

אֶתְרוֹג

אֶתְרוֹג שֵׁם ז'
citron, etrog

<http://www.morfix.co.il/en/%D7%90%D6%B6%D7%AA%D6%B0%D7%A8%D7%95%D6%B9%D7%92>

Etrog

For other uses, see Etrog (disambiguation).

Etrog (Hebrew: אֶתְרוֹג) refers to the yellow citron or *Citrus medica* used by Jews on the week-long holiday of Sukkot. While in modern Hebrew this is the name for any variety of citron, its English usage applies to those varieties and specimens used as one of the Four Species.^[1]

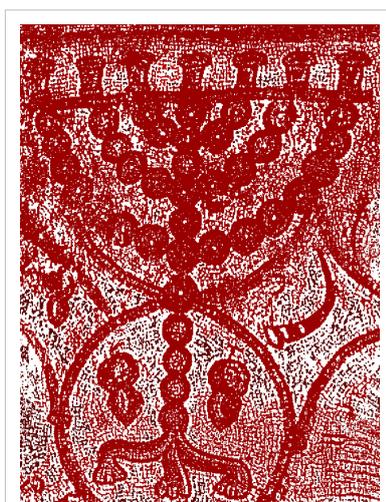
Etymology

The romanization as *Etrog* is according to the Sephardic pronunciation, widely used in Israel through Modern Hebrew. The Ashkenazi pronunciation as in Yiddish, is *esrog* or *esrig*. Rarely it could also be transliterated as *Ethrog* or *Ethrogh* even in scholarly work, which is according to the Yemenite Hebrew.^[2]



An Israeli Etrog, with Pitam and Gartel

Biblical references



6th century CE synagogue mosaic in northern Negev, Israel, depicting etrogs at the base of a Menorah

“And you shall take on the first day the fruit of beautiful trees, branches of palm trees and boughs of leafy trees and willows of the brook, and you shall rejoice before the Lord your God 7 days!” -- Leviticus 23:40

Rabbinic Judaism sees the Biblical phrase *peri eitz hadar* (פְּרִי עֵץ הַדָּר) as referring to the etrog. Grammatically, the Hebrew phrase is ambiguous; it is typically translated as "fruit of a beautiful tree," but it can also be read as "a beautiful fruit of a tree," which helps explain the great care with which etrogs are selected for performing the Sukkot holiday rituals.

Linguistic

In modern Hebrew, *hadar* refers to the genus *Citrus*. Nahmanides (1194 – c. 1270) suggests that the word was the original Hebrew name for the citron. According to him, the word *etrog* was introduced over time, adapted from the Aramaic. The Arabic name for the citron fruit, *itrani* (اترنج), mentioned in hadith literature, is also associated with the Hebrew.

Cosmetic requirements

Pitam (Pitom)

An *etrog* with an intact *pitam* is considered especially valuable. A *pitam* is composed of a style (Hebrew: "דָּד"), and a stigma (Hebrew: "שׁוֹשַׁנְתָּא"), which usually falls off during the growing process. However, varieties that shed off their *pitam* during growth are also kosher. When only the stigma breaks off, even post-harvest, it could still be considered kosher as long as part of the style has remained attached. If the whole *pitam* i.e. the stigma and style, are unnaturally broken off, all the way to the bottom, it is not kosher for the ritual use.

Many *pitams* are preserved today thanks to an auxin discovered by Dr. Eliezer E. Goldschmidt, formerly professor of horticulture at the Hebrew University. Working with the picloram hormone in a citrus orchard one day, he discovered, to his surprise, that some of the Valencia oranges found nearby had preserved perfect *pitams*. Usually a citrus fruit, other than an etrog or *citron hybrid* like the bergamot, does not preserve its *pitam*. When it occasionally does, it should at least be dry, sunken and very fragile. In this case the *pitams* were all fresh and healthy just like those of the Moroccan or Greek citron varieties. Experimenting with the picloram in a laboratory, Goldschmidt eventually found the correct “dose” to achieve the desired effect: one droplet of the chemical in three million drops of water. This invention is highly appreciated by the Jewish community.^[3]

