Figs

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- **Commentaries place the figs' origin around present day Yemen at about 5,000 years ago.**

- **"The History of the Fig in the Holy Land from Ancient Times to the Present" was written by Asaph Goor in Economic Botany 19: 124-135 (1965).**

- **The fig species discussed by Goor is the common edible fig (*Ficus carica*).**

The fig was cultivated for its fruit more than 5,000 years ago and is native to the region between the Mediterranean and Black Seas, sometimes referred to as the ancient region of Caria in Asia Minor.

- **It now grows wild over a large area, including southern Europe and the Middle East.**

- Goor (1965) stated that Ficus carica grew wild in the Holy Land thousands of years ago; however, this doesn't necessarily mean that it was truly native (indigenous) to the Holy Land.

- **It may have been introduced by people to this region, either by seeds or cuttings.**

- **Travelling up from Yemen through trade,** figs spread to the Holy Land, Greece and Rome.

Figs are a dioecious species with separate male and female trees, and a symbiotic pollinator wasp (Blastophaga psenes) that propagates inside the fruits (syconia) of male trees called caprifigs.

More History

- **Figs were introduced into England sometime between 1525 and 1548, (remember the Crusade Period, 1096 and 1291 A.D.).**
- It is not clear when the common fig entered China but by 1550 it was reliably reported to be in Chinese gardens. European types were taken to China, Japan, India, South Africa and Australia.
- **The first figs in the New World were planted in Mexico in 1560.**
- The fig reached Virginia by 1669.
- **Common figs (Black Mission), were introduced into California when the San Diego Mission was established in 1769.**
- Later, many special varieties were received from Europe and the eastern United States.

- **Male *Ficus carica* (Caprifigs),** and its symbiotic wasps were introduced into California by 1900, (female Smyrna types were introduced in the 1880's but bore no fruit).

- **There was great debate for over 20 years** as to whether pollination was required for figs…even though *Aristotle* had written about caprification centuries before, (350 BC).

- **In fact, the symbiotic wasps** live in caprifigs that produces three crops of inedible figs (syconia) each year, including a wasp-bearing, overwintering mamme crop that remains on the bare branches when the tree is devoid of leaves.

- **Today, descendants** of those dioecious fig introductions grow wild in San Diego County, and other California counties with similar climates.

Fig growing wild along road in Southern California. Photo: ML Robinson

- There are several varieties of male caprifigs and hundreds of varieties of female *Ficus carica* trees, some of which develop delicious, **seedless, parthenocarpic (common) fruits that do not require pollination.**

- There are also varieties in which the female trees will **shed their entire crop if they are not pollinated** by the symbiotic fig wasp, (Smyrna type figs).

- **Common Figs** are the most widely known figs in the U.S. and do not require pollination to set fruit.

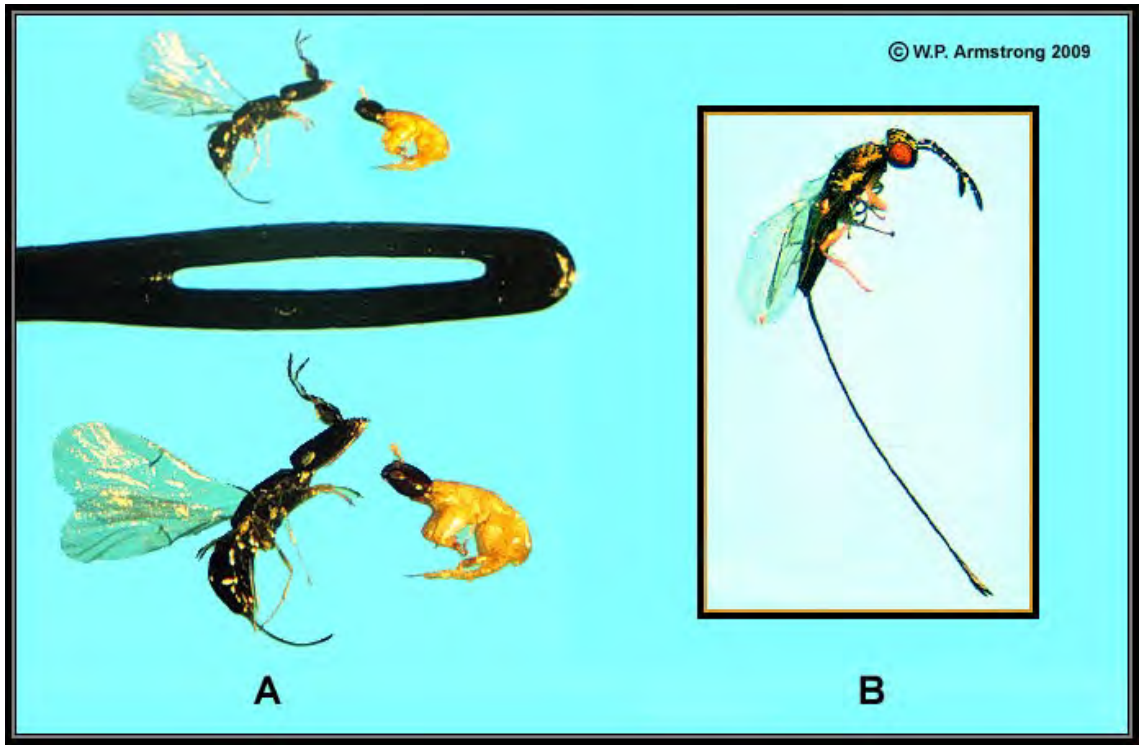

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Fig Wasps

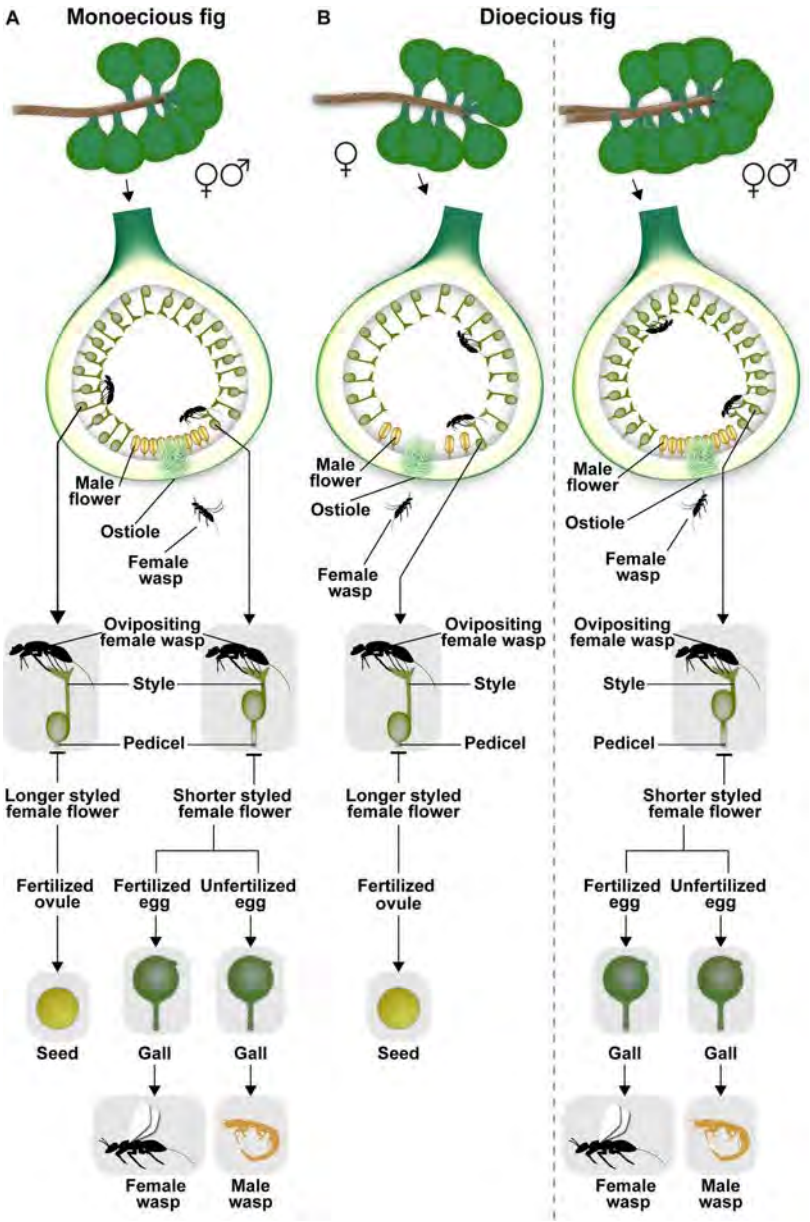

FIGURE 1. (A,B) The life cycles of gall-inducing pollinating fig wasps in monoecious and dioecious figs. The extreme sexual dimorphism and the lack of reproductive success in female trees in dioecious fig species is clearly depicted. Illustration by Priya B.R.

- **Since functional male trees are hermaphroditic** (contains both sexes), **<u>Ficus carica is usually considered gynodioecious</u>**, (can produce one, or both sexes in a single tree) rather than dioecious, (separate sexes, on separate trees).

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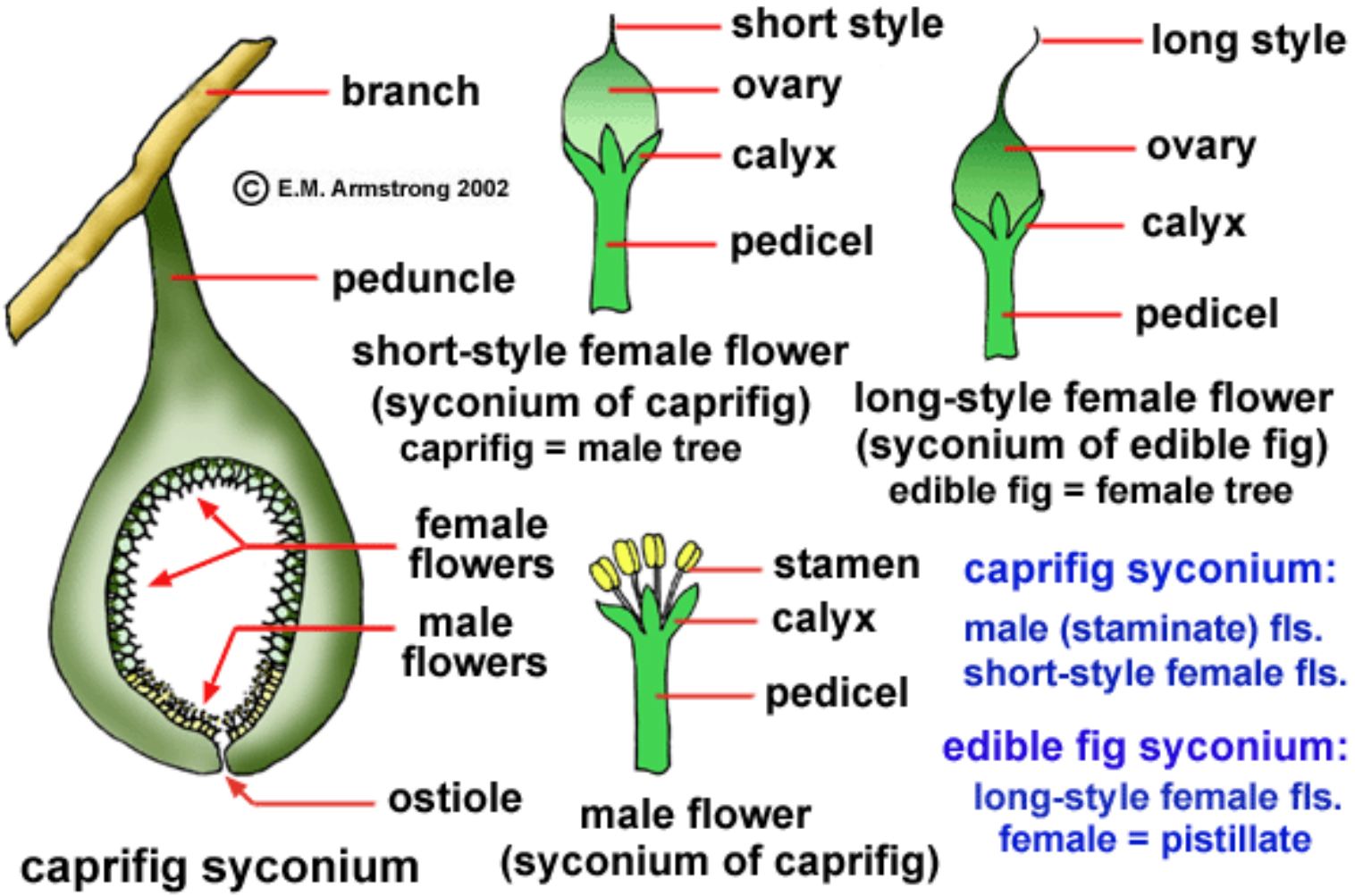

branch
© E.M. Armstrong 2002
peduncle
female flowers
male flowers
ostiole
caprifig syconium
short style
ovary
calyx
pedicel
short-style female flower
(syconium of caprifig)
caprifig = male tree
long style
ovary
calyx
pedicel
long-style female flower
(syconium of edible fig)
edible fig = female tree
stamen
calyx
pedicel
male flower
(syconium of caprifig)
caprifig syconium:
male (staminate) fls.
short-style female fls.
edible fig syconium:
long-style female fls.
female = pistillate

- **These “Common” varieties have been selected by people over countless centuries.** The trees are readily propagated by cuttings and were transported and cultivated by people thousands of years ago.

