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**Fruits**

OF THE

**Hawaiian Islands**

BY

GERRIT PARMILE WILDER

---

IN THREE VOLUMES

**VOL. I.**

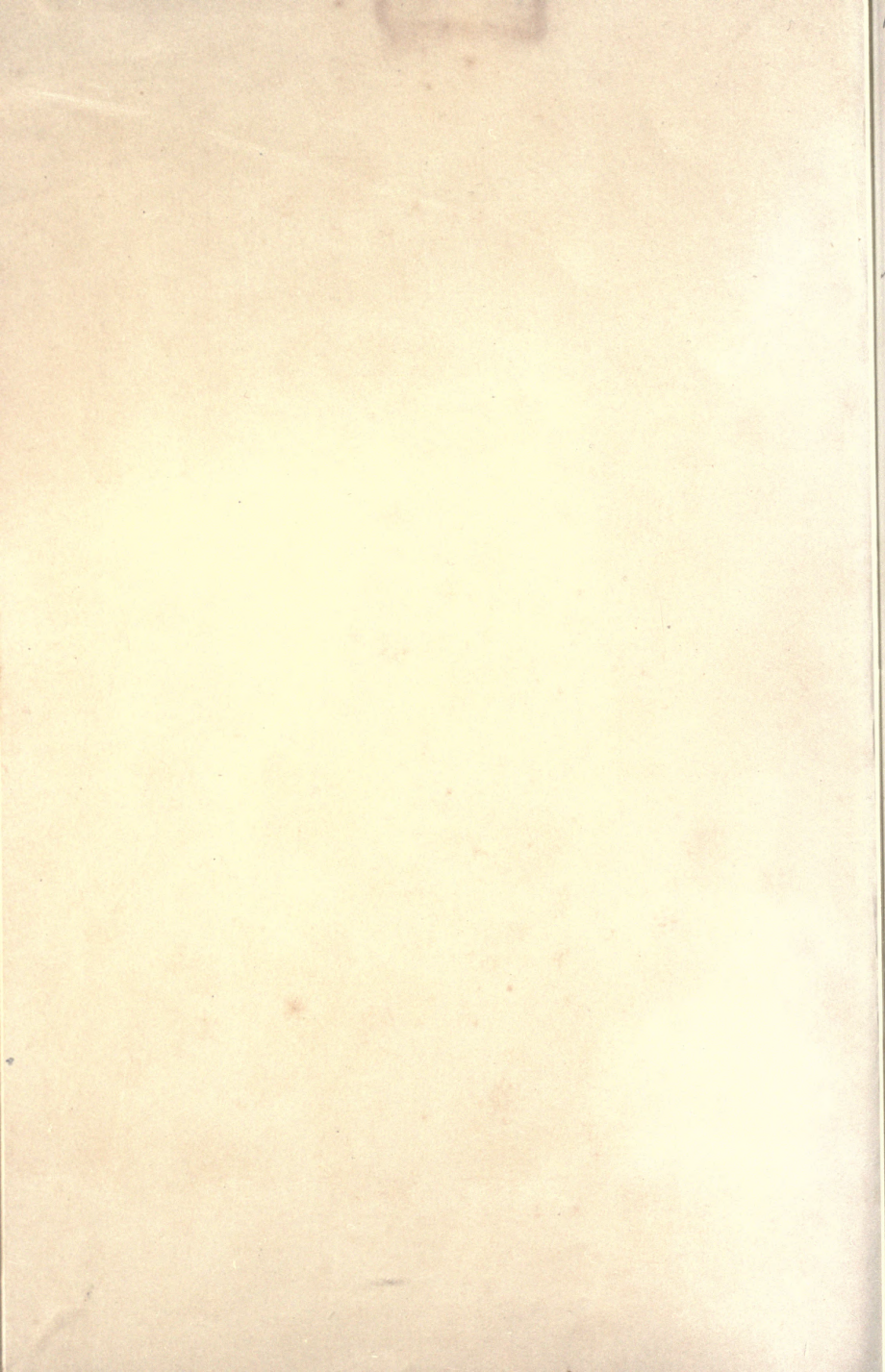
ILLUSTRATED BY THIRTY-SIX HALF-TONE PLATES WITH  
DESCRIPTIONS OF SAME

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GERRIT PARMILE WILDER

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HONOLULU  
PUBLISHED BY THE HAWAIIAN GAZETTE CO., LTD.  
1907





With the compliments  
of the author  
Gerrit P. Wilder

Santa Barbara, Cal. July 29/09

## Preface.



In introducing to the public this book on the "Fruits of the Hawaiian Islands," I desire to acknowledge my indebtedness for assistance in my researches, to various works on Horticulture, and to many personal friends for their valuable assistance.

My intention is to present this work in a series of three volumes, and I trust that, when complete, they will contain a comprehensive list of the Fruits of the Hawaiian Islands.

GERRIT PARMILE WILDER.



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*G. P. W. Collection.*

*Persea gratissima.*

PLATE I.

AVOCADO, PALTA OR ALLIGATOR PEAR.

Grown in the garden of Gerrit Wilder.

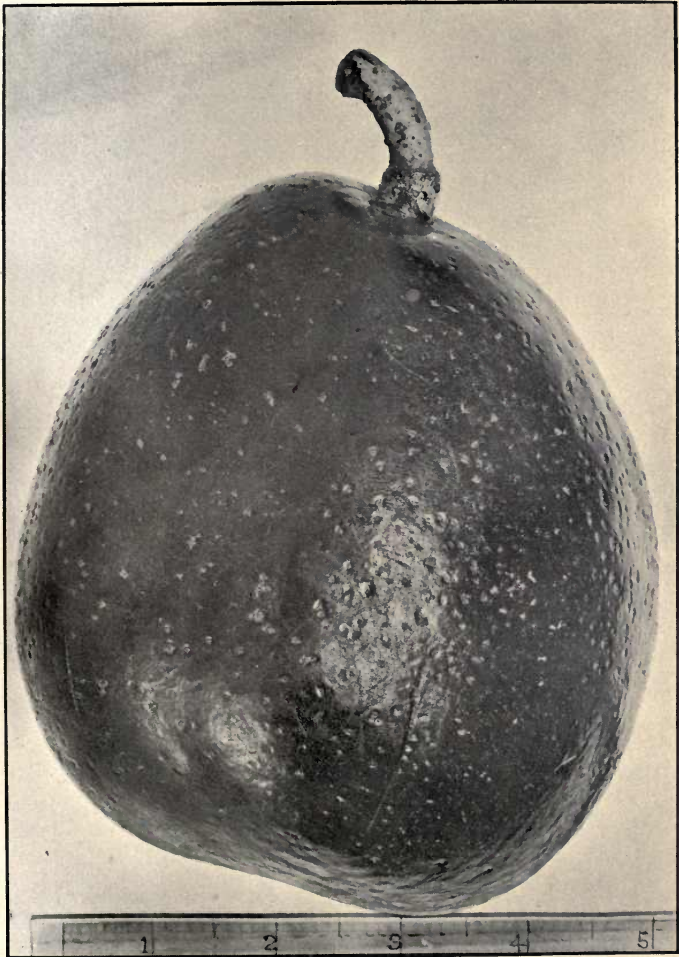


PLATE I.—*Avocado.*

*Persea gratissima.*

## AVOCADO.

This spreading evergreen tree is a native of the West Indies. In the Hawaiian Islands, the first trees of its kind were said to have been planted in Pauoa Valley, Oahu, by Don Marin. It attains a height of from 10-40 feet, and is adverse to drought. Its leaves are elliptico-oblong, from 4-7 inches in length. The flowers are greenish-yellow and downy. The fruit, which ripens from June until November, is a round or pear-shaped drupe, covered with a thin, rather tough skin, which is either green or purple in color. The flesh is yellow, firm and marrow-like, and has a delicious nutty flavor. The seed-cavity is generally large, containing one round or oblong seed, covered by a thin, brown, parchment-like skin. The quality of the pear is judged, not only by its flavor, but by the presence or absence of strings or fibre in the meat, and also by the quantity of flesh as compared to the size of the seed. Innumerable variations as to size, shape, and quality have been produced from seedlings—some of which may be seen in the accompanying illustration. The Avocado is easily reproduced by budding and grafting, and the best varieties may be obtained in this manner.