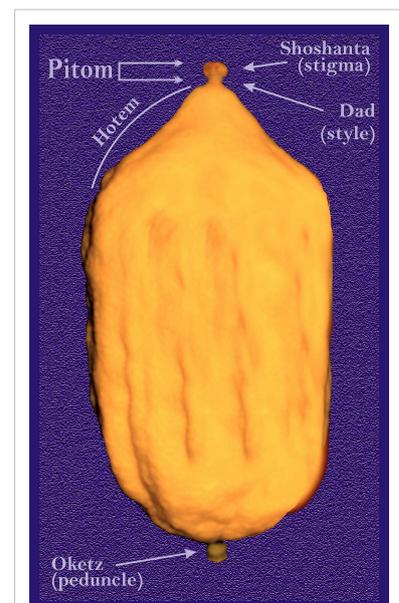


Diagram of the Halachic properties of an etrog

Purity

In order for a citron to be kosher it must be pure, neither grafted nor bred with any other species, therefore only a few traditional varieties are used. To prevent grafting, the plantations must be under strict rabbinical supervision.

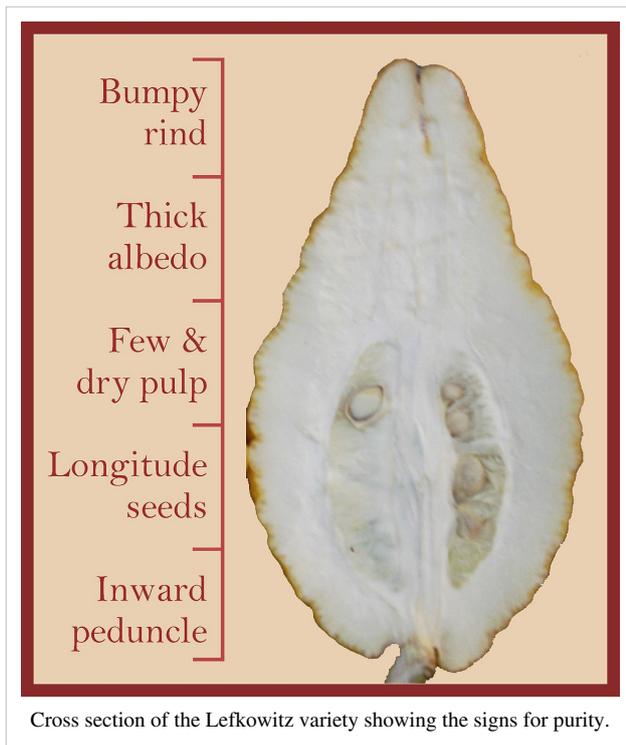
Genetic research

<h3>Citron varieties</h3>

<i>Acidic-pulp varieties:</i>
<ul style="list-style-type: none"> • Diamante citron • Greek citron • Balady citron • Florentine citron
<i>Non-acidic varieties:</i>
<ul style="list-style-type: none"> • Moroccan citron • Corsican citron
<i>Pulpless varieties:</i>
<ul style="list-style-type: none"> • Buddha's hand • Yemenite citron
Related Articles:
Citrus • Succade • Etrog • Hybrid • Grafting • Chimera • Sukkoth • Four Species
This box:
<ul style="list-style-type: none"> • view • talk • edit ^[4]

The citron varieties traditionally used as Etrog, are the Diamante Citron from Italy, the Greek Citron, the Balady Citron from Israel, the Moroccan and Yemenite Citrons.

A general DNA study was arranged by the world-renowned researcher of the etrog, Prof. Goldschmidt and colleagues, who positively testified 12 famous accessions of citron for purity and being genetically related. As they clarify in their joint publication, this is only referring to the genotypic information which could be changed by breeding for e.g. out cross pollination etc., not about grafting which is not suspected to change anything in the genes.^[5]



The Fingered and Florentine Citrons although they are also Citron varieties or maybe hybrids, are not used for the ritual. The Corsican Citron is no longer in use, though it was once used and sacred.

