 1913.

Stark Early Elberta was introduced by Stark Brothers, Louisiana, Missouri. The variety first fruited with Dr. Sumner Gleason of Kaysville, Utah. It is a seedling of Elberta and much like that variety but is said to ripen about a week earlier and to be handsomer and of better quality. On the grounds of this Station it seems to be identical with Elberta.

Stark Heath. 1. *U. S. D. A. Pom. Rpt.* 44. 1895. **2.** *Mich. Sta. Bul.* **169**:226. 1899. **3.** Stark Bros. *Yearbook* 71. 1910. **4.** *Ibid.* 52. 1916.

Stark Heath is said to be an improvement over Heath Cling. Fruit of medium size, roundish, slightly oval; apex prominent; suture distinct; color clear creamy-white, somewhat blushed; flesh creamy-white, juicy, tender, melting, with a vinous flavor; quality good; stone clinging; ripens a month after Elberta.

Steadley. 1. *Horticulturist* **28**:25. 1873. **2.** *Mich. Hort. Soc. Rpt.* 460. 1883. **3.** *Mich. Sta. Bul.* **169**:226. 1899. **4.** Budd-Hansen *Am. Hort. Man.* **2**:356. 1903.

This variety is said to be a seedling of La Grange which it resembles. Leaves with reniform glands; fruit large, roundish, inclining to ovate, with a slight suture; skin creamy-white, washed with pink; flesh free, white, very juicy, tender, with a mild sprightliness; quality good; season from the middle to the last of September.

Stearns. 1. *Mich. Sta. Sp. Bul.* **44**:62. 1910.

This variety, which was introduced in 1906, originated with J. N. Stearns, South Haven, Michigan. The fruit is about the size of Elberta which it surpasses in quality and brilliancy of color. It is a perfect freestone, with yellow flesh and ripens just after Elberta.

Steele. 1. *Can. Hort.* **24**:418. 1901.

Originated with Dr. M. Steele, Tavistock, Perth County, Ontario. Tree productive; fruit large, with an attractive, creamy skin and red cheek; flesh white, tender, juicy; good; season the last of August.

Stenson October. 1. *La. Sta. Bul.* **81**:31. 1905.

Undesirable in Louisiana.

Stephenson Cling. 1. Downing *Fr. Trees Am.* 641, 642. 1857. **2.** *Horticulturist* N. S. **7**:178. 1857.

This peach is supposed to be a seedling of Blood Cling grown by Thomas Stephenson, Clark County, Georgia. Fruit large, roundish, with a distinct suture; skin creamy-white, with a dark, dull, purplish-red blush; flesh white, with tinges of red and deep red at the stone, very tender, melting, juicy, with a pleasant, vinous flavor; ripens September first.

Stetson. 1. *Mag. Hort.* **13**:114. 1847. **2.** Hovey *Fr. Am.* **1**:53, Pl. 1851. **3.** Downing *Fr. Trees Am.* 626. 1857.

This is an accidental seedling which sprang up in 1843 in the garden of N. Stetson, Bridgewater, Massachusetts. Fruit large, roundish, with a shallow suture; skin greenish-white, marbled and shaded with crimson; flesh white, pink at the stone, very melting, juicy, brisk, rich; stone free; ripens from the middle to the last of September.

Stevens Late. 1. *Mich. Sta. Bul.* **104**:90. 1894. **2.** *Ibid.* **169**:227. 1899.

Late Rareripe Stevens. **3.** *Ga. Hort. Soc. Rpt.* 25. 1876. **4.** *Ibid.* 15. 1878.

Stevenson's Oct. **5.** *Ala. Sta. Bul.* **11**:10. 1890.

Stevens Late originated in Delaware or New Jersey. Tree strong; fruit of medium size, roundish, with an indistinct suture; skin creamy-white, with a bright, mottled blush; flesh pale creamy-white, with a little red at the pit, moderately juicy, tender, with a sprightly, vinous flavor; quality good; season early October.

Stewart Nos. 1 and 2. 1. *N. Y. Sta. Rpt.* **15**:290. 1897.

Listed in the reference; received at this Station from S. Richardson, Richardson, Utah.

Stickler Cling. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Listed in this reference.

Stiles. 1. *U. S. D. A. Rpt.* 291. 1893.

Stiles originated with Dr. E. P. Stiles, Austin, Texas, from a seed brought from Virginia and planted in 1866. Fruit of medium size, resembling Elberta in shape and color; flesh reddish-yellow, red at the pit, melting, juicy, free; quality good; ripens the last of June in Texas.

Stilson. 1. Wickson *Cal. Fruits* 314. 1889.

Originated in California. Fruit very large, having a red cheek, with crimson stripes; flesh yellow, free; quality excellent; ripens after Late Crawford.

Stinson. 1. *Ala. Sta. Bul.* **156**:135. 1911. **2.**

Am. Pom. Soc. Cat. 39. 1909.

Stinson Late. **3.** *Am. Pom. Soc. Rpt.* 157. 1881. **4.** *U. S. D. A. Rpt.* 263. 1892.

Stinson October. **5.** *Ala. Sta. Bul.* **47**:11. 1893.

Fruit large, broadly oval; color creamy-white, shaded with dark purplish-red; flesh adherent, white, veined with red and red at the pit, mild subacid; quality good; season late.

Stirling Castle. 1. *Gard. Chron.* 557. 1858. **2.** *Ibid.* 734. 1860. **3.** *Mag. Hort.* **28**:365. 1862. **4.** Thomas *Guide Prat.* 44. 1876.

Raised at Stirling Castle, England. Fruit large, roundish, with a well-colored, brownish-red surface; flesh red near the pit, vinous, aromatic; quality good; ripens early in September.

Stone. 1. *Jour. Hort.* N. S. **5**:318. 1893.

Said to be a yellow-fleshed peach common in the south of Europe.

Stonewall Jackson. 1. *Ga. Hort. Soc. Rpt.* 21. 1877. **2.** *Tex. Sta. Bul.* **39**:809. 1896. **3.** Waugh *Am. Peach Orch.* 207. 1913.

Stonewall. **4.** *Am. Pom. Soc. Cat.* 34. 1899. **5.** *Del. Sta. Rpt.* **13**:108. 1901.

General Jackson. **6.** *S. C. Sta. Rpt.* **19**:16. 1906.

This peach may have originated in Texas as a seedling of Chinese Cling. Some authorities, however, say that it originated with Judge Campbell, Pensacola, Florida, from a peach-pit brought from Japan in 1860 by William A. Spottswood, a Fleet Surgeon in the United States Navy. It is supposed to have been introduced by P. J. Berckmans,

Augusta, Georgia, about 1868. Fruit of medium size, roundish-oblate, inclined to conic; suture distinct; color creamy-yellow, with a faint crimson blush and many red dots; flesh white, red at the pit, firm, juicy, rich, with a pleasant, subacid flavor; stone large, clinging; season early.

Storm No. 1. 1. *Flor. & Pom.* 84. 1880.

This is a seedling raised by James A. Storm of Missouri, and said to be a large, attractive, freestone peach, ripening just before Amsden.

Stranahan. 1. *Mich. Sta. Sp. Bul.* **44**:62. 1910.

Stranahan's Late Orange. **2.** *Mich. Hort. Soc. Rpt.* 189. 1880.

Stranahan is a seedling raised in Michigan. Fruit very large, nearly round; color deep yellow, with a red cheek; flesh golden yellow, firm, free; quality good; season very late.

Strawberry. 1. Kenrick *Am. Orch.* 200. 1841. **2.** Downing *Fr. Trees Am.* 487. 1845. **3.** *Am. Pom. Soc. Cat.* 32. 1877.

Rose. **4.** *U. S. D. A. Rpt.* 263. 1892.

Strawberry was introduced by Thomas Hancock, Burlington, New Jersey. Fruit of medium size, roundish-oval; skin nearly all marbled with dark red; flesh white, juicy, melting, rich, with a sprightly, vinous flavor; ripens early in August.

Strong. 1. *U. S. D. A. Pom. Rpt.* 44. 1895. **2.** *Mich. Sta. Bul.* **169**:227. 1899.

Fruit medium to large, roundish; color creamy-white, with a bright red cheek; flesh white, red at the pit from which it is free, tender, melting, moderately juicy, mild subacid, vinous; quality good; ripens from the middle to the last of August.

Strout Early. 1. Budd-Hansen *Am. Hort. Man.* **2**:357. 1903.

Originated in Indian Territory and resembles Alexander. Fruit medium in size, roundish, slightly compressed; flesh streaked with red, firm; of good quality; stone free; ripens early.

Strunk.

Trees of this peach were received at this Station for testing in 1913 from W. P. Strunk, Roodhouse, Illinois, who originated it from seed in 1904. According to a statement of the originator, the trees are productive and bear large, yellow, freestone fruit of good quality which ripens the last of August.

Stuart. 1. *Ill. Hort. Soc. Rpt.* 161. 1898.

Fruit medium in size; color greenish-yellow, with a red blush; flesh clinging; quality good; season the last of July.

Studt. 1. *Ia. Hort. Soc. Rpt.* 366. 1908.

This is a seedling with Persian blood which originated in Solon, Johnson County, Iowa.

Sturtevant. 1. Elliott *Fr. Book* 290. 1852.
2. *Am. Pom. Soc. Cat.* 80. 1862.

Sturtevant was originated in 1826 by E. T. Sturtevant, Cleveland, Ohio. The American Pomological Society listed the variety in its fruit-catalog from 1862 until 1897. Fruit medium in size, roundish, compressed; skin very pubescent, rich yellow, nearly covered with dark red; flesh yellow, red at the pit, with veins of red running into the flesh; quality very good; pit free; ripens the last of August.

Suber. 1. *Fla. Sta. Bul.* **62**:517, 518. 1902.
2. *Am. Pom. Soc. Cat.* 39. 1909.

Suber was originated by a colored man of that name at Lake

Helen, Volusia County, Florida. Fruit large, roundish-oblong, with a shallow suture; color creamy-yellow, with a pinkish-red blush; flesh white, firm, meaty, sweet, vinous; quality good; clingstone; ripens early in Florida.

Success. 1. *Mo. State Fr. Sta. Rpt.* **1**:11. 1901. **2.** Budd-Hansen *Am. Hort. Man.* **2**:357. 1903. **3.** *Am. Pom. Soc. Cat.* 39. 1909.

Success probably originated in Texas. Fruit large, roundish, with a yellow surface; flesh firm, juicy, rich; good; pit free.

Sulhamstead. 1. Lindley *Guide Orch. Gard.* 252. 1831. **2.** Hogg *Fruit Man.* 232. 1866. **3.** Mas *Le Verger* **7**:89, 90, fig. 43. 1866-73.

This variety originated about a century ago in the garden of a Mrs. Thoytes, of Sulhamstead House, near Reading, Berkshire, England. Leaves deeply serrate, glandless; fruit large, roundish; skin clear, pale yellow, marbled with dark red; flesh pale yellow, melting, juicy, sweet, with a rich, vinous flavor; pit free; ripens from the first to the middle of September.

Sylphide. 1. *Tex. Sta. Bul.* **39**:809. 1896. **2.** *Del. Sta. Rpt.* **13**:109. 1901.

Sylphide Cling. **3.** *Am. Pom. Soc. Rpt.* 161. 1881.

Sylphide is a seedling of General Lee and originated in 1874 with Dr. L. E. Berckmans, Augusta, Georgia. Tree vigorous, productive; fruit medium to large, roundish-oblong, compressed, with a distinct suture; color creamy-white, dotted with red; flesh adherent, white, red at the pit, juicy, mild subacid; ripens the last of August.

Sumner Early. 1. Downing *Fr. Trees Am.* 633, 634. 1869.

Fruit medium to large, with an attractive blush; flesh white,

firm, free; ripens early.

Sumner White Free. 1. Downing *Fr. Trees Am.* 634. 1869.

Originated in South Carolina. Fruit large, nearly round, slightly depressed, with unequal sides; suture distinct; skin whitish-green, shaded with red; flesh white, juicy, sweet; ripens the first of September.

Sunrise. 1. *W. N. Y. Hort. Soc. Rpt.* 25. 1904.

Sunrise originated with Miller Brothers, Paw Paw, West Virginia, as a seedling of Heath Cling. Fruit large, roundish-oblong; color creamy-white, with a red blush; flesh firm, very juicy, sweet; quality good; clingstone; ripens very late.

Sunset. 1. *Fla. Sta. Rpt.* **8**:89. 1896.

Listed in this reference.

Superbe de Choisy. 1. Mathieu *Nom. Pom.* 416. 1889. **2.** *Guide Prat.* 41. 1895.

Fruit very large; flesh juicy, sweet, agreeably aromatic, white, red at the pit which is free; ripens the last of September.

Superbe de Trévoux. 1. *Cat. Cong. Pom. France* 115 fig. 1906.

Fruit large, with a distinct suture which divides the fruit into two unequal faces; skin nearly covered with dark red; flesh juicy, sweet, pleasantly flavored; quality good; ripens the last of August.

Superior Late. 1. *Country Gent.* **26**:256. 1865.

Scattergood No. 1. **2.** *Trans. Am. Inst.* 211. 1865.

This is a seedling raised about sixty years ago by H. V. Scattergood, Albany, New York. It is a large clingstone of good quality, ripening early in October.

Surpasse Bon Ouvrier. 1. *Gard. Chron.* 3rd Ser. **1**:210. 1887.

Fruit large, round, furrowed on one side; color deep scarlet in the sun; flesh melting, sweet, yellowish-white, red at the pit which is free; ripens the last of September.

Surprise. 1. Prince *Pom. Man.* **2**:33. 1832.

Tree productive; fruit very large, with a dingy-red or purplish surface; flesh deep yellow, with crimson veins running towards the center; quality very good; freestone.

Surprise de Jodoigne. 1. *Ann. Pom. Belge* **6**:91, 92, Pl. 1858.

Fruit medium in size, roundish, flattened at the base; skin yellow, mottled and dotted with red; flesh juicy, sweet, yellow, red at the pit which is free; quality fair.

Surprise de Pellaine. 1. Thomas *Guide Prat.* 41. 1876. **2.** Leroy *Dict. Pom.* **6**:281, 282 fig. 1879.

Introduced about 1864 by Henri Delloyer, a Belgian. Leaves glandless; fruit medium to large, roundish-oval, with a well-marked suture; skin pale greenish-yellow, washed with dark red; flesh greenish-white, red at the pit, juicy, sweet, aromatic; quality good; stone free; ripens the last of September.

Sure Crop. 1. Lovett *Cat.* 24 fig. 1906.

Introduced by J. T. Lovett, Little Silver, New Jersey. Tree hardy, productive; fruit large, nearly round; skin white, with a bright carmine cheek; flesh very juicy, sweet, rich, sprightly; ripens early.

Surties. 1. Ramsey *Cat.* 1913.

According to F. T. Ramsey and Son, Austin, Texas, this variety was originated by a Mr. Surties, Bexar County, Texas. The fruit resembles Honey but is less pointed; ripens the last of June in Texas.

Susquehanna. 1. *Am. Pom. Soc. Rpt.* 184, 214. 1856. **2.** Downing *Fr. Trees Am.* 633. 1857. **3.** Mas *Le Verger* **7**:179, 180, fig. 88. 1866-73. **4.** Leroy *Dict. Pom.* **6**:282, 283 fig. 1879.

Griffith. **5.** *Mag. Hort.* **24**:107. 1858.

Susquehanna was raised many years ago by a Mr. Griffith on the banks of the Susquehanna River, Pennsylvania, but the exact place of origin has never been known. Tree vigorous, productive; leaves have large, reniform glands; fruit very large, nearly round; skin rich yellow, with a beautiful red cheek; flesh yellow, sweet, juicy, with a rich, vinous flavor; quality good; stone free; ripens the first of September.

Swainson Black. 1. *Lond. Hort. Soc. Cat.* 94. 1831.

This is a dark red, medium-sized peach, ripening the first of September.

Swalsh. 1. Coxe *Cult. Fr. Trees* 221, 222. 1817. **2.** Elliott *Fr. Book* 294. 1854.

Swalze. **3.** Langley *Pomona* 105, Pl. 32 fig. 1. 1729.

Double Swalsh. **4.** Lindley *Guide Orch. Gard.* 256. 1831.

This variety is said to have been brought into England by Lord Peterborough before 1729. Leaves with reniform glands; flowers small, dark red; fruit medium in size, ovate,

with a deep suture; skin pale yellow, with a bright, deep red blush; flesh white, pale red at the pit from which it separates, melting, juicy, pleasantly flavored; ripens the first of September.

Swann Free. 1. *N. C. Sta. Rpt.* **12**:108. 1889.

Listed in this reference.

Sweet. 1. *Ohio Hort. Soc. Rpt.* 167 fig. 1886-87.

Originated by M. E. Sweet, Kirtland, Ohio. Fruit large, roundish-oval; color orange-yellow, mottled and striped with bright red; flesh light yellow, juicy, sweet; quality very good; season September.

Sweet Water. 1. Prince *Treat. Fr. Trees* 16. 1820. **2.** Prince *Pom. Man.* **2**:24. 1832.

Early Sweetwater. **3.** *Lond. Hort. Soc. Rpt.* **6**:412. 1826. **4.** Floy-Lindley *Guide Orch. Gard.*, 184. 1846.

According to Prince, Sweet Water originated in Flushing, New York, early in the Nineteenth Century. The peaches ripen a few days after Anne which Sweet Water resembles in shape of fruit and growth of tree. Leaves large, doubly serrate, glandless; flowers large; fruit of medium size, nearly round; skin thin, white, with a small amount of color on the exposed side; flesh melting, white, juicy, sweet; stone small, round, nearly flat, free.

Swick Wonder. 1. *Ia. Hort. Soc. Rpt.* 236. 1906.

Listed in this reference.

Switzerland. 1. *Gard. Mon.* **10**:249. 1868. **2.** *Mich. Hort. Soc. Rpt.* 378. 1895. **3.** *Mich. Sta. Bul.* **169**:227, 228. 1899.

This peach is supposed to have originated in Georgia. Tree productive, bearing leaves with globose glands; fruit medium to large, roundish, tapering slightly towards the apex, with a very shallow suture; color creamy-white, with a broad, dark red cheek; flesh white, red at the pit, tender, mild and vinous; quality good; pit free; ripens the last of August.

Taber. 1. *Fla. Sta. Rpt.* **8**:86. 1896. **2.** *Fla. Sta. Bul.* **73**:151, 152. 1904. **3.** *Am. Pom. Soc. Cat.* 39. 1909. **4.** *Ala. Sta. Bul.* **156**:135. 1911.

Taber originated in 1892 with G. L. Taber, Glen Saint Mary, Florida, as a seedling of Honey. The American Pomological Society added the variety to its fruit-list in 1909. Fruit large, roundish-oblong, with a long, recurved apex; skin white, well covered with red; flesh white, streaked with red, firm, juicy, rich, subacid; quality very good; clingstone; ripens the last of June in Florida.

Tacker. 1. *Del. Sta. Rpt.* **13**:109. 1901.

J. W. Tacker of Freestone County, Texas, grew this variety from an unknown peach-pit about 1845. It is said to reproduce itself closely from seed and is considered a valuable clingstone in Texas.

Tallman Nos. 1, 2 and 3. 1. *Mich. Sta. Bul.* **118**:31. 1895.

Listed in this reference.

Tante Mélanie. 1. Thomas *Guide Prat.* 53. 1876.

Tree very prolific; glands reniform; flowers very small; fruit well-colored.

Tarbell. 1. Cole *Am. Fr. Book* 194. 1849. **2.** *Am. Pom. Soc. Cat.* 39. 1909. **3.** Waugh *Am. Peach Orch.* 208. 1913.

This variety was grown many years ago by C. H. Tarbell, Lincoln, Massachusetts. Fruit very large, roundish, flattened at the base, with a suture nearly around the fruit; skin rich yellow, almost entirely covered with deep red; flesh yellow, red at the pit, very juicy, rich, sweet; quality good; season the middle of September.

Tardive d'Avignon. 1. Mathieu *Nom. Pom.* 416. 1889.

Listed in this reference.

Tardive d'Auvergne. 1. Mas *Pom. Gen.* **12**:182. 1883.

Belle tardive d'Auvergne. **2.** Thomas *Guide Prat.* 48. 1876.

Probably of Belgian origin. Glands globose; flowers small; fruit large, roundish; of first quality; matures early in October.

Tardive Béraud. 1. Mathieu *Nom. Pom.* 416. 1889.

Listed in this reference.

Tardive Chevallier. 1. Mathieu *Nom. Pom.* 416. 1889.

Mentioned in this reference.

Tardive de Gros. 1. Mathieu *Nom. Pom.* 416. 1889.

Listed in this reference.

Tardive des Lazaristes. 1. Mas *Pom. Gen.* **12**:186. 1883.

Listed in this reference.

Tardive du Mont d'Or. 1. *Garden* **52**:449.

1897. **2.** *Rev. Hort.* 520, 521, Pl. 1897.

This peach seems to have been sent out about 1896 by Francisque Morel, a nurseryman at Lyons, Rhône, France. Fruit large, roundish-oval; skin yellow, shaded with deep red; flesh creamy-white, streaked with pink at the center, very juicy, sweet, aromatic; season the first of November in France.

Tardive de Montauban. 1. Thomas *Guide Prat.* 53. 1876.

A large, yellow-fleshed peach ripening at the end of September.

Tardive de Passebel. 1. Mathieu *Nom. Pom.* 416. 1889.

Listed in this reference.

Tasmanian Wonder. 1. *Del. Sta. Rpt.* **5**:100. 1892.

Mentioned in this reference.

Tausch. 1. Mathieu *Nom. Pom.* 416. 1889.

Tausch's Lieblingspfirsich. **2.** Dochnahl *Führ. Obstkunde* **3**:206, 207. 1858.

Fruit large, roundish, flattened at the base; skin yellowish-white, with a red blush; flesh yellowish-white, sweet, vinous; season the middle of September.

Taylor. 1. *Del. Sta. Rpt.* **5**:100. 1892. **2.** Waugh *Am. Peach Orch.* 208. 1913.

Originated in the District of Columbia. Fruit large, round, with a yellow surface; clingstone; very good.

Tecumsa. 1. *Am. Pom. Soc. Rpt.* 205. 1858.

Said to be valuable in the South.

Teindoux. 1. Coxe *Cult. Fr. Trees* 229. 1817. **2.** Prince *Pom. Man.* **2**:16, 17. 1832.

Teindou. **3.** Duhamel *Trait. Arb. Fr.* **2**:38, 39, Pl. 27. 1768. **4.** Leroy *Dict. Pom.* **6**:286, 287. 1879.

Teint-Doux. **5.** Christ *Wörterb.* 356. 1802.

Sanftfarbige. **6.** Christ *Handb.* 594. 1817.

Zartgefärbter Lackpfirsich. **7.** Dochnahl *Führ. Obstkunde* **3**:213. 1858.

Glands globose; fruit large, round, divided into two unequal sections by a distinct suture; skin pale yellow, mottled with red; flesh juicy, sweet, melting, with a delicate flavor, white, faintly streaked with red around the pit which is free; ripens the last of September.

Teissier. 1. *Pom. France* **6**:No. 16, Pl. 16. 1869. **2.** *Cat. Cong. Pom. France* 117 fig. 1906.

Pêche du Teissier. **3.** *Jour. Hort.* N. S. **2**:32. 1862.

This variety was found on the grounds of a M. Teissier at Oullins, near Lyons, France, and was introduced to the trade about 1855. Fruit large, roundish, inclining to conic, with a well-marked suture; skin pale yellow, washed and mottled with deep red; flesh juicy, sweet, white, red at the pit which is free, vinous; quality very good; ripens the last of September.

Temple Late. 1. *Mich. Hort. Soc. Rpt.* 460. 1883.

Temple White. **2.** *Mo. State Fr. Sta. Bul.* **3**:33. 1902.

