From Hesperides' Garden:
A Cultural History of Oranges, Lemons and Limes

(ills.) It might be strange to talk about fruits that cost 99 cents a pound in a house where almost daily objects worth millions of dollars change their owners. In contrary, you can mange, distillate, squeeze or rub the fruits – something which also separates them from any other objects Sotheby's normally deals with, apart from maybe rare wines.
The book market offers only a few Italian and German books on the cultural history of citrus fruits. Subjects like tea, coffee, chocolate, spices and tobacco gave reason for many publications but lemons, oranges or grapefruits were only discussed in connection with the architectural history of glass houses.
This is the reason why I owe special thanks to the German Orangery-society, a circle of gardeners and garden historians that supports research work on the methods of cultivation, history of use and architecture of the approximately 600 orangeries recorded in Germany. The foundation of the group only 25 years ago might be seen as a clear sign that garden historians have become more and more aware of this subject rediscovering forgotten methods, tools, buildings and constructions.

I hope that this lecture will give you an opportunity to get acquainted with an interesting – and in many ways exotic – topic. It should enable you to understand cultural connections in giving you a survey of the history of special garden products.
Before we have a closer look into recipe books, gardens and table decorations we have to talk about the origin and different kinds of citrus fruits. The home country of the citrus has not determined yet, neither did any botanist ever found a wild, natural citrus. All kinds we know today are cultivated forms. Nevertheless, one thinks that lemons and oranges came from the region of Northern India. Most of the names are giving a clue like the chinese li-meng or der Indian limu which comes out as lemon. Or nagarunga (Sanskrit), narunj (Arab), nerantzion (Byzantine Greek), naranzi, aranzi (Italian) to orange.
There are nine different kinds of citrus fruits which I want to introduce to you:

1.) **(ills.) Orange, sweet orange, coolie orange**; *Citrus sinensis* (L.) Osbeck; 400 different kinds, 30 of them are trade-oranges, like blond oranges (Sunkist e.g.), navel oranges (first described in 1646 by Giovanni Battista Ferrari), or blood-oranges. The sweet orange was wide spread in the Han-dynastie (206 b.c.-220). Imported by the Portuguese beginning of 16th century to Europe and America. John Parkinson, Paradisii in Sole, Paradisus Terrestris, 1629: „a sort lately had come from Portugal, whither it came not many years since from China. This had the rind so pleasant and free from bitterness that it may be eaten as well as the meat which is sweet, and it is the best kind to preserve whole."

Oranges make 80% of the world's citrus production. After a few nights of around 41°F the peel turns orange, Brasilian and Indian oranges keep a green peel.

2.) **(ills.) Bitter orange, Sour orange, Seville orange**; *Citrus aurantium* (L.); several sub-divisions, for instance: *Citrus bergamia* (Risso) / *Citrus aurantium* ssp. *Bergamia* (Risso&Poit.) Appeared in the 10/11th century in Southern Italy. It reached England and Germany in the middle of the 16th century becoming a 'Classical' plant of all orangeries. They are rarely found on the market because of their sour juice. Many recipes of the 17th and 18th century mention them. Today most of them are grown for producing marmalade. „Sir Francis Carew is said to have grown the first orange trees in the country on his estate at Beddington near Croyden in Surrey, some time before 1562." (Paston-Williams, 102)." And also in Germany they were not recorded before 1540.

3.) **(ills.) Lemon**; *Citrus limon* (L.) Burm. F., came to Southern Italy in the 10th century; kind "Eureka" first cultivated in Los Angeles 1858. It is the common fruit of today's kitchen. It also played a major role in the citrus garden of the 17th and 18th century.

4.) **(ills.) Lime**, sour lime, lime acide; *Citrus aurantiifolia* (Christm.) Swingle. Sweet lime; *Citrus limetta*. Kaffir- / Sabal-lime; *Citrus hystix*. Musk-lime; *Citrus madurensis*. Tropical fruit, imported to Florida and the West-Indies in the 16th century. Crossing of Lime and Kumquat by the American W.T. Swingle in 1909 gave a Limequat. Haiti or Persian limes are harvested when green, without stones, Key-Limes harvested green-yellow, relatively small, plenty stones, very juicy. Thorny lime, *Poncirus trifoliata*.