Selection and cultivation

In addition to the above, there are many rabbinical indicators to identify pure etrogs out of possible hybrids. Those traditional specifications were preserved by continuous selections accomplished by professional farmers.^[6]

The most accepted indicators are as following: 1) a pure etrog has a thick rind, in contrast to its narrow pulp segments which are also almost dry, 2) the outer surface of an etrog fruit is ribbed and warted, and 3) the etrog peduncle is somewhat buried inward; a lemon or different citron hybrid is opposing one or all of the specifications.^[7]

A later and not so widely accepted indicator is the orientation of the seed, which should be pointing vertically by an etrog, except if it was strained by its neighbors; by a lemon and hybrids they are positioned horizontally even when there is enough space.^[8]

The etrog is typically grown from cuttings that are two to four years old, the tree begins to bear fruit when it is around four years old.^[9] If the tree germinates from seeds, it will not fruit for about seven years, and there may be some genetic change to the tree or fruit in the event of seed propagation.^[10]

Customs

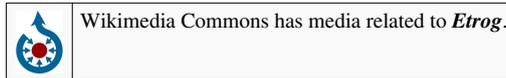
To protect the etrog during the holiday, it is traditionally wrapped in silky flax fibers and stored in a special box, often made from silver. After the holiday, eating from the etrog or etrog jam is considered a *segula* (efficacious remedy) for a woman to have an easy childbirth. A common Ashkenazi custom is to save the etrog until Tu Bishvat and eat it in candied form or as succade, accompanied by prayers that the worshiper will merit a beautiful etrog next Sukkot.^[11] Some families make jam or liqueur out of it,^[12] or stick cloves in the skin for use as *besamim* at the havdalah ceremony after Shabbat. The Dancing Camel Brewery in Tel Aviv, Israel uses the rinds of etrogim in their annual 'Trog Wit Beer, usually available around the Holiday of Sukkot.^[13]

References

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- [2] The Citrus Industry (<http://lib.ucr.edu/agnic/webber/Vol1/Chapter4.html#acid>)
- [3] Style Abscission in the Citron. *American Journal of Botany*, Vol. 58, no 1. pp. 14-23 ([http://links.jstor.org/sici?sici=0002-9122\(197101\)58:1<14:SAITC\(>2.0.CO;2-I](http://links.jstor.org/sici?sici=0002-9122(197101)58:1<14:SAITC(>2.0.CO;2-I))
- [4] http://en.wikipedia.org/w/index.php?title=Template:Citron_varieties&action=edit
- [5] A brief documentation of this study could be found at the Global Citrus Germplasm Network (http://www.lal.ufl.edu/societies/ISC/gcgn/Appendix_9.PDF).
- [6] Article by Professor Goldschmidt, published by Tehumin, summer 5741 (1981), booklet 2, p. 144
- [7] Letter by rabbi Shmuel Yehuda Katzenellenbogen of Padua midst the 16th century, printed in Teshuvat ha'Remo chapter 126
- [8] Shiurey Kneseth Hagdola and Olat Shabbat, cited by Magen Avraham, Orach Chaim chapter 648, comment 23
- [9] Chiri, Alfredo. (2002). Etrog (http://home.att.net/~oc_crfg/alfredo-sep02.htm)
- [10] Sunkist Website (http://www.sunkist.com/products/growing_packing.asp)

- [11] Aish (http://www.aish.com/tubshvat/tubshvatinterests/Lchaim_to_the_Trees.asp)
 [12] Etrog recipes (link no longer valid) (<http://www.haaretz.co.il/hasen/spages/1118246.html>)
 [13] "Trog Wit" (<http://www.dancingcamel.com/en/Page/trogwit.html>)

- Citrus Propagation by Ultimate Citrus (<http://www.ultimatecitrus.com/pdf/tncitrus.htm>)
- Fact Sheet HS-86 June 1994 by the University of Florida (<http://www.ultimatecitrus.com/pdf/propagation.pdf>)
- CROP PROPAGATION II: SEXUAL PROPAGATION (http://faculty.fortlewis.edu/shuler_p/classeswebsites/propagation_2.htm)