- **Apparently, many ancient civilizations knew Ficus carica required pollination in order to produce edible, seed-bearing fruits, a process called caprification.**

- **In 350 B.C., Aristotle described fig wasps that came out of caprifigs and penetrated the unripe female fig fruits, thus fertilizing them.**

- Theophrastus (372?-287? B.C.) discussed caprification in detail, and Pliny (23-79 A.D.) devoted an entire chapter to the practice of caprification in Italy.

- The subject of fig pollination and "gallflies" is also mentioned by Herodotus (Book I, 485?-425? B.C.).

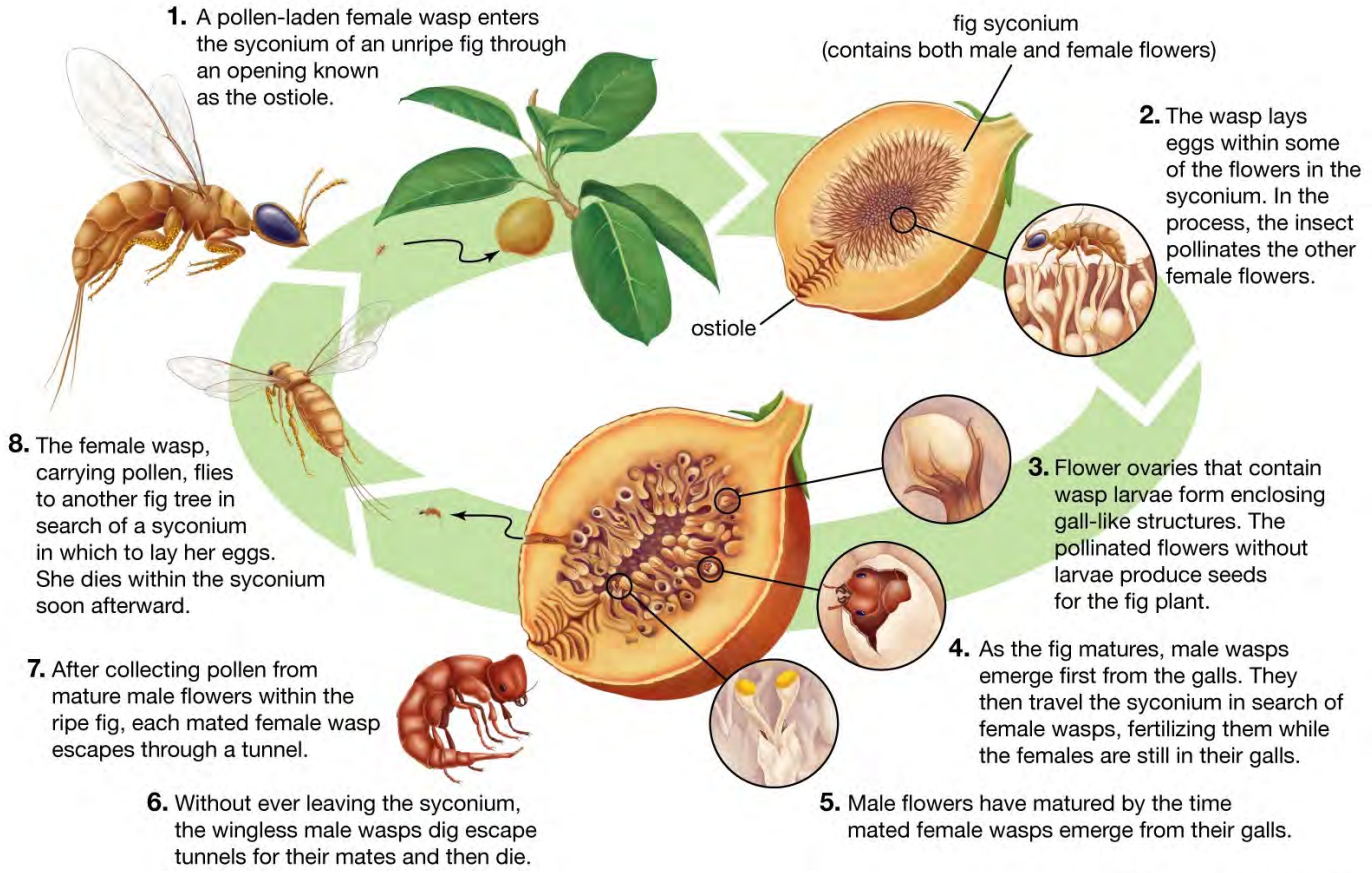
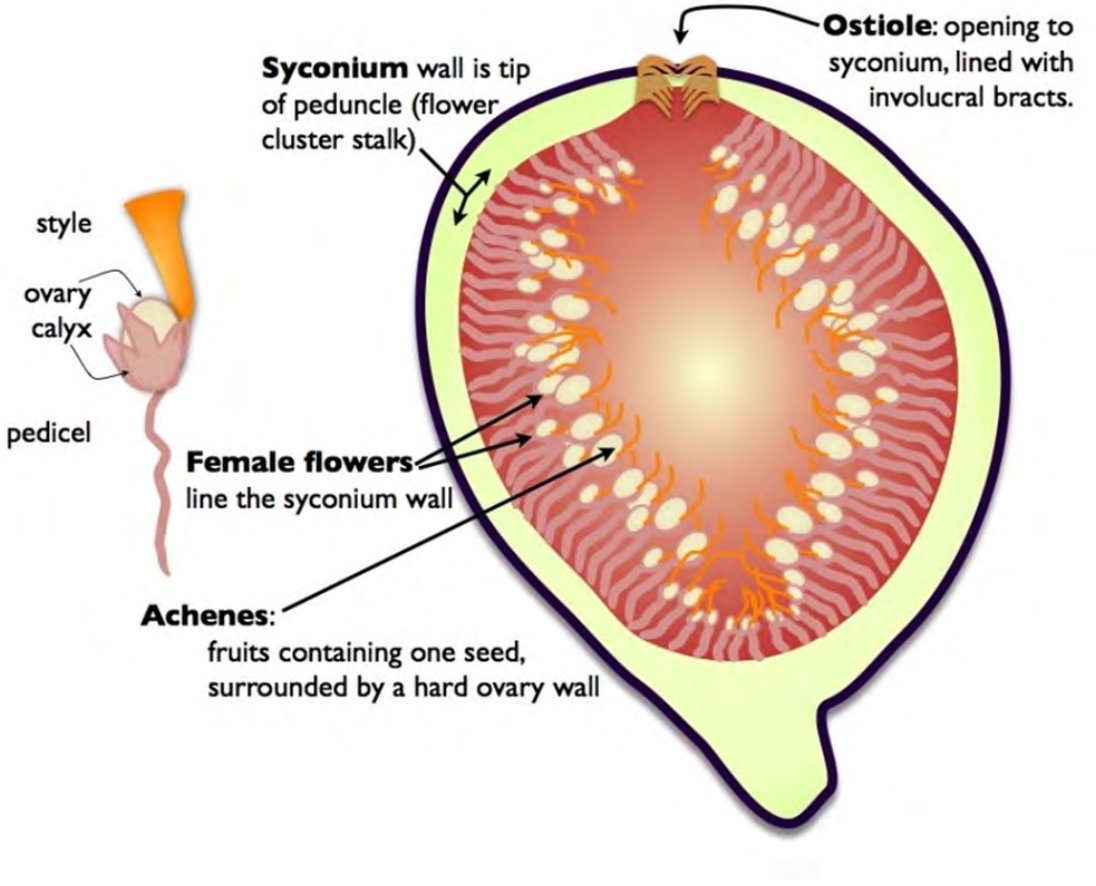


Fig Wasp - Agaoninae Image: Vuk Vojisavljevic

- **Early horticulturists were undoubtedly aware that the seeds impart a superior, nutty flavor to the fruit, and in some varieties the fruit will not set if it is not pollinated by fig wasps.**

Photo Credit: Rainer Zenz (fig)