5.) **(ills.) Citron**; *Citrus medica* (L.). Varieties: Jewish '*ethrog'* friut of the 'hadar tree'; Citrus *sarcodactylus* is a Buddhist symbol. The plant and fruits are known in the antique world, called in Greek "cedrus melon" (ceder-apple), Plinius transcribed it as "citrus". It has basically no use for the kitchen, apart from candy it.

6.) **(ills.) Kumquat;** *Fortunella margarita* (Lour.) Swingle, (oval shape), *Fortunella japonica* (Thunb.) Swingle (round shape); Orangequat, Citrangequat. Kumquats are brought by the botanist Robert Fortune to England in 1846. There are also Marumi- or Round Kumquat. Most potted plants are kumquats today.

7.) **(ills.) Mandarin,** *Citrus reticulata* Blanco; Tangerines named after the Marocco city of Tangier: *Citrus reticulata* var. *deliciosa* (Tanaka) Swingle; the Clementine is called after Father Clement, discovered around 1900 in Algeria (*Citrus reticulata x Citrus aurantium)*; the Satsuma us a Japanese kind, *Citrus reticulata* var. *unshiu* Swingle [japan. *Citrus unshiu* Tanaka]; Temple- / Tangor-Mandarins *Citrus reticulata x Citrus sinensis*; Tangelos are a crossing of *Citrus reticulata x Citrus x paradisi* cultivated by Swingle in 1897. In the middle of the 19th century cultivation of Mandarins are recorded in the Mediterranean and Florida.

8.) **(ills.) Pomelo,** Shaddock; *Citrus grandis* (L.) Osbeck – also Pampelmouse. Came to Europe in 12/13th century, imported by Captain Shaddock to Barbados in the 17th century.

9.) **(ills.) Grapefruit;** *Citrus x paradisi* Macf., wrong: pomelo. A crossing between Citrus grandis x Citrus sinensis, 1750 West-Indies, Grapefruit used since 1814 (Jamaica), cultivated in Florida since the beginning of the 19th century. Tangelos are a crossing (*Citrus x paradisi x Citrus reticulata*). The medic Jacob Harich from Florida made experiments in the 1980s concerning the antitoxin/antibiotic influence of grapefruit stones, the substance is used for immune deficiency syndromes and ecological disinfection.

All citrus fruits have special characteristics in common: Apart from the hardy Poncirus they are ever-green trees or bushes which bear young or ripe fruits and blossoms at the same time. That means that one can find reddish and green oranges on the same branch which often bears pricky long thorns – specially the more natural kind of citrus. All plants have an aromatic smell of blossoms, peel and leaves in common. The plants normally do not grow below freezing point, preferably not under 40°F, and not over a maximum of 150°F in the sun. Apart from the tropic citrus they have a period of hibernating where they need lower temperatures and less water. They are not fast growing species but reach an incredible age: In Belgium some oranges of Louis XIV's Orangery are still exiting.
Many different forms of cultivated citrus fruits are known today making it very difficult to distinguish them botanically. Striped, scarred, and deformed citrus fruits which very common in the 17th and 18th century – called "Bizarrities". Some of them looked very peculiar, nevertheless, all of them were just varieties of the same kind of fruits. **(ills.)**

Chinese and later on Japanese were the first who paid attention to oranges. They preferred Sweet oranges and Mandarins. There are poems like the elegies of Ch'u'-tz'u' which mentions orange-trees (Chü-sung) 300 years b.c. Six hundred years later Chi Han described in his book "Nan-fang ts'ao-mu chuang" cultivation and use of oranges. He mentioned the importance of the citrus, pointing out special ministers who watch the harvesting or gifts to the emperor. The first book entirely dedicated to citrus fruits was written by Han Yen-Chi, called "Chü lu", in 1178. It takes no wonder that the Chinese painted citrus fruits on paper rolls or carved them in Jade. **(ills.)** A special fingered form was called the "Hand of Buddha" but predominately references of citrus fruits are found in poems.
Parallel to the Chinese the antique world of the west came in contact with citrus fruits but not sweet oranges, probably only citrons. They were coming from the area of India via Persia and Media offering a thick and aromatic peel with little flesh and sour juice. They were quite rare which made them in the eyes of the people a special fruit.
The Jews called them – according to Leviticus 23:40 – the "fruit of the goodly tree." They imported them probably during the second Temple period, presumably because they got in contact with the citrus through