This is a medium-sized, oval, yellowish-red peach of good

quality, ripening in September.

Tennessee. 1. *U. S. D. A. Rpt.* 291. 1893.

This peach was raised about 1890 by Rev. J. G. Teter, Athens, Tennessee. Fruit large, round; skin heavily pubescent, creamy-white, with a trace of red; flesh creamy-white throughout, juicy, firm, meaty, sweet, rich; quality very good; clingstone; ripens the last of October in Tennessee.

Tennessee Everbearing. 1. Hood *Cat.* 28. 1909.

According to W. T. Hood and Company, Richmond, Virginia, this variety first fruited about 1888. It is a large, creamy-white clingstone with a deep blush and ripens its fruit continuously from August first to October first.

Terrel. 1. *Ill. Hort. Soc. Rpt.* 77. 1893.

Listed in this reference.

Teton de Venus. 1. Duhamel *Trait. Arb. Fr.* **2**:34, 35, Pl. XXIII. 1768. **2.** Coxe *Cult. Fr. Trees* 227, fig. 12. 1817. **3.** Lindley *Guide Orch. Gard.* 273. 1831. **4.** *Am. Pom. Soc. Cat.* 211. 1856. **5.** *Pom. France* **6**:No. 30, Pl. 30. 1869. **6.** Thomas *Guide Prat.* 45, 224. 1876. **7.** Leroy *Dict. Pom.* **6**:288 fig., 289. 1879.

Tuteon de Venice. **8.** Langley *Pomona* 101. 1729.

Teton Venus. **9.** Miller *Gard. Dict.* 1752.

Royal. **10.** *Pom. Mag.* **2**:73, Pl. 1839.

Venusbrust. **11.** Dochnahl *Führ. Obstkunde* **3**:209. 1858.

From all accounts this variety was known long before Merlet mentioned it in 1667 but its exact origin cannot be learned. According to Leroy it seems at one time to have been called Pêche du Chevalier but this name was permanently replaced by the present one about 1789—applied because of the unique shape of the fruit. In 1856 the American Pomological Society added the variety to its fruit-list but dropped it in 1862. Tree of moderate vigor and productiveness; leaves crenate, with globose glands; flowers small, pale red; fruit large, roundish, inclining to oblong, with a deep suture on one side; apex terminated by a broad, prominent, obtuse nipple; skin pale greenish-yellow, marbled with deep red in the sun; flesh greenish-white, faintly tinged with red at the pit, juicy, melting, sweet, having an excellent flavor; stone large, oval, free; season the last of September.

Texan. 1. *Tex. Nur. Cat.* 4. 1913.

Texan originated in the yard of the First National Bank at Whitesboro, Texas, and was introduced by the Texas Nursery Company, Sherman, Texas. It is a large, white clingstone, with a blush, ripening with Elberta.

Texas. 1. *Ill. Hort. Soc. Rpt.* 159. 1889. **2.** *Am. Pom. Soc. Cat.* 34. 1899. **3.** Waugh *Am. Peach Orch.* 208. 1913.

Texas King. **4.** *Ohio Sta. Bul.* **170**:182. 1906.

Fruit of medium size, roundish, compressed at the ends; color greenish-white, overspread with considerable crimson; flesh white, tinged with red at the pit and under the skin, firm, juicy, good; semi-clingstone; ripens about the middle of August.

Thames Bank. 1. Hogg *Fruit Man.* 233. 1866. **2.** *Gard. Chron.* 1552. 1871.

This variety was raised by a Mr. Rust, who was a gardener for L. Sullivan, Broom House, Fulham, England. Fruit large, roundish-oblong; skin deep orange-yellow, streaked on one

side with crimson; flesh yellow, tender, melting, juicy, highly flavored; season late.

Thissell Free. 1. Wickson *Cal. Fruits* 313. 1889.

Thissell White. **2.** *Cal. Sta. Rpt.* 315. 1895-97.

Originated with G. W. Thissell in California and is quite widely disseminated in that state. Fruit large, white, with a light red cheek; flesh white throughout, juicy, rich.

Thomas Burns. 1. *Gard. Mon.* **20**:236. 1878.

Introduced by Thomas F. Burns, Mt. Pulaski, Illinois. Fruit large, roundish, with a large suture; skin white, shaded and mottled with light red; flesh entirely white, juicy, melting, sweet, adherent; quality, very good; season very early.

Thomas November. 1. *Cultivator* 3rd Ser. **4**:146. 1856. **2.** Thomas *Guide Prat.* 51. 1876.

Glands reniform; flesh white, juicy, very firm, highly flavored; ripens the first of November.

Thomas Rivers. 1. *Garden* **56**:34. 1899. **2.** Bunyard-Thomas *Fr. Gard.* 114. 1904.

Originated with Thomas Rivers, Sawbridgeworth, England. Leaves glandless; fruit large, round, with a brilliant red blush; quality good; freestone; ripens the last of September.

Thompson. 1. *Am. Pom. Soc. Cat.* 39. 1909.

A yellow freestone said to have originated in Florida.

Thompson Orange. 1. *Gard. Mon.* **20**:273. 1878. **2.** *Flor. & Pom.* 84. 1880.

Said to have been raised at Wilson, North Carolina. It is a

large, early, attractive, freestone peach with a good, subacid flavor.

Tice. 1. Elliott *Fr. Book* 295. 1854.

Tice's Late Red and Yellow. **2.** Kenrick *Am. Orch.* 194. 1841.

Originated by James Tice, Middletown, New Jersey. Fruit large; color yellow, with a deep red blush; flesh free, yellow, juicy, sweet, delicious; ripens the last of September.

Tiebout. 1. Munson *Cat.* 7. 1904-05.

According to T. V. Munson and Son, Denison, Texas, this variety originated with V. J. Tiebout, Ellis County, Texas. Fruit large; color rich orange-yellow, with a dark red cheek; flesh firm but tender, free; quality good; ripens in Texas the last of August.

Tillotson. 1. Elliott *Fr. Book* 279. 1854. **2.** *Am. Pom. Soc. Cat.* 34. 1883.

Early Tillotson. **3.** Downing *Fr. Trees Am.* 475. 1845. **4.** *Cultivator* N. S. **6**:23, 86, 308. 1849. **5.** *Am. Pom. Soc. Cat.* 78. 1862. **6.** Thomas *Am. Fruit Cult.* 315. 1867.

Tillotson Précoce. **7.** Mas *Le Verger* **7**:165, 166, fig. 81. 1866-73. **8.** Leroy *Dict. Pom.* **6**:290 fig. 1879.

According to Thomas, this peach originated many years ago in Cayuga County, New York. It seems to have been introduced by J. J. Thomas, Macedon, Wayne County, New York. The American Pomological Society added the variety to its fruit-list in 1862 as Early Tillotson but shortened the name to Tillotson in 1883. Tree hardy, moderately productive; leaves deeply serrate, glandless; flowers small; fruit of medium size, roundish, sides unequal, with a shallow suture; skin pale yellowish-white, shaded with deep red: flesh white, red at the stone which is partially clinging,

melting, juicy, with a rich, excellent flavor; season the middle of August.

Tinley October. 1. Downing *Fr. Trees Am.* 634. 1869.

Said to have originated at Macon, Georgia. Fruit medium in size, somewhat oblong; color white, with a light wash of red; flesh white, juicy, vinous, good; season the middle of October.

Tippecanoe. 1. Hoffy *Orch. Comp.* **1**:Pl. 1841-42. **2.** *Mag. Hort.* **8**:252. 1842. **3.** Downing *Fr. Trees Am.* 499. 1845. **4.** *Am. Pom. Soc. Cat.* 80. 1862.

Pavie Tippécanoé. **5.** Leroy *Dict. Pom.* **6**:234 fig., 235. 1879.

Tippecanoe was raised from seed by George Thomas, Philadelphia, Pennsylvania, and was brought to notice in 1840. The variety received a place in the fruit-list of the American Pomological Society in 1862. Leaves with reniform glands; fruit very large, nearly round, a little compressed on the sides; skin yellow, with a fine red blush; flesh yellow, adherent to the pit, firm, juicy, with a good, vinous flavor; ripens the last of September.

Tirlemonter Magdalene. 1. Dochnahl *Führ. Obstkunde* **3**:197, 198. 1858.

Belle Tillemont. **2.** *Lond. Hort. Soc. Cat.* 94. 1831.

Fruit large, roundish; skin yellow, with a red blush; flesh yellowish-white, sweet, vinous; season the last of September.

Titus. 1. Downing *Fr. Trees Am.* 634. 1857. **2.** *Horticulturist* N. S. **7**:107 fig. 1857.

Originated with Mrs. Sarah Titus, Philadelphia,

Pennsylvania. Fruit large, round; skin yellow, with a red blush; flesh yellow, red at the pit which is free, juicy, sweet; quality good; ripens from the middle to the last of September.

Toledo. 1. *Mich. Sta. Bul.* **118**:31. 1895. **2.** *Ibid.* **169**:228. 1899.

Early Toledo. **3.** Storrs-Harrison *Cat.* 142. 1894.

Toledo Prolific. **4.** *Can. Exp. Farm Bul.* 2nd Ser. **3**:68. 1900.

According to the catalog of the Storrs and Harrison Company, Painesville, Ohio, Toledo came from northeastern Ohio about 1890. Fruit large, roundish; color creamy-white, washed, mottled and distinctly striped with red; flesh creamy-white, slightly colored at the pit which is free, juicy, tender, with a sweet, pleasant flavor; ripens from the middle to the last of August.

Tonbridge. 1. *Lond. Hort. Soc. Cat.* 104. 1831.

A hardy, yellow, dark red peach, ripening early in September.

Tong Pa. 1. *Mich. Sta. Bul.* **31**:58. 1887. **2.** *Col. O. Hort. Soc. Rpt.* 150. 1893.

Said to be a medium-sized peach of fair quality.

Topaz. 1. *Can. Exp. Farms Rpt.* 404. 1894. **2.** *Ariz. Sta. Bul.* **34**:81. 1900.

Fruit of medium size; skin greenish-white, tinged with red; flesh not juicy but free and of good quality; ripens the last of November in Arizona.

Toquin. 1. *U. S. D. A. Rpt.* 291. 1893. **2.** *Mich. Sta. Bul.* **169**:228. 1899.

Said to have originated with H. E. Harrison, Toquin, Michigan. Fruit medium in size, roundish; skin yellow, with a dull red cheek; flesh free, yellow, melting, juicy, mild subacid; quality good; season the middle of September.

Tornado. 1. *Del. Sta. Rpt.* **13**:109. 1901.

This seedling of Elberta originated with W. S. White, Denison, Texas. The fruit resembles that of Elberta but is larger and of better quality; season early July.

Toughina. 1. *Rural* N. Y. **74**:1197. 1915.

Toughina was originated by J. W. Stubenrauch, Mexia, Texas, as a cross between Elberta and Bell October. The fruit is said to surpass that of its parents in quality and adaptability for distant shipping. Fruit very large, with a bright yellow skin, nearly covered with attractive red; flesh yellow, firm; quality very good; ripens immediately after Elberta.

Towns Early. 1. *W. N. Y. Hort. Soc. Rpt.* 111. 1880.

This is a large, early peach originated by a Mrs. Towns, Garnett, Kansas.

Townsend. 1. *Del. Sta. Rpt.* **5**:100. 1892. **2.** *Mich. Sta. Bul.* **169**:228. 1899. **3.** *Fla. Sta. Bul.* **73**:152. 1904.

Said to be a seedling from Honey. Fruit large, roundish, often flattened at the base, compressed; color yellow, blushed with red; flesh juicy, tender, mild, vinous, yellow, red at the pit which is free; quality good; season the last of September.

Transparente Ronde. 1. Christ *Wörterb.* 357. 1802.

Said to be red on one side; with a firm, pleasing flesh.

Triomphe de Saint-Laurent. 1. Leroy *Dict. Pom.* **6**:291 fig., 292. 1879.

Triomphe Saint-Laurent. **2.** Thomas *Guide Prat.* 40. 1876.

This peach was probably raised about 1860 by a M. Galopin in Liége, Belgium. Fruit large, roundish, with sides unequal; skin pale yellow, with a dark red blush; flesh white, red at the pit, juicy, sweet; quality good; stone free; ripens the middle of August.

Troy. 1. Rea *Flora* 210. 1676.

Troy is a large, early, red peach of good quality.

Trueblood Late Free. 1. *Ind. Hort. Soc. Rpt.* 27. 1869.

Said to be a hardy variety of good quality.

Tuckahoe. 1. *N. Mex. Sta. Bul.* **30**:235. 1899.

Said to ripen late in New Mexico.

Tufts Early. 1. Cole *Am. Fr. Book* 190. 1849. **2.** Elliott *Fr. Book* 289. 1854.

Raised by E. Tufts, Cambridgeport, Massachusetts. Tree vigorous, productive; fruit large, roundish; skin yellowish-white, with a red cheek; flesh free, white, red at the pit, very juicy, melting, with a sweet, delicious flavor; ripens the last of August.

Tufts Rareripe. 1. Cole *Am. Fr. Book* 195. 1849.

This peach was originated by Bernard Tufts, Billerica, Massachusetts, and is said to come true from seed. Tree hardy, vigorous, productive; fruit medium in size, roundish; skin yellow, with a bright red blush; flesh yellow, melting,

very sweet, free; ripens from the middle to the last of September.

Turenne. 1. Noisette *Man. Comp. Jard.* **2**:479. 1860.

Turenne Améliorée. **2.** *Jour. Hort.* N. S. **5**:188. 1863. **3.** Decaisne *Jard. Fruit.* **7**:Pl. 1872-75.

Turenne grew from seed many years ago near Lyons, Rhône, France. Fruit large, roundish, somewhat irregular; skin pale yellow, deeply mottled with crimson; flesh yellowish-white, deep red at the pit which is adherent, coarse, acid, bitter; ripens in September.

Tuskena. 1. *Am. Pom. Soc. Rpt.* 75. 1873. **2.** *Am. Pom. Soc. Cat.* 34. 1899. **3.** *Mich. Sta. Bul.* **169**:228. 1899.

Tuskena Cling. **4.** *Am. Pom. Soc. Cat.* 28. 1873.

Tuscan Cling. **5.** *Okla. Sta. Bul.* **2**:15. 1892.

Yellow Tuscany. **6.** Budd-Hansen *Am. Hort. Man.* **2**:360. 1903.

Tuskena originated in Mississippi. It received a place on the fruit-list of the American Pomological Society in 1873 but was dropped in 1897, only to be replaced in 1899. Fruit large, roundish-oval; skin yellow, with a dark red cheek; flesh adherent, yellow, red at the pit, firm, vinous, rich; quality good; season the last of September.

Twenty-Ounce Cling. 1. *Oregon Nur. Cat.* 36. 1913.

According to the Oregon Nursery Company, Orenco, Oregon, this is a large, early peach desirable for canning.

Twyford. 1. *Lond. Hort. Soc. Cat.* 104.

1831.

Twyford is probably a seedling of Noblesse. Fruit large, pale green, with a red blush; flesh tender and of good quality; season the first of September.

Tyehurst. 1. *Can. Hort.* **14**:317. 1891. **2.** *Ont. Fr. Exp. Sta. Rpt.* **2**:58. 1895.

Tyehurst is a chance seedling which originated about thirty years ago with E. Tyehurst, Leamington, Ontario, Canada. Fruit medium in size, round; skin light yellow, with only a faint carmine blush; flesh yellow, slightly stained at the pit, sweet, firm, free; quality fair; ripens the middle of September.

Ulatis. 1. *Del. Sta. Rpt.* **5**:100. 1892. **2.** *Tex. Sta. Bul.* **39**:815. 1896. **3.** Wickson *Cal. Fruits* 310. 188g.

Ulatis originated near Vacaville, California, and is supposed to be a seedling of Alexander. Fruit large, roundish-oval; color creamy-white, with a red blush; flesh white, with a good flavor; freestone; ripens with Alexander.

Unique. 1. Mas *Le Verger* **7**:161, 162, fig. 79. 1866-73. **2.** Leroy *Dict. Pom.* **6**:293, 294 fig. 1879.

New Cut-leaved. **3.** *Lond. Hort. Soc. Cat.* 100. 1831.

New Serrated. **4.** *Ibid.* 101. 1831.

Emperor of Russia. **5.** Downing *Fr. Trees Am.* 477. 1845. **6.** Floy-Lindley *Guide Orch. Gard.* 184, 185. 1846.

De Smyrne. **7.** *Mag. Hort.* **20**:271. 1854.

Schöne Jersey Pfirsich. **8.** Mathieu *Nom. Pom.* 414. 1889.

Emperor. **9.** *Am. Pom. Soc. Cat.* 37. 1909.

Unique was raised more than a century ago by Michael Floy, New York City, from a pit of a curious peach-tree with serrate leaves which he had discovered about 1809 in New Jersey. In England the variety was introduced about 1819 as Emperor of Russia. Tree of moderate vigor, bearing narrow, glandless leaves which are very deeply and doubly serrated; fruit large, roundish, broad, one side much longer than the other; skin dull yellowish-white, with a dark red cheek; flesh yellowish-white, firm, juicy, rich and aromatic; stone free; season the last of August.

Unnamed Chinese. 1. *U. S. D. A. Rpt.* 291. 1893.

Professor C. S. Sargent grew this variety at the Arnold Arboretum, Jamaica Plain, Massachusetts, from seed received in 1868 from Dr. Bretschneider, who found it as a cultivated variety in the mountains north of Pekin, China. Its chief importance is as a parent type in the production of new, hardy varieties. Fruit medium in size, roundish to oblong-conic, sides somewhat unequal, compressed; color greenish-white, with a faint, dotted blush; flesh greenish-white, slightly tinged with red at the free pit, firm, juicy, fibrous, subacid to sweet; quality good; season early September in Massachusetts.

Unvergleichlicher Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:206. 1858.

Unvergleichlich Schöne. **2.** Liegel *Anweisung* 70. 1822.

Fruit large, roundish, somewhat flattened; skin yellow, with a deep red blush; flesh white, tender, sweet, vinous; season the first of September.

Utah Cling. 1. Munson *Cat.* 6. 1897-98.

Introduced in 1893 by T. V. Munson and Son, Denison, Texas. It is a large, prolific, yellow peach with a red cheek.

Utah Free. 1. Munson *Cat.* 6. 1897-98.

Also introduced by T. V. Munson and Son. A large, prolific, valuable, rich yellow peach.

Vagaloggia Cotogna. 1. *Mag. Hort.* **25**:88. 1859.

This is an attractive, Italian peach of excellent quality.

Vainqueur. 1. Baltet *Cult. Fr.* 238. 1908. **2.** *U. S. D. A. Plant Immigrants* **117**:958. 1916.

This is an early variety of the type of Alexander, valuable chiefly for breeding.

Valdy. 1. Thomas *Guide Prat.* 53. 1876. **2.** Leroy *Dict. Pom.* **6**:295 fig., 296. 1879.

Valdy was originated more than fifty years ago by a M. Valdy, Croix-Blanche, Lot-et-Garonne, France. Fruit large, roundish; skin yellow, washed with a dark carmine blush; flesh yellow, red at the center, juicy, sweet, with a pleasant, aromatic flavor; pit free; ripens the middle of August.

Van Buren Golden Dwarf. 1. *Gard. Mon.* **3**:53. 1861. **2.** *Cult. & Count. Gent.* **28**:238. 1866. **3.** *Am. Jour. Hort.* **2**:171, 172 fig. 1867.

This sort is supposed by the originator, J. Van Buren of Georgia, to be an accidental cross between Italian Dwarf and Van Zandt, originating about 1857. The tree resembles a currant bush; has numerous buds; its fruits attain average size but vary in shape. Fruit large, oblong, sometimes round, pointed at the apex; skin golden yellow, with a crimson cheek; flesh firm, juicy, sprightly; clingstone; ripens from the middle of September until October.

Van Deman. 1. *Green Nur. Cat.* 23 fig. 1916.

According to Green's Nursery Company, Rochester, New York, this peach originated near the summer home of the late Professor H. E. Van Deman, Beulah, Michigan. Fruit large, with a distinct suture; color clear yellow, with considerable red; flesh yellow, sweet, good; stone free; ripens early.

Van Deman Early. 1. *W. N. Y. Hort. Soc. Rpt.* 110, 111. 1880.

Said to have originated with H. E. Van Deman, Geneva, Kansas. The tree fruited first in 1878. Fruit large; color white, covered with bright purple and crimson; flesh slightly adherent, white, good.

Van Zandt. 1. Leroy *Dict. Pom.* **6**:296 fig., 297. 1879.

Van Zandt's Superb. **2.** Prince *Pom. Man.* **2**:15. 1832. **3.** Downing *Fr. Trees Am.* 487. 1845.

Van Zandt originated about 1825 with R. B. Van Zandt, Flushing, New York. Leaves with globose glands; fruit of medium size, roundish, with a small suture; skin yellowish-white, mottled with dark red; flesh white, tinted with red at the pit, juicy, melting, sweet, aromatic; quality good; stone free; ripens the first of September.

Vandermark. 1. *U. S. Pat. Off. Rpt.* 196. 1847. **2.** Elliott *Fr. Book* 295. 1854.

Said to be a seedling of Lemon Cling. Fruit large, roundish; color yellow, with a red blush; flesh yellow, acid, adherent to the pit; season September.

Vanderveer Optimum. 1. Prince *Pom. Man.* **2**:12. 1832.

This peach is a seedling of Old Newington and was named after a Dr. Vanderveer, of Long Island, New York. Fruit large, pale yellowish-white, blushed with red; flesh sweet,

juicy, with a delicate flavor; clingstone; season the last of September.

Vanguard. 1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Lindley *Guide Orch. Gard.* 253. 1831. **3.** Hogg *Fruit Man.* 233. 1866.

Probably Vanguard is but a variation of Noblesse, being included with it by some writers. The only distinction between the two is in habit of growth, Vanguard being more robust and hardy.

Vanmeter. 1. *Ill. Hort. Soc. Rpt.* 210. 1906.

A late variety resembling Krummel.

Variegated Free I. 1. *Horticulturist* **18**:276, 277 figs. 1863.

This variety originated many years ago with Isaac Pullen, Hightstown, New Jersey. Fruit large, roundish, with a well-marked apex; skin yellow, striped and marbled with deep red; flesh yellow, moderately juicy, sweet; quality very good; ripens early in September.

Variegated Free II. 1. Black *Cult. Peach & Pear* 113. 1886.

This peach is said to be a seedling of Variegated Free I and was introduced by H. R. Walker, Middletown, Delaware. It is a desirable white peach, with streaks and stripes of red.

Veritable Chancelliere. 1. Duhamel *Trait. Arb. Fr.* **2**:23, 24. 1768.

Kanzlerpfirsiche. **2.** Christ *Handb.* 593. 1817.

Schöne Kanzlerin. **3.** Dochnahl *Führ. Obstkunde.* **3**:198. 1858.

This variety differs from Chancellor in having large flowers and globose glands.

Verona. 1. Rea *Flora* 211. 1676.

Listed as a good, red peach.

Verte de Beaulieu. 1. Mas *Pom. Gen.* **12**:151, 152, fig. 12. 1883.

This variety was introduced and possibly originated by a M. Dumas near Lectoure, Gers, France. Fruit large, roundish-oval; skin greenish-white, shaded with red; flesh white, juicy, sweet, aromatic; quality good; season the middle of September.

Very Large Seedling Peach. 1. *W. N. Y. Hort. Soc. Rpt.* 112. 1880.

This variety is said to have been raised in New York City and to have ripened too late to be of value in the north.

Vessier. 1. *Mag. Hort.* **27**:545. 1861.

Vessier is a late, French peach, with rich, melting flesh.

Victor. 1. *Del. Sta. Rpt.* **13**:110. 1901. **2.** *W. N. Y. Hort. Soc. Rpt.* 11. 1907. **3.** *Am. Pom. Soc. Cat.* 39. 1909.