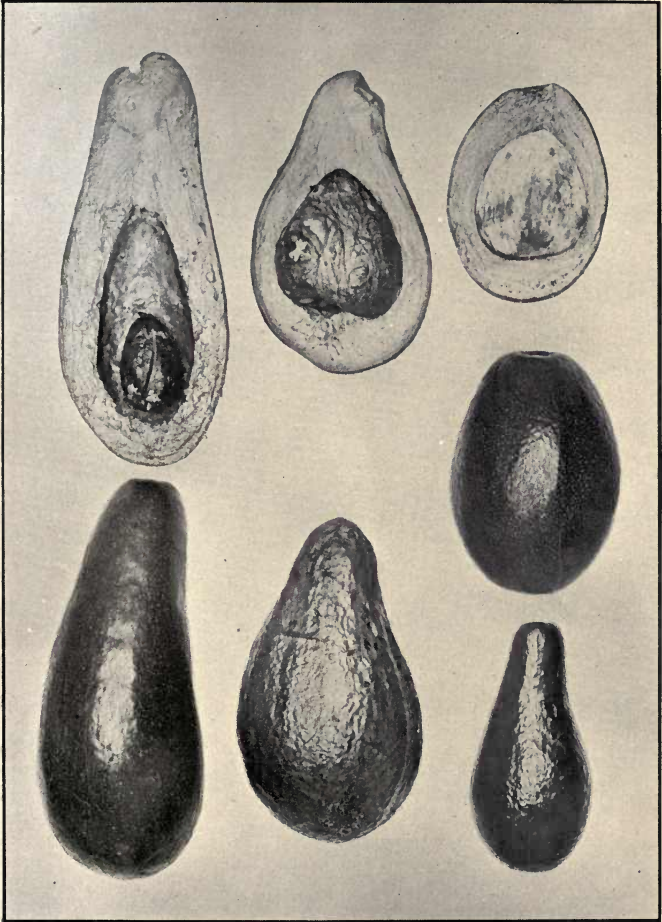


PLATE II.--*Avocado*.  
One third natural size.

G. P. W. Collection.

PLATE III.

*Persea gratissima.*

GUATAMALA AVOCADO.

This variety is a native of Mexico, and although known as the Guatamala Avocado, it is more commonly to be found in the markets of the City of Mexico. Its leaves are purplish-green. The flowers which appear in May and June, are like those of the preceding variety; and the drupe, which matures in the early part of the year, has a long stem. This fruit is round, from 3-5 inches in diameter, has a thick, tough, rough rind, which when ripe, is a deep claret color, and the meat which is a golden-yellow, is tinged with purple next to the rind, and is free from strings or fibres. There are but two trees of this variety bearing fruit in Honolulu. They were propagated from seeds brought here in 1890 by Admiral Beardsley. These two trees are growing in private gardens.





PLATE III.—*Avocado.*  
One half natural size.

*G. P. W. Collection.*

PLATE IV.

*Punica Granatum.*

## POMEGRANATE.

The name was derived from the word *punicus*, of Carthage, near which city it is said to have been discovered; hence *malum-punicum*, Apple of Carthage, which was the early name of the Pomegranate. It is a native of Northern Africa, and of South-western Asia, and is grown in the Himalayas up to an elevation of 6000 feet. It is a deciduous shrub, which by careful training can be made to grow into a tree from 10-15 feet high. Many shoots spring from the base of the tree, and should be cut away, as they draw the sap which should go to the fruit-bearing stems. The branches are slender, twiggy, nearly cylindrical, and somewhat thorny. The bark contains about 32 per cent. tannin, and is used for dyeing the yellow Morocco-leather. The peel of the fruit serves also as a dye. There are several varieties of Pomegranate growing in Hawaii; the double-flowering variety is popular as an ornamental plant. All of the varieties are of easy culture, and are readily propagated by means of cuttings of the ripe wood. The leaves are lanceolate, glabrous, and a glossy-green with red veins. The flowers are axillary, solitary or in small clusters, and in color are a very showy rich orange-red. The fruit is about the size of an ordinary orange, has a persistent calyx, and is made up of many small compartments arranged in two series, one above the other. The crisp, sweet, watery pink pulp enveloping each seed, is the edible portion of the Pomegranate.



PLATE IV.—*Pomegranate.*

One half natural size.

G. P. W. Collection.

PLATE V.

*Ficus Carica* (common variety).

FIG.

The Fig is the most ancient, as well as one of the most valuable of all fruit trees. Its name is nearly the same in all European languages. The tree is supposed to be a native of Caria in Asia Minor. The intelligent cultivators of Anatolia by whom the Smyrna Figs are produced, adhere to the caprification process, used from time immemorial. In California, efforts have been made to test this process. In the Hawaiian Islands, the Portuguese seem to be the most successful cultivators of the Fig, and several varieties are to be found throughout the group. This common variety grows to a height of from 10-20 feet, is hardy, and can easily be propagated from cuttings. Its leaves are alternate, 3-5 deeply lobed, and are shed during the fall months, at which season careful pruning will increase the following year's yield. The fruit is single, appearing from the axils of the leaves, on the new wood. It is a hollow, pear-shaped receptacle, containing many minute seeds, scattered throughout a soft pinkish-white pulp.



PLATE V.—*Fig.*  
One half natural size.

*G. P. W. Collection.*

PLATE VI.

*Ficus Carica.*

FIG.

Some years ago, this variety of Fig was to be found growing in large numbers at Makawao, and in the Kula district of Maui. Now, however, there are few, if any trees remaining, as a destructive blight, together with the lack of proper attention, has caused their extermination. This variety is very prolific. The fruit is small, pear-shaped, and has a particularly sweet and delicious flavor.

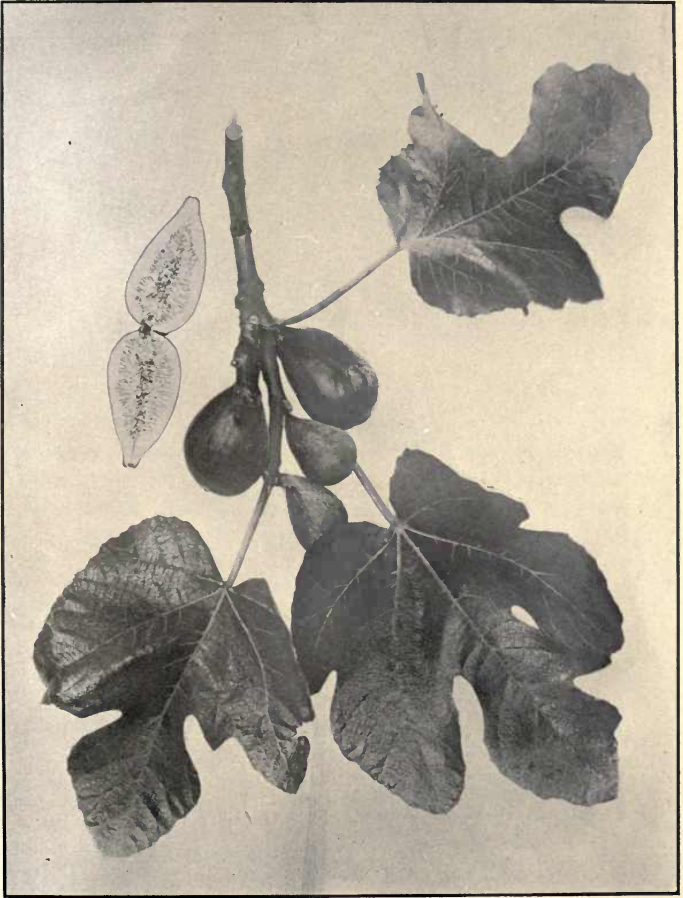


PLATE VI.—*Fig.*  
One half natural size

*G. P. W. Collection.*

PLATE VII.

*Ficus Carica* (white or lemon variety).

FIG.