trading with Persia. The citron became widespread because of its use on the Pilgrim festival of Tabernacles called Sukkot (cf. Suk 4:9, Tosef. Ibid. 3:16) where they are one of the prepared goods you have to carry. Traditionally, extremist religious Jews prefer the "etrogim" kind of citron from Corfu. **(ills.)**
It was possibly Alexander the Great or tradesmen who brought the citrus to the Grecian world. The Persian words "leimun" e "narangi" and the similarities to the Italian limone and arancia still show the close relation between the Persian world and the Mediterranean.
For the Greeks the new fruits surely had been something special as the mythology tells us: It was Hercules who raped the "Golden Apples" of the Hesperides. Many authors, like Hesiodod, Virgilius or Ovid wrote about the three Daughters of the Night who watched over the Garden of deities where the golden apples grow. They were originally a wedding gift from Gea to Hera and Zeus. The feast was celebrated in the paradise-like Garden which had an eternal spring and was always in bloom. Hercules who overpowered the dragon in front of the garden got the fruits and brought them to King Euristeus of Tirinto who gave them to Athena, leaving Hercules free. Furious about the loss of the fruits the three Hesperides turned into trees and the Dragon into the star constellation of the serpent. – Hendrik Goltzius made a copper print of the Hercules Farnese, now Naples National Archeological Museum, from front and backside, in his hands he holds three oranges symbolizing the three Hesperides.
Even if there were different variations of the story Hercules is always seen as the transmitter of the citrus fruits to the West. **(ills.)**

The Romans cultivated citron or lemon trees and bushes as they were depicted in frescoes of Herculaneum and Pompei, for example in the "Casa del frutteto". **(ills.)** The Roman cooking writer Aspicius mentioned them around the turn of the millenium, flanked by Dioscurides and Theophrast, a doctor who reports about their use for perfume and incense. They were extremely costly and never became cultivated in a grander scale. The reason for it might have been climatic difficulties in cultivating such delicate plants. Therefor it is no coincidence that the regions which first had a noteworthy citrus culture were situated in the mild Southern parts of Italy and Spain where winter-temperatures seldom reached freezing point.
A political stabilization of this area around the turn of the first millenium gave rise to one of the first flourishing post-Roman cultures in Europe. Due to the Arabian influence on this part of Europe their knowledge of agriculture (preparing of soil, pruning, watering, terracing) made lemons and citrus became common fruits in Sicily and Andalusia in the 11th century. An artistic reflection of this early culture is found in the mosaics of the Norman Palace of Palermo, the "Sala di Ruggero", made by Byzantine and Arabic masters, probably under William I (1120-66). **(ills.)**
It will take a few more centuries before the first citrus fruits will reach the Northern hemisphere of Europe. However, because of their ability for long

storing citrus fruits where shipped from this areas. The first fruits reached the inclement countries at the end of the Middle ages. In 1289, for instance, „15 lemons, 7 oranges and 230 pomegranates were bought from a Spanish ship at Portsmouth for Edward I's Queen Eleanor of Castille, homesick for the fruits of her native Spain" (Paston-Williams, 35). At the same time the first mentions of citrus fruits turn up in French sources. It is not known what they were used for in England but – following Italian manuscripts like the "Liber de coquina", one of the first real cooking-books written at the Court of the Anjou Kings in Naples in the 14th century, or the medical treatise called "Liber de Regimine sanitatis", written around 1340 in the same area, - they were used in the kitchen and for medical treatment.