Early Victor. **4.** *Mo. State Fr. Sta. Rpt.* 12, 13. 1905-06.

Victor is a variety of unknown parentage which originated with John B. Bass, Bass, Texas. Fruit medium in size, roundish; color creamy-white with a red blush; flesh creamy-white, melting, juicy, subacid, with an almond flavor; quality good; stone semi-clinging; season early.

Victoria. 1. *Ariz. Sta. Bul.* **15**:62, 67. 1895. **2.** *Glen St. Mary Nur. Cat.* 14. 1900.

Victoria is of American origin and belongs to the Spanish type. Fruit large, nearly round; skin yellow; flesh yellow, juicy, sweet, free; ripens in Florida early in August.

Vilmorin. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:68. 1900. **2.** *Cat. Cong. Pom. France* 119 fig. 1906.

Vilmorin was obtained by Alexis Lepère, Montreuil, France. Fruit large, roundish, flattened at the base; skin pale yellow, washed with bright red; flesh free, white, tinged with dark red at the pit, juicy, with a pleasant, sweet, aromatic flavor; ripens from the middle to the last of September.

Vineuse de Fromentin. 1. Christ *Wörterb.* 351. 1802. **2.** Kenrick *Am. Orch.* 212. 1832.

Weinhafte Fromentinerpfirsche. **3.** Christ *Handb.* 594. 1817.

Fromentiner Lieblingspfirsich. **4.** Dochnahl *Führ. Obstkunde* **3**:202. 1858.

The fruit of this variety is similar to that of Grosse Mignonne with which it is often confused. Glands round; flowers large; fruit roundish, somewhat compressed at the ends; skin nearly covered with dark red; flesh white except at the stone, tender, vinous, juicy; stone small, free.

Vineuse Hâtive. 1. Poiteau *Pom. Franc.* **1**:No. 17, Pl. 1846. **2.** Leroy *Dict. Pom.* **6**:300, 301 fig., 302. 1879.

Although Poiteau and Leroy differ somewhat as to the origin of this peach, there is probably no doubt but that it was found near Paris, France, more than two centuries ago. Fruit medium in size, roundish, compressed at the ends; skin greenish-yellow, with a dark red blush; flesh white, red under the skin and at the stone, juicy, vinous, sweet; stone free; ripens the last of August.

Vinous Purple. 1. Prince *Pom. Man.* **1**:190. 1831.

This variety resembles Grosse Mignonne but is distinct. Fruit large, divided on one side into two sections by a deep

groove; skin fawn-colored, covered with very dark red; flesh white, red under the skin and around the pit, juicy, vinous, with a slightly acid flavor; stone free.

Violet Hâtive. 1. Langley *Pomona* 104, Pl. 30 fig. 6. 1729. **2.** Downing *Fr. Trees Am.* 637. 1869.

Grosse Violette Hâtive. **3.** Duhamel *Trait. Arb. Fr.* **2**:27, Pl. XVI fig. 1. 1768.

Violette Hâtive. **4.** Brookshaw *Hort. Reposit.* **1**:33, Pl. 17 fig. 2. 1823. **5.** Hogg *Fruit Man.* 233, 234. 1866.

This is undoubtedly a French variety and may be a seedling of Galande. Fruit large, roundish; skin yellow, mottled with red over most of the surface; flesh white, juicy, sweet, vinous; season early September.

Violet Muscat. 1. Rea *Flora* 211. 1676.

This variety is listed as a fine, violet-colored peach of good quality.

Violet Musk. 1. Rea *Flora* 211. 1676.

This is a red peach with yellow flesh.

Violette de Montpellier. 1. Mas *Pom. Gen.* **12**:183. 1883.

The tree of this variety is described as being moderately vigorous and bearing dense foliage which has reniform glands.

Violetter Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:218. 1858.

Fruit of medium size, roundish-oblong; color yellow, with a violet-red blush; flesh juicy, tender, with a slightly acid flavor; ripens in August.

Voorheis No. 1. 1. *Tex. Sta. Bul.* **8**:35. 1889. **2.** *Ibid.* **39**:815. 1896.

Tree vigorous, unproductive; fruit of medium size, ovate, with a pointed apex; color yellow, with a red cheek; quality good; season the last of June in Texas.

Voorheis Silver. 1. *Tex. Sta. Bul.* **8**:35. 1889.

Listed in this reference.

Wake Forest. 1. *N. C. Sta. Rpt.* **12**:108. 1889.

Listed in this reference.

Walburton. 1. Elliott *Fr. Book* 289. 1854. **2.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903.

Walburton Admirable. **3.** *Gard. Chron.* 702. 1841. **4.** Downing *Fr. Trees Am.* 627. 1857. **5.** Mas *Le Verger* **7**:225, 226, fig. 111. 1866-73. **6.** Hogg *Fruit Man.* 463. 1884.

Walburton is a late peach raised more than seventy-five years ago by Andrew Morton, Walburton, Sussex, England. The variety is supposed to be a seedling of Noblesse which it resembles in many respects. Tree hardy, productive; glands globose; flowers small; fruit large, round, with a distinct suture; skin greenish-white, mottled, with a dark red blush; flesh white, stained at the pit, juicy, melting, with a rich, sweet flavor; ripens the last of September.

Waldo. 1. *Am. Pom. Soc. Cat.* 46. 1891. **2.** *Fla. Sta. Bul.* **62**:518, 519. 1902. **3.** *Ala. Sta. Bul.* **156**:135. 1911. **4.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903.

Waldo was raised from a seed of Peento about 1886 by T. K. Godbey, Waldo, Florida; it first fruited in 1888. Tree

moderately large and productive in the South; glands reniform; fruit medium to large, roundish, with a shallow suture; apex blunt, often with a recurved tip; skin yellow, washed with a delicate red blush; flesh yellowish-white, slightly pink near the pit, juicy, with a sweet, delicious flavor; freestone; ripens the first of June in the South.

Walker. 1. *Mich. Sta. Bul.* **169**:228, 229. 1899. **2.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903.

Walker's Variegated Free. **3.** *Ill. Hort. Soc. Rpt.* 213. 1881. **4.** Fulton *Peach Cult.* 177. 1908.

Said to have originated in Delaware. Glands globose; flowers small; fruit medium to large, roundish-oval, with a slight suture; color creamy-white, with a bright red cheek; flesh creamy-white, with red at the pit, tender, juicy, vinous, sprightly; quality good; pit free; season the last of September.

Walker Early. 1. *Mich. Hort. Soc. Rpt.* 500. 1871.

A productive, market sort ripening in August. Glands globose; fruit small, roundish; color white, with a red blush; quality good.

Wallace. 1. *Ga. Sta. Bul.* **42**:242. 1898.

Tree moderately vigorous; glands reniform; fruit large, roundish; color greenish-yellow, with a red blush; flesh white, tough, rich, vinous, adherent; quality good; ripens the middle of August in Georgia.

Waller. 1. Berckmans *Cat.* 13. 1916-17.

According to the P. J. Berckmans Company, Augusta, Georgia, this peach was originated by Waller Brothers near Sparta, Georgia. Tree productive, bears annually; fruit of the Crawford type, large; skin yellow but nearly covered with

red; flesh stringy; of good quality.

Wallis Best. 1. Stark Bros. *Cat.* 40. 1913.

According to Stark Brothers, Louisiana, Missouri, this peach originated as a seedling of Elberta on the grounds of Henry Wallis, St. Louis County, Missouri. It is said to resemble its parent in habit of growth, vigor and productiveness but is hardier and of higher quality.

Wallis Heath Free. 1. Stark Bros. *Cat.* 40. 1913.

This variety originated with Henry Wallis, St. Louis County, Missouri, according to Stark Brothers of Louisiana, Missouri. Tree hardy, vigorous, very productive; fruit very large; flesh creamy yellow and of fine quality.

Walter Early. 1. Kenrick *Am. Orch.* 183, 184. 1841. **2.** Downing *Fr. Trees Am.* 488. 1845. **3.** Cole *Am. Fr. Book* 191. 1849.

Walter Early originated in New Jersey. Tree productive; leaves with globose glands; fruit large, roundish; skin white, with a red cheek; flesh white, tinged red at the stone, melting, juicy, sweet, pleasant; ripens the last of August.

Ward Late. 1. Leroy *Dict. Pom.* **6**:305 fig., 306. 1879. **2.** Fulton *Peach Cult.* 191, 192. 1908.

Ward's Late Free. **3.** Kenrick *Am. Orch.* 201. 1841. **4.** *Am. Pom. Soc. Cat.* 80. 1862.

Ward's Freestone. **5.** Elliott *Fr. Book* 280. 1854.

Tardive de Ward. **6.** Mas *Le Verger* **7**:203, 204, fig. 100. 1866-73.

According to Leroy, Doctor A. Ward, Athens, Georgia, originated this variety. There is no statement as to the date

of origin. The American Pomological Society listed this peach in its fruit-catalog in 1862 where it has since remained. Tree vigorous, productive; glands globose or reniform; flowers small; fruit large, roundish, inclining to oval, with a moderately deep suture; skin pale yellowish-white, with an attractive, crimson blush; flesh nearly white, occasionally tinged with red at the pit, free, rich, juicy, melting, with a vinous flavor; ripens the last of September.

> **Ware. 1.** *U. S. Pat. Off. Rpt.* 372. 1856. **2.** *Am. Pom. Soc. Cat.* 80. 1862.

Ware was placed in the fruit-list of the American Pomological Society in 1862 without a description but was dropped in 1869.

> **Wark. 1.** *Mich. Sta. Bul.* **205**:31. 1903. **2.** *Mich. Sta. Sp. Bul.* **44**:63. 1910.

Wark originated as a sprout from the roots of an old peach-tree in the orchard of James Wark near Douglas, Michigan. It resembles Triumph but is larger and freer from leaf-curl and brown-rot. It ripens later than Triumph.

> **Washington. 1.** *Lond. Hort. Soc. Rpt.* **6**:409. 1826. **2.** Downing *Fr. Trees Am.* 488. 1845. **3.** Elliott *Fr. Book* 289. 1854. **4.** Mas *Le Verger* **7**:177, 178, fig. 87. 1866-73. **5.** *Mich. Sta. Bul.* **169**:229. 1899.
>
> *Washington Red Freestone.* **6.** Kenrick *Am. Orch.* 179. 1835.
>
> *Washington Rareripe.* **7.** Hogg *Fruit Man.* 234. 1866.

Washington originated in America and was named and introduced by Michael Floy of New York City. Tree vigorous, productive; glands globose; fruit large, roundish, broad, with a deep suture extending nearly around the fruit; skin yellowish-white, with a deep crimson cheek; flesh pale yellowish-white, juicy, very tender, melting, sweet, rich;

stone usually free; season the middle of September.

Washington Clingstone. 1. Prince *Cat. Fr. Trees* 24. 1823. **2.** Kenrick *Am. Orch.* 232. 1832. **3.** Downing *Fr. Trees Am.* 499. 1845. **4.** Elliott *Fr. Book* 289. 1854.

Said to be of American origin. Glands reniform; fruit of medium size, roundish; skin yellowish-green, with a slight red blush; flesh very juicy, tender, melting, with a sweet, luscious flavor; ripens the last of September.

Watkin Cling. 1. *Cultivator* 3rd Ser. **4**:146. 1856.

This variety originated in the South as a seedling of Heath Cling which it resembles except in later ripening.

Watkin Early. 1. *Del. Sta. Rpt.* **5**:100. 1892.

Listed in this reference.

Weaver. 1. Ramsey *Cat.* 4. 1912.

According to P. T. Ramsey and Son, Austin, Texas, this peach originated from seed grown by D. W. Weaver of Austin. Fruit large; color yellow, overspread with red; flesh very yellow and very firm, adherent; quality good; ripens the first of September in Texas.

Weber Golden Free. 1. Weber *Cat.* 17. 1906.

According to H. J. Weber and Sons Nursery Company, St. Louis, Missouri, the fruit of this variety is medium in size, golden yellow, with a bright red cheek, sweet and good in quality.

Weber Prize. 1. *The Dalles Nur. Cat.* 17, fig. 1910.

According to R. H. Weber, proprietor of The Dalles

Nurseries, The Dalles, Oregon, this variety originated in The Dalles. Fruit very large; color rich golden-yellow, considerably overspread with deep carmine and crimson; flesh yellow, firm, rich, delicious; pit very free; ripens the last of September.

Weed. 1. *U. S. D. A. Pom. Rpt.* 44. 1895.

Weed originated on the farm of George Weed, Douglas, Michigan. Fruit of medium size, roundish; color yellow, with a purplish-red cheek; flesh free, yellow, deep red at the pit, soft, juicy, sweet, vinous; quality good; ripens the first of September.

Weeping. 1. Kenrick *Am. Orch.* 229. 1832.
2. Elliott *Fr. Book* 296. 1854.

Reid's Weeping. **3.** *Horticulturist* **29**:165, 166. 1874.

Reid. **4.** *Mich. Sta. Bul.* **169**:224. 1899.

This variety originated many years ago on the grounds of William Reid, Elizabethtown, New Jersey. Tree vigorous, spreading, with graceful, drooping branches; fruit large, roundish-ovate; skin yellow, with a bright red cheek; flesh yellow, stained with red at the pit, very juicy, tender, vinous; quality good; pit free; ripens the last of August.

Weihnachts-Aprikosenpfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:220. 1858.

Fruit medium in size, yellow, washed with red; flesh yellow, tender, sweet; season very late.

Weisse Charlotte. 1. Dochnahl *Führ. Obstkunde* **3**:207. 1858.

Fruit large, round; skin yellowish-white, partly washed with red; flesh yellowish-white, often with tinges of red, sweet but with a slight astringent flavor; season the middle of October.

Welch. 1. *U. S. D. A. Yearbook* 272, 273, Pl. 35. 1903.

Welch was introduced by Charles B. Welch, Douglas, Michigan, having been raised as a seedling of Chili about 1880. The variety resembles its parent but is considered hardier, less subject to leaf-curl and brown-rot, better in quality and ripens its fruit later.

Weld Freestone. 1. Kenrick *Am. Orch.* 179. 1835. **2.** Elliott *Fr. Book* 289. 1854.

Said to have been raised by Eben Weld, Roxbury, Massachusetts. Fruit large, roundish-oval; skin greenish-white, with a red blush; flesh rich, sweet, vinous, with a delicious flavor; ripens the last of September.

Wellington. 1. *Lond. Hort. Soc. Cat.* 105. 1831. **2.** *Can. Hort.* **24**:480. 1901.

This old sort has long been growing in Toronto, Canada, but only recently came before the public. The fruit is a large freestone, with yellow flesh and the tree shows distinct hardiness and vigor.

West. 1. *Ga. Sta. Bul.* **42**:242. 1898.

This is a low, spreading variety with reniform glands.

Western Newington. 1. Prince *Treat. Fr. Trees* 17. 1820.

Listed in this reference as a clingstone.

Whaley Favorite. 1. *Ont. Fr. Gr. Assoc. Rpt.* **28**:87. 1896.

This is a seedling peach raised by Mark Whaley, Olinda, Ontario, Canada. The fruit is a yellow freestone of fair size and ripens two weeks ahead of Early Crawford.

Wheatstone. 1. *N. Y. Sta. Rpt.* **3**:22. 1884.

Listed as growing upon the Station grounds in 1884.

Wheatley. 1. *Miss. Sta. Bul.* **93**:14. 1905.

Listed in this reference.

Wheeler Early. 1. *Country Gent.* **23**:158. 1864. **2.** *Am. Pom. Soc. Cat.* 30. 1875. **3.** *Mich. Hort. Soc. Rpt.* 416. 1888.

Wheeler Early was listed by the American Pomological Society from 1875 until 1897. Glands globose; fruit small, roundish; skin white, blushed with red; flesh melting, not very high in quality; freestone; ripens early.

Wheeler Late. 1. *Can. Exp. Farm Bul.* 2nd Ser. **3**:68. 1900.

This is a strong-growing variety which does not ripen its fruit in Canada.

Wheeler Late Yellow. 1. *Del. Sta. Rpt.* **5**:100. 1892.

Listed as growing in Delaware.

White Ball. 1. *Mag. Hort.* **13**:114. 1847. **2.** Downing *Fr. Trees Am.* 636. 1869.

Said to have originated in Massachusetts. Glands reniform; fruit of medium size, roundish, slightly depressed; skin greenish-white, shaded and marbled with red; flesh free, white, juicy, melting, sweet; ripens early in September.

White Blossom. 1. Prince *Treat. Fr. Trees* 17. 1820.

White Blossomed Incomparable. **2.** *Lond. Hort. Soc. Cat.* 97. 1831. **3.** Prince *Pom. Man.* **2**:19. 1832.

Pêcher à Fleurs et à Fruits Blancs. **4.** Mas *Le Verger* **7**:13, 14, fig. 5. 1866-73.

This singular variety has white blossoms and pale, straw-colored bark. It was found in a hedge in Kings County, New York. The fruit resembles the Snow peach but is inferior in size, flavor and appearance. Leaves light green, with reniform glands; fruit large, oval; flesh white to the stone, melting, juicy; ripens late in August.

White Cling. 1. *Ga. Hort. Soc. Rpt.* 25. 1876.

This peach is a white-fleshed clingstone ripening in July.

White Double Crop. 1. *Del. Sta. Rpt.* **5**:100. 1892.

Mentioned in this reference.

White Globe. 1. *Cultivator* **4**:146. 1856.

This is a very juicy, clingstone peach, having a delicious, aromatic flavor and ripening early in September.

White Imperial. 1. Downing *Fr. Trees Am.* 488, 489. 1845. **2.** Elliott *Fr. Book* 279, 280. 1854. **3.** *Am. Pom. Soc. Cat.* 80. 1862.

This old sort originated with David Thomas, Cayuga County, New York, and is believed to be a seedling of Noblesse. It was introduced by J. J. Thomas, a son of the originator, Macedon, New York. Growers and pomologists have confused White Imperial with the Imperial of southern origin. Tree hardy, vigorous; fruit large, roundish, broad, depressed at the apex; suture moderately deep; skin yellowish-white, tinged with light purplish-red in the sun; flesh nearly white, melting, juicy, of delicate texture, sweet; quality very good; freestone; ripens the last of August.

White July. 1. *Del. Sta. Rpt.* **5**:100. 1892. **2.** *Ala. Bd. Agr. Rpt.* **36**:106. 1908.

This is a superior clingstone peach which ripens early in Alabama.

White June. 1. *Green River Nur. Cat.* 15. 1899.

According to the Green River Nurseries, Bowling Green, Kentucky, this variety originated with W. W. Ware, Hopkinsville, Kentucky. It is a white peach of good quality, ripening with Alexander.

White Magdalen. 1. Langley *Pomona* 101, Pl. 27 fig. 6. 1729. **2.** Christ *Handb.* 598. 1817. **3.** Lindley *Guide Orch. Gard.* 253. 1831.

Magdalen. **4.** Rea *Flora* 210. 1676.

Madeleine Blanche. **5.** Duhamel *Trait. Arb. Fr.* **2**:11, 12, 13, Pl. VI. 1768. **6.** Leroy *Dict. Pom.* **6**:147, 148 fig., 149, 150. 1879.

Madeleine Blanche précoce. **7.** Mas *Pom. Gen.* **12**:186. 1883.

White Magdalen is an old French sort, having been mentioned as early as 1628 by Lectier. Leaves doubly serrate, glandless; flowers large, pale red; fruit below medium in size, somewhat globular, halves unequal; deeply sutured; skin yellowish-white, marbled with deep red; flesh melting, stained near the pit, juicy but not high in flavor; stone free, small, obtuse; ripens the middle of August.

White Monsieur. 1. Rea *Flora* 211. 1676.

Said to be a fine, early peach.

White Nectarine. 1. *Del. Sta. Rpt.* **13**:111. 1901.

This is an old English variety belonging to the Chinese Cling group of peaches. Fruit nearly large, roundish; color greenish-white, washed and striped with crimson; flesh white, tinged with red at the pit, juicy, melting, with a mild subacid, vinous flavor; pit free; season late.

White Nutmeg. 1. Langley *Pomona* 100, Pl. 27 fig. 1. 1729. **2.** Miller *Gard. Dict.* 1752.

Avant-pêche blanche. **3.** Duhamel *Trait. Arb. Fr.* **2**:5, 6, Pl. II. 1768. **4.** Leroy *Dict. Pom.* **6**:45, 46 fig., 47, 48. 1879.

Weisse Frühpfirsche. **5.** Christ *Handb.* 598. 1817.

Kleiner weisser Frühpfirsche. **6.** Liegel *Anweisung* 68. 1822. **7.** Dochnahl *Führ. Obstkunde*. **3**:196. 1858. **8.** Mathieu *Nom. Pom.* 402. 1889.

Frühe Montagne? **9.** Liegel *Anweisung* 68. 1822.

Earliest White Nutmeg. **10.** Prince *Pom. Man.* **1**:173. 1831.

This is an old French sort spoken of in 1589. Leaves small, doubly serrate, without glands; flowers large, pale; fruit very small, oval, distinctly sutured; apex with an acute nipple; skin white, with a pale tinge; flesh white to the stone, juicy, musky; freestone; quality fair; stone small, oval; ripens the middle of July.

White Pace. 1. Downing *Fr. Trees Am.* 637. 1869.

This is a Southern variety, having Persian blood but with a comparatively white skin. Flesh yellowish, juicy, sweet, free; season August.

White Winter. 1. Prince *Treat. Fr. Trees* 17. 1820. **2.** Prince *Pom. Man.* **2**:32. 1832.

This is an oval-shaped peach with white skin and flesh which ripens in October and is chiefly valued for preserves.

Whitehead Red Heath. 1. Kenrick *Am.*

Orch. 197. 1841.

This variety, which was sent out about 1840 by Richard Reynolds, Smithfield, Virginia, is said to be superior to Heath Cling with which it ripens. Fruit very large, with a deep red color.

Whitlow Choice. 1. *Green River Nur. Cat.* 16. 1899.

This variety was found by the Green River Nurseries, Bowling Green, Kentucky, on the farm of W. H. Whitlow near Casky, Kentucky. It is a freestone of good quality, resembling Yellow Rareripe and ripening the last of July.

Wiard. 1. *W. N. Y. Hort. Soc. Rpt.* 117. 1900.

Wiard originated about twenty years ago on the grounds of Harry Wiard, Syracuse, New York. Fruit large, with golden-yellow skin, nearly covered with bright crimson; flesh yellow, very juicy; of good quality; freestone; season the middle of September.

Wiggins. 1. *Ga. Sta. Bul.* **42**:242. 1898. **2.** *Del. Sta. Rpt.* **13**:111, 112. 1901.

Said to have originated in Texas. Fruit medium in size, roundish-oblong, slightly compressed; skin creamy-yellow, with a red blush; flesh greenish-white, juicy, tender, sweet; quality excellent; stone free; ripens early in July in Texas.

Wilbur. 1. Leonard Coates *Cat.* 5. 1911-12.

According to the Leonard Coates Nursery Company, Morganhill, California, this is a very large, attractive, yellow, freestone peach ripening in September.

Wilder. 1. *Gard. Mon.* **17**:270. 1875. **2.** *Ibid.* **18**:82. 1876.

Wilder probably originated with H. M. Engle, Marietta,

Pennsylvania. It is said to be a promising variety.

Wilkins. 1. *U. S. D. A. Rpt.* 382. 1891.

Wilkins Cling. **2.** Kan. Hort. Soc. *Peach, The* 148. 1899.

Wilkins is said to have originated with Colonel Wilkins of Maryland as a seedling of Heath Cling and is thought to be identical with that variety except in being larger and having clearer and more creamy color.

Willard. *W. N. Y. Hort. Soc. Rpt.* 115. 1900.