Caprifig - Male

Photo:JeremyM

Smyrna Type Figs - Female

https://ucanr.edu/blogs/napanewspaper//blogfiles/83596_original.jpg

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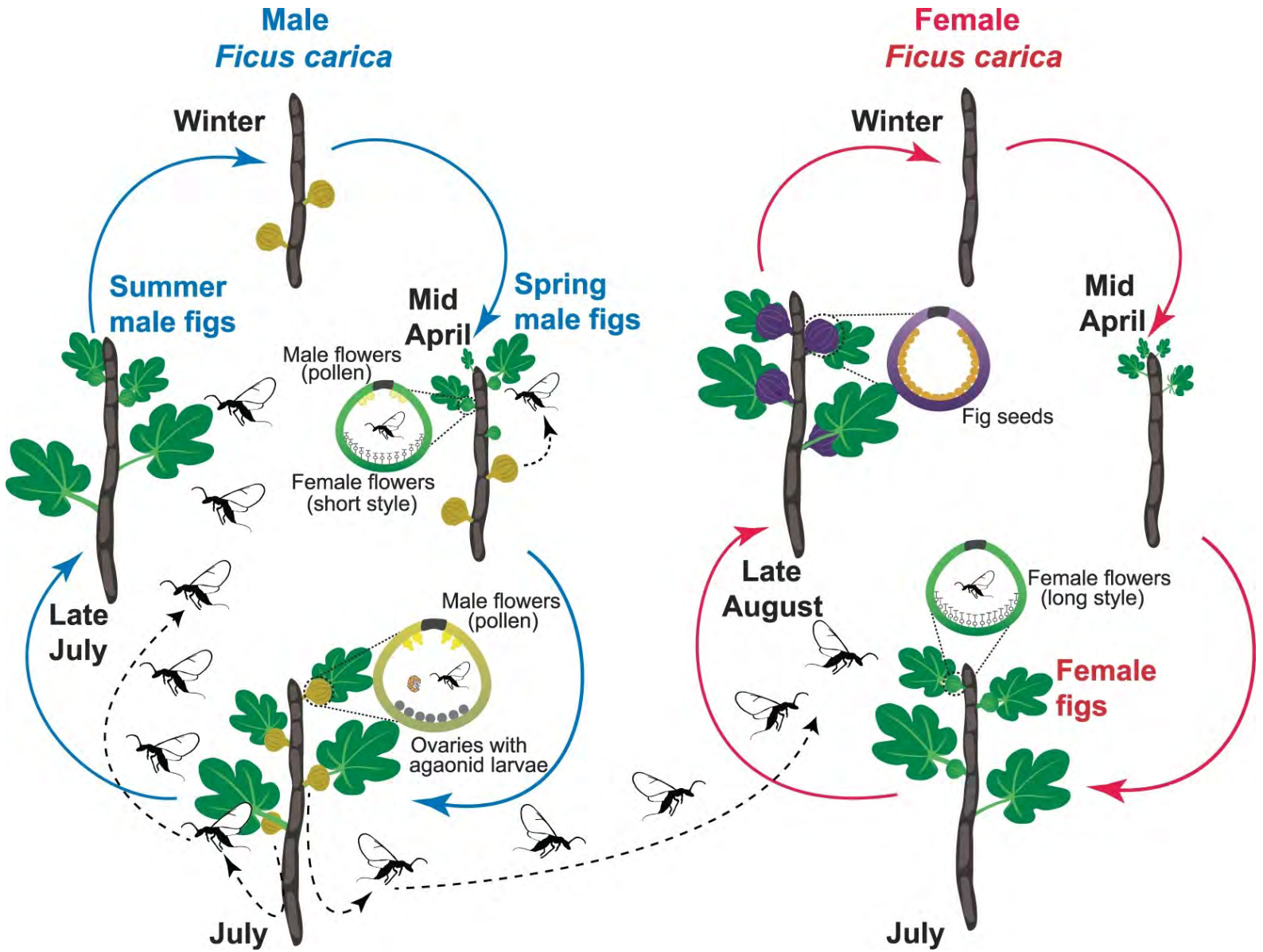
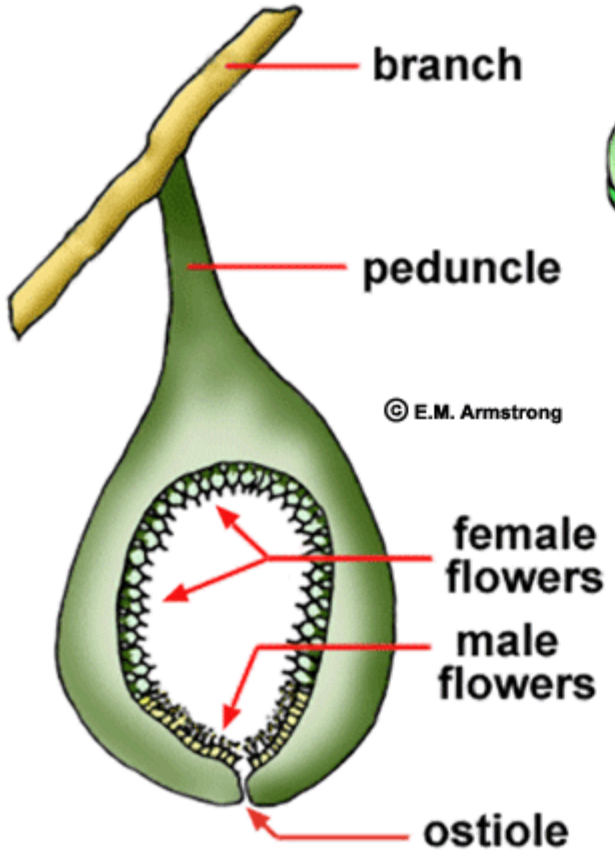
Fig newton with seed-bearing drupelets from a wasp-pollinated Calimyrna fig.

A wasp-pollinated Calimyrna fig, (Smyrna type) containing numerous seed-bearing drupelets (minute ripened ovaries).

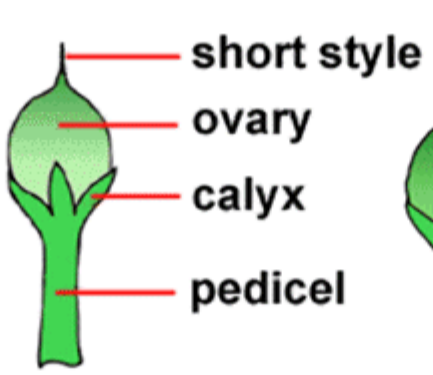
In fact, the excessive pollination and seed production has caused the syconium to split open. The seed-bearing drupelets impart a superior nutty flavor to the fig newton (right).

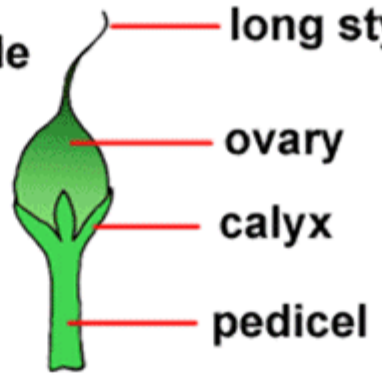


Scientific Reports (Sci Rep) ISSN 2045-2322 (online)

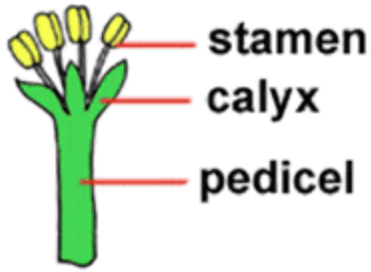


Syconium "Fig Fruit"





Female Flowers



Male Flower

Variation In Syconia Of Fig (*Ficus*) Species:

1. Short-Style Female & Male Fls: *F. carica* Caprifig
2. Long-Style Female Fls Only: *F. carica* Common Fig
3. Short & Long Style Female & Male Fls: Sycomore

Inside-Out Inflorescence (Flower Cluster): A Hollow, Fleshy Structure Lined On The Inside With Hundreds Of Minute Apetalous Flowers.

According to Storey (Recent Advances in Fruit Breeding, 1975), all commercial caprifigs (male) probably originated from common edible fig seeds from homozygous female (ga/ga) trees and, therefore, are heterozygous (GA/ga).

According to Condit (1920), cuttings of Smyrna figs and caprifigs were introduced into California in 1882, (without fig wasps). The fruit from these trees all dropped because of the lack of caprification.

In 1890 caprifig cuttings with wasp-bearing syconia were also introduced. It is impossible to be certain if any of these caprifigs were homozygous. Naturalized female trees that have been pollinated, develop syconia that are conspicuously pinkish-red inside, with numerous drupelets (endocarps) containing viable seeds.

Horticultural Categories or Fig Types

• Cultivars of ***Ficus carica*** are classified into four categories or "types" based on sex and the need to be pollinated or "Caprified" in order to set a crop.

These are:

1. Caprifig-type: Has male and female flowers enclosed in the syconium and is generally considered the "male" fig. All caprifigs are placed in this class without regard to whether the synconia persist or not.

2. Smyrna-type: Has only female flowers and needs cross-pollination by Caprifigs in order to develop normally. This crop sets virtually no breba crop.

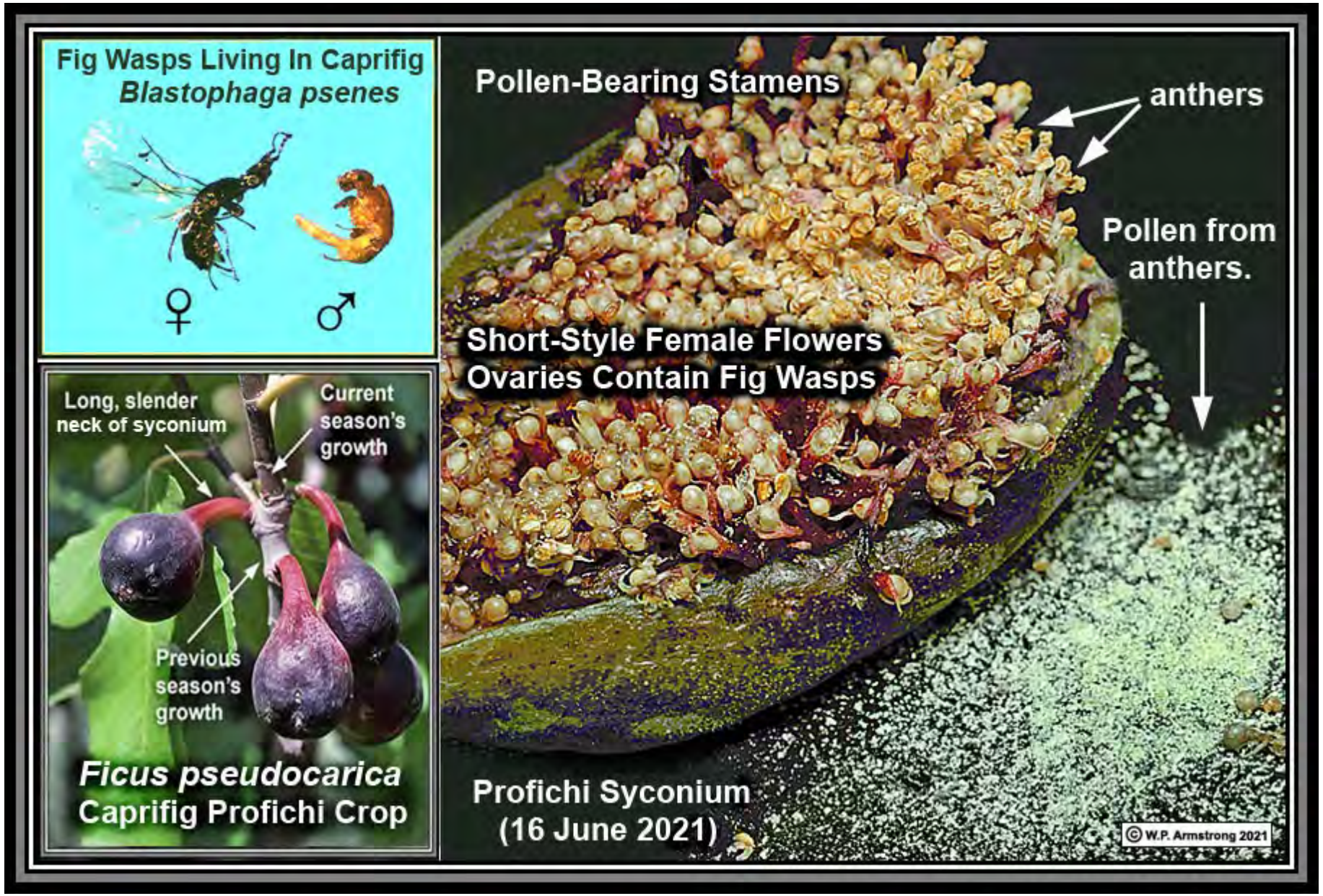
3. San Pedro-type: Has only female flowers. Its breba crop needs no pollination to produce fruit like the common fig. Its second crop is commonly dependent on pollination.