External links

- First evidence of the etrog tree in Israel (<http://www.greenprophet.com/2012/07/ramat-rachel-etrog-tree/>)
- The Citrus Variety Collection (<http://www.citrusvariety.ucr.edu/citrus/ethrog.html>) by the University of California Riverside
- Ancient Treasures and the Dead Sea Scrolls (http://www.uoregon.edu/~dfalk/courses/ejud/synagogues_files/image018.jpg)
- Mosaic depicting an *etrog* (<http://www.jewlicious.com/wp-content/uploads/TM/floor1.jpg>)
- Lulav, Etrog, Shofar and Menorah, 2nd Cent. CE, Ostia Synagogue (<http://www.exploringeastlondon.co.uk/jc/index.htm>)
- An antique Hebrew coin depicting an *etrog* (http://www.hebrewworld.com/goldSilver3_files/2.jpg)
- Pictures homecitrusgrowers.co.uk (<http://www.homecitrusgrowers.co.uk/citrusvarieties/uncommon3.html>)
- Evyatar Marienberg and David Carpenter, The Stealing of the 'Apple of Eve' from the 13th century Synagogue of Winchester (http://unc.academia.edu/evyatarm/Papers/1218963/The_Stealing_of_the_Apple_of_Eve_from_the_13th_century_Synagogue_of_Winchester), Henri III Fine Rolls Project, Fine of the Month: December 2011 (<http://frh3.org.uk/content/month/fm-12-2011.html>)
- A Huge Etrog-looking Citron in Geetha's Kitchen, amazing photos (<http://www.geethaskitchen.com/2010/07/citron-etrog-or-esrog-citrus-medica.html>)
- Know Your Etrog (<http://www.jewfaq.org/etrog.htm>), website with educational pictures, information how to plant your own tree.

Etrog Gallery



Rabbi Bergman re-examines the Etrog for a student



Balady citron of the Chazon Ish selection, in a market in Bnei Berak



The Etrog market in the dark



Fruits of Diamante citron for sale



Cross section in Yanover Esrog, to check for signs of genetic purity



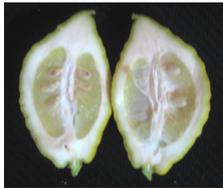
Cross section in Braverman Esrog



Cross section in Yemenite citron



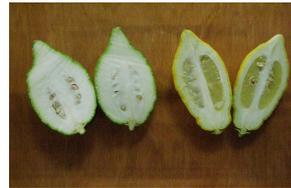
Cross section in Ordang Esrog



Cross section in Kiblevitz Esrog



Cross section in Moroccan citron



Cross section of a Yemenite citron (left), and a Balady citron ("Chazon Ish" selection - right)



Cross section in a Variety etrog citron, and in Fingered citron.



Yanover Esrog without a Pitam



Yanover Esrog with a Pitam



Inspecting an Etrog for flaws



Inspecting a Yemenite citron



Shmita in Kefar Chabad, the etrog orchard is full of weed



Young plants in Kefar Chabad



More young plants in Kefar Chabad



Etrog fully covered with clove punctured in it, to smell on Yom Kippur



Purchasing Etrog and Lulav in Tel Aviv



Pitam perceptivo



Pulless Buddha's hand



Citrons for sale in a German market



Closed Buddha's hand



Semi-closed Buddha's hand



Chinese citron in Vienna



A mature fruit of Diamante citron gets to big size



Naxos citrons and leaf



Citron or hybrid in Sicily



A wild citron in India



A nice Diamante citron



Diamante citron in growth, with half-dried Pitam



Etrog Blossom

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Citron

For other uses, see Citron (disambiguation).

Not to be confused with Citroën.

Citron <i>Citrus medica</i>	
	
Scientific classification	
Kingdom:	Plantae
(unranked):	Angiosperms
(unranked):	Eudicots
(unranked):	Rosids
Order:	Sapindales
Family:	Rutaceae
Genus:	<i>Citrus</i>
Species:	<i>C. medica</i>
Binomial name	
<i>Citrus medica</i> L.	