This variety originated with S. D. Willard, Geneva, New York, and is a peach of good quality, ripening after Early Crawford.

Willett. 1. *Mich. Sta. Bul.* **118**:32. 1895. **2.** *Ibid.* **169**:229. 1899. **3.** *U. S. D. A. Yearbook* 476, 477, Pl. LXI. 1902.

Cornelius O'Bryan of New York City is said to have originated this peach more than fifty years ago from a stone brought from South America. In 1874 Mr. O'Bryan's property came into the possession of Wallace P. Willett, who was so impressed with the new seedling that the following year he induced C. L. Van Dusen, Geneva, New York, to propagate it. Fruit large, roundish-ovate, compressed; skin deep yellow, blushed and often striped with crimson; flesh yellow, red at the pit, juicy, fairly tender, with a vinous flavor; stone free; quality good; ripens the last of September.

Williams. 1. *W. N. Y. Hort. Soc. Rpt.* 115. 1880.

Williams was discovered about 1875 by Lewis Williams, Hillsboro, Maryland. The fruit is said to be earlier and better than that of Alexander.

Williams Catherine. 1. *Lond. Hort. Soc.*

Cat. 95. 1831.

Very much like Catharine. Leaves with reniform glands; flowers small; fruit large, pale green, blushed; of first quality; stone clings; matures late in September.

Williams Cling. 1. L. R. Johnson *Cat.* 6. 1894.

L. R. Johnson, Coshocton, Ohio, says that this peach was grown from a seed of Bealmear Cling by J. F. Williams. It closely resembles its parent.

Williams Early Purple. 1. *Lond. Hort. Soc. Cat.* 105. 1831.

This is said to be a good, pale green peach, blushed with dull red and ripening early in August.

Williamson. 1. *U. S. D. A. Pom. Rpt. 44.* 1895. **2.** *Mich. Sta. Bul.* **169**:229. 1899.

Williamson Choice. **3.** *Col., O., Hort. Soc. Rpt.* 32. 1892.

Fruit large, roundish; skin yellow, washed and striped with crimson; flesh yellow, red at the pit, juicy, tender, with a mild, vinous flavor; freestone; ripens the last of September.

Williamson Cling. 1. Kenrick *Am. Orch.* 186. 1835.

Fruit large, oblong, with a pointed apex; skin white, with a red blush; flesh white, very juicy, with a good flavor; season the middle of October.

Willow-Leaf. *1. Mich. Sta. Bul.* **31**:58. 1887.

Listed in this reference.

Willson. 1. *Gard. Mon.* **24**:307. 1882.

This variety originated about 1878 with Pierpont Willson, Vineland, New Jersey. Fruit large, roundish, inclined to oblong; color yellowish-white, with a slight blush; flesh yellowish-white, dark red at the pit, very juicy, of excellent flavor; freestone; season the first of September.

Wilson. 1. *Peachland Nur. Cat.* 12, 13. 1890.

Wilson was introduced more than twenty-five years ago by Charles Wright, proprietor of the Peachland Nurseries, Seaford, Delaware. The variety resembles Reeves but is larger, more productive and ripens a week earlier.

Windoes. 1. *Mich. Hort. Soc. Rpt.* 452. 1879.

This is a freestone peach ripening in the middle of September and of only local interest in Michigan, where it originated.

Wine. 1. *Continental Pl. Cat.* 13, 14. 1915-16.

Wine is an old variety recently introduced by the Continental Plant Company, Kittrell, North Carolina. Said to reproduce itself from seed. Fruit medium in size, with an attractive, red cheek; flesh very juicy and tender, with a wine-like flavor; freestone; season the last of July.

Winesburgh Large Yellow. 1. *Mag. Hort.* **13**:110. 1847.

This is said to be a large, very excellent seedling which originated long ago in Holmes County, Ohio.

Winifred. 1. Leonard Coates *Cat.* 5. 1911-12.

According to the Leonard Coates Nursery Company, Morganhill, California, this is a very late, yellow clingstone equal to Levy.

Winnepesaukee. 1. *Am. Pom. Soc. Rpt.* 149. 1897.

This is a peach of New Hampshire origin.

Wirt Lady. 1. *Kan. Hort. Soc. Rpt.* 84. 1898.

Said to ripen with Crothers.

Witham Seedling. 1. *Lond. Hort. Soc. Cat.* 105. 1831.

Listed in this reference.

Woburn Early Mignonne. 1. *Lond. Hort. Soc. Cat.* 100. 1831.

Mentioned in this reference.

Woerner. 1. *U. S. D. A. Rpt.* 291. 1893.

Fruit of medium size, oblong, with a cream-white skin, faintly blushed with red; flesh white, firm, sweet, rich; quality very good; clingstone; season the last of October.

Wonderful. 1. *N. C. Sta. Rpt.* **12**:108. 1889. **2.** *Can. Hort.* **16**:81. 1893. **3.** *Mich. Sta. Bul.* **169**:229. 1899. **4.** Budd-Hansen *Am. Hort. Man.* **2**:359. 1903. **5.** *Am. Pom. Soc. Cat.* 39. 1909.

Wonderful is a seedling peach which originated in New Jersey nearly thirty years ago. It has been confused with Smock which it closely resembles. Tree hardy but lacking in productiveness; fruit large, roundish-oval, with a distinct suture; color yellow, with a red blush when exposed; flesh yellow, red at the pit, moderately juicy, tender, free; quality fair; season the last of September.

Woodlawn Golden. 1. *Woodlawn Nur. Cat.* 36. 1914.

This variety was recently introduced by Allen L. Wood,

proprietor of the Woodlawn Nurseries, Rochester, New York. Fruit large; color golden yellow, with a red cheek; flesh free, yellow, firm, with a fine, rich flavor; season the first of September.

Woodman Choice. 1. *N. Y. Sta. Rpt.* **15**:290. 1896.

At one time grown on the Station grounds. Fruit large, roundish; skin greenish-yellow, with a mottled blush; flesh deep yellow, stained with red at the pit, juicy, firm; freestone; quality good; season the last of September.

Woolsey. 1. Budd-Hansen *Am. Hort. Man.* **2**:359. 1903.

Woolsey Nebraska. **2.** Stark Bros. *Cat.* 40. 1913.

Said to have originated in Gage County, Nebraska. Tree hardy in Nebraska; fruit large, roundish; color yellow, with a red and crimson cheek; flesh yellow, rich, melting, vinous, good; pit free.

Worcester. 1. *Am. Pom. Soc. Rpt.* 89. 1899.

Dr. J. Warren Worcester, Middletown, New York, raised this variety from a pit of a California peach. Fruit large, round, with a distinct suture; flesh yellow, red at the stone, juicy, sweet, rich; freestone; ripens rather late.

World Fair. 1. Bailey *Am. Hort.* 185. 1892.

This variety, which was introduced by the Home Nursery Company, Normal, Illinois, is said to have originated about 1892 in Sappington, Missouri. Tree hardy, vigorous; fruit very large, roundish; color yellow, with a deep red blush; flesh juicy, with an excellent flavor; season about the middle of June in Missouri.

Worth. 1. Stark Bros. *Cat.* 40. 1913.

Worth was introduced by Stark Brothers, Louisiana, Missouri, many years ago. The peach is a yellow freestone, with a brilliant red blush, resembling Early Crawford.

Wright. 1. *U. S. D. A. Rpt. 291*. 1893.

Tree very productive; fruit large, roundish; color rich orange-yellow, shaded with red; flesh yellow, tinged with red at the pit, firm, juicy, sweet, rich; quality very good; clingstone; season early in November in California.

Wright Seedling. 1. *Gard. & For.* **8**:349. 1895. **2.** *Neb. Hort. Soc. Rpt.* 277. 1901.

This peach was obtained by W. F. Wright, Johnson County, Nebraska. Said to reproduce itself from seed.

Wyandotte Chief. 1. *W. N. Y. Hort. Soc. Rpt.* 50. 1879. **2.** *Ibid.* 110. 1880.

This variety is said to have originated on the farm of Matthew Mudeator, near Wyandotte, Kansas. It is described as a handsome, dark red, rich, juicy, finely flavored, freestone peach, ripening very early.

Wylie Cling. 1. Wickson *Cal. Fruits* 200. 1908.

This is an old seedling grown by John Wylie, Green Valley, California. It is superior to Orange Cling in not splitting at the pit or dropping from the tree; a fine peach for canning and drying.

XX Yellow. 1. *Del. Sta. Rpt.* **5**:100. 1892.

Listed in this reference.

Yates Early. 1. Elliott *Fr. Book* 296. 1854.

Said to be inferior to Early York which it resembles.

Yates Red Cling. 1. Stark Bros. *Cat.* 40. 1913.

According to Stark Brothers, Louisiana, Missouri, this is a large, attractive, red-cheeked, white-fleshed, clingstone peach, ripening ten days earlier than Heath Cling.

Yazoo. 1. *Am. Pom. Soc. Cat. 39.* 1909. **2.** Waugh *Am. Peach Orch.* 209. 1913.

This is a clingstone which originated in Mississippi.

Yellow Admirable. 1. Duhamel *Trait. Arb. Fr.* **2**:33, 34, Pl. XXII. 1768. **2.** Kenrick *Am. Orch.* 216. 1832. **3.** *Gard. Chron.* 1159. 1864. **4.** Leroy *Dict. Pom.* **6**:40, 41 fig., 42. 1879.

Abricotée. **5.** *Lond. Hort. Soc. Cat. 92.* 1831. **6.** Downing *Fr. Trees Am.* 489. 1845. **7.** Noisette *Man. Comp. Jard.* **2**:476. 1860.

Apricot. **8.** Prince *Pom. Man.* **1**:194. 1831.

Gelbe Wunderschöne. **9.** *Deut. Obstcabinet* **Pt. 7**:9. 1858.

Gelber Aprikosenpfirsich. **10.** Dochnahl *Führ. Obstkunde* **3**:217. 1858.

Prachtvolle Apricosenpfirsich. **11.** Lauche *Deut. Pom.* **VI**:No. 1, Pl. 1882.

Yellow Admirable is an old French sort which has never been cultivated in America. Tree vigorous, productive; leaves small, with reniform glands; flowers usually large, with an intense rose-color; fruit large, round, flattened; suture shallow; skin thick, finely pubescent, yellow, blushed with red where exposed; flesh yellow, faintly red near the stone, firm, rather dry, sweet, with the flavor of the apricot; good in quality; pit small for the size of the fruit, partially clinging, oval, blunt at the apex; ripens the middle of October.

Yellow Apricot. 1. Prince *Treat. Hort.* 18.

1828.

Fruit very large; color yellow, with a red blush; flesh yellow, firm, with an apricot flavor; ripens the first of October.

Yellow August. 1. *Tex. Sta. Bul.* **39**:817. 1896.

Said to be a very late and worthless variety in Texas.

Yellow Chance. 1. *Cal. Sta. Rpt.* 391. 1894-95.

Said to be a seedling ripening the last of September.

Yellow Chevreuse. 1. *Lond. Hort. Soc. Cat. 95.* 1831.

Leaves with globose glands; flowers small; flesh melting.

Yellow Extra. 1. *Mich. Sta. Bul.* **31**:58. 1887.

Listed in this reference.

Yellow Globe. 1. *Kan. Hort. Soc. Rpt. 228.* 1910-11.

Mentioned in this reference.

Yellow Mignonne. 1. *Lond. Hort. Soc. Cat. 100.* 1832.

Mentioned in this reference as a pale, greenish-yellow peach having a red blush, dull yellow flesh and ripening in early September.

Yellow Nutmeg. 1. Prince *Treat. Fr. Trees* 16. 1820. **2.** *Cultivator* **6**:308 fig. 1849.

Early Yellow Nutmeg. **3.** *Lond. Hort. Soc. Cat.* 101. 1831.

This is a free grower having large flowers and reniform glands. Its flesh is deep yellow and of good quality and its season is early.

Yellow Peach. 1. Parkinson *Par. Ter.* 580. 1629. **2.** *Gard. Chron.* 1042. 1872.

This is a very old peach once considerably used in making peach-brandy. Tree small, bushy; fruit large, with a bright golden, pubescent skin; flesh very firm, clinging tenaciously to the pit.

Yellow Preserving. 1. Coxe *Cult. Fr. Trees* 224. 1817. **2.** Prince *Pom. Man.* **2**:20. 1832.

Fruit small, with a greenish-yellow skin; flesh greenish-yellow, dry, with but little flavor; freestone; ripens in September.

Yellow Rose. 1. *Kan. Hort. Soc. Rpt.* 51. 1901.

Yellow Rose is a seedling from F. G. Barker, Salina, Kansas. Trees hardy, reproducing true from seed; fruit fair in size; skin pale yellow, free from down; flesh firm, yellow; ripens early in October.

Yellow Seedling. 1. *Mag. Hort.* **27**:154. 1861.

Listed as a large, promising freestone.

Yellow Swan. 1. Sneed & Wood *Cir.* 1906.

According to John F. Sneed, Tyler, Texas, this peach was brought to notice by C. W. Wood, Swan, Texas. It is thought to be a seedling of Chinese Cling. Fruit large, roundish-oval, slightly compressed, with a shallow suture; skin yellow, mottled with red on one side; flesh yellow, sometimes faintly red at the pit, semi-clinging, tender, sweet yet sprightly; quality good; ripens early in August.

Yenshi. 1. *Green River Nur. Cat. 17.* 1899.

Yenshi Hardy. **2.** Lovett *Cat.* 34 fig. 1896.

According to the Lovett Company, Little Silver, New Jersey, this variety was introduced from northwestern China by Professor J. L. Budd, Ames, Iowa. Tree vigorous, very hardy; fruit large, roundish; color creamy-white, nearly covered with crimson; flesh tender, very juicy, high-flavored; freestone; ripens with Alexander.

Yocum. 1. *Ill. Hort. Soc. Rpt. 203.* 1879.

This is an attractive, large, late, yellow peach.

York Pearl. 1. *Mich. Sta. Bul.* **143**:186. 1897.

Listed in this reference.

Yulu. 1. *Ont. Fr. Gr. Assoc. Rpt.* App. **33**:37. 1901.

Listed in this reference.

Yum Yum. 1. *Del. Sta. Rpt.* **5**:100. 1892. **2.** *Fla. Sta. Bul.* **62**:518, 519. 1902.

Originated by a Dr. Cushing, Waldo, Florida. Fruit large, roundish-oblong, with a shallow suture; skin light creamy-white, dotted and washed with delicate red; flesh white, firm, meaty, juicy, sweet, with almost an almond flavor; quality very good; clingstone; season early June in Florida.

Zane. 1. *U. S. D. A. Rpt. 263.* 1892. **2.** *Am. Pom. Soc. Rpt.* 74. 1895.

Zane originated on Wheeling Island in the Ohio river and was brought to notice by Joseph Morrison, Cadiz, Ohio. Fruit medium in size, roundish-oblate; color yellow, with a dark red blush; flesh yellow, red at the pit, tender, juicy, mild subacid; quality good; freestone; season early September.

Zea. 1. *Mich. Sta. Bul.* **152**:199. 1898. **2.** *Ibid.* **205**:31. 1903.

Zea is large and attractive but is not so good nor as productive as Waddell with which it ripens.

Zelhemer Lieblingspfirsich. 1. Dochnahl *Führ. Obstkunde* **3**:207. 1858.

Fruit medium in size, round; skin yellow, washed with red; flesh very yellow, with a sweet, vinous flavor; ripens the last of August.

Zelia. 1. *Am. Pom. Soc. Rpt.* 41. 1877. **2.** *Pa. Fr. Gr. Soc. Rpt.* 587. 1878.

Zelia originated in 1873 with L. E. Berckmans, Rome, Georgia. Fruit large; skin white, with a red cheek; flesh white, juicy, vinous; quality very good; freestone; ripens the last of September.

Zell. 1. *Am. Pom. Soc. Cat. 39.* 1909.

Listed in this reference.

Zella. 1. *Mo. Hort. Soc. Rpt.* 246. 1893.

Zella was brought to notice in 1893 by S. W. Gilbert, Thayer, Missouri. It is a large, white, freestone peach with a bright red blush and fine flavor.

Zipf Seedling. 1. *Hopedale Nur. Cat. 22.* 1912.

According to the Hopedale Nurseries, Hopedale, Illinois,

this variety originated as a chance seedling. Fruit large, roundish-oblong; flesh firm, of good flavor; ripens the middle of September.

Zoar Beauty. 1. Elliott *Fr. Book* 296. 1854.

Beauty of Zoar. **2.** *Mag. Hort.* **13**:110. 1847.

Glands globose; fruit medium in size, round; skin mostly red; flesh free, tinged with red; ripens in September.

BIBLIOGRAPHY AND REFERENCES, WITH ABBREVIATIONS USED

The list of books which follows contains all American pomological works in which the peach is discussed at any length. Only such European books are listed, however, as were found useful in writing *The Peaches of New York*. Only periodicals are listed to which references are made in the text of the book. The reports and bulletins of experiment stations and horticultural societies are not included since the abbreviations used for such publications will be recognized by all. The date of copyright has been preferred to that of publication though sometimes it has been necessary to use the latter, as when there were several editions from the same copyright.

Am. Gard.

American Gardening. An Illustrated Journal of Horticulture and Gardener's Chronicle. New York: 1892-1904. Copyright, 1903. (Before its union with Popular Gardening in 1892, the publication was known as The American Garden. Both Popular Gardening and The American Garden resulted from the union or absorption of several other horticultural periodicals.)

Am. Gard. Mag.
The American Gardener's Magazine, and Register of Useful Discoveries and Improvements in Horticulture and Rural Affairs. See Mag. Hort.

Am. Hort. An.
American Horticultural Annual. A Year-book of Horticultural Progress for the Professional and Amateur Gardener, Fruit-grower, and Florist. (*Illustrated.*) New York: 1867. Copyright, 1867. New edition. New York: 1870. Copyright, 1869.

Am. Jour. Hort.
The American Journal of Horticulture and Florist's Companion. (*Illustrated.*) Volumes 1-5. Boston: 1867-1869. Copyrights, 1867-1869. Continued as Tilton's Journal of Horticulture and Floral Magazine. (*Illustrated.*) Volumes 6-9. Boston: 1869-1871. Copyrights, 1869-1871.

Am. Pom. Soc. Rpt.
Proceedings of the American Pomological Society. Issued usually biennially from 1850 to date. First published as the Proceedings of the National Convention of Fruit Growers in 1848.

Ann. Hort.
Annals of Horticulture and yearbook of information on practical gardening. 5 Volumes. London: 1846-1850.

Ann. Pom. Belge
Annales de Pomologie Belge et Étrangère; publiées par la Commission royale de Pomologie Institutée par S. M. le Roi des Belges. (*Illustré.*) 8 Tomes. Bruxelles: 1853-1860.

Bailey, Ann. Hort.
Annals of Horticulture in North America for the Years 1889-1893. A Witness of Passing Events and a Record of Progress. By L. H. Bailey. New York: 1890-1894. Copyrights, 1889, 1891-1894.

Bailey, Cyc. Hort.
Cyclopedia of American Horticulture Comprising Suggestions for Cultivation of Horticultural Plants, Descriptions of the Species of Fruits, Vegetables,

Flowers and Ornamental Plants Sold in the United States and Canada, Together with Geographical and Biographical Sketches. By L. H. Bailey, assisted by Wilhelm Miller. (*Illustrated.*) In Four Volumes. New York: 1900-1902. Copyrights, 1900-1902.

Bailey, Ev. Nat. Fruits
Sketch of the Evolution of our Native Fruits. By L. H. Bailey. (*Illustrated.*) New York: 1898. Copyright, 1898.

Bailey, Stand. Cyc. Hort.
The Standard Cyclopedia of Horticulture. A Discussion, for the Amateur, and the Professional and Commercial Grower, of the Kinds, Characteristics and Methods of Cultivation of the Species of Plants Grown in the Regions of the United States and Canada for Ornament, for Fancy, for Fruit and for Vegetables; with Keys to the Natural Families and Genera, Descriptions of the Horticultural Capabilities of the States and Provinces and Dependent Islands, and Sketches of Eminent Horticulturists. By L. H. Bailey. (*Illustrated.*) In Six Volumes. New Yor and London: 1914-1917. Copyrights, 1900, 1901, 1914, 1915, 1916, 1917.

Bailey, Sur. Unlike
The Survival of the Unlike. A Collection of Evolution Essays Suggested by the Study of Domestic Plants. By L. H. Bailey. (*Illustrated.*) Fifth Edition. New York: 1906. Copyright, 1896.

Baltet, Cult. Fr.
Traité de la Culture Fruitière Commerciale et Bourgeoise. Par Charles Baltet. (*Illustré.*) Quatrième Édition. Paris: 1908.

Barry, Fr. Garden
The Fruit Garden. By P. Barry. (*Illustrated.*) New York: 1852. Copyright, 1851. Revised Edition, 1896. Copyright, 1883.

Beverly, Hist. Va.
History of Virginia. By Robert Beverly. 1722. Reprinted in Richmond, 1855.

Black, Cult. Peach & Pear
The Cultivation of the Peach And The Pear, on the Delaware and Chesapeake Peninsula; with a Chapter on Quince Culture and the Culture of Some of the Nut-Bearing Trees. By John S. Black, M. D. (*Illustrated.*) Wilmington: 1886. Copyright, 1886.
Bradley, Gard.
New Improvements of Planting and Gardening, both Philosophical and Practical. In three parts. By Richard Bradley. (*Illustrated.*) Seventh Edition with Appendix, London: 1739.
Bridgeman, Gard. Ass't.
The Young Gardener's Assistant, in three parts. By Thomas Bridgeman. New Edition, with an Appendix. New York: 1857. Copyright, 1847.
Brookshaw, Hort. Reposit.
The Horticultural Repository, containing Delineations of the best Varieties of the Different Species of English Fruits. By George Brookshaw. (*Illustrated.*) In Two Volumes. London: 1823.
Brookshaw, Pom. Brit.
Pomona Britannica, or A Collection of the Most Esteemed Fruits at present Cultivated In Great Britain; selected principally from the Royal Gardens At Hampton Court, and the remainder from The Most Celebrated Gardens Round London; Accurately Drawn and Colored from Nature, with Full Descriptions of their Various Qualities, Seasons, &c. By George Brookshaw. Volumes I and II. London: 1817. Vol. I. The Peach.
Budd-Hansen, Am. Hort. Man.
American Horticultural Manual. By J. L. Budd, assisted by N. E. Hansen. (*Illustrated.*) In Two Volumes. Volume 2. New York and London: 1903. Copyright, 1903.
Bunyard-Thomas, Fr. Gard.
The Fruit Garden. By George Bunyard and Owen Thomas. (*Illustrated.*) London and New York: 1904.
Can. Hort.
The Canadian Horticulturist. (*Illustrated.*) Toronto

and Peterboro: 1878 to date.

Carrière, Var. Pêchers.
Description Et Classification des Variétés De Pêchers et de Brugonniers. Par E. A. Carrière. Paris: 1867.

Cat. Cong. Pom. France
Société Pomologique de France Catalogue Descriptif des Fruits Adoptés par le Congrès Pomologique. Lyon: 1887. Ibid.: 1906.

Cecil, Hist. Gard. Eng.
A History Of Gardening In England. By the Hon. Mrs. Evelyn Cecil. Third and enlarged edition. (*Illustrated.*) New York: 1910.

Christ, Handb.
Handbuch über die Obstbaumzucht und Obstlehre. Von J. L. Christ. Vierte, sehr verbesserte und vermehrte Auflage. Frankfurt: 1817.

Christ, Wörterb.
Pomologisches theoretisch-praktisches Handwörterbuch, oder Alphabetisches Verzeichniss. Von J. L. Christ. Leipzig: 1802.

Cole, Am. Fr. Book
The American Fruit Book; containing directions for Raising, Propagating, and Managing Fruit Trees, Shrubs, and Plants; with a description of the Best Varieties of Fruit, including New and Valuable Kinds. By S. W. Cole. (*Illustrated.*) Boston: 1849. Copyright, 1849.