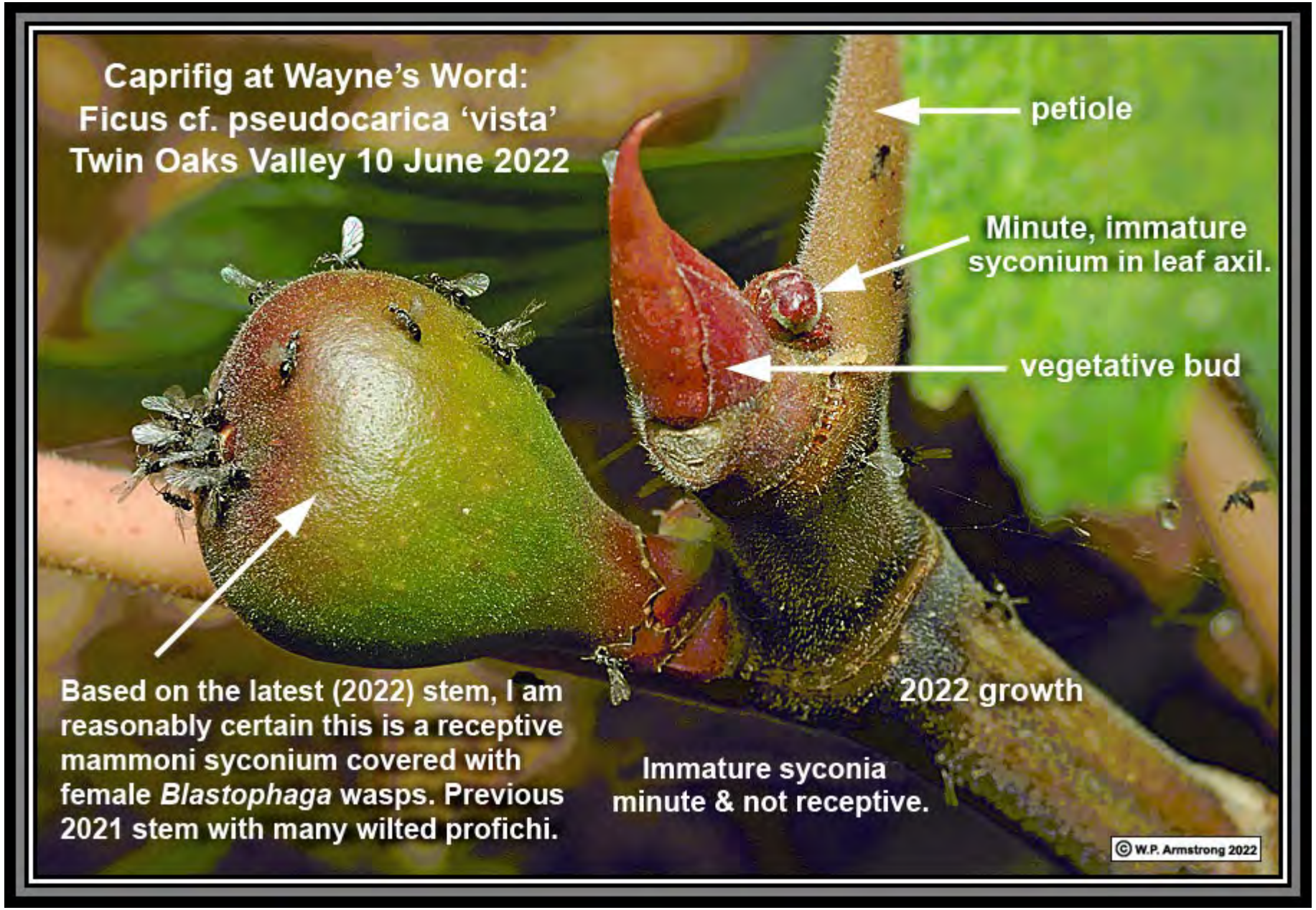
4. Common-type: The flowers are all female and need no pollination to produce fruit (parthenocarpic fruit set). Some cultivars in this class set no breba crop, some set a moderate crop, and some set a good breba crop.

Female Trees: 1-2 Crops/YearMale Trees: 3 Crops/Year	Type Of Gynodioecious Fig Cultivar Based On Sex & Whether It Needs Caprification (Pollination) In Order To Set Fruit Crop			
	Unisexual Female Tree (No Male Flowers) Syconia Contain Long-Style Female Flowers			Male Tree (Bisexual)
Seasonal Crop Name	Smyrna (Caducous)	San Pedro * (Intermediate)	Common ** (Persistent)	Caprifig (Pollinator)
1st or Breba (Summer)	None	Parthenocarpic	Parthenocarpic	Profichi ***
2nd or Main (Summer/Fall)	Caprification	Caprification	Parthenocarpic	Mammoni
3rd Crop (Overwinter)	None	None	None	Mamme

* Depending on the cultivar, main crop may develop even if it is not caprified.
** There are about 400-500 cultivated varieties of the common fig (*Ficus carica*).
*** Only the caprifig profichi crop produces pollen, and this is used to pollinate (caprify) the receptive main crop of Smyrna & San Pedro type figs in June.

Ficus cf. pseudocarica ‘Vista' = 'Vista Caprifig' Profichi Crop in May & June 2021

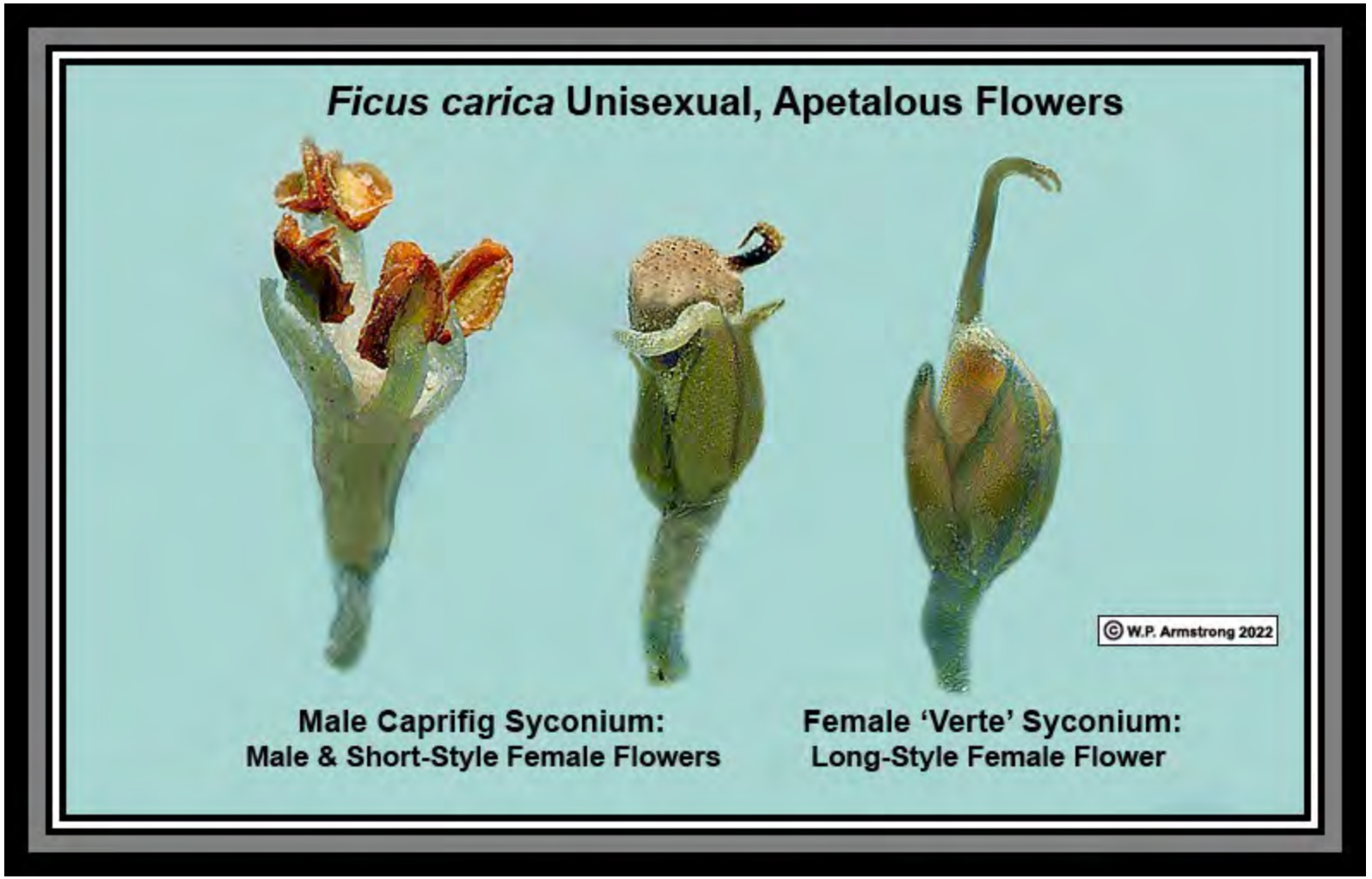



Caprifig at Wayne's Word:
Ficus cf. pseudocarica 'vista'
Twin Oaks Valley 10 June 2022
petiole
Minute, immature syconium in leaf axil.
vegetative bud
Based on the latest (2022) stem, I am reasonably certain this is a receptive mammoni syconium covered with female *Blastophaga* wasps. Previous 2021 stem with many wilted profichi.
2022 growth
Immature syconia minute & not receptive.
© W.P. Armstrong 2022

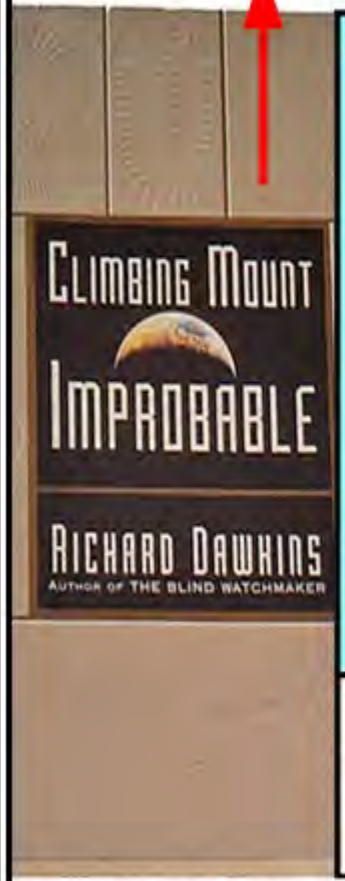

Mammoni Syconium On New (2022) Growth Of Caprifig
mammoni
2022
2021
profichi
Ficus cf. pseudocarica 'vista'
Twin Oaks Valley 10 June 2022
© W.P. Armstrong 2022

- Each June in California's hot San Joaquin Valley, paper bags containing **wasp and pollen-bearing caprifigs** are stapled to limbs in Calimyrna fig orchards.

- Only a few wasp-laden caprifig syconia are placed in the bags to prevent over pollination and split Calimyrna fruit. Inside the paper bag (right), small black wasps can be seen exiting the caprifigs.