Slowly, around 1400, not only fruits but also plants found their way to the Northern parts of the Italian Peninsula, to Rome, Florence and the Lakes. Unlike South Italy the major requirement was to protect the plants in the winter. There were two possibilities: Potted plants were brought into light and cool chambers, others which stood in the ground were surrounded by a wooden construction, recalling an ephemeral shed. **(ills.)**

The popularity of citrus gave reason for the first major books on citrus culture. Giovanni Pontano wrote "De hortis Hesperidum sive de Cultu Citri" in 1513, and Agostino Gallo published "Le Vinti giornate di Agricoltura" in 1569. It takes no wonder that the 16th century was the first period where citrus products were regularly manufactured and exported, primarily from Lake Garda or Liguria to other parts of Europe: Fruit, dried or candied peel, citrus oil, or orange-water laid the base for an industry which flourished in the 19th century. It was possibly also the same region which delivered the first plants to Germany in the middle of the 16th century. Simultaneously, potted plants came to England possibly via France which got acquainted with it in consequence of its Italian campaign in 1510.

In England, and especially in the more inclement parts of the continent the problem of hibernation became very serious. How to do it efficiently was the question of that time. The first potted trees must have been sheltered or stowed away in cellars and cold rooms. Others who were planted in plain ground were mantled by wood, framed glass or even transparent cloth. One of these constructions you can find in the residence garden of Stuttgart at the beginning of the 17th century: The orange-grove, which you can figure out on a copper print by Matthäus Merian grows naturally in the soil of the garden. When they were sheltered in winter little charcoal-fires where burnt among them. This method was still used in the Belvedere in Vienna around 1700, and even today the Italians kept this habit. **(ills.)**

Nevertheless these sheds were not very appropriate: often the rooms were too dark and, as climatologists have recently found out, the 17th century winters became increasingly severe. That might have been the reason why North of the Alps citrus-lovers turned to built real edifices for their trees where they found a home between October and April or May.

An early Orange house is found in Blieskastel (near Saarbrücken) and Chatillon, 50 miles south of Paris, which was built into a slope in the first

half of the 17th century. **(ills.)** Both are facing south to catch as much light as possible in the winter. Chatillon was repeated in a more refined way in Versailles where Jules Hardouin Mansart built a detached orangery for Louis XIV in 1684. Ramps surrounded a parterre which was protected from cold winds from three sides, giving a microclimate appropriate to the warm-loving plants. More than 1000 trees are recorded in Versailles at the end of the 17th century, curated by the skillful kitchen gardener Jean de la Quitinie. **(ills.)** He experiences were amalgamated in a fundamental book on fruit-, kitchen- and orange-gardens in 1690: Instruction pour les jardins fruitiers et potagers, avec un traité des orangers. He mentions major preconditions for growing, trimming, and storing citrus plants. They demand an airy space, which should be neither too humid, nor too dry. A temperature which could be regulated either through ventilation or heating; an optimum of light in the dark winter days but also protection from burning rays in spring. To catch as much light as possible the so called "gooseneck", a concave shape of the roof, was introduced. **(ills.)** In other books around 1700 you find prints illustrating installations of plants and pots concerning to their need of light and high. **(ills.)**

Yet, the most complicate task was probably the way of heating a huge room without wasting too much wood, a resource which was short in 18th century Middle-Europe. Basically, there were two different systems of heating: one was the domestic version by a regular stove, the other by channel. **(ills.)** The latter one was far more complicate, consisting of a floor heating, whose fire source was located in a special corridor behind the orangery. Depending on the system it took two days to heat the room and another two days to cool it down again. It is clear that the gardeners had to look ahead the weather, sometimes staying awake all night to keep the fire burning, and in case of a warming up they were responsible to cool down the room by opening the window in order not to stimulate the plants to grow while hibernated.