This is a low-growing tree with compact foliage. The leaves are small, and the fruit is round-turbinate, about 1-1½ inches in diameter. The skin is very thin, is light-green in color, turning to a greenish-yellow when thoroughly ripe. The pulp is pink, very sweet, and when quite ripe is free from milky juice. This variety is also prolific, is easily dried, and on this account would find a ready sale in our markets.



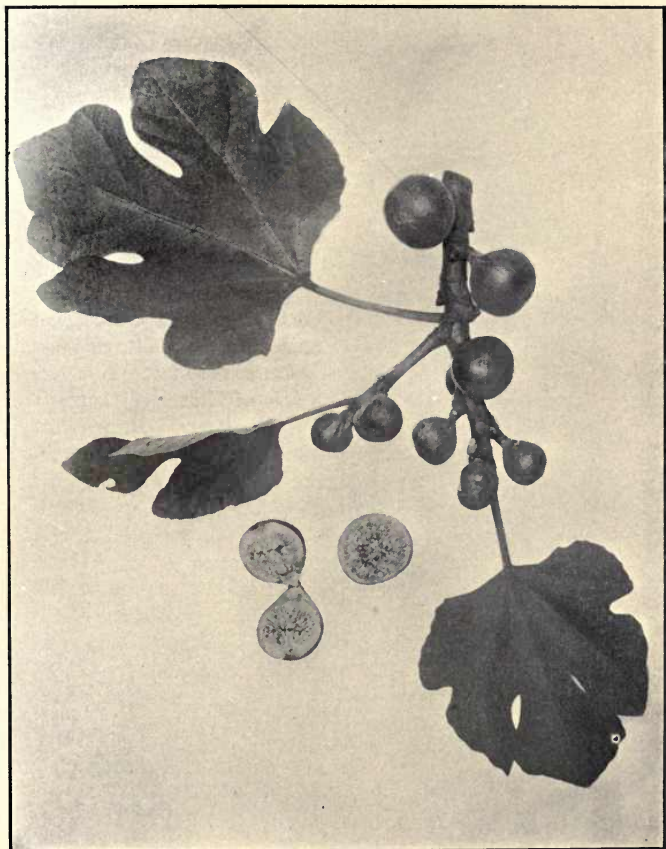


PLATE VII.—*Fig.*  
One half natural size

G. P. W. Collection.

PLATE VIII.

*Eugenia malaccensis.*

MOUNTAIN APPLE, "OHIA AL."

This tree is found on all the large islands of the Polynesian groups, and in the Malaysian Archipelago. In the Hawaiian Islands it confines itself almost entirely to the moist, shady valleys, and thrives well, up to an elevation of 1800 feet. It is generally gregarious, and on the north side of East Maui it forms a forest belt. It attains a height of from 25-50 feet. Its dark, shiny, glabrous leaves are opposite, elliptico-oblong, and from 6-7 inches long, and from  $2\frac{1}{2}$ -3 inches broad. The flowers are crimson fluffy balls, appearing in March and April, on the naked branches and upper trunk of the tree. The fruit, which ripens from July until December, generally contains one seed, is obovate, about 3 inches in diameter. The skin is so thin as to be barely perceptible, and the fruit is very easily bruised. In color, it is a deep, rich crimson, shading into pink and white; the pulp is firm, white, and juicy, with a very agreeable flavor.



PLATE VIII.—*Mountain Apple.*

One third natural size.

G. P. W. Collection.

PLATE IX.

*Eugenia sp* (Solomon Island variety).

WATER APPLE.

This low-growing tree is very rare in the Hawaiian Islands. It was introduced here, from the Solomon Islands, by Mr. A. Jaeger. The foliage and crimson flowers resemble those of the *Eugenia melaccensis*, but the drupe is not so highly colored, and is, in shape, much more elongated. Specimens of this sweet edible fruit have measured 5 inches in length.

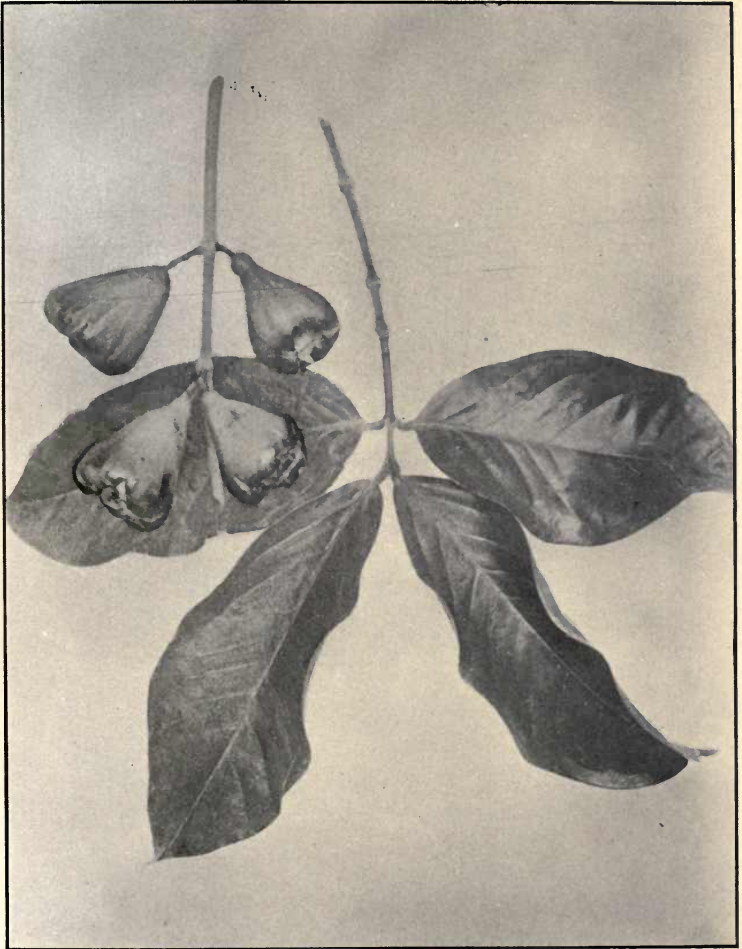


PLATE IX.—*Water Apple*.  
One fourth natural size.

G. P. W. Collection.

PLATE X.

*Eugenia alba* (white variety).

WATER APPLE.

This tree is a native of the Malay Islands. The foliage is symmetrical, and its opposite shiny leaves are broad, lanceolate, and obtusely-acuminate. The pure white flowers, which bloom from March until June, are about  $\frac{1}{2}$ -inch in diameter, and are produced in bunches on the naked branches. The fruit, which is also produced in bunches, ripens in October. It is transversely oval in shape, about 1-1 $\frac{1}{2}$  inches in diameter at its largest end. It contains from 1-3 seeds. Even when quite ripe, the fruit remains pure white in color, and has a tart, insipid flavor.

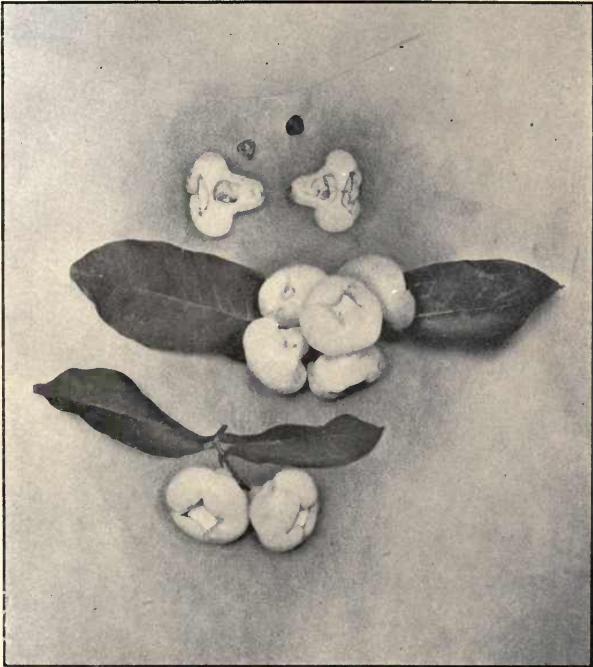


PLATE X.—*Water Apple.*  
One half natural size.

*G. P. W. Collection.*

PLATE XI.

*Eugenia sp.* (red variety).

WATER APPLE.