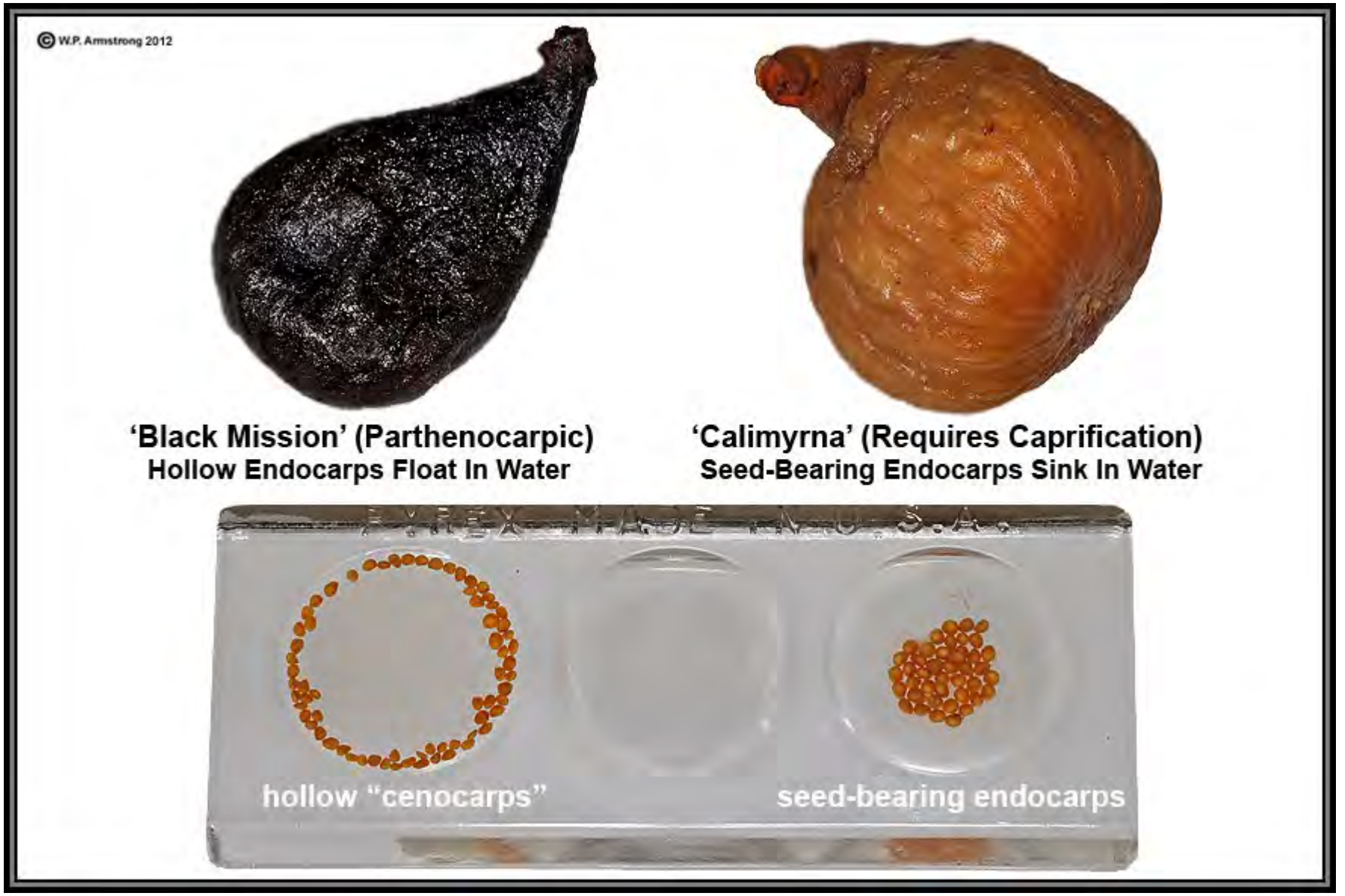

Ficus carica Unisexual, Apetalous Flowers
© W.P. Armstrong 2022
Male Caprifig Syconium:
Male & Short-Style Female Flowers
Female 'Verte' Syconium:
Long-Style Female Flower

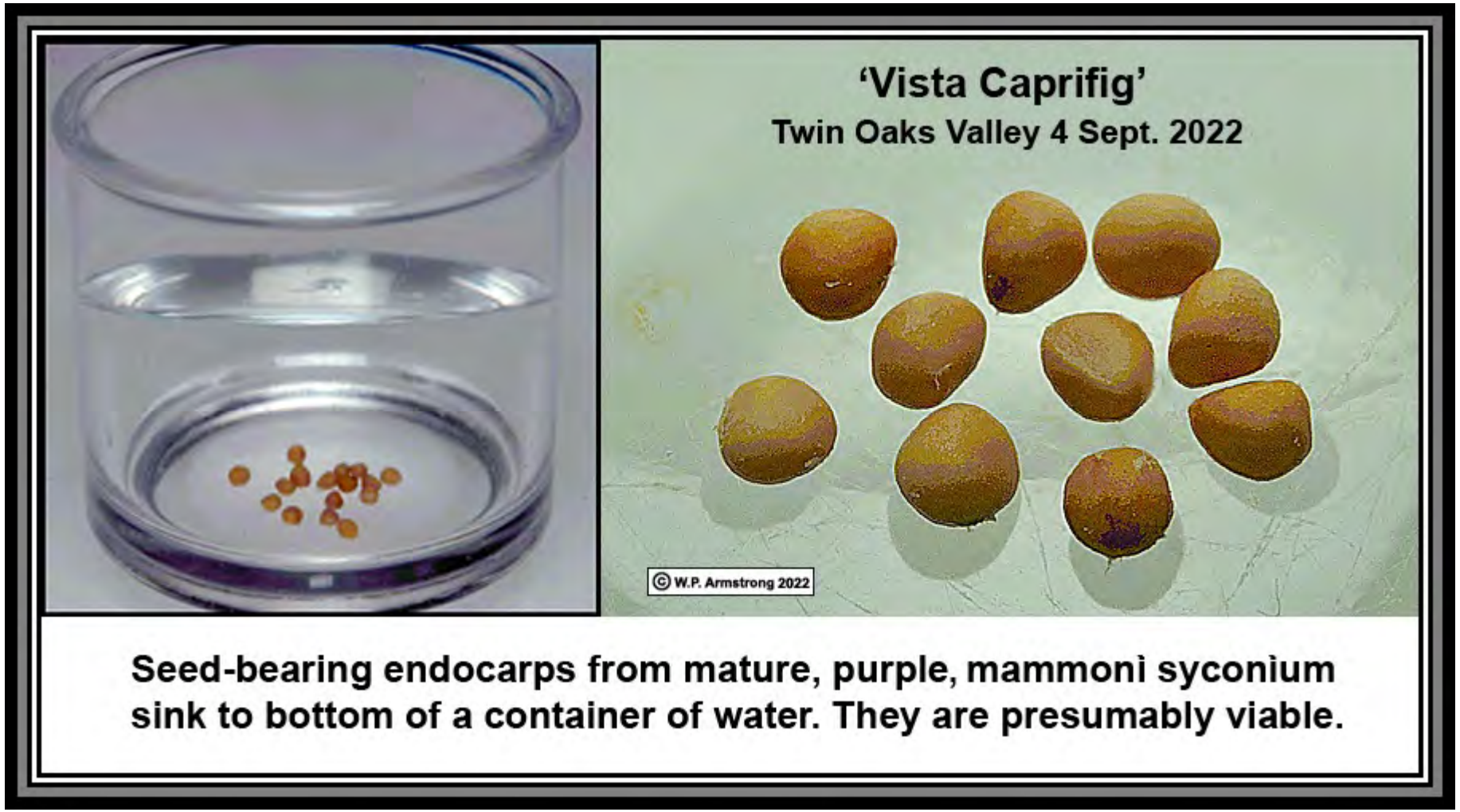
Chapter 10: "We have come a long way and are finally ready to return to the most difficult and complicated of all my stories, that of the fig"



Male Role #1	Male Role #2	Female Exiting Flower
		
Male wasp inseminates female while she is still inside ovary of short-style flower. He chews a hole in the ovary wall & inserts his long, slender abdomen.	The male wasp also chews exit tunnels through syconium wall through which winged females escape. Without these tunnels the females could not escape.	Female emerging from ovary of short-style flower through hole chewed open by male. Without enlarged mandibles she cannot chew through ovary & escape.

I wrote many natural history articles about insects & plants, from jumping bean & yucca moths to acacia ants. But with over 800 species of figs (*Ficus*), each with its own symbiotic (in-house) pollinator wasp, the fig-wasp story is by far the most incredibly complicated & remarkable of all. W.P. Armstrong, 31 May 2021






Possible Vista Caprifig Seedling
Seed From Mammone 4 Sept. 2022
Photo In Potting Soil 30 April 2023
© W.P. Armstrong 2023

Caprifying Figs at Home

https://www.youtube.com/watch?v=XNNtWwaFYCU

Published by Mike Lamonte

Ficus carica

- **The fig is a picturesque deciduous tree, growing typically to a height of 10 - 30 ft. and spreading wider than they are tall.**
- Fig trees often grow as a multiple-branched shrub.
- Fig wood is weak and decays rapidly.
- The twigs are pithy rather than woody.
- The succulent trunk and branches are unusually sensitive to heat and sun damage and should be whitewashed if particularly exposed.
- Roots are invasive and greedy, traveling far beyond the tree canopy.
- The sap contains copious milky latex that is irritating to human skin.

Large Fig Tree in Las Vegas, NV. Photo: ML Robinson

- **Fig trees thrive on a wide range of soils** from light sand to heavy clay.
- Regular fertilizing is necessary only on sands and on potted trees. Excess nitrogen encourages rank growth.
- **Fully dormant trees are hardy to 12° - 15° F,** but plants in active growth can be damaged at 30° F.
- Chilling requirements for the fig are less than 300 hours.
- **The fig grows best and produces the best quality fruit in Mediterranean and dryer warm-temperate climates.**
- Rains during fruit development and ripening can cause the fruits to split.

Large Fig Tree in St. George, UT. Photo: ML Robinson

Fig Trees under Protective Cover in Reno, NV. Photo: ML Robinson

The Fig Synconium

• **The syconium is what most people associate with the tasty fruit of a fig,** but technically it is not a true fruit. It is a complex inflorescence (flower cluster) consisting of a hollow, fleshy, flask-shaped modified stem lined on the inside with numerous tiny unisexual (female) flowers.

• Ficus carica has 2 sexual forms, the "male" caprifig and the “female” tree which produces the edible fig.

• **The caprifig is monoecious [i.e., with separate male (staminate) flowers and separate female short-style (pistillate) flowers. It is functionally male because it produces pollen.**

• **Edible figs contain only long-style female flowers.**

• **Since functional male trees are hermaphroditic** (contains both sexes), **Ficus carica is usually considered gynodioecious**, (can produce one, or both sexes in a single tree) rather than dioecious, (separate sexes, on separate trees).

(Description: A gynodioecious plant bears only female (pistillate) flowers on some plants and either bisexual or both male (staminate) and female (pistillate) flowers on other plants).