It takes no wonder that the gardeners who looked after the orangery were specialists in their own way. The plants they had to look at where the most precious ones in the garden: Next to citrus trees many other plants where stowed in an orangery. The orange house in around 1700 consisted of three dozens of different plants which all came from the subtropical areas like laurel, oleander, myrtle, pomegranate, olives, cypress, cactus, phoenix-palms and so on. **(ills.)** Exceptions are pineapples which reached Europe during the second half of the 17th century. They are tropical plants which needed two years of heating and procuring to produce ripe fruits. They products were seen as the maximum of garden art. **(ills.)**

The Mediterranean plants were exposed in the summer in special areas of the garden, often called the orangery-parterre, or just orangery. A copper print by Fülck from the 1720s and the reconstruction of a parterre in Hanover Herrenhausen of 1937 shows that the pots highlighted the flat ornaments of the parterre, formed with colored gravel and tiny little boxwood hedges. **(ills.)** Other pots stood in the "plats bandes" – a regular flower boarder pointed with sculptures, vases and pots. **(ills.)** The citrus fruits were predominately ornamental, and garden lovers who held a

special reputation liked to collect many different varieties. Baron Münchhausen, for instance, kept more than 200 different kinds of citrus fruits in his garden in Schwöbber – an attraction which made even Peter the Great to visit the North German site. **(ills.)**
It takes no wonder that garden patrons spent quite some money in buying appropriate pots for the plants. La Quitinye recommends a total high of pots and trees of about eight or nine feeds preparing a grove to promenade under. **(ills.)** The usual kind of pot is a wooden box or barrel. Sometimes cast iron or lead was used, as the example of Schloss Charlottenburg shows. Some owners spend money in ordering pots of Delft ware, a very costly way. **(ills.)** Another very expensive fashion is recorded at the Court of Augustus the Strong in Dresden, who speaks about his common madness for porcelain and orange trees. He re-uses huge fish tubs of Chinese porcelain to plant orange trees in it. Therefor some holes had to be drilled in the vessels, if not to drown the citrus trees. They were placed on piedestals in the Zwinger spreading an exotic air representing the wealth and power of the owner.
Representation was certainly the reason to build several orangeries not as a simple place for hibernation. They became integrated in the architectural system of a princely and noble residence. I want to introduce you some examples:
Weikersheim, 1710-12, Großsedlitz (1720-21)
Pleasure House: Kassel (1701-1707), Nordkirchen (1715)
(ill./ill.)
Several Nobles copied this fashion erecting smaller edifices, often combined with a more practical or economical use, like the one in Ivenack **(ill./ill.)**. Such Orangeries are also constructed in the United States. The first ones were built by prosperous landowners in Maryland and Virginia. In the 1780's the orangery of Wye House, Talbot County, Maryland was built, followed by the one in Mount Vernon, which was destroyed in 1835, and rebuilt in 1952. (See: The Orangery in England and America, Antiques Magazine 1996, **ills.**). The east annex of Thomas Jefferson's House in Monticello with its three bay windows also suggest a green house, giving a transition between the house and the garden. **(ills.)** This kind of orangery is reflected in the architecture of Dumbarton Oaks green house which was built in the 1930s. The neo-Georgian architecture covers a modern glass roof bringing in enough light to make the plants grow. **(ills.)**
The center for orangeries is certainly Northern Europe, which means Scandinavia, Russia and Germany. The numerous little middle European states in the 18th century prepared a platform for the competition of courtly and political representation. Who has the most orange trees and who owns the biggest orange house, were questions discussed in diplomatic papers. It takes no wonder that countries like England never reached such peak. **(ills.)** Baroque orangeries like the one at the Royal Gardens of Kensington are mere exceptions and the smaller ones often mentioned in books – like Blickling Hall - were built at the end of the 18th century or even later.