Country Gent.
The Country Gentleman. Albany: 1853-1865. The Cultivator & Country Gentleman. Albany: 1866-1897. The Country Gentleman. Albany and Philadelphia: 1898 to date.

Coxe, Cult. Fr. Trees
A View of the Cultivation of Fruit Trees, and the Management of Orchards and Cider; with accurate descriptions of the most estimable varieties of Native and Foreign Apples, Pears, Peaches, Plums and Cherries, cultivated in the middle states of America. By William Coxe. (*Illustrated.*)

Philadelphia: 1817. Copyright, 1817.

Cultivator
: The Cultivator. Albany: 1834-1865. In 1866 united with The Country Gentleman.

Cult. & Count. Gent.
: The Cultivator & Country Gentleman. See Country Gent.

Darwin, Ans. and Pls. Domest.
: The Variation of Animals And Plants under Domestication. By Charles Darwin. (*Illustrated.*) First edition. London: 1868. Second edition, revised. In Two Volumes. London: 1893.

De Candolle, Or. Cult. Plants
: Origin of Cultivated Plants. By Alphonse de Candolle. Geneva [Switzerland]: 1882. New York: 1885.

Decaisne, Jard. Fruit.
: Le Jardin Fruitier Du Muséum Ou Iconographie De Toutes Les Espèces Et Variétés D'Arbres Fruitiers Cultivés dans cet Établissement Avec Leur Description, Leur Histoire, Leur Synonymie, Etc. Par J. Decaisne. Tome Septième. Paris: 1872-1875.

Decaisne & Naudin, Man. Amat. Jard.
: Manuel de L'Amateur Des Jardins Traité Général D'Horticulture. Par Jh. Decaisne et CH. Naudin. (*Illustré.*) Tome Quatrième. Paris.

Deut. Obstcabinet
: Deutsches Obstcabinet in naturgetreuen fein colorirten Abbildungen und Fruchtdurchschnitten zu Dittrich's systematischem Handbuche der Obstkunde und zu jedem pomologischen werke nebst einter kurzen Beschreibung und Diagnose der Obstarten. Neue Auflage. Section VII. Jena: 1858.

Dochnahl, Führ. Obstkunde
: Der sichere Führer in der Obstkunde auf botanisch-pomologischen Wege oder Systematische Breschreibung aller Obstsorten. Von F. J. Dochnahl. Vier Bände. Nürnberg: 1855-60. Volume 3, 1858. Peaches.

Downing, Fr. Trees Am.

The Fruits and Fruit Trees of America: or the culture, propagation, and management, in the garden and orchard, of fruit trees generally; with Descriptions Of All The Finest Varieties Of Fruit, Native and Foreign, Cultivated In This Country. By A. J. Downing. (*Illustrated.*) New York & London: 1845. Copyright, 1845. Second edition, same text, with colored plates, 1847. First revision, by Charles Downing. New York: 1857. Copyright, 1857. Second revision, by Charles Downing. New York: 1869. First appendix, 1872. Second appendix, 1876. Third appendix, 1881.

Duhamel, Trait. Arb. Fr.

Traité Des Arbres Fruitiers; Contenant Leur Figure, Leur Description, Leur Culture, &c. Par M. Duhamel Du Monceau. (*Illustré.*) Tomes 1 et 2. Paris: 1768. Édition publié en 1872, en trois tomes. Nouvelle Édition en six tomes, 1807-1835.

Elliott, Fr. Book

Elliott's Fruit Book; or, the American Fruit-Grower's Guide in Orchard and Garden. By F. R. Elliott. (*Illustrated.*) New York: 1858. Copyright, 1854. Revised edition. 1859.

Fish, Hardy-Fr. Bk.

The Hardy-Fruit Book. By D. T. Fish. (*Illustrated.*) Two Volumes. London: probably 1882.

Flor. & Pom.

The Florist And Pomologist: A Pictorial Monthly Magazine of Flowers, Fruits, and General Horticulture. Conducted at first by Robert Hogg and John Spencer, later by Thomas Moore and William Paul. (*Illustrated.*) London: 1862-1884.

Floy-Lindley, Guide Orch. Gard.

A Guide to the Orchard And Fruit Garden or an account of the Most Valuable Fruits cultivated in Great Britain. By George Lindley; edited by John Lindley. American edition by Michael Floy. New York: 1833. New edition; with an Appendix. New York: 1846. Copyright, 1846.

Forsyth, Treat. Fr. Trees

A Treatise on the Culture and Management of Fruit Trees. By William Forsyth. London: 1802. Same with an Introduction and Notes, by William Corbett. Albany: 1803. Seventh edition [English] London: 1824.

Fulton, Peach Cult.
Peach Culture. By James Alexander Fulton. (*Illustrated.*) Copyright, 1889. New, revised, and greatly enlarged edition. New York: 1908.

Gard. Chron.
The Gardener's Chronicle. (*Illustrated.*) London: 1841 to date.

Gard. & For.
Garden And Forest. A Journal of Horticulture, Landscape Art and Forestry. Conducted by Charles S. Sargent. (*Illustrated.*) Volumes I-X. New York: 1888-1897, Copyrights, 1888-1897.

Gard. Mon.
The Gardener's Monthly and Horticultural Advertiser. Edited by Thomas Meehan. (*Illustrated.*) Philadelphia: 1859-1887.

Garden.
The Garden. (*Illustrated.*) London: 1872 to date.

Gaucher, Pom. Prak. Obst.
Pomologie des Praktischen Obstbaumzüchters. Von N. Gaucher. (*Illustrirt.*) Stuttgart: 1894.

Gen. Farmer.
The Genesee Farmer. Edited by Luther Tucker, Rochester: 1831-1839. Then consolidated with the Cultivator. Another periodical of the same name was published in Rochester from 1845 to 1865. Also New Genesee Farmer and Monthly Genesee Farmer.

Gerarde, Herball.
The Herball or Generall Historie of Plantes. By John Gerarde. Enlarged and amended by Thomas Johnson. London: 1633. Reprinted without alteration, 1636.

Guide Prat.
Guide Pratique de L'Amateur De Fruits. Description

Et Culture, des Variétés De Fruits Classées Par Séries De Mérite composant les collections pomologiques De L'Etablissement Horticole Simon-Louis Frères. A Plantières-Les-Metz (Lorraine Annexée) Suivi D'Une Table Générale Alphabétique de tous les Synonymes connus, Francais et Étrangers appartenent à chaque variété. Deuxième Édition. Paris et Nancy: 1895.

Hoffy, N. Am. Pom.
Hoffy's North American Pomologist, containing numerous Finely Colored Drawings, accompanied by letter press descriptions, &c., of Fruits of American Origin. Edited by William D. Brincklé. Book No. 1. Philadelphia: 1860. Copyright, 1860.

Hoffy, Orch. Com.
The Orchardist's Companion. Alfred Hoffy, Editor and Publisher. A quarterly journal. Vol. I, 1841-2; Vol. II, 1842-3. Philadelphia.

Hogg, Fruit Man.
The Fruit Manual: A Guide to the Fruits and Fruit Trees of Great Britain. By Robert Hogg. First edition, London: 1860. Second edition, 1861. Third edition, 1866. Fourth edition, 1873. Fifth edition, 1884.

Hooper, W. Fr. Book.
Hooper's Western Fruit Book: a compendious Collection of Facts from the Notes and Experience of Successful Fruit Culturists, arranged for practical use in The Orchard and Garden. By E. J. Hooper. Cincinnati: 1857. Copyright, 1857.

Hort. Reg. (Am.).
Horticultural Register and Gardener's Magazine. Edited by T. G. Fessenden and J. E. Teschemacher. Volume I. Boston: 1835.

Hort. Reg. (Eng.).
The Horticultural Register and General Magazine. By Joseph Paxton and Joseph Harrison. Vol. I. London: 1833.

Horticulturist.
The Horticulturist and Journal of Rural Art and

Rural Taste. Founded and first edited by A. J. Downing. (*Illustrated.*) Volumes 1 to 30. Albany, Philadelphia and New York: 1846-1875.

Hovey, Fr. Am.
The Fruits of America, containing Richly Colored Figures, and full Descriptions of all the choicest Varieties cultivated in the United States. By C. M. Hovey. Volume I. Boston and New York: 1852. Volume II. Boston: 1856. Copyright, 1851.

Jour. Hort.
The Journal of Horticulture began as: The Cottage Gardener; or Amateur's and Cottager's Guide to out-door gardening and spade cultivation. 25 Volumes. London: 1849-1861. Continued as The Journal of Horticulture, Cottage Gardener, and Country Gentleman. A Journal of Horticulture, Rural and Domestic Economy, Botany and Natural History. New Series. 38 Volumes. London: 1861-1880. Continued as The Journal of Horticulture, Cottage Gardener, and Home Farmer. A Chronicle of Country Pursuits and Country Life, including Poultry, Pigeon, and Bee-keeping. Third Series. 59 Volumes. London: 1880-1909.

Jour. Roy. Hort. Soc.
The Journal of the Royal Horticultural Society. London: 1846 to date. Vols. 1-9, 1846-55, bear the title of The Journal of the Horticultural Society of London.

Kalm, Travels N. Am.
Travels into North America. By Peter Kalm. Volumes 1-3. 1770-1771.

Kenrick, Am. Orch.
The New American Orchardist. By William Kenrick. Boston: 1833. Copyright, 1832. Second edition. Boston: 1835. Copyright, 1835. Seventh edition, enlarged and improved, with a supplement. Boston: 1845. Copyright, 1841.

Knoop, Fructologie.
Part I. Pomologie, ou Description des meilleures sortes de Pommes et de Poires. Part II. Fructologie,

ou Description des Arbres Fruitiers. Par Jean Herman Knoop. (*Illustré.*) Amsterdam: 1771.

Koch, Deut. Obst.
Die Deutschen Obstgehölze. Vorlesungen gehalten zu Berlin im Winterhalbjahr 1875-76. Von Karl Koch. Stuttgart: 1876.

Kraft, Pom. Aust.
Pomona austriaca, Abhandlung von den Obstbäumen. Von Johann Kraft. 2 Theile. Vienna: 1792.

Langley, Pomona.
Pomona, or the Fruit Garden Illustrated. By Batty Langley. London: 1729.

Lauche, Deut. Pom.
Deutsche Pomologie. Von W. Lauche. (*Illustrirt.*) Berlin: 1882.

Lauche, Ergänzungsband.
Erster Ergänzungsband zu Lucas' und Oberdieck's Illustrirtes Handbuch der Obstkunde. Von W. Lauche. Berlin: 1883.

Lawson, Hist. Carolina.
History of Carolina. By John Lawson. 1714. Reprinted at Raleigh, 1860.

Le Bon Jard.
Le Bon Jardinier. 126ˆe Édition Almanach Horticole, 1882 et 129ˆe Édition, 1884. Paris.

Leroy, Dict. Pom.
Dictionnaire de Pomologie. Par André Leroy. (*Illustré.*) 6 Tomes. Paris: 1867-1879. Tome 6, 1879. Peaches.

Liegel, Anweisung.
Anweisung, mit welchen Sorten verschiedene Obstbaum-Anlagen besetzt werden sollen. Von G. Liegel. Salzburg: 1822.

Liegel, Syst. Anleit.
Systematische Anleitung zur Kenntniss der vorzüglichsten Sorten des Kern-, Stein-, Schalen- und Beerenobster. Von Georg Liegel. Passau: 1825.

Lindley, Guide Orch. Gard.
A Guide to the Orchard And Kitchen Garden; or, an

account of the most valuable fruit and vegetables cultivated In Great Britain: with Kalendars of the Work Required in the Orchard and Kitchen Garden during every month in the year. By George Lindley. Edited by John Lindley. London: 1831.

Lond. Hort. Soc. Cat.
A Catalogue of the Fruits Cultivated in the Garden of the Horticultural Society of London. London: 1826. Second edition, 1831. Third edition, 1842. A supplement was published in 1853.

Loudon, Arb. Frut. Brit.
Arboretum et Fruticetum Britannicum. Par J. C. Loudon. Deuxième Édition. Tome 2. London: 1844.

Loudon, Enc. Gard.
An Encyclopedia Of Gardening. By J. C. Loudon. (*Illustrated.*) New edition. London: 1834.

Lucas, Handb. Obst.
Vollständiges Handbuch der Obstkultur. Von Ed. Lucas. (*Illustrirt.*) Stuttgart: First edition, 1880; second edition, 1886; third edition, 1893. Third edition edited by Fr. Lucas, 1894.

McIntosh, Bk. Gard.
The Book of the Garden. By Charles McIntosh. (*Illustrated.*) Two Volumes. London: 1855.

McMahon, Am. Gard. Cal.
The American Gardener's Calendar. By Bernard McMahon. Philadelphia: 1806.

Mag. Hort.
The Magazine of Horticulture. Boston: 1837-1868. First published as The American Gardener's Magazine, 1835-6. Edited by C. M. Hovey with P. B. Hovey, Jr., associate editor during 1835-6.

Manning, Book of Fruits.
Book of Fruits. By Robert Manning. (*Illustrated.*) Salem: 1838. Copyright, 1838.

Mas, Le Verger.
Le Verger ou Histoire, Culture Et Description avec planches coloriées Des Variétés De Fruits Les Plus Généralement Connues. Par M. Mas. 8 Tomes. Paris: 1866-73 Tome 7. Peaches.

Mas, Pom. Gen.
Pomologie Générale. Par M. Mas. (*Illustré.*) 12 Tomes. Paris: 1872-83. Tome 12, 1883. Peaches.
Mathieu, Nom. Pom.
Nomenclator Pomologicus. Von Carl Mathieu. Berlin: 1889.
Mawe-Abercrombie, Com. Gard.
The Complete Gardener. By Thomas Mawe and John Abercrombie. London: 1829.
Miller, Gard. Dict.
The Gardener's Dictionary. By Philip Miller. Sixth edition. London: 1752. Revised edition. By Thomas Martyn. London: 1807.
Miller, Gard. Kal.
The Gardener's Kalendar. By Philip Miller. London: 1734.
Nat. Nur.
The National Nurseryman. Published by The National Nurseryman Publishing Co. (*Illustrated.*) Rochester: 1893 to date.
Nicholson, Dict. Gard.
The Illustrated Dictionary of Gardening, a practical and scientific Encyclopedia of Horticulture for Gardeners and Botanists. By George Nicholson, assisted by J. W. H. Trail and J. Garrett. 4 Volumes. London. Supplement to same. By George Nicholson et al. London: 1900.
Noisette, Man. Comp. Jard.
Manuel Complet du Jardinier. Par M. Louis Noisette. Tome Deuxième, Paris: 1860.
Oberdieck, Obst-Sort.
Deutschlands beste Obst-Sorten. Von F. G. C. Oberdieck. Leipzig: 1881.
Parkinson, Par. Ter.
Paradisi in Sole. Paradisus Terrestris. By John Parkinson. (*Illustrated.*) London: 1629.
Parkinson, Tour Am.
A Tour In America, in 1798, 1799 and 1800. Exhibiting Sketches of Society and Manners and a particular account of the American System of

Agriculture, with its recent improvements. By Richard Parkinson. Volumes I and II. London: 1805.

Phillips, Com. Orch.
The Companion for the Orchard. An Historical And Botanical Account of Fruits Known In Great Britain. By Henry Phillips. New Edition, London: 1831.

Poiteau, Pom. Franc.
Pomologie Francaise. Recueil des Plus Beaux Fruits Cultivés En France. Par Antoine Poiteau. Tomes 1-4. Paris: 1846.

Pom. France.
Pomologie De La France ou Histoire Et Description de tous Les Fruits Cultivés En France Et Admis Par Le Congrès Pomologique. (*Illustré.*) Tomes I-VIII. Lyon: 1863-1873. Tome VI, 1869. Peaches.

Pom. Mag.
The Pomological Magazine; or, Figures And Descriptions of the Most Important Varieties Of Fruit cultivated in Great Britain. Three Volumes. London: 1828-30. This work has also been published under the title Pomona Brittanica.

Popular Gard.
Popular Gardening. An Illustrated periodical devoted to Horticulture in all its branches. Volume I. Buffalo: 1886. Continued as Popular Gardening and Fruit Growing. Volumes II-VI. Buffalo: 1887-1891. Consolidated with The American Garden and continued as American Gardening. New York: 1892-1904.

Prince, Cat. Fr. Trees.
Catalogue of Fruit And Ornamental Trees & Plants, Bulbous Flower Roots, Green-House Plants, &c. &c. Cultivated at the Linnæan Botanic Garden, William Prince, Prop. Twenty-second edition. New York: 1823.

Prince, Pom. Man.
The Pomological Manual; or, A Treatise on Fruits. By William Robert Prince, aided by William Prince. Second Edition. Part I. New York: 1832. Copyright, 1831. Part II. New York: 1832. Copyright, 1832.

Prince, Treat. Hort.
A Short Treatise on Horticulture. By William Prince. New York: 1828. Copyright, 1828.
Prince, Treat. Trees & Plants.
A Treatise on Fruit and Ornamental Trees And Plants, cultivated at the Linnaean Botanic Garden, Flushing, Long-Island, near New-York. By William Prince. New York: 1820.
Rea, Flora.
Flora: Seu, De Florum Cultura; or A Complete Florilege. By John Rea. 3 Books. London: 1676. Book 3. Peaches.
Rev. Hort.
Revue Horticole. Journal D'Horticulture Pratique. (*Illustré.*) Paris: 1829 to date.
Rural N. Y.
The Rural New-Yorker. A Journal for the Suburban and Country Home. (*Illustrated.*) Rochester and New York: 1850 to date.
Rutter, Cult. & Diseases Peach.
The Culture And Diseases of The Peach. By John Rutter. Harrisburg: 1880. Copyright, 1880.
Sickler, Teutsche Obst.
Der teutsche Obstgartner oder gemeinnutziges Magazin Des Obstbaues in Teutschlands sammtlichen Kreisen; verfasser von einigen prachtischen Freunden Der Obstcultur und herausgegeben von J. B. Sickler. Volumes 8-13. Weimar: 1797-1800.
Soc. Nat. Hort. France Pom.
Nationale D'Horticulture De France. Section Pomologique. Les Meilleurs Fruits au début du XXˆe siècle. (*Illustré.*) Paris: 1904.
Sou. Cult.
The Southern Cultivator. A Monthly Journal, devoted to the improvement of Southern Agriculture. (*Illustrated.*) Augusta, Ga.: 1843-1848.
Thacher, Am. Orch.
The American Orchardist. By James Thacher. Boston: 1822. Copyright, 1822.

Thomas, Am. Fruit Cult.
The American Fruit Culturist. By John J. Thomas. (*Illustrated.*) First Edition. Geneva and Auburn, N. Y.: 1846. Copyright, 1846. Revised Edition. Auburn, N. Y.: 1851. Copyright, 1849. Revised Edition. New York: 1869. Copyright, 1867. Revised Edition. New York: 1885. Copyright, 1875-1885. Twentieth Edition, Revised and Enlarged. New York: 1897. Copyright, 1897. Twenty-first Edition, Revised and Enlarged. New York: 1911. Copyright, 1903.
Thomas, Guide Prat.
Guide Pratique de L'Amateur de Fruits. Par O. Thomas. 1876. Deuxiéme Édition. 1895. See Guide Pratique.
Thompson, Gard. Ass't.
The Gardener's Assistant; Practical and Scientific. By Robert Thompson. (*Illustrated.*) Two Volumes. London: 1859. Same, revised by William Watson. Six Volumes. London: 1901.
Tilton, Jour. Hort.
Tilton's Journal of Horticulture and Floral Magazine. See Am. Jour. Hort.
Trans. Lond. Hort. Soc.
Transactions of the Horticultural Society of London. Volume I. London: 1815. Volume II. London: 1817. Volume III. London: 1820. Volume IV. London: 1822. Volume V. London: 1824. Volume VI. London: 1826.
U. S. D. A. Rpt.
Reports of the United States Department of Agriculture: 1862-1894.
U. S. D. A. Yearbook.
Reports of the United States Department of Agriculture: 1894 to date.
U. S. Pat. Off. Rpt.
Reports of the Agricultural section of the United States Patent Office: 1837 to 1861.
Waugh, Am. Peach Orch.
The American Peach Orchard. A Sketch of the Practice of Peach Growing in North America at the

Beginning of the Twentieth Century. By F. A. Waugh. (*Illustrated.*) New York: 1913. Copyright, 1913.

Waugh, Syst. Pom.
Systematic Pomology. Treating of the Description, Nomenclature, and Classification of Fruits. By F. A. Waugh. (*Illustrated.*) New York: 1903. Copyright, 1903.

Wickson, Cal. Fruits
The California Fruits and How To Grow Them. By Edward J. Wickson. (*Illustrated.*) Second Edition. San Francisco: 1891. Copyright, 1889. Fourth Edition. Los Angeles: 1909. Copyright, 1908. Seventh Edition. San Francisco: 1914. Copyright, 1914.

Willich, Dom. Enc.
Domestic Encyclopedia or a Dictionary of Facts. By A. F. M. Willich. First American edition with additions by James Mease. In five volumes. Volume 4, Philadelphia: 1803.

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FOOTNOTES:

[1] De Candolle, Alphonse *Or. Cult. Plants* 222. 1885.

[2] Meyer, Frank N. *U. S. D. A. Plant Immigrants* **No. 107**:862. 1915.

[3] Feb. 4, 1916.

[4] De Candolle, Alphonse *Or. Cult. Plants* 228. 1885.

[5] Chinese Literature, Edited by Epiphanius Wilson Bk. I:126. 1902.

[6] *Ibid.* Bk. IX:148, 149. 1902.

[7] *Ibid.* Bk. XIII:161. 1902.

[8] Cibot, Pierre Martial *Mém. concernant l'hist. les sciences etc. des Chinois*. **II**:280-293. 1777.

[9] *U. S. D. A. Plant Immigrants.* **No. 102**:823-825. 1914.

[10] Knight Thomas Andrew *Trans. Hort. Soc. Lond.* **3**:1. 1820.

[11] *Gard. Chron.* 531. 1856.

12 *Gard. Chron.* 27. 1863.

13 Darwin *Ans. and Pls. Domest.* **1**:357. 1868.

14 Carrière, E. A. *Variétés De Pêchers* 25-33. 1867.

15 De Candolle, Alphonse *Or. Cult. Plants* 229. 1885.

16 *U. S. D. A. Bu. of Pl. Ind. Bul.* **227**:20. 1911.

17 *Ibid.* **227**:47. 1911.

18 *Ibid.* **233**:76. 1912.

19 *Ibid.* **233**:77. 1912.

20 *Ibid.*

21 *Ibid.*

22 *Ibid.* **233**:78. 1912.

23 *Ibid.*

24 *Ibid.* **233**:80. 1912.

25 *U. S. D. A. Bu. of Pl. Ind. Bul.* **242**:27. 1912.

26 *Ibid.*

27 *Ibid.* **207**:62. 1911.

28 *Ibid.* **233**:76. 1912.

29 *Ibid.* **233**:78. 1912.

30 *Ibid.*

31 *Ibid.*

32 *Ibid.* **106**:26. 1907.

33 *Ibid.* **132**:80. 1908.

34 *U. S. D. A. Bul. of For. Pl. Int.* **No. 32**:19. 1910.

35 *U. S. D. A. Bu. of Pl. Ind. Bul.* **233**:77. 1912.

36 *U. S. D. A. Bu. of Pl. Ind. Inv. of S & P. I.* 21. 1915.

37 *U. S. D. A. Bu. of Pl. Ind. Bul.* **66**:95. 1905.

38 *U. S. D. A. Bu. of Pl. Ind. Inv. of S. & P. I.* 32. 1914.

39 *U. S. D. A. Bu. of Pl. Ind. Bul.* **106**:50. 1907.