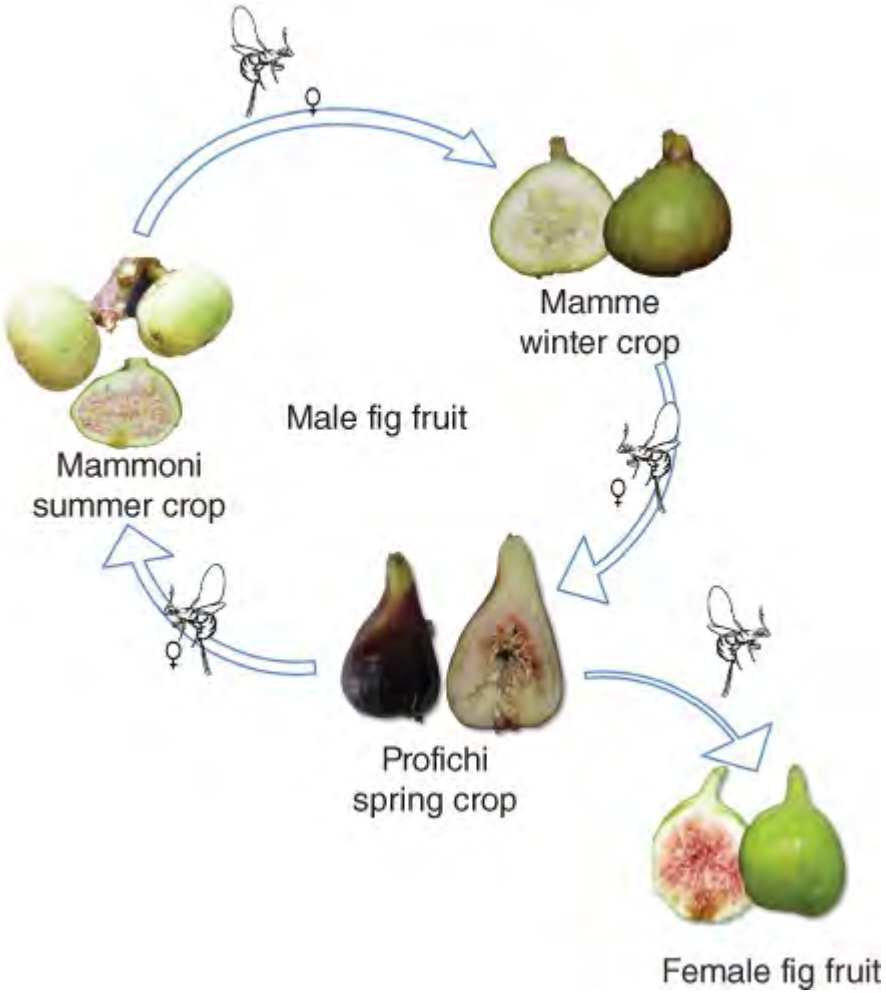
Wikipedia

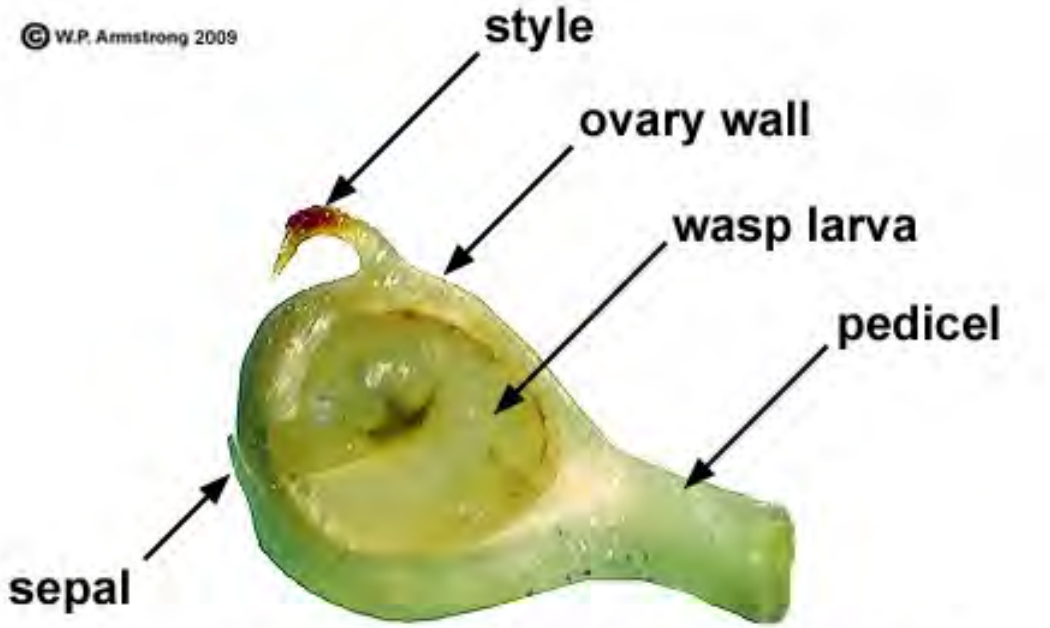
Cross-section of the syconium of a female creeping fig.
The receptacle forms a hollow chamber, its inner wall (white) covered by a shell of rufous florets. Their long and curled, white styles occupy the centre. Each floret will produce a fruit and seed. The green, bract-lined ostiole, below, admits wasp pollinators.

The Story of the Fig Wasp (Blastophaga)

- **Entomologists have learned that fig wasps overwinter as larvae in the pistils (as galls) of the fruit from the winter (mammae) crop of caprifigs.**

- In April, the larva changes into an adult. A male emerges from the pistil and promptly impregnates a female, while she is still in her pistil. Soon after the wingless male dies. The winged, gravid females emerge and leave the mammae fig through the ostiole.





Short-style female flower inside mamme syconium of a caprifig.

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• **Eventually a female flies to a new, young, flowering caprifig** of the spring crop (profichi crop) and enters through the ostiole.

• **The female oviposits eggs in the short-style pistils**, one per ovary, **and then carries pollen to the long-style pistils** for seed set. This enables the fruit to mature, and her young therefore to receive nourishment. The female dies within the developing fruit.

• **After a short period, the new generation of fig wasps emerges;** males impregnate females and die while gravid females escape to colonize new flowering figs.

• **The profichi caprifig has many male flowers near the ostiole**, and the wasp thereby carries much pollen with her to the next syconium.

• **The profichi crop resemble edible figs**, except they are filled with wasps and pollen-bearing stamens.

Caprifig-type:

- **Caprifigs are native to Asia Minor and are grown in California for pollination** (caprification) of Smyrna-type figs. Caprifigs were imported to California from Algiers in 1899.

- **Caprifigs are naturalized in moist riverbeds and creeks of southern & central California.** They occasionally appear as seedling volunteers in urbanized areas, probably dispersed by birds.

- The most common cultivars of caprifigs grown in California are: 'Brawley', 'Croisic', 'Roeding #3', and'Stanford'.

- Several cultivated varieties of caprifigs are sweet and palatable, including the 'Cordelia', 'Brawley', 'Enderud' and 'Saleeb".

Caprifig-type:

- **Functional male caprifigs of Ficus carica produce three crops** of syconia per year: the summer profichi, fall mammoni and overwintering mamme that mature the following spring. Only the profichi crop produces pollen.

- **The profichi syconia** contain clusters of pollen-bearing male flowers in the ostiolar region and wasps that develop from eggs laid inside the ovaries of the short-style female flowers . Wasp eggs are not laid in long-style flowers.

- **Fig pollen** is transferred from male flowers (stamens) on the profichi crop of caprifigs to female flowers (pistils) on the Smyrna-type figs and the second crop of figs on San Pedro-type figs by an insect called a fig wasp (Blastophaga).

Smyrna-type:

- **The Smyrna-type fig was brought to California in 1881-82** but it was not until 1900 that the wasp was introduced to serve as the pollinating agent and make commercial fig culture possible.

- **The Smyrna-type fig varieties produce large edible fruit** with true seeds. The Blastophaga wasp and Caprifigs are required for normal fruit development. If this fertilization process does not occur, fruit will not develop properly and will fall from the tree.

- Only one cultivar 'Sari Lop' ('Calimyrna') is cultivated extensively in California. Other cultivars include 'Marabout' and 'Zidi'.

- **'Calimyrna' is the commercial variety used to make Fig Newtons.**

Smyrna-type:

- **Smyrna-type figs are the most desirable fig.** They are judged better in flavor than the parthenocarpic fruits because the skin is more tender and the oil in the fertilized seeds give the fig extra flavor.

- **It is true that the skeleton of a female wasp** plus some dead larvae of the next generation fig wasps occur in Smyrna-type figs; however, the consumer hardly notices these inclusions. The "crunch" of the Smyrna-type fig is the oily seeds.

- Smyrna-type figs are commonly sold as dried figs.

San Pedro-type:

• **These figs can bear two crops of fruit in one season**--one crop on last season's growth and a second crop on current growth.

• **The first crop, called the Breba crop**, is parthenocarpic and does not require pollination. The breba crop produces early in the spring. San Pedro-type cultivars are characterized by producing a good, persistent breba crop.

• **Fruit of the second crop is the Smyrna type** and requires pollination from the Caprifig. However, the second crop of the Smyrna type may fail to set because of lack of pollination from Blastophaga and Caprifig. This second crop fruit drop often discourages homeowners.

• The most important San Pedro-type cultivars in California include: 'King', 'Lampeira', and 'San Pedro'.

• **When caprified, all fig fruit increase in size and weight,** the flesh becomes fleshy, juicy, rich in flavor and strawberry red in color.

Common-type:

- **These figs develop parthenocarpically without pollination** and are by far the most prevalent fig grown. The fruit does not have true seeds. The "fruit" is primarily produced on current season wood (main crop); however, some varieties may produce a breba crop.

- **At maturity,** the interior of the common-type fig contains only the remains of the flower structures, including the small gritty structures commonly called seeds. These so-called seeds usually are nothing more than unfertilized ovaries that failed to develop. They impart the resin-like flavor associated with figs.

- Over 160 cultivars of common figs are in the University of California at Davis's germplasm collection.

- **There are some 800 types of figs** in the genus Ficus, but the most popular fig varieties that we grow for the delicious fruits are all varieties of *Ficus carica*, the common fig tree.

Breba Crop Versus Main Crop Synconia

- **Brebas are the first figs** of the season, setting on wood from the previous year. These typically mature in June in California.
- **Brebas tend to be larger** than main crop figs, are relatively scarce on the market, and tend to get a high price as fresh fruit.
- **The main crop is produced on the current season's wood**, maturing fruit from August through November or even later in a warm year.
- **Maturity in main crop fig fruits** on a single tree is sequential, beginning with development of basal fruits and progressing toward the most distal fruits.

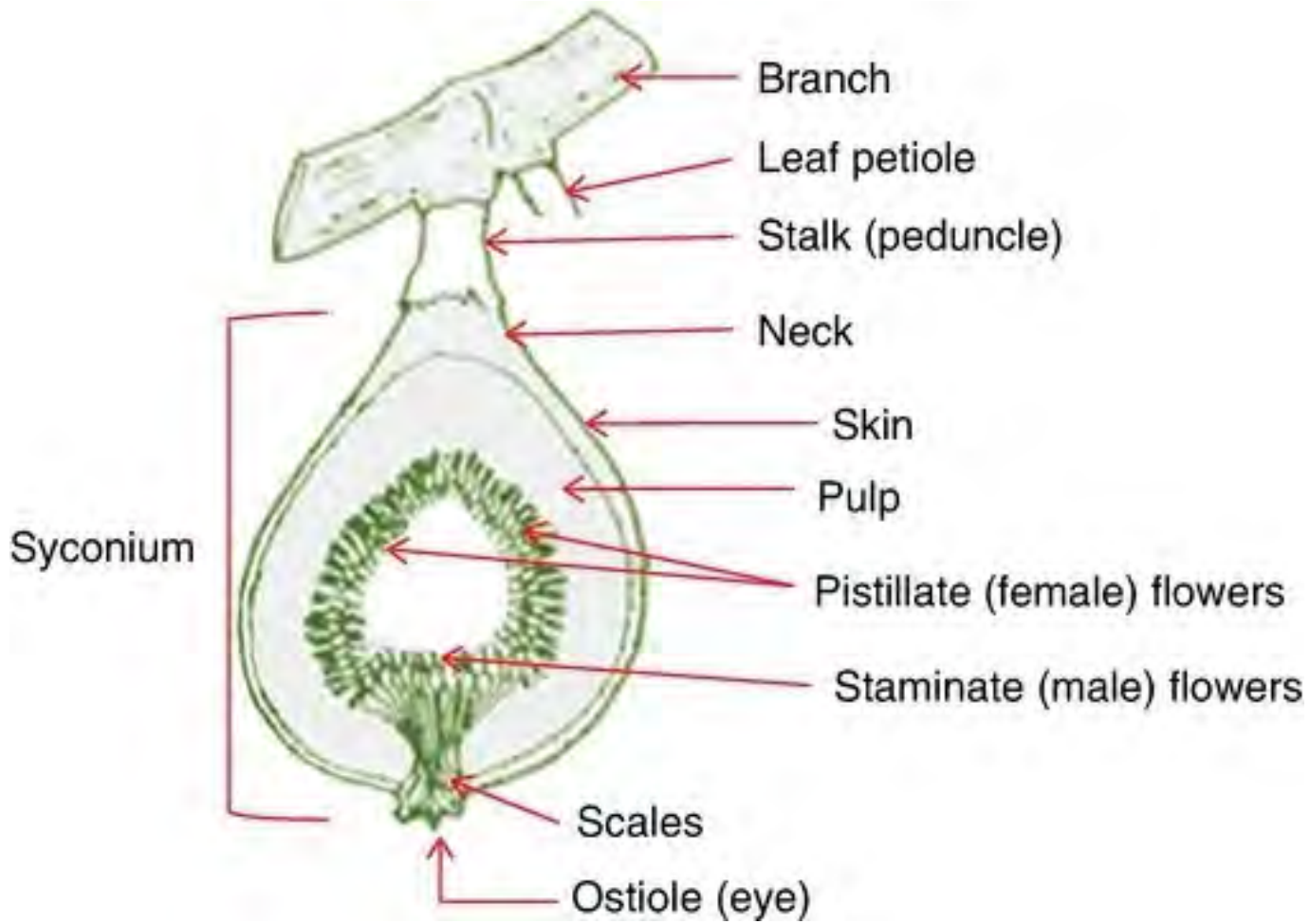
The Fig Ostiole (Eye)

- **The ostiole is the opening at the apex** of the fig through which female fig wasp enter the fig to pollinate the flowers and to lay their eggs.