We have to be aware that courtly representation also was underlined by a common understanding of special symbols. The family of Medici first adopted the symbol of the lemon as a stemma. The name of *Lemon medica* was interpreted in its medical but also dynastic meaning. The Portrait of a Medici Princess who became a Princess Palatinate of Bavaria by marriage shows a lemon tree branch. **(ills.)**
The German Princely house of Nassau who inherited the little country Orange in Southern France in the fifteenth century used a similar symbol. Probably the name of the fruit "orange" was overtaken from the country's name, an area in which oranges were maybe cultivated first in France. Therefor the family changed their name into Orange-Nassau, overtaking the bitter orange as their symbol. This was important, especially when the family became one of the wealthiest in Europe reaching the position of the monarch-like Stadhouder of the Low Countries. Consequently, you can find bitter oranges on political still lives like the one by Jan de Heem from Het Loo Palace, bearing an inscription: Vivat Orange. **(ills.)** A iron orange tree on the market place of Oranienbaum in Germany symbolizes the marriage of Henriette Catharina of Orange with the Prince of Anhalt-Dessau in 1659. Anthonis Van Dyck painted Prince William I of Orange next to an orange tree; and Electoral Princess Sophia of Hanover, dedicated Queen of England, did not get tired to expressed her relation to the house of Orange in being portrait with orange branches or trees. This relation, actually, was the reason why the house of Hanover accessed the throne of England. **(ills.)**
A third dynastic meaning of citrus fruits is found in the common allegory of Hercules which was widely used to decorate tapestries, silver, paintings and – of course the garden. It takes no wonder that in the first decade of the 18th century the Princely family of Hesse built a huge monument crowned by the Hercules Farnese on top of a water cascade, followed by one of the biggest orangeries in Europe, and finally the successful election as King of Sweden in 1710. **(ills.)**
Orange trees became nearly an equivalent for festivity and exuberance: The opera house in Stuttgart was temporarily decorated with orange trees, also an altar in a Hanover church. Next to this, orange trees were a fixed decoration for "Schaugerichte" (representational dishes?) and banquets. An early description is given of Guglielmo Gonzaga's wedding banquet (1538-1587) in 1581: "Salads were prepared of all kinds of animals, but especially of pomegranates, citrons, bitter oranges, lemons and similar peels and pulp. There was a castle of beets whose walls were artistically fixed with lemons and fish bones." „Allerlay Thiere waren von allerley Salaten bereitet aufgetragen, sonderlich aber von Granaten, Cedern, Pomerantzen, Cirronen und dergleichen Schelffen und Marck. Es war alldar zu sehen ein Castell von Ruben, dessen Mauren von Limonen mit Fischgräten zusammen gekünstelt." (n. Morel, 111) A fresco in one of the major rooms in Ludwigsburg Palace near Stuttgart suggest that more than one hundred years later citrus still played an important role on the table or the buffet. **(ills.)**

But were they just decoration? How could you eat the bitter fruits? Though, let's have a closer look to the use of citrus fruits in the kitchen and on the table: **(ills.)**

All parts of citrus fruits can be used in the kitchen or for medical purposes: peel, leaves, flowers, flesh and juice. Even stones were used in former times. The wood of lemons gave light wood for intarsia, sometimes even whole furniture where made out of it.

The first recipes of using lemon in the kitchen go back to the middle ages... The introduction of the bitter orange brought a greater variety, immediately mirrored in culinary publications at the end of the 16th century, for instance, in books like "The Good Houswives Handmaid for Cookerie in her Kitchin" of 1597. In his book on preparing "banquetting stuffe" called "Delightes for Ladies" (1605) Sir Hugh gives several descriptions of the use of lemons and oranges.

Printed explanations of festive meals give an inside that citrus fruits become more and more popular on the table, whereas lemons were always cheaper than oranges. The first course of the Wedding banquet for William V of Bavaria with Renata of Lorrain in 1568 contained – amongst others - 45 pheasants coming with lemon and orange slices. For the wedding of Duke Albrecht of Bavaria with Mechthild von Leuchtenberg in Munich in 1612 the tradesman Martin Scheicher bought 30 citrons, 300 lemons and bitter oranges at Lake Garda in Northern Italy. For a visit of empress-widow Eleonore in Munich in the midst of the 30th-year-war in 1642 they prepared more than 260 Pounds of Ox- and Vealmeat with only 12 lemons and 12 bitter oranges. In the year 1637 the Munich-court needed "600 piece sweet oranges from Genova, preserved and cooked in sugar, ... determined for the Ducal table." ("600 Stück süße Genueser Pomeranzen, die eingemacht und in Zucker abgesotten, zu den dörttlen vonnöthen sind, die allein auf die churfürstliche Tafel Tafel kommen".) About the reign of Max Emanuel who spend some time at the French Court at the beginning of the 18th century it was said that more bitter oranges than apples were used. For a wedding of the later Joseph II with Josepha Maria of Bavaria in 1765 there were 4743 lemons (à 6 Kreutzer) and 693 oranges (à 10 Kreutzer) next to more than 10000 pound of meat and 30000 eggs. (Anständige Lust, 161)

During the 18th century citrus fruits became cheaper but, nevertheless, until the 19th century bourgeois people only enjoyed the fruits for special holidays.