This low-growing tree with its bright evergreen foliage, is not common in Hawaii. The flowers are small, deep crimson, and appear on the branches either singly or in bunches. The contrast between these brilliant flowers, and the fresh green leaves makes a very beautiful sight when the tree is in full bloom. The fruit, which ripens in July, appears in clusters; it is the same shape as that of the preceding variety, but in color it is a bright scarlet. It contains from 1-3 seeds, which are somewhat difficult to germinate. The fruit is crisp, watery, and has a sub-acid flavor.





PLATE XI.—*Water Apple.*  
One third natural size.

G. P. W. Collection.

PLATE XII.

*Eugenia Jambos.*

ROSE APPLE.

This evergreen tree, which is a native of the West Indies, is of medium size, reaching a height of from 20-30 feet. It grows well in Hawaii, and is found at an elevation of 2000 feet. It is propagated from seed, as well as from cuttings of the ripe wood. The leaves are lanceolate, acuminate, thick and shiny. The large, fluffy flowers which appear from January until April, are produced freely, and are a beautiful creamy-white. The fruit is a somewhat compressed, globular shell, varying in size from 1-2 inches in diameter, and with a large cavity, containing generally one seed. This shell, which is the edible portion of the fruit, is a light-creamy-yellow, with a tinge of pale-pink on one side; it requires from 2-2½ months to mature. It is firm, crisp, and has a delicious flavor somewhat resembling an apricot, and with a rose odor. The season for the fruit varies according to the elevation, but ends about August or September.



PLATE XII.—*Rose Apple.*

One half natural size.

*Eugenia brasiliensis.*

## BRAZILIAN PLUM, OR SPANISH CHERRY.

This evergreen shrub, or low-growing tree, which in many countries is said to reach a height of but 6 feet, in Hawaii attains a height of 20 feet; and although it thrives in comparatively high altitudes, it bears best below the 200-foot elevation, and requires considerable moisture. The bluntish, dark, shiny leaves, which are scale-like along the branches, are obovate, oblong, and about 3 inches in length. The blossoming season varies according to the location, however, the tree generally has flowers and fruit from July until December. The fruit is the size of a cherry, is deep purple in color, and the persistent calyx is very prominent. The sweet pulp has a very agreeable flavor.

Probably the first plants of this variety were brought here by Don Marin, about a century ago. Some fine trees may be found in Pauoa and Makiki valleys, and also in Nuuanu, in the garden which formerly belonged to Dr. Hillebrand.

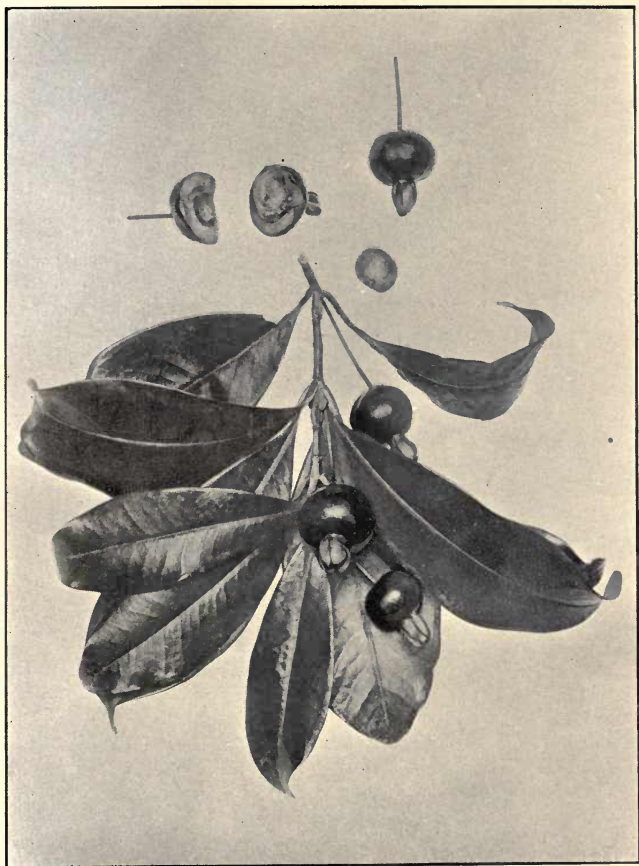


PLATE XIII.—*Brazilian Plum, or Spanish Cherry.*  
One half natural size.

G. P. W. Collection

PLATE XIV.

*Eugenia uniflora.*

FRENCH CHERRY.

This shrub is said to be a native of Brazil. In Hawaii, it is a common garden plant, sometimes reaching a height of 10 feet. Its glossy leaves are ovate-lanceolate, and its peduncles short. It has small, single, white fragrant flowers. The mature fruit, which resembles a cherry, is about 1 inch in diameter, and is ribbed longitudinally. It has a delicious, spicy, acid flavor. There is generally one large, round, smooth seed.



PLATE XIV.—*French Cherry.*  
One third natural size.

*G. P. W. Collection*

PLATE XV.

*Eugenia Jambolana.*

PORTUGUESE PLUM.

This tall, hardy tree is a native of Southern Asia. In Polynesia it grows well, up to an elevation of 5000 feet. It is a very common tree in the Hawaiian Islands. Its leaves, which are from 4-6 inches long, and from 2-3 inches broad, are opposite, obtuse or shortly-acuminate. The flowers, which bloom in June, July and August, are white and quite fragrant, and are especially attractive to the honey-bee. The oblong fruit grows in large clusters, ripens from September until November, and varies in size from a cherry to a pigeon's egg. It is purplish-black in color, and is edible only when thoroughly ripe. It contains one large oblong seed.





PLATE XV.—*Portuguese Plum*.  
One bali natural size.

*G. P. W. Collection.*

PLATE XVI.

*Eugenia Jambolana* (small variety).

PORTUGUESE PLUM.

This tree, which is also very common in the Hawaiian Islands, is said to have been introduced by Dr. Hillebrand. It bears but one crop a year, will grow in any soil, and withstands dry weather. The foliage is smaller than that of the preceding variety; its leaves are narrower, and a lighter green in color. It blooms at about the same time of year, but its flowers are not as large, and appear in thick bunches. The purplish fruit ripens from September until December.



PLATE VI.—*Portugues? Plum.*  
One half natural size.

*G. P. W. Collection.*

PLATE XVII.

*Averrhoa Carambola.*

This tree, which is said to have been named after Averrhoes, an Arabian physician, is a native of Insular India, and is much cultivated in India and China. It is evergreen, with dense foliage, and grows to a height of from 15-20 feet. It is easily propagated from seeds, and fruits in about three years. In Hawaii it bears one crop annually, the flowers appearing in July and the fruit in November and December. The leaves are alternate, odd-pinnate. The flowers, which are borne in clusters on the naked stems and branches, are minute, fragrant, and in color shading from a pale pink to a deep purplish-red. The fruit, varying in size from a hen's egg to an orange, is ovate, and has 5 acutely-angled longitudinal ribs. The fragrant light-yellow skin is very thin, and the pulp is watery; it contains a number of flat brown seeds. This fruit is of two varieties: the sweet, which may be eaten raw, and the acid which is delicious when preserved. A very appetizing pickle may be made from the half-ripe fruit of the acid variety.



PLATE XVII.—*Averrhoa Carambola*.

*G. P. W. Collection*

PLATE XVIII.

*Achras Sapota.*

SAPODILLA, OR NASEBERRY.

This tree, which grows on almost all of the Islands of the Hawaiian group, is a fine evergreen, growing to a height of from 10-20 feet, and producing a fruit which is much prized in warm countries. The bark possesses tonic properties, and from the juice chewing-gun is made. Its foliage is dense, and the shiny leaves are thick, lance-oblong, entire, and clustered at the ends of the branches. The flowers which are small, whitish, and perfect, are borne on the rusty pubescent growths of the season. The fruit, of which there are two varieties, the round and the oblong, is about the size of a hen's egg. It has a rough skin, the color of a russet apple, beneath which is a firm, somewhat stringy, sweet pulp, having the flavor of an apricot: This pulp is divided into 10-12 compartments, and contains from 4-6 large, flat, smooth black seeds.