40 *Ibid.* **137**:31. 1909.

41 *Ibid.* **233**:78. 1912.

42 *Ibid.* **137**:31. 1909.

43 *U. S. D. A. Plant Immigrants* **No. 59**:404. 1911.

44 *U. S. D. A. Bu. of Pl. Ind. Bul.* **66**:102. 1905.

45 *Ibid.* **233**:80 1912.

46 *Ibid.* **233**:80. 1912.

47 *U. S. D. A. Plant Immigrants* **103**:828. 1914.

48 *U. S. D. A. Bu. of Pl. Ind. Bul.* **66**:189. 1905.

49 *Ibid.* **66**:306. 1905.

50 *Ibid.* **142**:21. 1909.

51 *Ibid.* **66**:95. 1905.

52 *Ibid.* **66**:95. 1905.

53 *Ibid.*

54 *Ibid.*

55 *Ibid.* **233**:47. 1912

56 *Ibid.* **242**:12. 1912.

57 *U. S. D. A. Bu. of Pl. Ind. Bul.* **137**:31. 1909.

58 *Ibid.*

59 *Ibid.* **137**:46. 1909.

60

Ibid. **66**:191. 1905.

61

Ibid. **162**:50. 1909

62

Ibid.

63

U. S. D. A. Plant Immigrants **51**:4. 1910.

64

Ibid. **60**:411. 1911.

65

Ibid. **60**:412. 1911.

66

Ibid. **62**:431. 1911.

67

M. Cibot, a French missionary, writing nearly a century and a half ago in his memoirs concerning the Chinese (**II**:280-293. 1784), gives the following account of peaches with which he was familiar in China at that time:—

"Peaches are distinguished by size and color, the shape and earliness of their fruit. There are some whose flesh is white, some greenish, some a delicate yellow, some a yellow orange and some marble; some are round, some oval, some lengthened to a point like a crow's beak. Peaches are heard of weighing two pounds or even more. The largest ones I have seen were scarcely three and a half inches in length and diameter; as to earliness, in the middle provinces there are peaches almost as soon as cherries. It is still more astonishing that some varieties do not ripen here till October, and that there is a secret by which they can be kept till January, just as fresh, just as beautiful, and just as delicious as if right off the tree."

68

Ikeda, T. *The Fruit Culture in Japan* 32, 33. 1907.

69

Loureiro, *Fl. Cochin.* 315.

70
Royle, *Illust. Bot. Himal.* 204.

71
Hooker, Sir Joseph, *Jour. of Bot.* 54. 1850.

72
Hendricks, P. J. P. *U. S. D. A. Bur. Pl. Ind. Bul.* **97**:72. 1905.

73
Meyer, F. W. *U. S. D. A. Bur. Pl. Ind. Bul.* **132**:80. 1908.

74
Montreal Hort. Soc. Rpt. **12**:64, 65. 1886-87.

75
Schuyler, Eugene *Turkestan* **1**:296, 297. 1876.

76
Lansdell, Henry *Russian Central Asia* **1**:223. 1885.

77
Lansdell, Henry *Russian Central Asia* **1**:277. 1885.

78
Ibid. **1**:608. 1885.

79
Ibid. **2**:83. 1885.

80
Bostock and Riley *Nat. History of Pliny* **3**:296. 1855.

81
Bostock and Riley *Nat. History of Pliny* **3**:296. 1855.

82
Ibid. **3**:293, 294. 1855.

83
De Candolle Alphonse *Or. Cult. Plants* 225. 1885.

84
Duhamel Du Monceau *Trait. Arb. Fr.* **2**:1-2. 1768.

85
Leroy *Dict. Pom.* **6**:10. 1879.

86
Bostock and Riley *Nat. History of Pliny* **4**:508. 1856.

87
Leroy *Dict. Pom.* **6**:10. 1879.

88
Cecil, Hon. Mrs. Evelyn *A Hist. of Gard. in Eng.* 3. 1910.

89
Ibid. 38. 1910.

90
Ibid. 48. 1910.

91
Gerarde *Herball* 1446, 1447. 1633.

92
Parkinson *Par. Ter.* 580, 582. 1629.

93
This early Spanish publication is to be found in the Library of Congress under the title *Molina's Vocubalario en Lengua Castellana y Mexicana* (1571). Mr. W. E. Safford, economic botanist in the United States Department of Agriculture, has been kind enough to translate Molina's reference to the peach. Mr. Safford writes:—

"On page 83a (the pages of Molina are numbered only on one side, and this is the reverse of page 83) I find as a definition of the fruit of Melocoton (Peach) the following: —*xuchipal durazno* (red peach), *cuztic durazno* (yellow peach), *xocotl melocoton* (plum peach). I translate *xocotl* "plum", because the Mexicans applied this word to many plum-like fruits, or fruits more or less acid in distinction to *tzapotl*, the general term applied to sweet soft fruits. The words cited are all hybrid compounds of Nahuatl and Spanish. Whatever may be the value of these citations, they establish the fact that the peach was undoubtedly introduced into Mexico before 1571."

94
Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean, War Department **3**:122. 1854.

95

Bul. Tor. Bot. Club **12**:85-86. Aug. 1885.

96

Hilton, William, A Relation of a Discovery lately made on the Coasts of Florida. 1664, Force *Hist. Tracts.* IV: **No. 2**:8.

97

Bartram, William *Travels through North and South Carolina, Georgia, East and West Florida* 343. 1791.

98

Bartram, William *Travels through North and South Carolina, Georgia, East and West Florida* 405. 1791.

99

Ibid. 421. 1791.

100

Kalm, Peter *Travels into North America* **3**:127. 1771.

Peter Kalm is so often mentioned in the fruit-books published by this Station that readers are entitled to know something about him. Kalm was a Swede, born in 1715, died in 1779, who was sent by the Swedish government to travel in North America. He landed in 1748 and spent the next three years in travel in the settled parts of the New World devoting himself to the study of the plant and animal life, the natural phenomena, resources and agriculture of the Middle and Northern States and Canada. On his return to Sweden, Kalm published an account of his travels in America which was afterward translated into German and then into English. To him we are indebted for much valuable information in regard to the beginnings of agriculture and horticulture in the middle of the Eighteenth Century in America. Kalm was a student of Linnaeus and the great botanist perpetuated his memory by naming our beautiful mountain laurel, *Kalmia.*

101

Le Page Du Pratz, *Hist. La.* **2**:17. 1763.

102

Hennepin *Nouvelle découverte d'un très grand pays* etc., etc.

300. 1697.

103

Kalm, Peter *Travels into North America* **3**:79. 1771.

104

Nuttall, Thomas *A Journal of Travels into the Arkansa Territory During the Year 1819*, 79. 1821.

105

Ibid. 101. 1821.

106

Lawson, John *History of Carolina*, 181-183. 1714. Reprinted at Raleigh, 1860. Lawson's History of Carolina contains the best description of the natural resources of the southern Atlantic seaboard published in colonial times. It is a book of nature rather than of history and one of fascinating interest which cannot be read without admiring and loving the author and mourning his sad fate. Poor Lawson was burned at the stake by the Indians in 1711. We cannot refrain from quoting his description of North Carolina as printed on page 79 of his history: "A delicious country, being placed in that girdle of the world which affords wine, oil, fruit, grain, and silk, with other rich commodities, besides a sweet air, moderate climate, and fertile soil. These are the blessings, under Heaven's protection, that spin out the thread of life to its utmost extent, and crown our days with the sweets of health and plenty, which, when joined with content, render the possessors the happiest race of men upon earth."

107

Works of Captain John Smith, Ed. by Edward Arber, 887. 1884.

108

De Vries, David Peterson *Voyages from Holland to America* 50. 1853.

109

Neil, Rev. E. D. *Virginia Carolorum* 50. 1869.

110

Evelyn, Robert New Albion, Force *Hist. Tracts.* **II**: No. **7**:31.

111
Norwood, Col. A Voyage to Virginia, Force *Hist. Tracts*, **III**:No. **10**:5.

112
Hammond, John Leah and Rachel or The Two Fruitful Sisters of Virginia and Maryland 1656, Force *Hist. Tracts*, **III**:No. **14**:13.

113
Works of Capt. John Smith Ed. by Edward Arber, 886. 1884.

114
Bruce, Philip Alexander *Economic History of Virginia in the Seventeenth Century* **1**:468, 469.

115
Beverly, Robert *History of Virginia*. 259, 260. 1722. Reprinted in Richmond 1855.

116
A New and Accurate Account of the Provinces of South Carolina and Georgia. Reprinted in *Collections of the Georgia Historical Society.* **1**:50-51. 1840.

117
An Impartial Inquiry into the State and Utility of the Province of Georgia. Reprinted in *Collections of the Georgia Historical Society* **1**:199. 1840.

118
Oldmixon, John *The British Empire in America* 2nd Ed. **1**:515. 1741.

119
Oldmixon, John *The British Empire in America* 2nd Ed. London. **1**:440. 1741.

120
Watson *Annals of Phila.* **1**:46. 1856.

121
Raum, John O. *History of New Jersey*, 108.

122
Watson *Annals of Phila.* **1**:46. 1856.

123
Acrelius, Israel *The History of New Sweden, or the Settlements on the River Delaware*. Stockholm, 1759. Translated from the Swedish by William M. Reynolds, D. D., Philadelphia, 1876, Vol. XI of the *Memoirs of the Historical Society of Pennsylvania* 151, 152.

124
Kalm, Peter *Travels into North America* **1**:71-73. 1770.

125
Kalm, Peter *Travels into North America* **1**:94. 1770.

126
Ibid. **1**:222-223. 1770.

127
Kalm, Peter *Travels into North America* **2**:244, 245. 1771.

128
Mss. in the library of Hobart College, Geneva, N. Y.

129
David Thomas is now scarcely known in horticulture except as he is spoken of as the father of America's well-known agricultural, horticultural and pomological writer, John Jacob Thomas. Yet the father merits recognition for his work in agriculture and horticulture. David Thomas was a Quaker, born in Montgomery County, Pennsylvania, in 1776. He became a civil engineer and moved to Aurora, Cayuga County, New York, in 1805 and began to practice his profession. Later he became one of the engineers in charge of the construction of the Erie Canal and still later performed a similar service in building the Welland Canal. Soon after, we find him a nurseryman and fruit-grower at Aurora. Throughout his entire life, his son writes, he was interested in horticulture, pomology and botany and by his writings on these subjects, published principally in the *Genesee Farmer*, then the leading agricultural paper in western New York, and in *Travels in the Western Country in 1816*, published in Auburn in 1819, David Thomas performed most valuable services in forwarding the cultivation of fruits. He was a corresponding member of the London Horticultural Society and of the Linnaean Society of Paris. His articles in the *Genesee Farmer* and other

agricultural papers furnish the most authoritative statements we have in regard to the early history of fruit-growing in western New York. The name of David Thomas ought long to be preserved by horticulturists of the State and country together with that of his illustrious son, John Jacob Thomas.

130

Mass. Records **1**:24.

131

Mass. Hist. Collections 4th Ser. **VI**:499.

132

History of the Mass. Hort. Soc. 16. 1829-1878.

133

Hist. Mass. Hort. Soc. 17. 1829-1878.

134

Darlington, Wm. *Memorials of Bartram* 81. 1849.

135

Ibid. 93. 1849.

136

Ibid. 177. 1849.

137

John Kenrick, one of the pioneer nurserymen on American soil, began his business career by raising peach-seedlings. His nursery was situated in the towns of Newton and Brighton, Massachusetts, and was founded in 1790. As we have stated in the text, he early acquired the art of budding and possibly was the first, or at least one of the first, nurserymen to offer budded peach-trees for sale. In 1823, he advertised in the *New England Farmer* thirty varieties of budded peaches five to eight feet high at thirty-three and one-third cents each. These thirty varieties must have included practically all of the named sorts then grown in America. It is interesting to note that he states in the advertisement that the trees were packed with clay and mats. It was in this year that William Kenrick, son of John Kenrick, became a partner of his father. Beside growing peaches, the Kenrick nurseries offered for sale other trees, vine and bush-fruits and

ornamentals as well. The Kenricks were also extensive growers of currants from which they made currant-wine, their output in 1824 being 1700 gallons; in 1825, 3000 gallons and in 1826, 3600 gallons. The date and place of John Kenrick's birth cannot be learned. His death occurred in 1833 in the Kenrick mansion, built in 1720, standing near the nurseries. New England, and peach-growers everywhere, owe him a debt of gratitude for his services in horticulture.

138

William Kenrick, son of John, of whom we have just written, was born in 1795 in the family mansion on Nonantum Hill in the town of Newton, Massachusetts. He was trained by his father as a nurseryman and in 1823 became a partner in the Kenrick nurseries, of which he soon after appears to have assumed control. The Kenrick nurseries, at this time, were probably the most extensive and the best known of any in New England. Besides growing the fruit-bearing plants of the time and such ornamentals as were then to be found in America, the Kenricks seem to have taken an enthusiastic part in the craze for the Lombardy Poplar which was then raging in America. The elder Kenrick must have been one of the early growers of this popular plant for in 1797 two acres of his nursery was appropriated to the Lombardy Poplar. The son, in his turn an enthusiast, succumbed to the silk-culture fad and seems in 1835 to have been one of the leading growers of the mulberry, *Morus multicaulus* for feeding silkworms. In this year Mr. Kenrick published the *American Silk Growers Guide*, which is, in essence, a treatise on mulberry-culture. William Kenrick's most notable pomological achievement, however, was the publication of the *New American Orchardist* which appeared in 1833. While not the best of the pomological manuals of the time, it is a valuable contribution to American pomology because of its full descriptions of the fruits of that date. Beginning with his father in 1823, William Kenrick continued in the nursery business for twenty-seven years, probably growing, importing and disposing of more fruit and ornamental trees than any other nurseryman in New England during this time. He died in February, 1872, at the ripe age of 77, having lived to see the orchards planted from his nursery come to full fruition and every part of New England made

more beautiful by the ornamental trees and shrubs grown under his care.

139

Hist. Mass. Hort. Soc. 33. 1880.

140

Willich *Dom. Enc*. **4**:244-246. 1803.

141

Am. Farmer **1**:406, 407. 1821.

142

Parkinson *A Tour in America* **1**:212-219. 1805.

143

An interesting account of peach-culture in Egypt is to be found in *Agr'l Jour. of Egypt* 3:**Pt. 2**:134-137. 1914.

144

A Voyage to Virginia Force's Hist. Tracts 3: **No. 5**:10.

145

U. S. D. A. Invent. of Seeds and Plants **No. 32**:14. 1914.

146

Transvaal Agr. Journal **No. 10, 3**:336. 1905.

147

Darwin, Charles *Voy. of a Nat.* **1**:154.

148

Bertero, *Ann. Sc. Nat.* **21**:350.

149

Oakenfull, J. C. *Brazil* 358. 1913.

150

Wight, W. F. *Proc. Soc. Hort. Sci.* **10**:122-133, 1913.

151

Agr. Journal of the Cape of Good Hope No. 2, **27**:197. 1905.

152

Boucher, W. A. *Con. New Zeal. Fruit Growers* 89. 1901.

153

U. S. D. A. Bur. of Pl. Ind. Bul. **137**:31. 1909.

154

Ibid. **137**:48. 1909.

155

Ibid.

156

U. S. D. A. Bur. of Pl. Ind. Bul. **162**:50. 1909.

157

U. S. D. A. Invent. of Seeds and Plants **No. 32**:14. 1914.

158

U. S. D. A. Bul. of For. Plant Int. **No. 60**:411. 1911.

159

Ibid. **No. 60**:412. 1911.

160

U. S. D. A. Bur. of For. Plant Int. **No. 60**:431. 1911.

161

U. S. D. A. Plant Immigrants **No. 113**:920. 1911.

162

Ibid. **No. 114**:929. 1911.

163

Wickson, E. J. *Cal. Fruits* 308. 1889.

164

Gregory, C. T. *Cornell Bul.* **365**:219-220. 1915.

165

Trait. Arb. Fr. 35. 1807.

166

Darwin *Ans. and Pls. Domest.* 2nd Ed. **2**:217. 1893.

167

Hedrick, U. P. *Science* **37**:917. 1913.

168

U. S. D. A. Plant Immigrants No. **106**:858. 1915.

169

Trans. Hort. Soc. Lond. **3**:1. 1820; **4**:396. 1822.

170

See Duhamel *Traite Arb.* Ed. 2, IV: 112. 1809; Seringe in DC. *Prodr.* II: 531. 1825; Reichenback *Fl. Ger. Exc.* 647. 1830-32.

171

De Candolle *Or. Cult. Plants*, 225. 1885.

172

Commentaries on *Dioscorides*, French Ed. of 1572. 159-160.

173

Parkinson *Par. Ter.* 582, 583. 1629.

"I presume that the name *Nucipersica* doth most rightly belong unto that kinde of Peach, which we call Nectorins, and although they have beene with us not many yeares, yet have they beene knowne both in Italy to Matthiolus, and others before him, who it seemeth knew no other then the yellow Nectorin, as Dalechampius also: But we at this day doe know five severall sorts of Nectorins, as they shall be presently set downe; and as in the former fruits, so in this, I will give you the description of one, and briefe notes of the rest.

The Nectorin is a tree of no great bignesse, most usually lesser then the Peach tree, his body and elder boughes being whitish, the younger branches very red, whereon grow narrow long greene leaves, so like unto Peach leaves, that none can well distinguish them, unlesse it be in this, that they are somewhat lesser: the blossomes are all reddish, as the Peach, but one of a differing fashion from all the other, as I shall shew you by and by: the fruit that followeth is smaller, rounder, and smoother than Peaches, without any cleft on the side, and without any douny cotton or freeze at all; and herein is like unto the outer greene rinde of the Wallnut, whereof as I am perswaded it tooke the name, of a fast and firme meate, and very delicate in taste, especially the best kindes, with a rugged stone within it, and a bitter kernell.

The Muske Nectorin, so called, because it being a kinde of the best red Nectorins, both smelleth and eateth as if

the fruit were steeped in Muske: some thinke that this and the next Romane Nectorin are all one.

The Romane red Nectorin, or cluster Nectorin, hath a large or great purplish blossome, like unto a Peach, reddish at the bottome on the outside, and greenish within: the fruit is of a fine red colour on the outside, and groweth in clusters, two or three at a joynt together, of an excellent good taste.

The bastard red Nectorin hath a smaller or pincking blossome, more like threads then leaves, neither so large nor open as the former, and yellowish within at the bottome: the fruit is red on the outside, and groweth never but one at a joynt; it is a good fruit, but eateth a little more rawish then the other, even when it is full ripe.

The yellow Nectorin is of two sorts, the one an excellent fruit, mellow, and of a very good rellish; the other hard, and no way comparable to it.

The greene Nectorin, great and small; for such I have seene abiding constant, although both planted in one ground: they are both of one goodnesse, and accounted with most to be the best rellished Nectorin of all others.

The white Nectorin is said to bee differing from the other, in that it will bee more white on the outside when it is ripe, then either the yellow or greene: but I have not yet seene it.

The Use of Nectorins.

The fruit is more firme then the Peach, and more delectable in taste; and is therefore of more esteeme, and that worthily."

174
Darwin *Ans. and Pls. Domest.* 2nd Ed. **1**:357-365. 1893.

175
Bretschneider E. *Bot. Explor. in China* **2**:860. 1898.

176
Gard. and For. **1**:153. 1888.

177
Bretschneider E. *Bot. Explor. in China* **2**:860. 1898.

178
U. S. D. A. Plant Immigrants No. **115**:940. 1915

179
U. S. D. A. Plant Immigrants No. **72**:516. 1912.

180
Prunus Davidiana alba Bean *Garden* **50**:165. 1896; *Persica Davidiana alba* Carrière *Rev. Hort.* 76. 1872; *Prunus Davidiana flore alba* Wittmack Gartenfl. **44**:129. 1895.

181
Jour. Agr. Research **1**:147-177. 1913.

182
U. S. D. A. Seeds and Plants Imported Invent. **13**:173. 1908.

183
Trans. Hort. Soc. Lond. **3**:380-387. 1820.

184
Ibid. **5**:525-560. 1824.

185
For a brief history of the life and pomological work of Gilbert Onderdonk, the reader is referred to *The Plums of New York*, page 392.

186
U. S. D. A. Rpt. 648-651. 1887.

187
Tex. Sta. Bul. **39**:826-832. 1896.

188
Am. Pom. Soc. Rpt. 110. 1887.

189
Waugh, F. A. *Systematic Pomology*, 178. 1903.

190
Hume H. Harold *Fla. Sta. Bul.* **62**: 1902.

191 Gould, H. P. *Md. Sta. Bul.* **72**:129. 1901.

192 Wright, Charles *Cyc. of Am. Hort.* **3**:1240. 1900.

193 Gould, H. P. *Md. Sta. Bul.* **72**:130. 1901.

194 Shallcross, J. T. *Md. Hort. Soc. Rpt.* **1**:17. 1898.

195 Wright, Charles *Cyc. of Am. Hort.* **3**:1238. 1900.

196 *Am. Farmer* July, 1878.

197 Rutter *Cult. & Diseases of the Peach* 81, 82. 1880.

198 *New England Farmer* **7**:174.

199 *Mag. Hort.* **5**:12.

200 *Ohio Hort. Soc. Rpt.* 61. 1869.

201 *Jour. Lond. Hort. Soc.* 221. 1846; l. c. 265. 1852.

202 *Mag. Hort.* 475. 1851.

203 *Horticulturalist* 286, 472. 1853.

204 *Horticulturist* **1**:382. 1847.

205 *Rev. Hort.* 11. 1861.

206 *Trans. Hort. Soc. Lond.* **4**:512-513. 1822.

207

Prince, Wm. *Treat. on Hort.* 16. 1828.

William Prince, second of the name in American pomology and third proprietor of the celebrated Prince nurseries at Flushing, Long Island, was born November 10, 1766, and died April 9, 1842. His grandfather, a French Huguenot, was the founder of the establishment of which he became owner, and in which he made his reputation. Under his father, the first William Prince, the nursery at Flushing developed into a great commercial nursery, a private experiment station, a testing ground for American and foreign fruits and a botanic garden of American plants. The mantle dropped by William Prince, the father, at his death in 1802, fell upon the shoulders of William Prince, subject of this sketch, then just reaching the prime of life and one of the most brilliant and versatile pomologists the country has known. William Prince continued most successfully the work of his father in breeding new varieties, domesticating native plants and importing foreign fruits and ornamentals. During his supervision the Prince Nursery reached the height of its fame. It was conducted less for money than for love of the work. An attempt was made to grow every American and European plant-species having horticultural value. The catalogs published from the nursery by William Prince are among the best horticultural and botanical contributions of the first half of the Nineteenth Century. Besides these, William Prince is the author of the *Treatise on Horticulture*, published in 1828, and gave assistance to his son, William Robert Prince, in preparing his *Pomological Manual* published in 1832. In the description of varieties in this text it will be found that many varieties of peaches were originated, introduced, imported or first described by William Prince.

208

For a brief history of the life and horticultural activities of Prosper Julius A. Berckmans, the reader is referred to *The Plums of New York*, page 159.

209

Wickson *Cal. Fruits* 450-456. 1914.

"*Trays for Drying.*—The fruit is placed upon trays for

exposure to the sun. There is great variation in the size of the trays. The common small tray is made of one-half inch sugar-pine lumber two feet wide and three feet long, the boards forming it being held together by nailing to a cleat on each end, one by one and a quarter inches, and a lath or narrow piece of half-inch stuff is nailed over the ends of the boards, thus stiffening the tray and aiding to prevent warping.

A large tray which is used by some growers is four feet square, and is made of slats three-eighths of an inch thick, and one and a half inches wide, the slats being nailed to three cross slats three-eighths of an inch thick and three inches wide, and the ends nailed to a narrow strip one-half inch thick by three-quarters of an inch wide on the other side.