Most of the citrus were not table fruit, they are much to bitter to be eaten alone. Mostly they were used as complements for the meals, as side dishes, garnishing for a roast or refining the ragout or tureens. Some still-lives show that lemons and bitter oranges were sliced for decoration or eaten with the meat, or the juice was squeezed over it. The obligatory slice of lemon coming with a Vienna-Schnitzel or a fish today is a reminiscent of this habit. The use is the reason why lemons and sometimes bitter oranges became a part of the table decoration in the 17th century: Painted tureens or covers where ornamented with lemons reflecting an important supplement of the meal. **(ills.)**

To consume single citrus fruits they have to be sweetened which was a problem in times where sugar was only imported from the Canaries, from the West-Indies or Indonesia. Nevertheless they were caramelized and candied in sugar-syrup which made them more storable. Others were cooked to jellies or marmalades. The bitter orange marmalade, an essential of every 18th century English breakfast owes its existence to the patisserie kitchen of the 17th century. There were also cakes, puddings and, of course, sorbets or ice creams. The table decoration of the dessert table often presents citrus fruits, formed in silver and porcelain, or epergnes to keep sugared lemons or oranges. **(ills.)**
One can imagine that orange juice also had a different taste like today: „Although fresh Orange juice had been available since the beginning of the 17th century, Pepys first encountered it at the house of his cousin in 1669: ‚here, which I never did before, I drank a glass, of a pint, I believe, at one draught, of the juice of oranges, of whose peel they make comfits; and here they drink as wine, with sugar, and it is a very fine drink; but, it being new, I was doubtful whether it might do not hurt me.' Thirty years later Margaret Bankes of Kingston Lacy, payd 7s. 6d. for quarts of lime juice' in 1697" (Paston-Williams, 153) which came added with sugar from the West-Indies or Italy, often falsified with juice of unripe grapes. They were used to sour the meal or prepare lemonades. „In the 18th century Lime juice... was used to make the lime punch that accompanied the turtle soup." (Paston-Williams, 214)
Orange juice as we know it today came on the marked in the 1880s, probably in connection with the Californian gold rush. Canned juice was used to protect miners from scurvy. The possibilities of transportation and pasteurization made orange juice more common in the beginning of the 20th century.
A very popular drink of the 18th century North Germany and Denmark was a Punch called "Bishop". It was made of red vine and the peel of unripe green oranges, the other one was named "Cardinal", made of white wine and ripe oranges. Both beverages needed lots of sugar and sometimes stronger alcoholic ingredients. Also the modern Christmas-Punch belongs to the family of these drinks, originally made with bitter – and more – aromatic oranges. The orange-punches were very fashionable in the 18th century and gave reason to invent new forms of punch bowls. Some of them were decorated with citrus fruits or even formed in the shape of a mitra, symbolizing the hats of bishops and cardinals. **(Ills.)**

Closely related to the kitchen was the apothecary, often delivering spices or producing some goods for the kitchen. The best example is dried or distilled peels and blossoms. There was aromatic water and Aqua vitae – liquor. The first one – like rose-water – was important to make perfume. The alcohol was important for digestion, headache, hysteria, stomach problems and so on. Relics of this medicine you find in the French liquors "Grand Manier" or Cointreau or the Caribbean Curacao. (Ills.)
More important than this, of course, was the way to concentrate the precious oils of the blossoms to "Oleum Naphae" or Neroli-Oil, named

after the duchess of Neroli, who should have used this oil in the middle of the 17th century.