The **citron** is a fragrant citrus fruit, botanically classified as *Citrus medica* by both the Swingle and Tanaka botanical name systems. The designation *medica* given it by Linnaeus, apparently is derived from its ancient name, "*Median or Persian apple*";^[1] that was reported by Theophrastus,^[2] who believed it to be native to Persia or the land of the Medes.

The fruit's name derives ultimately from Latin, *citrus*, also the origin of the genus name, and as a result it has many similar names in many European languages, e.g. *cederat*, *cédrat*, *cedro*, etc. A source of confusion is that citron or similar words in French, Hungarian, Finnish, Latvian, the West Slavic languages, and all Germanic languages but English are false friends, as they refer to the lemon. Indeed, into the 16th century, the English name citron included the lemon and perhaps the lime as well.^[3] Most other European languages, from Albanian and English to Spanish, use variants of the Arabic word *laymun* itself derived from middle Persian "leemun": "limon".

Uses

Main articles: Succade and Etrog



citron torte

Culinary

While the lemon or orange are peeled to consume their pulpy and juicy segments, the citron's pulp is dry, containing a small quantity of insipid juice, if any. The main content of a citron fruit is the thick white rind, which adheres to the segments, and cannot be separated from them easily.

Today the citron is used for the fragrance or zest of its flavedo, but the most important part is still the inner rind (known as pith or *albedo*), which is a fairly important article in international trade and is widely

employed in the food industry as succade,^[4] as it is known when it is candied in sugar. In Iran, the citron's thick white rind is used to make jam; in Pakistan the fruit is used to make jam as well as pickled; in South Indian cuisine, the citron is widely used in pickles and preserves.

Medicinal

Thus, from ancient through medieval times, the citron was used mainly for medical purposes: to combat seasickness, pulmonary troubles, intestinal ailments, and other disorders. The essential oil of the flavedo (the outermost, pigmented layer of rind) was also regarded as an antibiotic.^[5] Citron juice with wine was considered an effective antidote to poison, as Theophrastus reported. In Ayurvedic system of medicine, the fruit juice is still used for treating conditions like nausea, vomiting, excessive thirst etc.

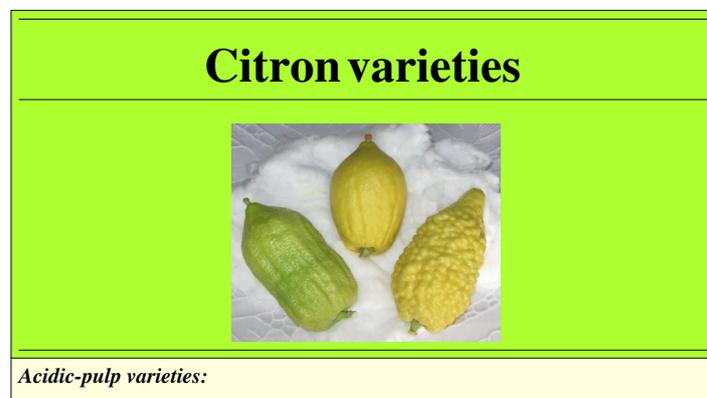
The fruit juice has a high content of Vitamin C and used medicinally as an anthelmintic, appetizer, tonic, in cough, rheumatism, vomiting, flatulence, haemorrhoids, skin diseases and weak eye sight.^[6]

There is a rising market for the citron in the United States for the use of its soluble fiber found in its thick albedo.^[7]

Religious

The citron is also used by Jews (the word for it in Hebrew is *etrog*) for a religious ritual during the Feast of Tabernacles; therefore is considered as a Jewish symbol, and is found on various Hebrew antiques and archeological findings.^[8] Citrons used for ritual purposes cannot be grown by grafting branches.