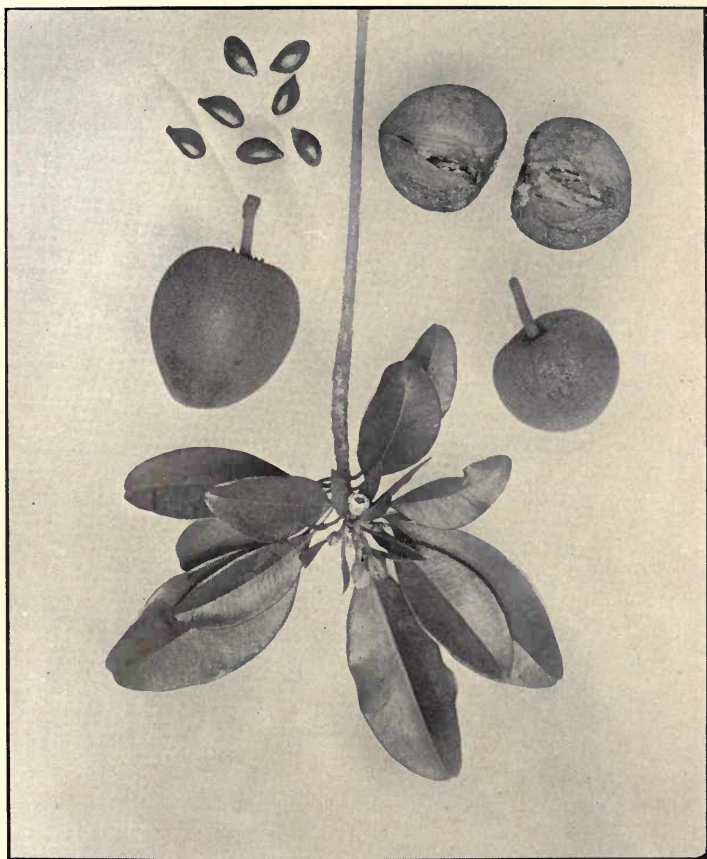


PLATE XVIII.—*Sapodilla*, or *Naseberry*.  
One half natural size.

G. P. W. Collection.

PLATE XIX.

*Casimiroa edulis.*

WHITE SAPOTA.

This tree, which is a native of Mexico, is said to have been named after Cardinal Casimiro Gomez. The first tree of its kind in Hawaii, was planted in 1884, at the Government Nursery, Honolulu. The seed came from Santa Barbara, California, where there grows today, a tree more than 80 years old, and which still bears its fruit. It is a tall evergreen with irregular branches; its digitate leaves are dark and glossy. The trunk is ashen grey, with warty excrescences. The fruit, which matures in April and May, is large, 1-4 inches in diameter; it is depressed-globular and somewhat ribbed, like a tomato; in color it is a light green, turning to a dull yellow when ripe, and it has a very thin skin. The pulp is yellow, resembling that of an over-ripe papaia, and has a melting, peach-like flavor. It contains from 1-3 large oblong seeds which are said to be deleterious.





PLATE XIX.—*White Sapota*.  
One third natural size.

*Prunus Persica.*

## PEACH.

The Peach-tree is said by some authorities to be indigenous to Persia, while by others it is claimed to be a native of China. It is a hardy tree, and has been known to bear fruit precociously even in the second year after planting. If allowed to do so, the Peach will grow to a height of about 15 feet; but it should be pruned annually, in order to secure a good crop. Its leaves are lanceolate and coarsely serrate. The flowers are solitary, pink in color, and appear before the leaves. The fruit is soft and pubescent at maturity. The stone is deeply pitted and very hard. There are two well-marked varieties, the cling-stone and the free-stone.

Ulupalakua and Makawao, Maui, once had the reputation of growing finely flavored seedling peaches; however, many of these trees have been injured by cattle, and others have been destroyed by root-fungus and insect pests. In several localities in Hawaii good peaches have been grown from imported varieties.

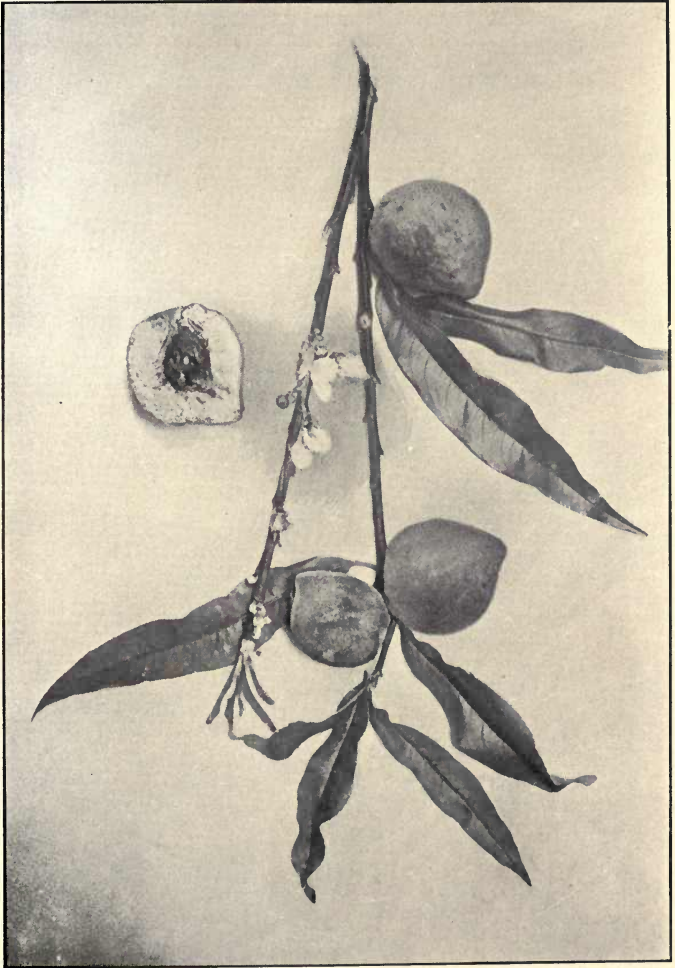


PLATE XX.—*Peach*.  
One half natural size.

G. P. W. Collection.

PLATE XXI.

*Chrysophyllum Cainito* (purple variety).

STAR APPLE.

This tree is a native of the West Indies, and although not common in Hawaii, there are good specimens to be found in many gardens. It has large irregular spreading branches, grows to a height of from 10-25 feet, and has rather thick foliage. Propagation is ordinarily effected by seeds, which germinate readily, when fresh. It can also be grown from cuttings of the ripe wood. The tree derives its name from the words "chrysos," gold, and "phyllon," a leaf; referring to the golden-russet color of the under-side of the beautiful, glossy green leaves. The small flowers, which appear from June until October, are solitary at the nodes, or in fascicles. The fruit, which ripens in April, is round, about 3 $\frac{1}{2}$  inches in diameter, has a smooth tough rind, about 1/16 inch thick, which is a deep purple in color. A cross-section of the fruit shows the edible pulp with its numerous black seeds, and the star-shaped core, from which the fruit derives its common name of Star Apple. Unless the fruit is thoroughly ripe, its milky juice is remarkably astringent.

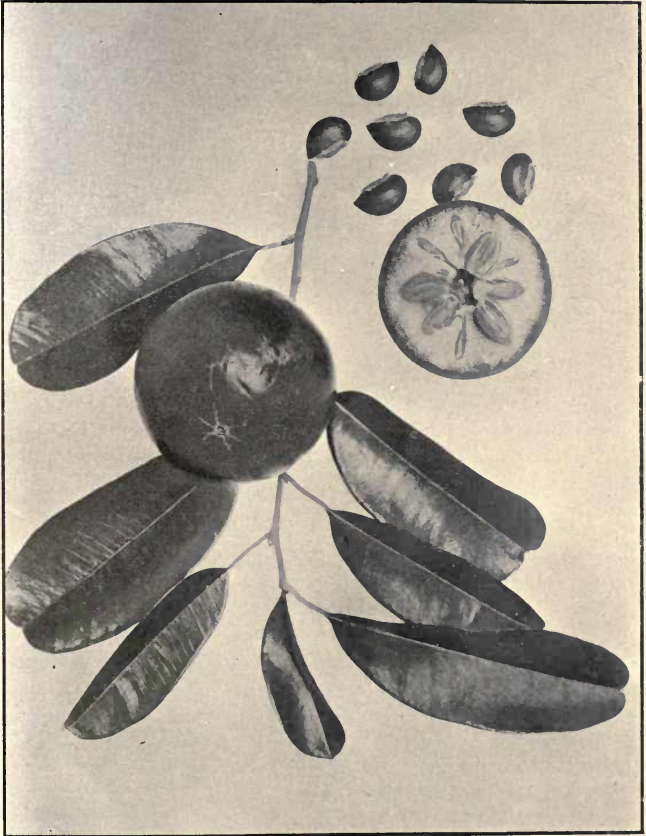


PLATE XXI.--*Star Apple*.  
One half natural size.