Since large drying yards have been supplied with tramways and trucks for moving the fruit instead of hand carriage, larger trays, three feet by six or three feet by eight, have been largely employed. These tramways lead from the cutting sheds to the sulphur boxes and thence to various parts of the large drying grounds, making it possible to handle large amounts of fruit at a minimum cost.

Protecting Fruit from Dew.—In the interior there are seldom any deposit of dew in the drying season but occasionally there are early rains before the drying season is over. The fruit is then protected by piling the trays one upon another, in which operation the thick cleats serve a good purpose. In dewy regions the trays are piled at night, or cloth or paper is sometimes stretched over the fruit, thus reducing the discoloration resulting from deposits of moisture upon it.

Drying Floors.—For the most part the trays are laid directly on the ground, but sometimes a staging of posts and rails is built to support them, about twenty inches from the ground. The drying trays are sometimes distributed through the orchard or vineyard, thus drying the fruit with as little carrying as possible. Others clear off a large space outside the plantation and spread the trays where full sunshine can be obtained. Drying spaces should be selected at a distance from traveled roads, to prevent the deposit of dust on the fruit * * *.

Grading.—It is of great advantage in drying to have all the fruit on a tray of approximately the same size, and grading before cutting is advisable. Machines are now made which accomplish this very cheaply and quickly.

Cutting-Sheds.—Shelter of some kind is always provided for the fruit-cutters. Sometimes it is only a temporary bower made of poles and beams upon which tree branches are spread as a thatch; sometimes open-side sheds with boarded roof, and sometimes a finished fruit-house is built, two stories high, the lower story opening with large doors on the north side, and with a large loft above, where the dried fruit can be sweated, packed, and stored for sale. The climate is such that almost any shelter which suits the taste of the purse of the producer will answer the purpose.

Sulphuring.—The regulations promulgated under the pure food law enacted by Congress in 1906 established an arbitrary limit to the percentage of sulphur compounds in evaporated fruits, which was shown by producers to be destructive to their industry, and otherwise unwarranted and unreasonable. As a result of their protest the enforcement of such regulations was indefinitely postponed, pending the results of scientific investigation which began in 1898.

From the point of view of the California producer it must be held that before the employment of the sulphur process, California cured fruits were suitable only to the lowest culinary uses. They were of undesirable color, devoid of natural flavor, offensive by content of insect life. They had no value which would induce production and discernible future. Placing the trays of freshly cut fruit in boxes or small 'houses,' with the fumes of burning sulphur, made it possible to preserve its natural color and flavor during the evaporation of its surplus moisture in the clear sunshine and dry air of the California summer. It also prevented souring, which with some fruits is otherwise not preventable in such open air drying, and it protected the fruit from insect attack during the drying process. By the use of sulphur and by no other agency has it been possible to lift the production of cured fruits of certain kinds from a low-value haphazard by-product to a primary product for which Californians have planted orchards, constructed packing houses and made a name

in the world's markets.

The action of sulphuring is not alone to protect the fruit, it facilitates evaporation so that about one-half less time is required therefor. Not the least important bearing of this fact is the feasibility of curing fruits in larger pieces. The grand half-peaches, half-apricots, half-pears of the California cured fruits are the direct result of the sulphur process. Without it the fruit must be cut into small sections or ribbons, which in cooking break down into an uninviting mass, while, with the sulphuring, it is ordinary practice to produce the splendid halves with their natural color so preserved that they lie in cut glass dishes in suggestive semblance to the finest product of the canners, and are secured at a fraction of the cost.

There are various contrivances for the application of sulphur fumes to the freshly-cut fruit. Some are small for hand carriage of trays; some are large and the trays are wheeled into them upon trucks. The most common is a bottomless cabinet about five or six feet high, of a width equal to the length of the tray and a depth a little more than the width of the tray. The cabinet has a door the whole width of one side, and on the sides within cleats are nailed so that the trays of fruit slip in like drawers into a bureau. Some push in the trays so that the bottom one leaves a little space at the back, the next a little space at the front, and so on, that the fumes may be forced by the draft to pass between the trays back and forward. The essentials seem to be open holes or dampers in the bottom and top of the cabinet so that the fumes from the sulphur burning at the bottom may be thoroughly distributed through the interior, and then all openings are tightly closed. To secure a tight chamber the door has its edge felted and the cabinet is made of matched lumber. The sulphur is usually put on a shovel or iron pot, and it is ignited by a hot coal, or a hot iron, or it is thrown on paper of which the edges are set on fire, or a little alcohol is put on the sulphur and lighted, etc. The sulphur is usually burned in a pit in the ground under the cabinet. The application of sulphur must be watchfully and carefully made, and the exposure of the fruit should only be long enough to accomplish the end desired. The exposure required differs for different fruits, and with the same fruits in different conditions, and must

be learned by experience.

Grading and Cleaning.—After the fruit is sufficiently dried (and it is impossible to describe how this point may be recognized except by the experienced touch), it is gathered from the trays in to large boxes and taken to the fruit house. Some growers put it into a revolving drum of punctured sheet iron, which rubs the pieces together and separates it from dust, etc., which falls out through the apertures as the drum revolves. Others empty the fruit upon a large wire-cloth table and pick it over, grading it according to size and color, and at the same time the dust and small particles of foreign matter fall through the wire cloth. The fanning mill for cleaning grain may also be used for rapid separation of dirt, leaves, etc., with proper arrangement of metal screens.

Sweating.—All fruit, if stored in mass after drying, becomes moist. This action should take place before packing. To facilitate it, the fruit is put in piles on the floor of the fruit house and turned occasionally with a scoop shovel; or, if allowed to sweat in boxes, the fruit is occasionally poured from one box to another. The sweating equalizes the moisture throughout the mass. Some large producers have sweat-rooms with tight walls, which preserve an even temperature. No fruit should be packed before 'going through the sweat.' If this is not done, discoloration and injury will result.

Dipping before Packing.—All fruits except prunes can be packed in good condition without dipping, provided the fruit is not over-dried. Efforts should be made to take up the fruit when it is just sufficiently cured to prevent subsequent fermentation. If taken from the trays in the heat of the day and covered so that the fruit moth can not reach it there is little danger of worms. The highest grades of fruit are made in this way. If, however, the fruit has been over-dried or neglected, it can be dipped in boiling water to kill eggs of vermin and to make the fruit a little more pliable for the press. The dipping should be done quickly, and the fruit allowed to drain and then lie in a dark room, carefully covered, for twenty-four hours before packing.

Packing.—To open well, packages of dried fruit should be 'faced.' The many fine arts of paper lining, etc., must be

learned by observation. Flatten some fair specimens of the fruit to be packed (and reference is especially made to such fruits as apricots, peaches and nectarines) by running them through a clothes wringer or similar pair of rollers set to flatten but not crush the fruit. Do not face with better fruit than the package is to contain. It is a fraud which will not in the end be profitable. Lay the flattened fruit (cup side down) neatly in the bottom of the box. Fill the box until it reaches the amount the box is to contain, and then apply the press until the bottom can be nailed on. Invert the box and put on the label or brand; the bottom then becomes the top.

Many different kinds of boxes are used. A very good size is made of seasoned pine, six inches deep by nine inches wide by fifteen inches long, inside measurements, and it will hold twenty-five pounds of fruit. * * *

Peaches.—Take the fruit when it is fully ripe, but not mushy; cut cleanly all around to extract the pit and put on trays cup side up; get into the sulphur box as soon as possible after cutting. Peaches are dried both peeled and unpeeled, but drying without peeling is chiefly done. Peeling is done with the small paring machines or with a knife. Peeling with lye has been generally abandoned because of discoloration of the fruit after packing, although it can be successfully done by frequently changing the lye and using ample quantities of fresh water for rinsing after dipping.

Clingstone peaches are successfully handled with curved knives and spoon-shaped pitters in conjunction with ordinary fruit knives. Different styles are carried at the general stores in the fruit districts, and individuals differ widely in their preferences.

The weight of dried peaches which can be obtained from a certain weight of fresh fruit, depends upon the variety; some varieties yield at least a third more than others, and clings yield more than freestones as a rule. Dry-fleshed peaches, like the Muir, yield one pound dry from four or five pounds fresh, while other more juicy fruits may require six or seven pounds.

Nectarines.—Nectarines are handled like peaches; the production of translucent amber fruit in the sun depends

upon the skillful use of sulphur."

210

U. S. D. A. Yearbook 505. 1912.

211

Information supplied by letter.

212

Smith, Erwin F. *U. S. D. A. Div. of Bot. Bul.* No. **9**:17, 18. 1888.

This reference as well as most of those that follow, was found in Bulletin 9, Division of Botany, United States Department of Agriculture, the most complete account we have of peach-yellows, whether of historical facts or of natural history.

213

Smith, Erwin F. *U. S. D. A. Div. of Bot. Bul.* No. **9**:18, 19. 1888.

214

Smith, Erwin F. *U. S. D. A. Div. of Bot. Bul.* No. **9**:19. 1888.

215

Ibid. 19. 1888.

216

Coxe, Wm. *Cult. Fr. Trees* 215-217. 1817.

217

Prince, Wm. *Treat. Hort.* 14, 15. 1828.

218

Report of U. S. Com. Patents 242. 1851.

219

Am. Pom. Soc. Rept. 81. 1852.

220

Rutter *Cult. & Diseases of the Peach* 70. 1880.

221

Horticulturist **1**:318. 1846.

222
Am. Farmer 100-102. 1875.

223
Peach Yellows, Houghton Farm Experiment Department Ser. 3. No. **2**:27-28. 1882.

224
Horticulturist 503. 1849.

225
N. Y. Farmer and Hort. Repository 46. 1831.

226
Cultivator 255. 1844.

227
Can. Hort. 15-16. 1878.

228
Mich. Hort. Soc. Rpt. 275. 1880.

229
U. S. D. A. Condition of Growing Crops August. 1887.

230
Ibid.

231
N. Y. Farmer and Hort. Repository 9. 1831.

232
Yoemans, John L. *Rpt. of U. S. Com. of Patents* 166. 1852.

233
Conn. Bd. Agr. Rpt. 169. 1867.

234
Ibid. 173.

235
Trans. Mass. Hort. Soc. Pt. **1**:140. 1882.

236
Houghton Farm Exp. Dept. Ser. 3. No. **2**:27. 1882.

237
Proc. Am. Pom. Soc. 212. 1854.

238

Rpt. U. S. Com. Patents 369. 1851.

239

Ibid. 378.

240

Smith, Erwin F. *U. S. D. A. Div. of Bot. Bul.* **9**:42. 1888.

241

Ibid. 45.

242

Cult. & Count. Gent. 765. 1877.

243

Ibid. 275.

244

Mich. Hort. Soc. Rpt. 274. 1880.

245

Gulley, A. G. *Mich. Hort. Soc. Rpt.* 249. 1878.

246

Ramsdell, J. G. *Mich. Hort. Soc. Rpt.* 306. 1882.

247

Lannin, Joseph *Mich. Hort. Soc. Rpt.* 11. 1884.

248

Black, John J. *Cult. Peach & Pear*, 81. 1886.

249

Cultivator 167. 1843.

250

Horticulturist 37. 1846.

251

Dunlap, Dr. F. S. *U. S. D. A. Div. of Bot. Bul.* No. **9**:57. 1888.

252

Smith, Erwin F. *U. S. D. A. Div. of Bot. Bul.* No. **9**:61. 1888.

253

Smith, Erwin F. *U. S. D. A. Div. of Bot. Bul.* No. **9**:68-79. 1888.

254

Welsh, F. S. *Letter* June 9, 1916.

255

For a full report of this investigation see the Report of the New York State Fruit-Growers Association 180-187. 1908.

256

Hedrick, U. P. *N. Y. Sta. Bul.* **299**: 1908.

257

Goff, E. S. *Gard. & For.* **9**:448. 1896.

258

Welsh, F. S. and Anderson, E. H. *The Marketing of New York State Peaches* 5. 1916.

259

Welsh, F. S. and Anderson, E. H. *The Marketing of New York State Peaches* 5. 1916.

260

Ibid. 6-7. 1916.

261

For a brief history of William Prince, the first, and his contributions to American pomology, the reader is referred to *The Plums of New York*, page 389.

262

For a brief history of the life and horticultural activities of Andrew Jackson Downing, whose likeness is shown in the frontispiece of *The Peaches of New York*, the reader is referred to *The Cherries of New York*, page 244.

263

The Plums of New York is dedicated to William Robert Prince through the likeness shown of him in the frontispiece. A brief history of his life is given on page 21 of *The Grapes of New York* and reprinted on page 24 of *The Plums of New York*.

264

Fruit Trees, published in 1817 by William Coxe, is the first American pomology. Though written by an amateur, during most of his life a merchant, his work was done with so much care and exhibits such nice discrimination in selecting, describing and discussing varieties of fruits that until the later and more complete work of Andrew Jackson Downing and Charles Downing, Coxe's *Fruit Trees*, competing with several other manuals, was the standard pomological work of America. William Coxe was born in Philadelphia, May 3, 1762, and died near Burlington, New Jersey, February 25, 1831. He seems to have inherited wealth and with it scholarly habits and such refinement and charm of personality that in Philadelphia and later in Burlington, to which place he removed in early manhood, he was one of the leaders in literary, scientific and social circles. His tastes early led him to the cultivation of fruit and he began to grow the varieties then to be had in America and to import sorts from England and France so that by 1817 he was able to say that he had been "for many years actively engaged in the rearing, planting and cultivating fruit trees on a scale more extensive than has been attempted by any other individual in this country." Previous to this for some years, how long cannot be said, he was the moneyed partner with one Daniel Smith in what, for the times, was an extensive fruit-tree and ornamental nursery. Demands for information became so frequent that he determined to put his knowledge in print and his *Fruit Trees* was the result. The objects he sought to obtain in writing are well set forth in the title page as follows: "A VIEW of the CULTIVATION of FRUIT TREES, and the Management of Orchards and Cider; with Accurate Descriptions of the Most Estimable Varieties of NATIVE AND FOREIGN APPLES, PEARS, PEACHES, PLUMS, AND CHERRIES, Cultivated in the Middle States of America; Illustrated by Cuts of two hundred kinds of Fruits of the natural size; Intended to Explain Some of the errors which exist relative to the origin, popular names, and character of many of our fruits; to identify them by accurate descriptions of their properties, and correct delineations of the full size and natural formation of each variety; and to exhibit a system of practice adapted to our climate, in the Successive Stages of A NURSERY, ORCHARD, AND CIDER ESTABLISHMENT." He was at one time a member of the State Legislature and later a Congressman

intimately associated with Daniel Webster. He was, also, an honorary member of the Horticultural Society of London to which during many years he was a faithful correspondent. It was Coxe's privilege to see the very beginnings of commercial peach-growing in America and through his nursery, his orchard and his book he contributed much to American peach-culture.

265

Theodatus Timothy Lyon, fruit-grower, experimenter and writer, was for many years the leading pomological authority of his adopted State, Michigan. T. T. Lyon, as he always signed his name, was born in Lima, New York, January 13, 1813, and died in South Haven, Michigan, February 6, 1900. At the age of fifteen he moved with his parents to Michigan where until his thirty-first year, in 1844, he worked at most of the arts and crafts practiced by pioneers in a new country. In the year named, he began the career of horticulturist, by planting a nursery at Plymouth, Michigan. In the nearby regions French missionaries had early planted orchards and old settlers had long been importing varieties of fruit. The nomenclature of these fruits was in uttermost confusion. T. T. Lyon set himself the task of ascertaining the correct names of these varieties in the old settlements of the State. The result was he became the pomological authority of the State. In 1874 Mr. Lyon moved to the famous "*peach-belt*" of western Michigan, where he lived until his death. Here, at first, he was president of a prominent nursery company. In 1876 he was elected president of the State Horticultural Society and continued as its active president until 1891 and from then on until his death was honorary president. In 1888 T. T. Lyon wrote a *History of Michigan Horticulture* which was published in the Seventeenth Report of the State Horticultural Society. From the beginning of his interests in horticulture in southwestern Michigan Mr. Lyon was particularly interested in peaches—growing seedlings, testing new varieties, planting orchards and in every way helping to forward the great peach-industry of the region. He was probably, in his time, the best informed, the most accurate and the most critical judge of peaches in this country. In 1889 he was given charge of the South Haven Sub-station of the Michigan Experiment Station which gave him added facilities for studying and

describing fruits and a means of publishing, through his connection with the Experiment Station, bulletins on fruits. These, for accuracy of description of varieties, are still unsurpassed among American pomological publications. Besides these bulletins, the fruit-lists in the reports of the Michigan Horticultural Society and in the American Pomological Society, during the last half of the Nineteenth Century, show the results of his accurate judgment of fruits. A modest man, shrinking from publicity, his printed works but poorly represent his vast knowledge of fruits and his great influence in the betterment of American pomology.

Transcriber's Note:

Page 144, "but appear he peach-growers" was changed to read "but appear to peach-growers".

Page 373, "Hazelhurst, Mississippi" changed to read "Hazlehurst, Mississippi".

Page 530, "Pavie Genisant" was changed to read "Pavie Genisaut".

Inconsistent spelling and hyphenation are as in the original.

*** END OF THE PROJECT GUTENBERG EBOOK THE PEACHES OF NEW YORK ***

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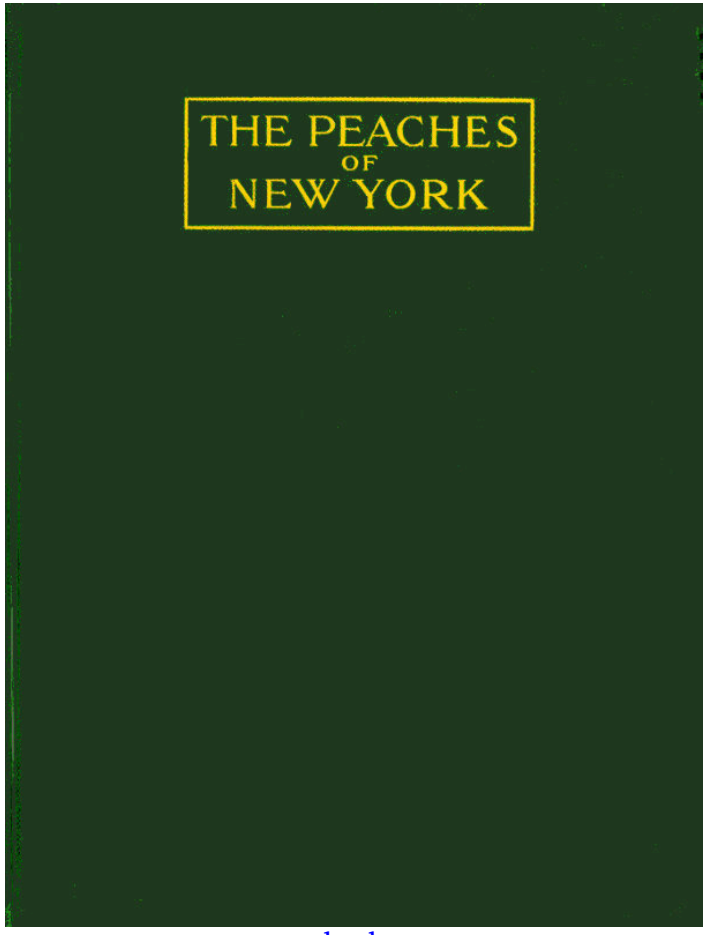
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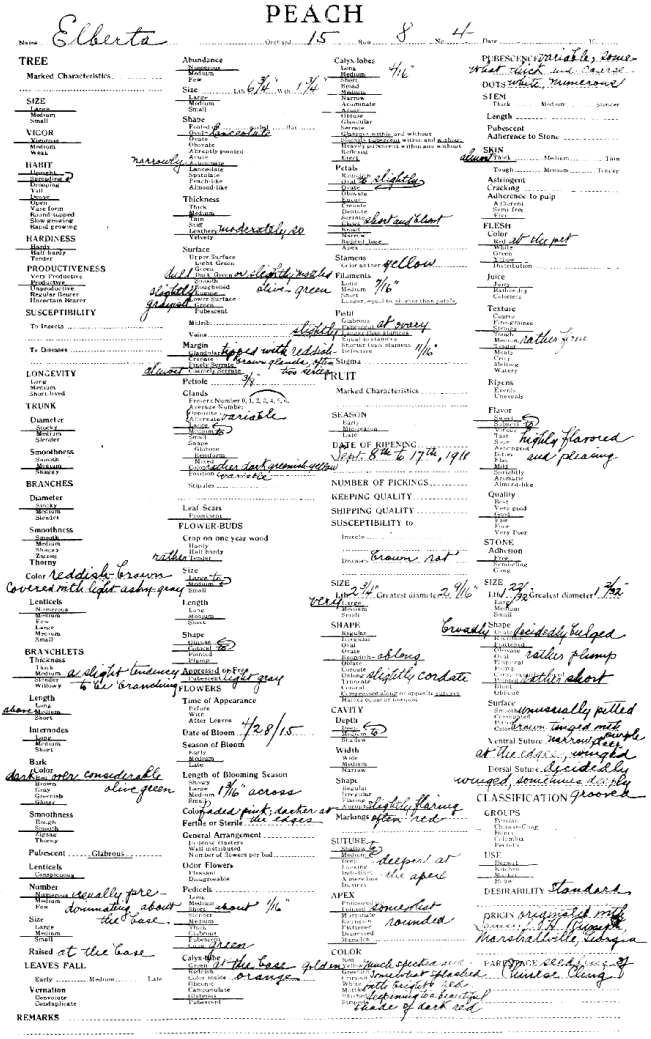
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back



back


PEACH

Name Elberta Grd'nd 15 Row 8 No. 4 Date

TREE
Marked Characteristics

SIZE
Large
Medium
Small

VIGOR
Vigorous
Medium
Weak

HABIT
Upwright
Semi-erect
Drooping
Round
Inclined
Open
Vase form
Round-topped
Slow growing
Rapid growing

HARDINESS
Hardy
Half hardy
Tender

PRODUCTIVENESS
Very Productive
Productive
Regular Bearer
Shy Bearer

SUSCEPTIBILITY
To Insects
To Diseases

LONGEVITY
Long
Medium
Short lived

TRUNK
Diameter
Stocky
Medium
Slender
Smoothness
Smooth
Medium
Shaggy

BRANCHES
Diameter
Stocky
Medium
Slender
Smoothness
Smooth
Medium
Shaggy
Thorny
Color reddish-brown covered with light ashy-gray
Lenticels
Numerous
Medium
Few
Large
Medium
Small

BRANCHLETS
Thickness
Thick
Medium
Slender
a slight tendency to be crowding
Length
Long
above Medium
Short
Internodes
Long
Medium
Short
Bark
Color
dark green over considerable olive green
Smoothness
Rough
Smooth
Glossy
Pubescent Glabrous
Lenticels
Conspicuous
Number
Numerous
Medium
Few
Size
Large
Medium
Small
Raised at the base
LEAVES FALL
Early Medium Late
Vernation
Convolute
Conduplicate

Abundance
Numerous
Medium
Few
Size Lth 6 3/4 Wth 1 1/4
Large
Medium
Small
Shape
Pointed
Oval Lanceolate
Ovate
Obovate
Abruptly pointed
Arbutoid
Lanceolate
narrowly
Lanceolate
Spatulate
Peach-like
Almond-like
Thickness
Thick
Medium
Thin
Leathery moderately so
Velvety
Surface
Upper Surface
Light Green
Dark Green
Under Surface
Light Green
Dull Green or slightly mottled olive green
Slightly Pubescent
grayish Green
Pubescent
Midrib
Veins
Margin
Glandular
Serrate
Crenate
Undulate
Revolute
Position
Stipules
Leaf Scars
Prominent
Persistent