Description and variation



<ul style="list-style-type: none"> • Diamante citron • Greek citron • Balady citron • Florentine citron
<i>Non-acidic varieties:</i>
<ul style="list-style-type: none"> • Moroccan citron • Corsican citron
<i>Pulpless varieties:</i>
<ul style="list-style-type: none"> • Buddha's hand • Yemenite citron
Related Articles:
Citrus • Succade • Etrog • Hybrid • Grafting • Chimera • Sukkoth • Four Species
This box: <ul style="list-style-type: none"> • view • talk • edit ^[9]

Fruit

The citron fruit is usually ovate or oblong, narrowing towards the stylar end. However, the citron's fruit shape is highly variable, due to the large quantity of albedo, which forms independently according to the fruits' position on the tree, twig orientation, and many other factors. The rind is leathery, furrowed, and adherent. The inner portion is thick, white and fleshy; the outer is uniformly thin and very fragrant. The pulp is usually acidic, but also can be sweet, and even pulpless varieties are found.

Most citron varieties contain a large number of monoembryonic seeds. They are white, with dark innercoats and red-purplish chalazal spots for the acidic varieties, and colorless for the sweet ones. Some citron varieties are also distinct, having persistent styles, that do not fall off after fecundation. Those are usually promoted for *etrog* use.



The Fingered Citron

Some citrons have medium-sized oil bubbles at the outer surface, medially distant to each other. Some varieties are ribbed and faintly warted on the outer surface. There is also a fingered citron variety called Buddha's hand.

The color varies from green, when unripe, to a yellow-orange when overripe. The citron does not fall off the tree and can reach 8–10 pounds (4–5 kg) if not picked before fully mature.^[10] However, they should be picked before the winter, as the branches might bend or break to the ground, and may cause numerous fungal diseases for the tree.

Plant

Citrus medica is a slow-growing shrub or small tree that reaches a height of about 8 to 15 ft (2 to 5 m). It has irregular straggling branches and stiff twigs and long spines at the leaf axils. The evergreen leaves are green and lemon-scented with slightly serrate edges, ovate-lanceolate or ovate elliptic 2.5 to 7.0 inches long. Petioles are usually wingless or with minor wings. The flowers are generally unisexual providing self-pollination, but some male individuals could be found due to pistil abortion. The clustered flowers of the acidic varieties are purplish tinted from

outside, but the sweet ones are white-yellowish.

The acidic varieties include the Florentine and Diamante citron from Italy, the Greek citron and the Balady citron from Israel. The sweet varieties include the Corsican and Moroccan citrons. Between the pulpless are also some fingered varieties and the Yemenite citron.

The citron tree is very vigorous with almost no dormancy, blooming several times a year, and is therefore fragile and extremely sensitive to frost.^[11]

Origin and distribution

Despite the variation among the cultivars, authorities agree the citron is an old and original species. There is molecular evidence that all other cultivated citrus species arose by hybridization among four ancestral types, which are the citron, pomelo, mandarin and papeda.

The citron is believed to be the purest of them all, since it is usually fertilized by self-pollination, and is therefore generally considered to be a male parent of any citrus hybrid rather than a female one.^[12]

Today, authorities agree that all citrus species are native to Southeast Asia where they are found wild and in an uncultivated form. The story of how they spread to the Mediterranean has been reported by Francesco Calabrese,^[13] Henri Chapot,^[14] Samuel Tolkowsky,^[15] Elizabetta Nicolisi,^[16] and others.^[17]

The citron could also be native to India where it borders on Burma, in valleys at the foot of the Himalayas, and in the Indian Western Ghats.^{[18][19]} It is thought that by the time of Theophrastus, the citron was mostly cultivated in the Persian Gulf on its way to the Mediterranean basin, where it was cultivated during the later centuries in different areas as described by Erich Isaac.^[20] Many mention the role of Alexander the Great and his armies as they attacked Persia and what is today Pakistan, as being responsible for the spread of the citron westward, reaching the European countries such as Macedonia and Italy.^[21]