G. P. W. Collection.

PLATE XXII.

*Chrysophyllum Cainito* (white variety).

STAR APPLE.

This tree, which will bear fruit in four or five years, has about the same characteristics as that of the preceding variety. The fruit is somewhat larger, and is not quite so sweet. In color it is a pale green, shaded with purple.

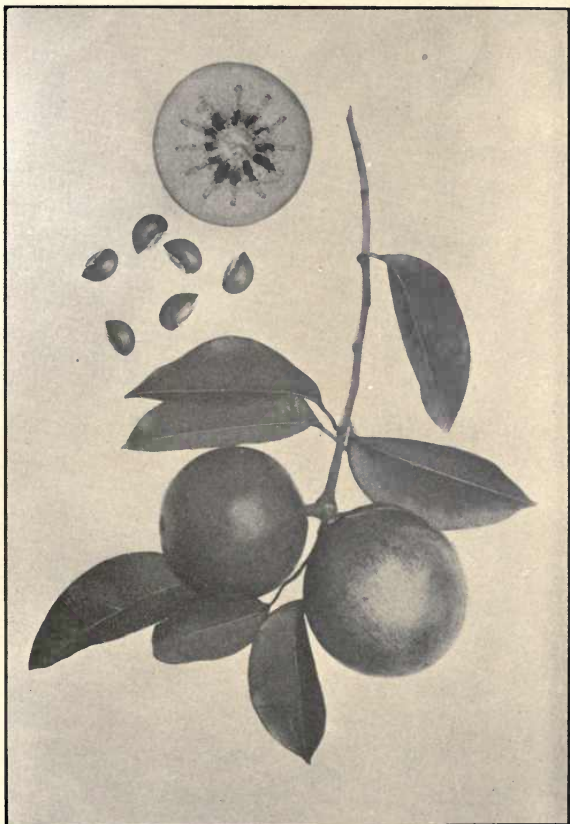


PLATE XXII.—*Star Apple*.  
One half natural size.

G. P. W. Collection.

PLATE XXIII.

*Chrysophyllum monopyrenum.*

This small tree, which is indigenous to the West Indies, is also a native of Southern Florida, and is to be found as an ornamental plant in many localities of tropical America. In Jamaica it is called the "Damson Plum." Its small single white flowers are highly perfumed. The fruit, which matures from August until December, is small, ovoid-oblong, and when ripe is purplish-black; when bruised it emits a white sticky juice. It contains one large seed. Specimens of this tree are to be found growing in the grounds of the Queen's Hospital and at the Government Nursery, Honolulu.





PLATE XXIII.—*Chrysophyllum Monopyrenum*,  
One half natural size.

G. P. W. Collection.

PLATE XXIV

*Chrysophyllum* sp.

This handsome evergreen tree, with its bright glossy green leaves, is very suitable for hedges and wind-breaks. Its leaves are alternate, irregular, ovate, and acuminate. The small solitary flowers have many creamy white petals, and are very fragrant. The yellow fruit is about the size and shape of a small olive, contains a dry mealy pulp, and has one large, flat brown seed.



PLATE XXIV.—*Chrysophyllum*. *sp.*  
One half natural size.

*Spondias dulcis.*

## WI.

This deciduous tree is said to be a native of the Society Islands, and is common to the tropics of both hemispheres. It is a large, spreading and graceful tree, reaching a height of from 30-50 feet. Its pinnate leaves are green and glossy; the leaflets are oval-oblong and opposite. The foliage is shed from December until April. The flowers are paniculate, small, and greenish-white. The fruit, which ripens from November until April, is a fleshy drupe, oval in shape, from 1-3 inches in diameter; it has a thin, smooth golden-yellow skin, which has a rather sour disagreeable odor. The fleshy pulp is light yellow, is mellow when quite ripe, and has a sub-acid delicious flavor, compared by some to the pineapple. Within this pulp is embedded a 1-5 loculed bony endocarp, which contains generally one seed. This endocarp is covered with fibres which penetrate the pulp.

The first Wi tree in Hawaii was planted at the residence of John S. Walker, Nuuanu Valley.



PLATE XXV.—*Spondias dulcis*.  
One third natural size.

G. P. W. Collection.

PLATE XXVI.

*Spondias lutea.*

HOG PLUM.

This tree is a native of the West Indies, where it is commonly called the Hog Plum, and is used there for fattening swine. In Jamaica it grows well, up to an elevation of 4000 feet. It is a large, graceful tree, about 50 feet high, with spreading branches, and it is particularly beautiful when in fruit. The pinnate leaves are a clear green, the leaflets are ovate-lanceolate, and the golden-yellow fruit hangs in clusters. It ripens in September and October. The fruit is ovoid, about 1 inch long; it has a smooth skin, with a disagreeable odor. There is one large seed, which resembles the husk of a ground-nut. This fruit has somewhat the flavor of the pineapple, and is cooling and aromatic. To my knowledge there is but one tree of this kind in bearing in the Hawaiian Islands, and that is growing in private grounds in Honolulu.

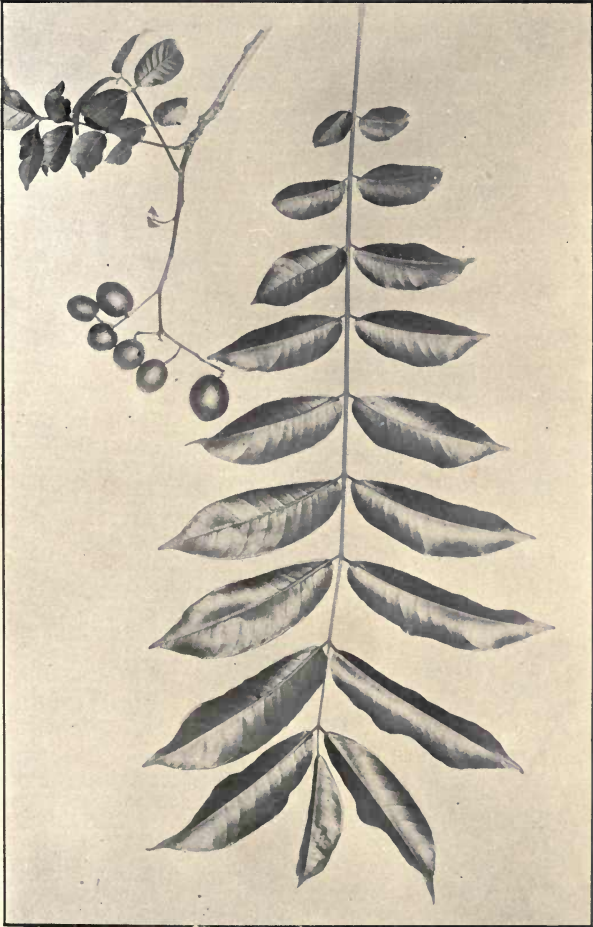


PLATE XXVI.—*Hog Plum.*  
One half natural size.

G. P. W. Collection.

PLATE XXVII.

*Mammea americana.*

MAMMEE APPLE.

The Mammee Apple, which grows well in Hawaii, is a native of the West Indies, and is a fruit much esteemed in tropical countries. In Jamaica it thrives well, up to an elevation of 3000 feet. The tree attains a height of from 30-40 feet, and the wood, which is beautifully grained, is durable and well adapted to building purposes. Its leaves are rigid and leathery. The round seeds, varying in number from 1-4, germinate freely, and the young plants are easily raised. The fruit is from 3-6 inches in diameter, is brown or russet color, and has a yellow juicy pulp, which is sweet and aromatic. The outer rind, as well as the pulp immediately surrounding the seeds, is very bitter. The fruit may be eaten raw, and is also very delicious when preserved.