- **Fresh figs** for the consumer market usually centers on parthenocarpic cultivars. These varieties do not need pollination to produce fruit.

- **The ostiole of fresh figs can be open or closed,** depending on variety. Those fruit with closed ostiole have less problems with insect pests or diseases affecting the fruit.

- **Some figs produce a drop of nectar** at the ostiole that effectively blocks the opening to the “eye”.



http://cabidigitallibrary.org/

Fruit Ripening

• **Many signs indicate that a fig is ripening.** Getting to know your variety is critical, because each variety has different characteristics and, more important, progresses through the ripening process at a different rate.

• **Generally, most of the flavor and sugars are developed** in the last day or two of ripening, so just picking a day early can have a significantly negative impact on the enjoyment of the fruit.

• **A cool period during ripening will delay ripening,** and in some varieties, interrupt their maturation process, so that they will "ripen", but they will not develop the full sugars and flavors that they would have had if they ripened in warm weather.

• **Some varieties will not ripen without sufficient heat** and although fruit will form, the fruit remains hard or rubbery and may never mature to become an edible fruit.

Fruit Ripening

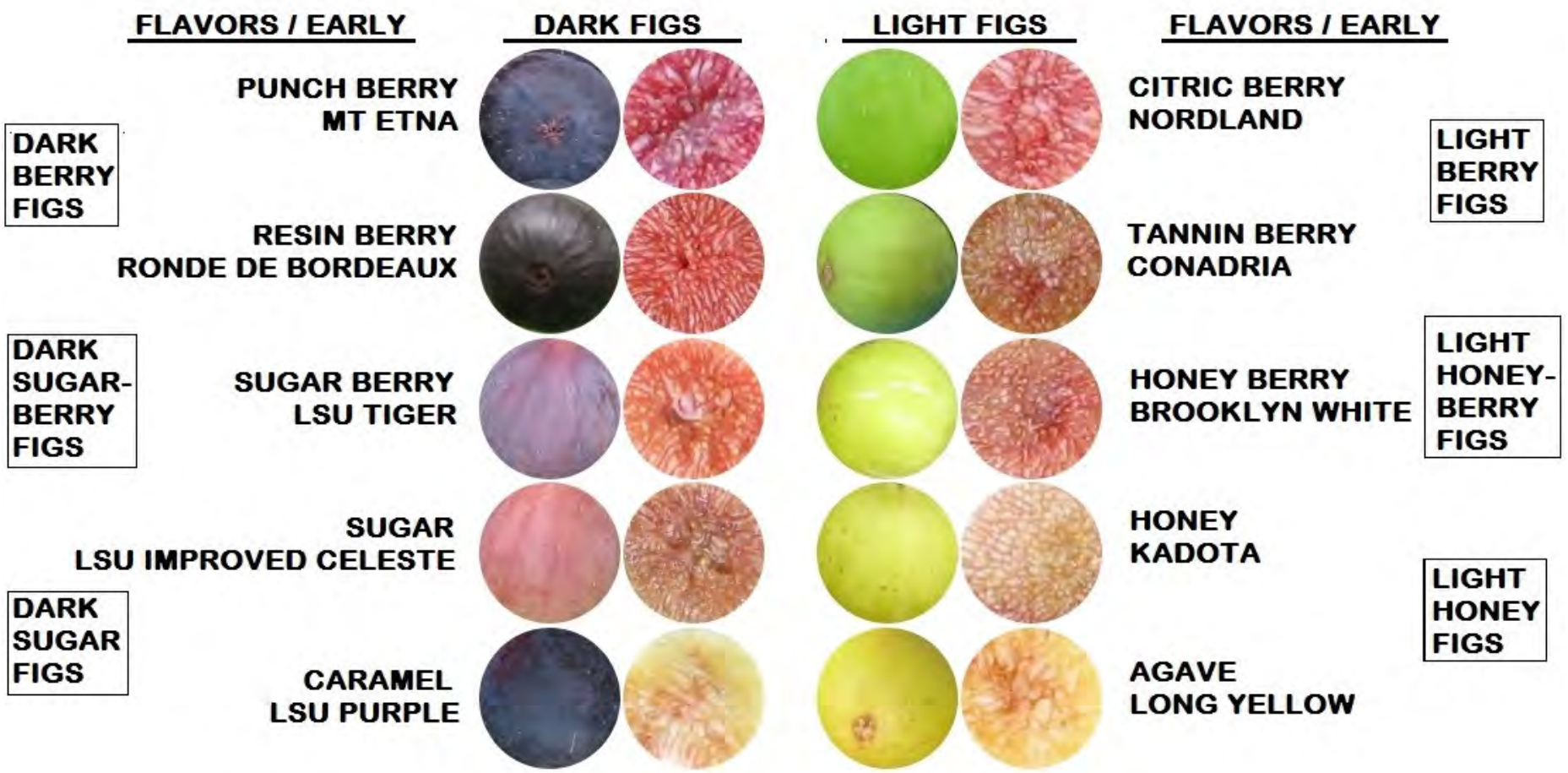
- **Figs exhibit a significant size increase when they begin to ripen.** This usually happens concurrently with a marked color change. The color change is most noticeable in dark colored figs.

- **Ripe figs no longer exude a milky sap when picked.**

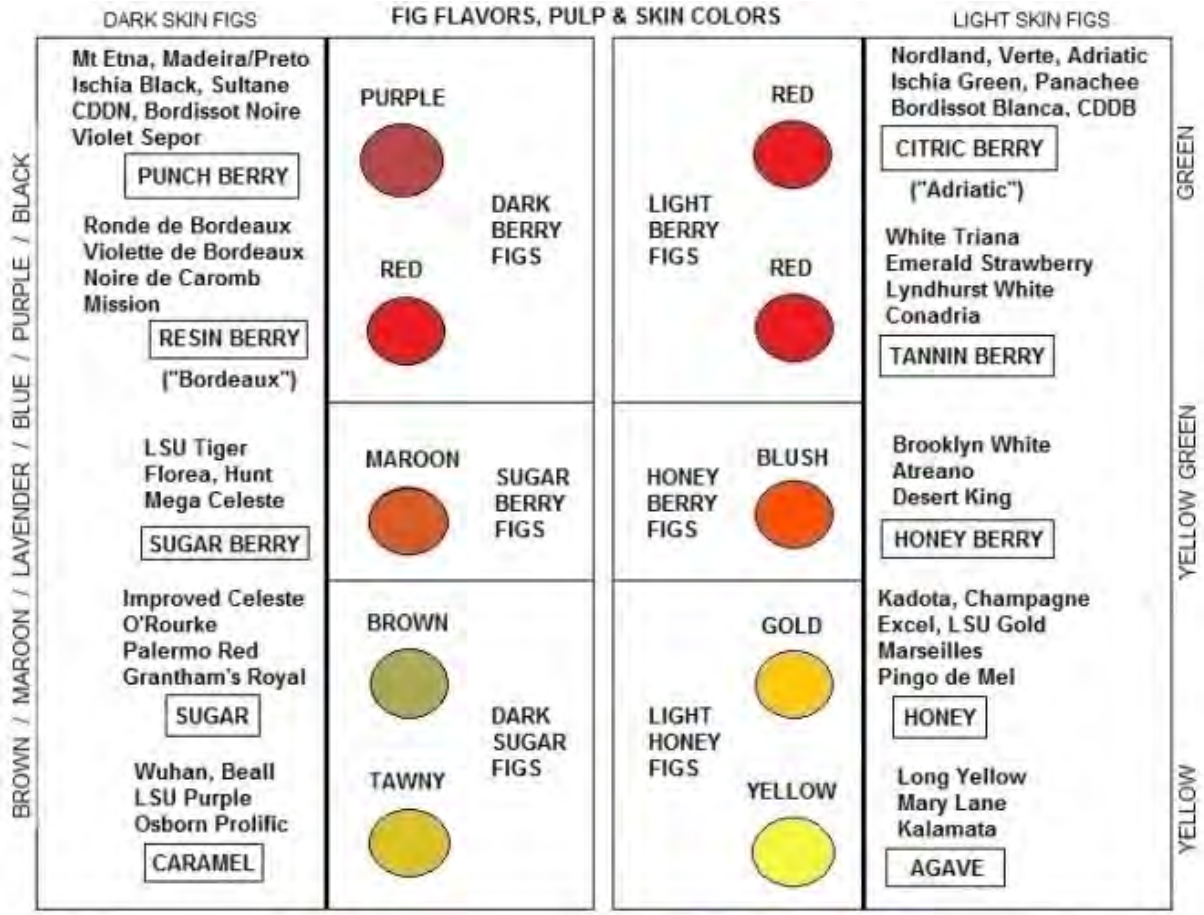
- **As a fig ripens and increases in size and weight,** it will usually soften, which will cause it to droop or sag.

- **The skin of some figs will split as they increase in size.**

- **Some varieties when ripe will exude a drop of honey-like nectar from the eye.**



Photos of the fig flavor, pulp and skin color spectrum can be found at: "Fig Flavors, Pulp and Skin Color Examples."



Photos of the fig flavor, pulp and skin color spectrum can be found at: “Fig Flavors, Pulp and Skin Color Examples.”

Nutrition Value

- **Figs are one of the highest plant sources of calcium and fiber.**

- **According to USDA data for the Mission variety,** dried figs are richest in fiber, copper, manganese, magnesium, potassium, calcium, and vitamin K, relative to human needs. They have smaller amounts of many other nutrients.

- **Figs have a mild laxative effect and contain many antioxidants.**

- **They are good source of flavonoids and polyphenols.**

Propagation

- **There are many ways to propagate figs.** They may be sprouted from seed, air-layered, grown from suckers , grafted or grown from rooted cuttings.

- **Seeds do not produce trees that are true to type.** The trees are often sterile or functionally male caprifigs.

- **Air-layering requires access to a tree for 3-6 months.** Air-layering a fig is easy and very successful. This method of propagation can produce a large plant in a very short period of time.

- **Suckers** are not always handy when you want them.

- **Grafting:** Cultivars may be propagated on rootstocks, or older trees, topworked by whip, cleft or crown grafting, or chip or patch budding.

- **Cuttings: Fig plants are usual propagated by cuttings.**

Propagation by Cuttings

- **Cuttings can be rooted** in water, in potting soil, directly in the ground, in a variety of rooting media (such as sand, vermiculite or perlite) or in a bag.

- **Two things greatly improve rooting success:** pre-rooting in a bag and transplanting to a clear plastic cup containing specific media.

- **Rooting is greatly speeded up when temperatures are 70F or higher.** Providing a warm environment can be as simple as placing your cuttings in a bag on top of the refrigerator, or a shelf above the stove.

- **The use of a rooting hormone is not necessary.** Powdered hormone seems to encourage rotting of the cutting. Use a liquid hormone, if you use any, at all.

Photos: Alastair Bland is a freelance writer based in San Francisco.

Propagation by Cuttings

- **Rooting success is almost entirely dependent on controlling moisture,** both in the potting media and in the atmosphere around your cuttings. Soil moisture and humidity are crucial.

- **The cuttings will rot if their soil is too wet.** If it is too dry, the new roots will desiccate and die. Using a rooting media that maintains proper levels of air and moisture greatly increases rooting success.

- **When choosing a rooting medium,** you need to have a mix which allows for moisture to be retained, but one which does not allow the water to completely saturate the medium so that there is no air (oxygen) in the medium.