The citron is mentioned in the Torah as being required for ritual use during the Feast of Tabernacles (Lev. 23:40^[22]). According to this tradition, the Jews brought it back to Israel from their exile in Egypt, where the Egyptologist and archaeologist Victor Loret claimed to have identified it depicted on the walls of the botanical garden at the Karnak Temple, which dates back to the time of Thutmose III, approximately 3,000 years ago.^[23]

Antiquity

The citron has been cultivated since ancient times, predating the cultivation of other citrus species.^[24]

Theophrastus

The following is from the writings of Theophrastus^[25]

*In the east and south there are special plants... i.e. in Media and Persia there are many types of fruit, between them there is a fruit called Median or Persian Apple. The tree has a leaf similar to and almost identical with that of the andrachn (Arbutus andrachne L.), but has thorns like those of the apios (the wild pear, *Pyrus amygdaliformis* Vill.) or the firethorn, Cotoneaster pyracantha Spach., except that they are white, smooth, sharp and strong.*

The fruit is not eaten, but is very fragrant, as is also the leaf of the tree; and the fruit is put among clothes, it keeps them from being moth-eaten. It is also useful when one has drunk deadly poison, for when it is administered in wine; it upsets the stomach and brings up the poison. It is also useful to improve the breath, for if one boils the inner part of the fruit in a dish or squeezes it into the mouth in some other medium, it makes the breath more pleasant.

The seed is removed from the fruit and sown in the spring in carefully tilled beds, and it is watered every fourth or fifth day. As soon the plant is strong it is transplanted, also in the spring, to a soft, well watered site, where the soil is not very fine, for it prefers such places.

And it bears its fruit at all seasons, for when some have gathered, the flower of the others is on the tree and is ripening others. Of the flowers have said^[26] those that have a sort of distaff [meaning the pistil] projecting from the middle are fertile, while those that do not have this are sterile. It is also sown, like date palms, in pots punctured with holes.

This tree, as has been remarked, grows in Media and Persia.

Pliny the Elder

About 400 years later it was also described by Pliny the Elder, who called it *nata Assyria malus*. The following is from his book Natural History.

“There is another tree also with the same name of “citrus,” and bears a fruit that is held by some persons in particular dislike for its smell and remarkable bitterness; while, on the other hand, there are some who esteem it very highly. This tree is used as an ornament to houses; it requires, however, no further description.^[27]”

“The citron tree, called the Assyrian, and by some the Median apple, is an antidote against poisons. The leaf is similar to that of the arbutus, except that it has small prickles running across it. As to the fruit, it is never eaten, but it is remarkable for its extremely powerful smell, which is the case, also, with the leaves; indeed, the odour is so strong, that it will penetrate clothes, when they are once impregnated with it, and hence it is very useful in repelling the attacks of noxious insects. The tree bears fruit at all seasons of the year; while some is falling off, other fruit is ripening, and other, again, just bursting into birth. Various nations have attempted to naturalize this tree among them, for the sake of its medical properties, by planting it in pots of clay, with holes drilled in them, for the purpose of introducing the air to the roots; and I would here remark, once for all, that it is as well to remember that the best plan is to pack all slips of trees that have to be carried to any distance, as close together as they can possibly be placed.”

It has been found, however, that this tree will grow nowhere except in Media or Persia. It is this fruit, the pips of which, as we have already mentioned, the Parthian grandees employ in seasoning their ragouts, as being peculiarly conducive to the sweetening of the breath. We find no other tree very highly commended that is produced in Media.^[28]

“Citrons, either the pulp of them or the pips, are taken in wine as an antidote to poisons. A decoction of citrons, or the juice extracted from them, is used as a gargle to impart sweetness to the breath. The pips of this fruit are recommended for pregnant women to chew when affected with qualms. Citrons are good, also, for a weak stomach, but it is not easy to eat them except with vinegar.^[29]”

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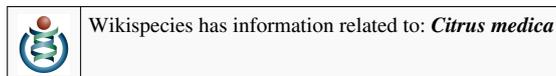
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Atrugiel - great prince of the seventh heaven.

http://www.freejazzblog.org/2009_07_01_archive.html