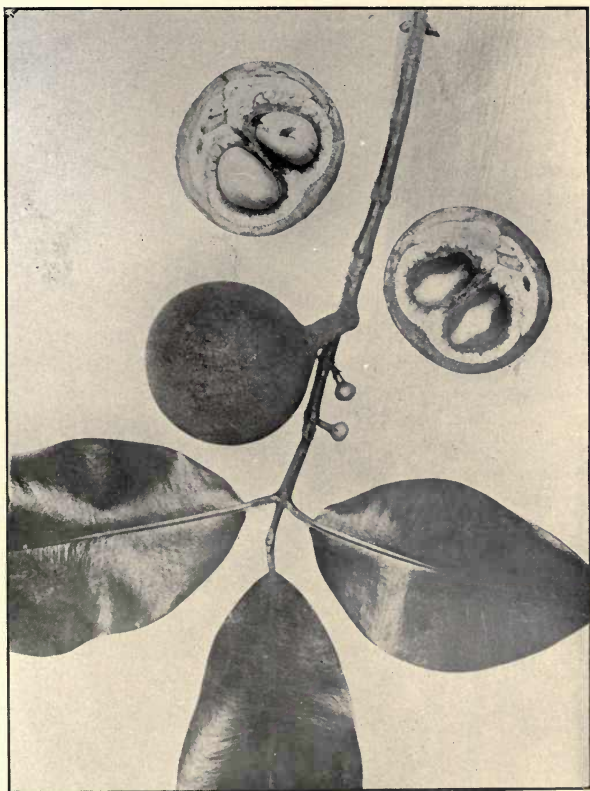


PLATE XXVII.—*Mammee Apple*.  
One fourth natural size.

*Tamarindus indica.*

## TAMARIND.

The name is derived from Tamar, Arabic for Date, and Indus, Indian; thus literally meaning Indian Date. It is a native of the Indies, Egypt and Arabia. The tree is never leafless, and the foliage is graceful, pinnated and acacia-like. It bears one crop a year, the season varying somewhat according to the location and elevation. It yields a handsome, hard and close-grained furniture wood, which is yellowish-white, with occasional red streaks in it; the heart-wood is dark brownish-purple. The pods are thick, linear, dark brown in color, and from 3-6 inches long. The seeds vary in number. The pulp surrounding the seeds has a pleasant acid flavor, and when made into syrup, forms the basis of a delicious cooling beverage. This pulp is called the fruit, while the pod is spoken of as the shell. The Tamarind is propagated from both seeds and cuttings, and is undoubtedly one of the noblest of our tropical trees.



PLATE XXVIII.—*Tamarind*.  
One half natural size.

G. P. W. Collection.

PLATE XXIX.

*Durio zibethinus.*

DURION.

This fine tree attains a height of from 60-80 feet; it derives its name from the Malay word dury, a thorn, in reference to the prickly covering of the fruit. The leaves, which are a light glossy green on the upper surface, are alternate, entire, elliptical and acute. The yellowish-white flowers are large. The fruit, which is either globular or oval, sometimes measures 10 inches in length. It has a hard rind, covered with thorny warts or spines, and externally looks not unlike a breadfruit. When ripe, it is brownish-yellow, and, when opened at its lower end, shows 5 longitudinal sections or cells, each containing from 1-4 seeds about the size of a pigeon's egg. The edible pulp surrounding the seeds is firm and cream-colored. The Durion is remarkable for its combination of an absolutely delicious flavor, and an abominably offensive odor. To my knowledge there is but one tree in bearing in the Hawaiian Islands, and that is growing in private grounds at Lihue, Kauai.



PLATE XXIX.—*Durion*.  
One third natural size.

*Aleurites triloba.*

## CANDLE-NUT—KUKUI-NUT.

The name *Aleurites* is from the Greek word signifying flour: as the tree, so easily recognizable from afar off by the pale hue of its foliage, appears to be dusted over with flour. It is a handsome, soft wood, evergreen tree, growing to a height of from 40-60 feet, and is widely spread over tropical Polynesia, and a great part of Malaysia; and by all branches of the Polynesian race, it is called by the same name: Kukui or Tutui. The natives tattooed their skins with a black dye which they prepared from the juice which is found in the fleshy covering of the green fruit. The leaves are alternate, 3-5 lobed, pubescent, and have long petioles. The yellowish-green flowers are in terminal clusters. The fruit is spherical, from 1-2 inches in diameter, and light-green in color. It contains one or more nuts, or seeds, which have a very hard bony shell, the surface of which is uneven like the shell of a walnut. The kernals of this nut, when dried, were strung together, or bound on sticks, and served the natives for torches or candles: thus the English name of Candlesnut Tree. The oil obtained from the nut was used by the Hawaiians for burning in stone lamps. The kernel, when baked, pounded, and mixed with salt and Chili peppers, makes a brown paste which is very appetizing. This is esteemed by the Hawaiians, who call it "Inamona"

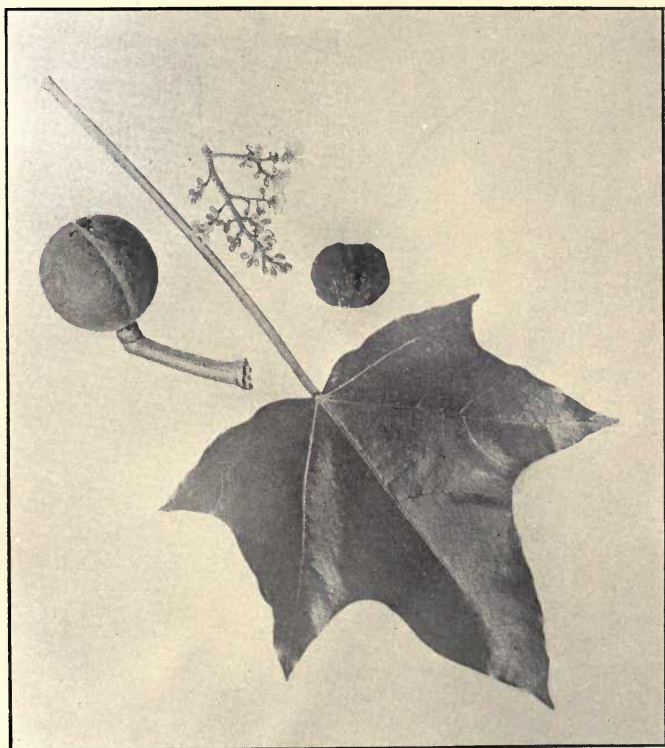


PLATE XXX.—*Candle Nut (Kukui Nut)*.  
One third natural size.

G. P. W. Collection.

PLATE XXXI.

*Coffea arabica.*

ARABIAN COFFEE.

The Coffee-tree is said to be a native of Abyssinia. Two species, the Arabian and the Liberian, are now cultivated throughout the tropics. The use of coffee was known in Arabia long before it was introduced to Europeans in the sixteenth century. The Dutch were the first to introduce the plant into Europe. The Arabian Coffee-tree is low-growing, and bears one crop annually; its leaves are elliptico-oblong, acuminate, generally from 3-6 inches long, and are thin and shiny. The white flowers appear in clusters, and are very fragrant. The berries are ovoid, fleshy and bright red. In this berry, are found the two seeds, which constitute the coffee of commerce. The Coffee-tree was introduced into Hawaii about 1823, by a Frenchman, who established a small plantation in Manoa Valley, Oahu. The tree is now well naturalized in the woods of Kona, Hawaii, and elsewhere in the Islands, and flourishes up to an elevation of from 1000-2000 feet.





PLATE XXXI.—*Arabian Coffee.*  
One half natural size

G. P. W. Collection.

PLATE XXXII.

*Coffea liberica.*

LIBERIAN COFFEE.