FLOWER-BUDS
Crop on one year wood
Hardy
Half hardy
Tender
Size
Large
Medium
Small
Length
Long
Medium
Short
Shape
Obtuse
Conical
Pointed
Plump
Appressed or Free
Color Light gray

FLOWERS
Time of Appearance
Before
With
After Leaves 4/28/15
Date of Bloom
Season of Bloom
Early
Medium
Late
Length of Blooming Season
Short
Long
Medium 3/4" across
Long
Color pink; darker at the edges
Fertile or Sterile
General Arrangement
In close clusters
Well distributed
Number of flowers per bud
Odor Flowers
Pleasant
Disagreeable
Pedicels
Long
Medium
Short about 1/16
Thick
Medium
Thin
Color green
Calyx-tube
Green at the base
Color inside orange
Glabrous
Campanulate
Tubular
Urceolate

Calyx-lobes 4/16
Long
Medium
Short
Width
Broad
Medium
Narrow
Apex
Obtuse
Glandular
Acute
Margin: entire and without
Slightly lacerate " " "
Heavily gl. lacerate " " "
Reflexed
Erect
Petals
Rounding
oval slightly
Ovate
Obovate
Base
Tapering
Crenate
Serrate
Long short and blunt
Broad
Medium
Narrow
Rudimentary
Apex
Stamens
Color anther yellow
Filaments
Long
Medium 7/16"
Short
Pistil
Glabrous
Pubescent slightly at ovary
Longer than stamens
Shorter than stamens
Length 7/16"
Stigma

FRUIT
Marked Characteristics

SEASON
Early
Mid-season
Late

DATE OF RIPENING
Sept. 6th to 17th, 1915

NUMBER OF PICKINGS
KEEPING QUALITY
SHIPPING QUALITY
SUSCEPTIBILITY to
Insects
Diseases brown rot

SIZE 2 3/4 Greatest diameter 2 7/16"
Large very
Medium
Small
SHAPE
Regular
Symmetrical
Oval
Ovate
Roundish
Oblate
Cordate
Obcordate
Triangular
Elliptical
Compressed along or opposite suture
Narrowed to suture
CAVITY
Depth
Deep
Medium
Shallow
Width
Wide
Medium
Narrow
Shape
Regular
Irregular
Furrow
Lipped
Markings often red

SUTURE
Shallow
Medium deeper at
Deep
Extends
Suture-line
Incurved
APEX
Prominent
Inclined toward lateral
Mammillate
Retuse
Pointed
Depressed
Mucronate
COLOR
Skin
Ground
Overlaid
Mottled
Stripes
Flesh
Stained
Streaked
Marbled
Veined
Dots
Russet
Blush
Bloom

PUBESCENCE moderately dense what thick and coarse
DOTS white, numerous
STEM
Thick Medium Slender
Length
Pubescent
Adherence to Stone
SKIN
Thick Medium Thin
Tough Medium Tender
Astringent
Cracking
Adherence to pulp
Adherent
Semi free
Free
FLESH
Color
Red at the pit
Green
White
Yellow
Distribution
Juice
Amount
Rather dry
Colorless
Texture
Coarse
Fineness
Stringy
Tough
Medium rather of fine
Granular
Soft
Dry
Melting
Watery
Ripens
Evenly
Unevenly
Flavor
Sweet
Subacid
Acid
Vinous
Aromatic
Astringent
Rich highly flavored
Poor and pleasing
Bitter
Insipidity
Pungent
Almond-like
Quality
Best
Very good
Good
Fair
Poor
Very Poor
STONE
Adhesion
Free
Partially
Clings
SIZE 2 7/8 Greatest diameter 2 3/4
Large
Medium
Small
Shape
Globular
Ovoid
Oval
Elliptical
Ovate
Obovate
Obtuse
Cordate
Oblong
Ellipsoidal
Flattened
Base
Apex
Suture
Sides
Ventral Suture
Dorsal Suture
Surface
Smooth
Furrowed
Pitted
Grooved
Ridged
Keeled
Winged
Crenate
Lacerate
Fibrous
Reticulate
Rugose
Color
Ground
Overlaid brown tinged with purple
Mottled
Striped
Spotted
Clouded
Veined
Dots
Russet
Blush
Bloom
Gradually Decidedly bulged
Sides plump
Base pointed short
Apex
Suture unusually pitted
Ventral Suture narrow deep at the edges, winged
Dorsal Suture decidedly winged, sometimes double
CLASSIFICATION grooved
GROUPS
Peento
Chinese-Cling
Honey
Columbia
Indian
USE
Canning
Preserving
Market
Dessert
DESIRABILITY standard
ORIGIN originated with J. H. Gumpp, Marshallville, Ga.
VARIANCE

Calyx-lobes yellow
Foliage much spotted and crumpled
Flowers somewhat pleasing
Fruit with bright red shade of dark red
Pubescence
Stem
Suture
Apex
Flesh
Stone
Quality
Season
Tree
Remarks

REMARKS

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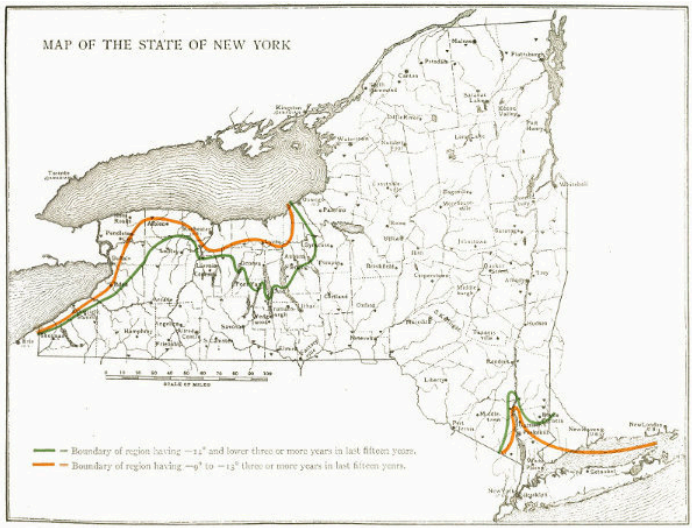
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MAP OF THE STATE OF NEW YORK
— Boundary of region having −12° and lower three or more years in last fifteen years.
— Boundary of region having −9° to −12° three or more years in last fifteen years.

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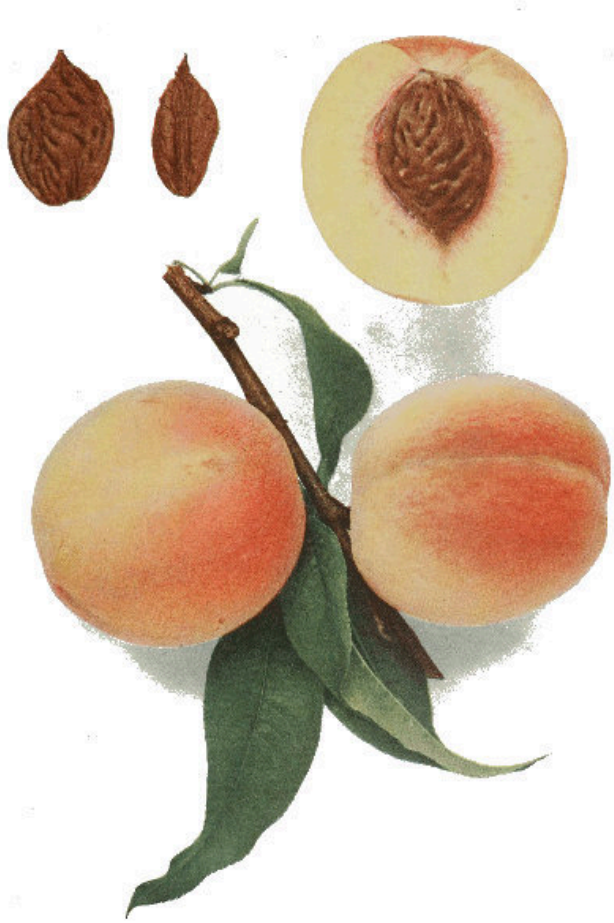
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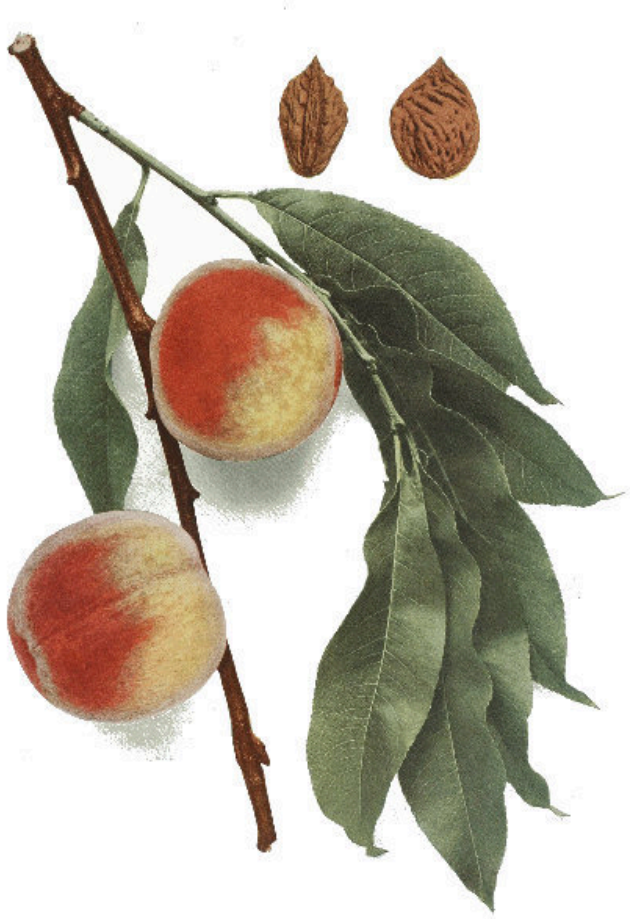
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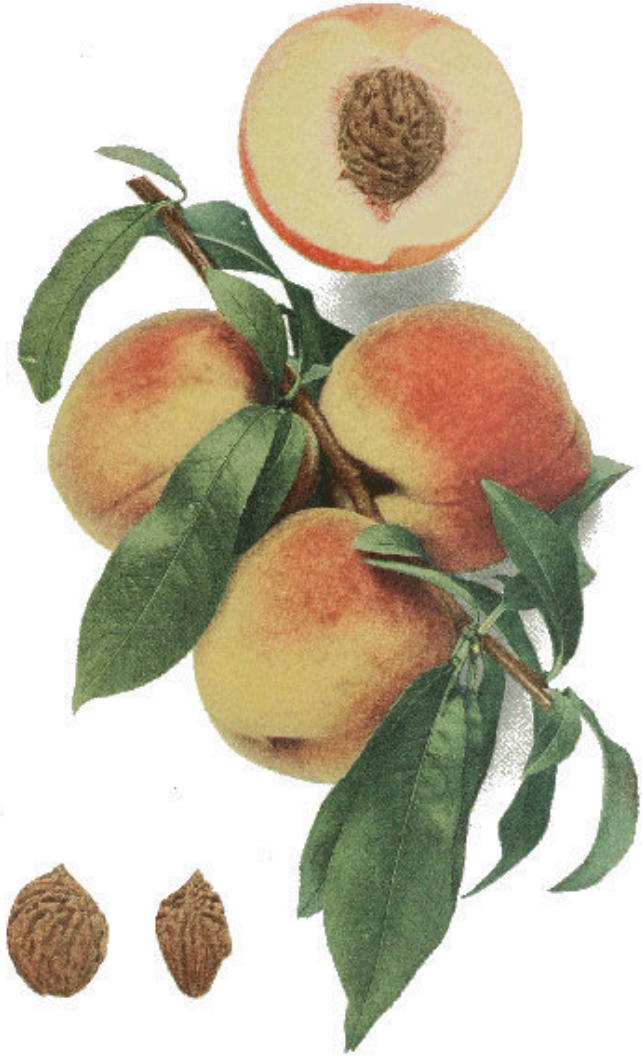
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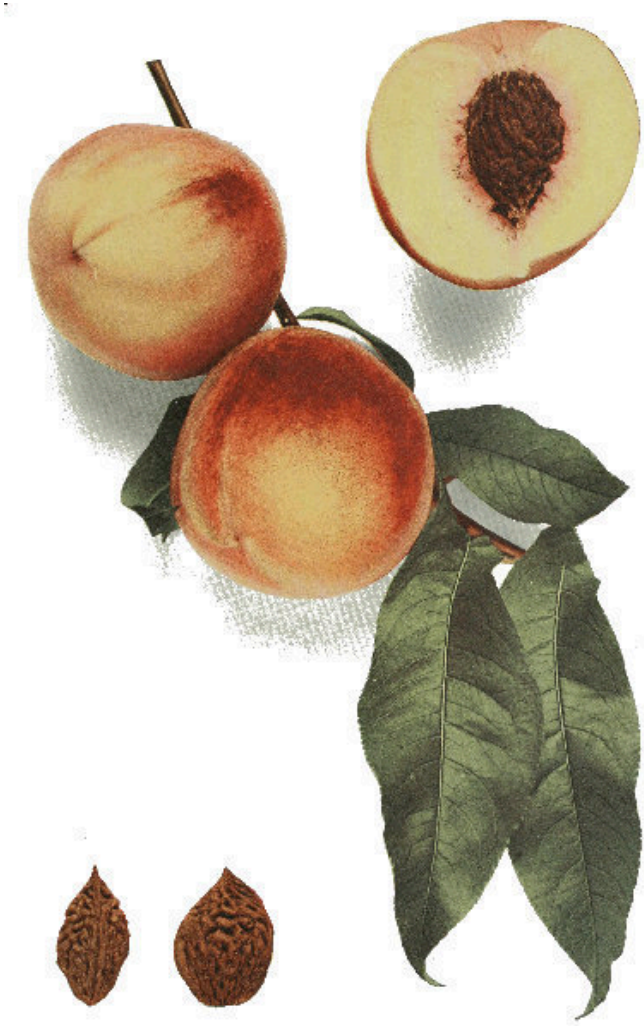
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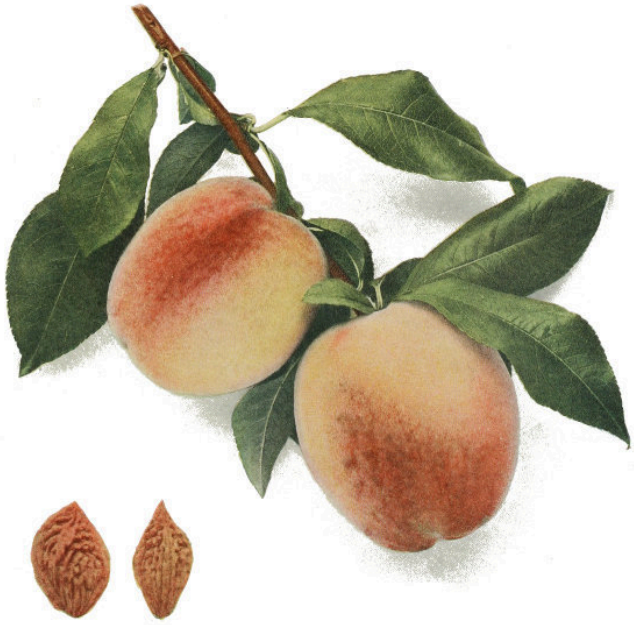
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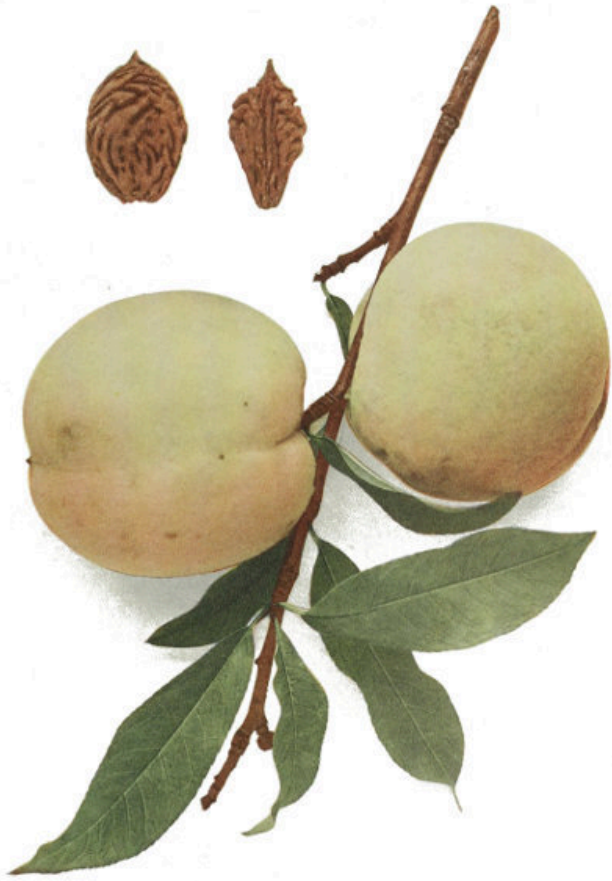
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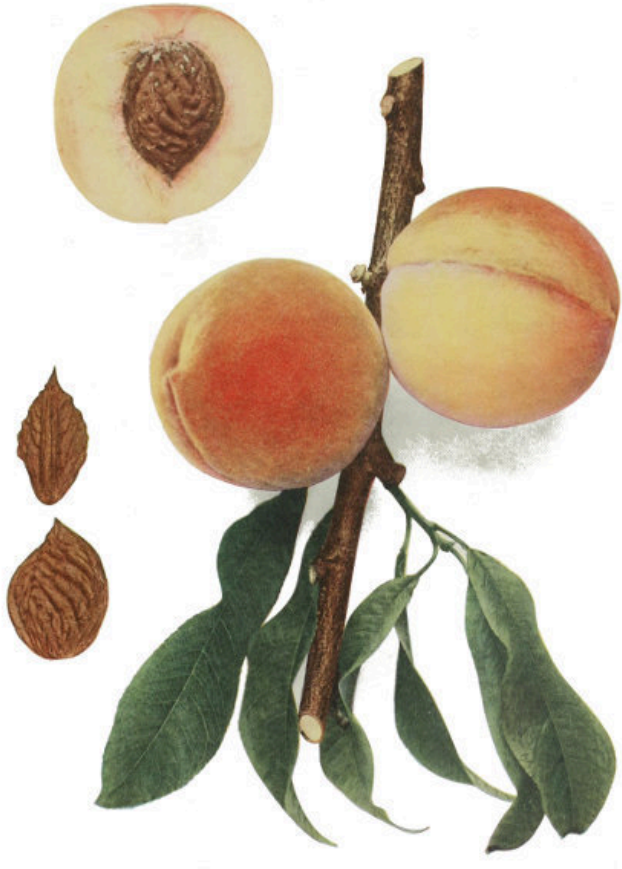
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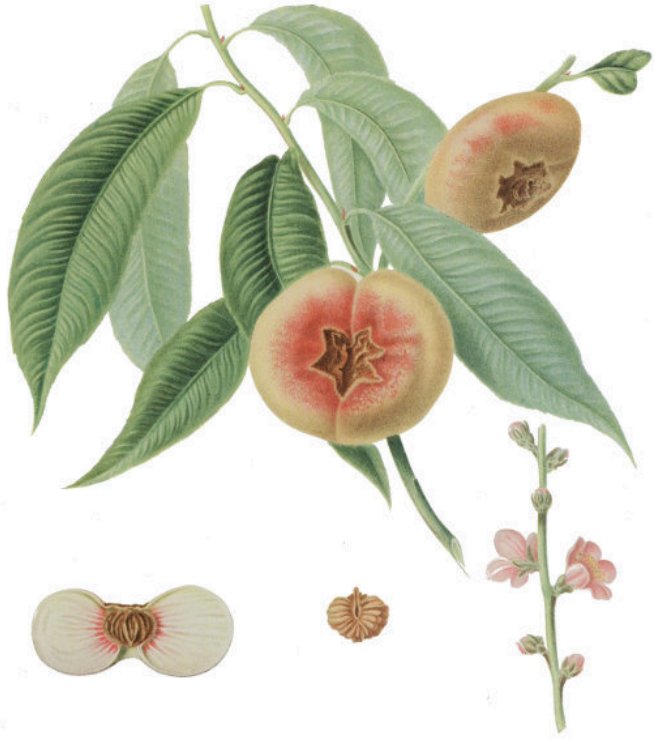
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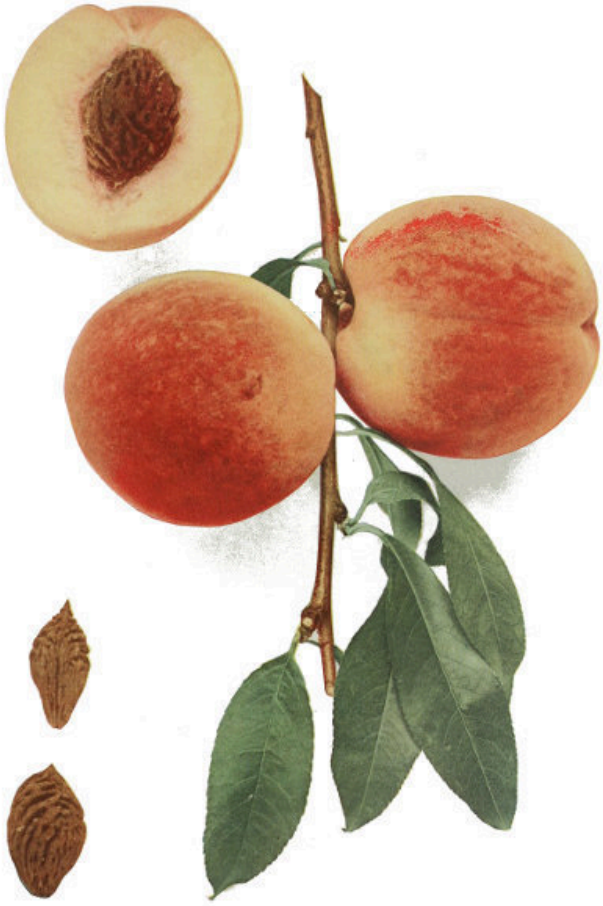
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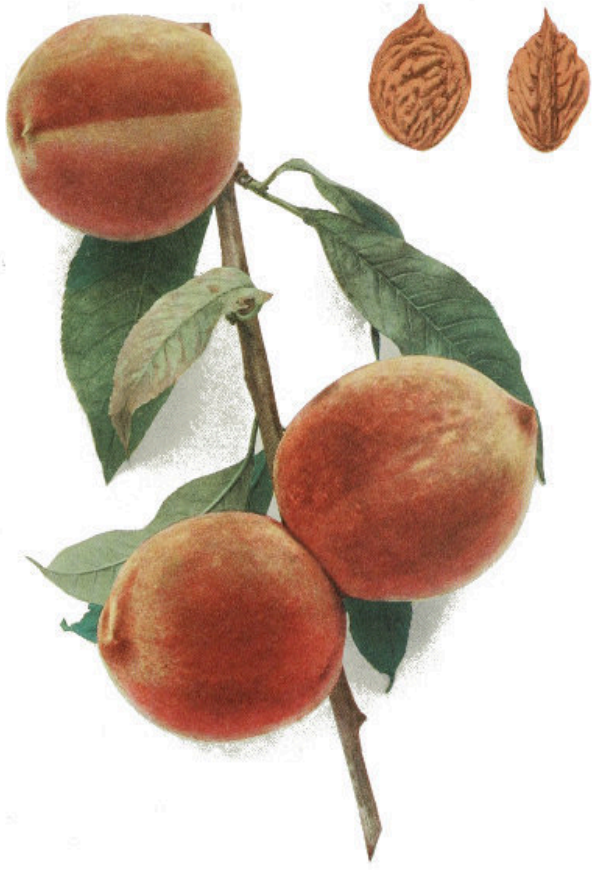
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