- **Texture or coarseness is an important factor in balancing these two requirements.** The smaller particle sizes tend to allow the medium to become saturated, excluding all air and holding too much moisture. Larger particles will hold less moisture and allow air. Most sand is too fine to prevent saturation. Potting soils hold too much moisture.

- **Coarse vermiculite produces very good results**. The coarse texture allows for good air penetration in the media, while the vermiculite holds the moisture.

- **A mix of 60% Perlite and 40% finer vermiculite also works well.**

Propagation by Cuttings

- **If the humidity is too high,** mold is a likely outcome, and if it is too low, the cuttings are at risk of desiccation before rooting occurs.

- **Humidity can be controlled** in a greenhouse or using something simple like a plastic storage box with the lid substantially closed.

Propagation by Cuttings

Pre-rooting Cuttings

• Wrap dormant cuttings in lightly dampened paper towels or newspaper.

• Then place them in a sealed plastic bag and put them in a warm place.

• In a few weeks, you will see root initials begin to form, and then roots. Be patient; each variety is different and each cutting, even when from the same tree, can have a different response.

Propagation by Cuttings

• **Once the cuttings have formed roots** they are removed from the bag for transfer to a clear cup.

• This "bag" technique can be used on all sizes of cuttings.

• **Transfer the cuttings from bags to 26-oz. clear plastic cups** containing a rooting medium and with holes drilled in their bottoms.

• **The pre-rooted cuttings are placed in these clear cups for further root development.** Remember that deeper cups are better than short, squat cups.

Propagation by Cuttings

• The pre-rooted cuttings in clear plastic cups are placed on wire racks, in plastic storage boxes. These boxes hold 20 cuttings and can be used to control humidity.

• The screen "racks" are used to keep the cups above the water that collects at the bottom of the storage box. **If the cups sit in water, the rooting media wicks up the water rotting the cuttings.** But the water underneath the screen provides humidity to maintain moisture in the cutting.

Propagation by Cuttings

- **Place the box of cuttings in an area that receives filtered sunlight.** Too much sun can heat up the box and "cook" your cuttings.

- **Open the lid of the box a little bit**. This allows fresh air to enter, which is important in controlling mold. If the lids are wide open, you lose too much humidity.

- The water at the bottom of the crate, under the screen, replenishes the humidity lost by having the lids open.

Propagation by Cuttings

• **Eventually the cuttings will develop roots**. Each cutting may develop at a different rate.

• An important principle to remember is that roots and leaves have no relationship to each other.

• Under identical conditions, some cuttings will grow roots, some will grow leaves, and some will grow both.

• **You cannot presume root development from observing leaf development.** This is why clear cups are beneficial; they allow me to actually see whether roots are developing.

Propagation by Cuttings

- **Transfer the cuttings to 1-gallon pots containing a potting mix of 60% Perlite and 40% potting soil.**

- **Acclimate them to the outdoors,** usually putting them in shade with augmented humidity for a few days, and gradually introducing them to more sunlight over a period of weeks.

- At this stage, potting mix moisture control is still critical. Too much moisture will still cause root rot and plant failure.

- When you see roots in the drain holes, transfer the trees to 2-gallon pots while reversing the mix to 40% perlite and 60% potting soil.

Photos: Alastair Bland is a freelance writer based in San Francisco.

How many fig trees can you plant per acre?

- **The trees are planted at 15' X 20' spacing, with 155 trees per acre.**
- Fig trees cost $20-$40/each depending on variety. Quantity orders are generally less.
- Cost per acre: $3,410 to $6,820 fig trees.
- **Self propagation can greatly reduce costs.**

https://alcaldesc.nmsu.edu/projects/houses.html

NMSU

High Tunnel/Hoop House Production

Grow Great Fruit

Ohioline
Ohio State University Extension

https://ohioline.osu.edu/

Pests and Diseases

Pocket Gophers

• **Fig tree roots are a favorite food of gophers,** who can easily kill a large plant. One passive
method of control is to plant the tree in a large aviary wire basket.

• The wire should have openings no larger than ½" and the top edge of the basket should extend at least 2"-3" above the surface of the soil.

Traps, Baits and Gases

• Important in the effectiveness of these products is that they should be placed in a fresh tunnel or run.

• **Traps are often the most effective, (Macabee).** Use in pairs and place back-to-back.

• Baits work well if used properly. A bait injector tool is a useful tool.

• Gases are most effective when the soil is moist. Gases are often the least effective of these options.

Pests and Diseases

Birds and Fig Beetles:

- The most effective bird deterrents are nets. Any size net which completely encloses the tree will be effective against birds. Birds should be discouraged from your fruit, but never harmed or killed.

- **Building Hoop Houses covered in woven wire mesh will keep birds and fig beetles out.** Depending on size of mesh, smaller insects can be controlled as well.

- **1/2" Bird mesh is too large to keep out fig beetles, 1/4“ bird mesh** may be the perfect solution for both Birds and Fig Beetles**.**

- Traps hung in trees during the summer can help reduce fig beetle populations and can help to reduce damage to the fig crop.

Fig Mosaic Virus

- **Host specific, only affects figs.** Formerly considered benign, probably causes crop reduction.

- Symptoms resemble potassium deficiency. Leaves may be smaller than normal and deformed. Premature defoliation and fruit drop often occur.

- Virus spread by cuttings and by eriophyid mite.

- Black Mission is the most seriously damaged cultivar.

- There are no cures for virus diseases.

Pests and Diseases

Root Knot Nematodes

- **Root knot nematodes are difficult to control** and can be spread easily from garden to garden in soil (for example, on tools, boots, etc.) and plant parts.

- Root knot nematodes survive from season to season primarily as an egg in the soil. After the eggs hatch, the second stage juveniles invade roots, usually at root tips, causing some of the root cells to enlarge where the nematodes feed and develop.

- Root knot nematodes usually cause distinctive swellings, called galls, on the roots of affected plants.

- The nematodes feed and develop within the galls, which may grow to as large as 1-inch in diameter on some plants but are usually much smaller.

Root Knot Nematodes

- **Above ground symptoms of a root knot nematode** infestation include wilting, loss of vigor, yellowing, and other symptoms similar to a lack of water or nutrients.

- **Fewer and smaller leaves and fruits** are produced, and plants heavily infested early in the season may die.

- **Damage is most serious in warm, irrigated, sandy soils.**

- **Some control** may be achieved by using fruit tree rootstocks that are resistant to nematode injury, increasing the organic material in the soil with the use of mulches or soil amendments, or by introducing beneficial Steinernema feltiae (Sf) nematodes.

Mary Lane Fig Tree

Often called the “jelly fig” Mary Lane produces large crops of delicious yellow figs with a strawberry interior that is nearly seedless.

The texture on this one really is like jelly and has a supremely sweet agave syrup flavor to it.

One of the easiest fruits to grow, and a true gourmet delight, you should not live your life without feasting on this sweet, delectable fruit. To fully enjoy fresh Figs, you must grow your own. When fully ripe and at their tender, shipping them long distances is virtually impossible. Another plus for Figs – deer don’t like them (most of the time)!

ONEGREENWORLD

Yellow Lebanese Fig Tree

A delicious honey fig from the Middle East, Yellow Lebanese has a wonderful sweetness to it once it is perfectly ripe.

Eaten too early and it might not be the most flavorful fig, but at peak ripeness it is delicious.

Produces a nice sized breba crop and then a main crop in late summer-fall.

One of the easiest fruits to grow, and a true gourmet delight, you should not live your life without feasting on this sweet, delectable fruit. To fully enjoy fresh Figs, you must grow your own. When fully ripe and at their tender, shipping them long distances is virtually impossible. Another plus for Figs – deer don't like them (most of the time)!

ONEGREENWORLD

Col de Dame Rimada

A striped version of the always delicious Col de Dames. Col de Dame Rimada produces late ripening, beautifully striped figs that resemble Col de Dame Blanc in flavor when fully ripe.

The young branches are even striped, and it will occasionally throw out a variegated leaf. Worth growing in a greenhouse or in a pot in northern climates where you can give it a head start on the season and an extension in the fall. The richly flavored figs are worth the extra effort!

A true gourmet delight, you should not live your life without feasting on this sweet, delectable fruit. One of the easiest fruits to grow, figs are happy outdoors and, with winter protection, in pots, or in the ground in colder climates. To fully enjoy fresh Figs, you must grow your own. When fully ripe and at their tender best, shipping them long distances is virtually impossible.

ONEGREENWORLD

Genovese Nero Fig Tree

A premier dark fig with excellent flavor, vigor and productivity, Genovese Nero Fig Tree deserves a spot in every fig collection.

Deep black skin and a bright red flesh are flavored with an intense berry sweetness. Ripens mid season and holds up decently well to splitting. This particular clone is also known as Genovese Nero AF.

A true gourmet delight, you should not live your life without feasting on this sweet, delectable fruit. One of the easiest fruits to grow, figs are happy outdoors in the Maritime Northwest and, with winter protection, in pots or in the ground in colder climates.

To fully enjoy fresh Figs, you must grow your own. When fully ripe and at their tender best, shipping them long distances is virtually impossible. While many fig varieties are not suitable for the Northwest, our varieties have been chosen for their ability to ripen in our climate. Another plus for Figs – deer don't like them (most of the time)!

ONEGREENWORLD

Sources for Fig Trees

The following nurseries offer medium to large assortments of fig varieties. Listing is not an endorsement.

- Chestnut Hill Nursery, 15105 NW 94 Avenue, Alachua, FL 32615. 800 669-2067. Free catalog.
- Durio Nursery, 5853 HIGHWAY 182, OPELOUSAS, LA 70570, PHONE: (337) 948-3696, FAX: (337) 942-6404
- Edible Landscaping, P. O. Box 77, Afton, VA 22920. 800 524-4156. URL: www.EAT-IT.com Illustrated catalog free.
- Encanto Farms, San Diego, CA., (619) 266-1770, URL: www.encantofarms.com
- Exotica, 2508-B E. Vista Way, Vista, CA. 92083, (619) 724-9093
- Fig Tree Nursery, P. O. Box 124, Gulf Hammock, FL 32639. 352 486-2930. Catalog $1.00.
- Just Fruits, Route 2, Box 4818, Crawfordville, FL 32327. 904 926-5644. Free catalog.
- Louisiana Nursery, Route 7, Box 43, Opelousas, LA 70570. 318 948-3696. Catalog $6.00.
- Oregon Exotics, 1065 Messenger Road, Grants Pass, OR 97527. 503 846-7578. Illustrated catalog $3.00.
- Raintree Nursery, 391 Butts Road, Morton, WA 98356. 360 496-6400. Illustrated catalog free.
- Fred W. Born, 5715 W. Paul Bryant Drive, Crystal River, FL 34429-7523. 352 795-0489.
- Bill Fogarty, 1035 S.E. Bell Avenue, Corvallis, OR 97333 541 758-5272.
- National Clonal Germplasm Repository, USDA-ARS
- University of California, Davis, CA 95616916 752-6504 (voice) or 752-5974 (fax)

- https://www.google.com/url?sa=i&url=https%3A%2F%2Fmountainfigs.net%2Fmountain-figs%2F8-basic-fig-flavor-pulp-skin-color-modes%2F&psig=AOvVaw17EX8RQQmK9Rqg28vzZgem&ust=1685819314491000&source=images&cd=vfe&ved=0CBAQ3YkBahcKEwiwo8-9pKX_AhUAAAAAHQAAAAAQAw
- https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DtwtqO8I2-Kc&psig=AOvVaw17EX8RQQmK9Rqg28vzZgem&ust=1685819314491000&source=images&cd=vfe&ved=0CBAQ3YkBahcKEwiwo8-9pKX_AhUAAAAAHQAAAAAQDA
- https://www.figboss.com/
- **www.figbid.com**
- **www.onegreenworld.com**
- **https://treesofjoy.com/**

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