This species is a tall grower, is highly ornamental in foliage, and is a rich bearer. Its leaves are from 6-12 inches long. The white flowers come in dense clusters, and are more robust and productive than are those of the Arabica. The berries are nearly spherical, and in color, are a dull crimson. The pulp is large in proportion to the size of the seeds. Although this variety has not become popular in Hawaii, it is claimed that it will grow at a much lower elevation than will the Arabica, and the flavor is said to be very fine.

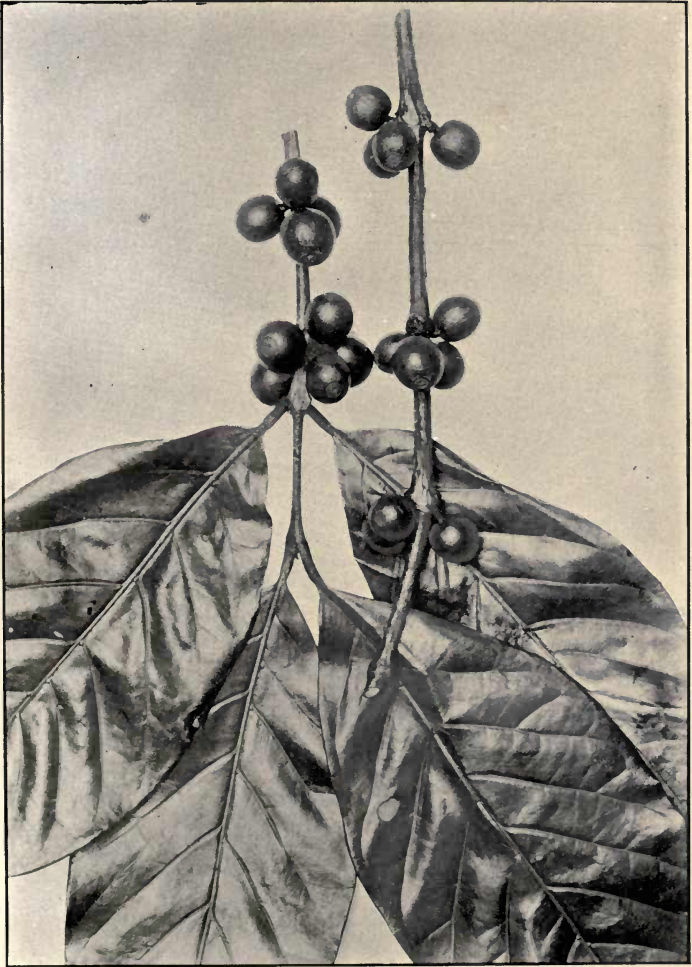


PLATE XXXII.—*Liberian Coffee.*  
One half natural size.

G. P. W. Collection.

PLATE XXXIII.

*Cookia punctata.*

WAMPI.

This odorous tree is a native of China. It is a symmetrical evergreen with dense foliage. The light mossy-green leaves are imparipinnate, the leaflets ovate-repand and they are rough on the under surface. The flowers, which are borne in clusters, on the new wood, are small, yellow, and very fragrant. The fruit ripens from June until October; it is about the size of a gooseberry; the skin is yellowish-brown, shaded with green. The pulp is sub-acid with a balsamic fragrance. It contains one large seed about the size of a kernel of corn. There are two varieties, the sweet and the sour; both may be eaten raw, and are very highly prized by the Chinese. I know of but one tree of this kind in the Hawaiian Islands, it is of the sour variety, and is growing in a private garden in Honolulu.



PLATE XXXIII.—*Wampi*.

G. P. W. Collection.

PLATE XXXIV.

*Physalis peruviana.*

CAPE GOOSEBERRY—POHA.

This shrub or bush, is a native of Brazil, but is naturalized in many warm countries. It stands partially erect, reaching a height of from 1½-3 feet. Its pointed leaves, heart-shaped at the base, are very fuzzy. The open, bell-shaped flowers are yellow in color. The fruit, which is about the size of a cherry, is enclosed in a thin, yellow, paper-like husk, which is quite hairy. When ripe, the fruit is yellow, and has a delicious sub-acid pulp, filled with minute seeds. The Poha may be eaten raw, but is much more acceptable when made into jam or jelly. The dried fruit is said to be a substitute for yeast. In Hawaii, the Poha thrives best in the cool elevations.



PLATE XXXIV.—Cape Gooseberry (*Poha*)

*Carica Papaya.*

PAPAIA (fruit, female tree).

The Papaya is a native of South America; it is found in Florida, and in many other parts of tropical America; it was early introduced into Hawaii, grows and bears well in almost any locality. It is a small tree, with a hollow branchless trunk; is of short vitality, and is suitable only to regions free from frost, and requires perfect drainage. There are two varieties, the tall and the dwarf, but there are numerous variations as to shape and quality of the fruit. The soft green leaves, often measuring two feet across, are variously palmated, and have simple, long hollow stems. The Papaya is usually dioceous; the fruit-bearing tree is called the female, it is claimed that trees of both sexes should be planted near each other, in order to ensure a good yield. The female flowers, which appear from the axils of the leaves, are yellowish-white, are single or 2-3 together.

The fruit of the Papaya ripens successively. It is either round or oblong, and sometimes weighs eight pounds. The skin is thin, and is bright yellow when ripe. The firm yellow pulp has a delicious flavor, and the milky juice contains a digestive principle similar to pepsine. The seed-cavity is large, and is filled with many small seeds which are enveloped, in a loose mucus coat, with a brittle, pitted testa. When fresh these seeds germinate readily.





PLATE XXXV.—*Papaia* (fruit, female tree).

*G. P. W. Collection.*

PLATE XXXVI.

*Carica Papaya.*

PAPAIA (fruit, male tree).

The size, shape, foliage and general appearance of this tree, is the same as that of the preceding variety. Its flowers appear on long stems, are funnel-shape, and have five lobes. The male tree sometimes produces fruit, and it is of large size and fine quality. A good sample may be seen from the accompanying illustration.

I know of no method whereby one can, by any selection of seeds, produce with any degree of certainty, plants of either male or female variety.

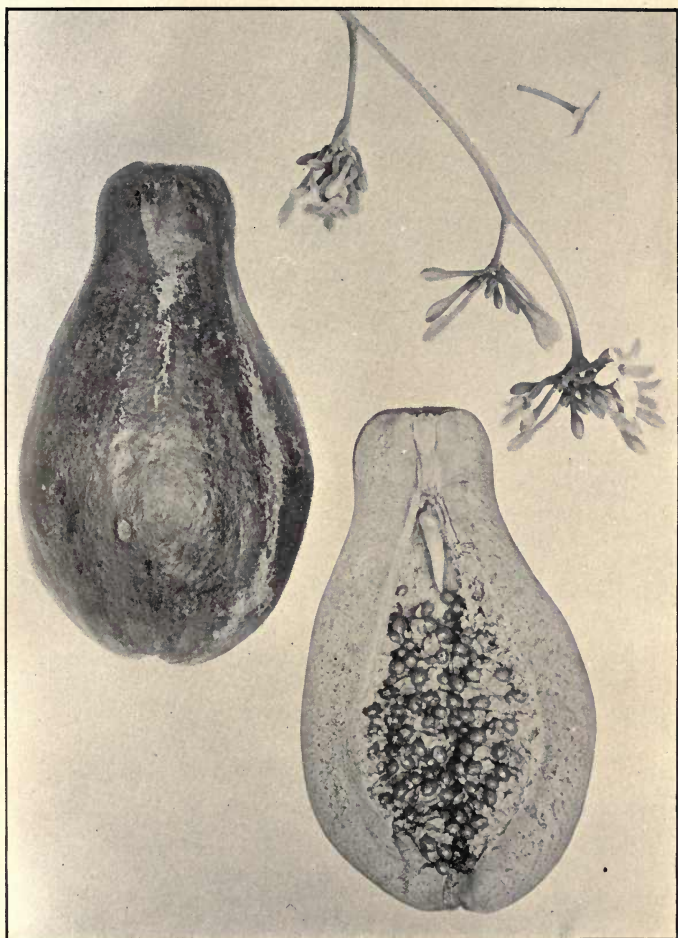


PLATE XXXVI.—*Papaya* (fruit, male tree).

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