We have discussed the meaning of citrons and oranges as dynastic symbols but here we have touched another level of understanding: On one side citrus fruits can seen as a symbol of health and good smell expelling all diseases, on the other hand we also have to recall their natural characteristics: They bloom and bear fruits in once, they are always green and have thorns. This was the reason why the Italians of the 15th century brought them in connection with the Virgin Mary. **(Ills.)** Because of blooming and bearing fruit at the same moment citrus became a symbol of chastity. The thorns reminded of Mary's Passion under the Cross, and the odor was maybe a sign of the angelical company. Several painters of the Italian renaissance present the Madonna with citrus fruits like in pictures of Andrea Mantagena, Giovanni Busi called Cariani (Venice 1485-1547/48) or Dominico Ghirlandaio. Jan van Eyck refers to it in his Ghent Altar piece with an orange tree in the back side. The Flemish tradesman of that time dealing with the Mediterranean knew about the Italian meaning.
During the 15th century oranges were bought as a treat by solicitous husbands and friends for pregnant wives. In South Germany the lemon were used as a symbol for the life-cycle (marriage, death...). **(Ills.)** A final refinement is mirrored in the 17th century Dutch and Flemish still lives. Some painters have seen a close relation of citrus fruits and craack porcelain. **(ills.)** Willem Kalf like to paint them lying in their little own world of porcelain bowls dividing them from other more local items like native tapestries, glasses or garden fruits. If it was due to its exoticness or the knowledge of its origin, this does not matter. Kalf liked to the entire "career" of one fruit: leaves, blossoms, full fruits and peeled ones. **(ills.)** Looking to Jan van Huysum who combined spring flowers, a bird's nest with eggs and the blossoms of a citrus tree in one picture it is clear that this marks the beginning of life, whereas the peeled citrus marks the end. But it is not just the end: in this last moment it is a refinement of the food paralleled to a possible ennobling of the human character at the end of life. This makes citrus fruits similar to grapes that culminate into wine. Kalf, therefor, paints a peeled citrus in a glass of wine, another fruit which has to be destroyed to be enjoyed. Others, like Peter Gijsels or Martin Nellius combine them with oysters and lobsters – also two items which are estimated only when cooked and cracked to reach to delicious meat. **(ills.)**
Let's leave the 17th and 18th century. When I used the word orangery I focused on the French and German word. The English language prefers different names like glass house, conservatory, green house, cold house, tepidarium and so on. All this expressions indicate a general change in the culture of citrus fruits. Since 1815, the time after the Napoleonic Wars, a new political language created its own symbols. Orangeries were not symbols of economical power any more and rather seen as an anachronistic and conservative attitude, like in Potsdam where Frederick

William IV of Prussia and his architect Hesse erected a huge Orangerie. **(ills.)** Furthermore, fashion certainly have changed from the formal and tamed art of gardening to more natural and landscaped forms. There were no alleys or parterres to put citrus trees any more. **(ills.)** Rarely Oranges were put in the lawn to decorate the space around the Country house.
A major reason for the decline was certainly the importation of several exciting new plants from the colonies to Europe and America in the first decades of the 19th century. Camelias, azaleas, bromelias, ferns and orchids were more estimated than the old-fashioned Mediterranean plants, replacing the classical stock progressively. This was supported by new methods of transportation: steam boats and trains delivered plants quickly from all regions of the world, and citrus fruits from Florida or the Mediterranean over-floating Northern markets with inexpensive fruits. The invention of glass houses which were brought to a mastership by the gardener Joseph Paxton in building the winter garden of the World Exhibition in 1851 marked a new, and cheaper way of construction of winter houses. **(ills.)** The extraction of coal, the invention of gas-light and steam heating brought new impulses for a broader range of people to install little greenhouses on their grounds. Winter-Gardens and glass-appendices found the way into the contemporary architecture as photos of smaller North German country houses show around 1865. **(ills.)**
The only distinction between all the green-house owners was made by the character of a plant collection or the size of a glass house. One has to be clear that around 1850 a new culture of gardening under glass has totally replaced the baroque one. Oranges and lemons were seen more or less as common fruits keeping its uniqueness only in melancholic places like Johann Strauss' "Lemon Waltz" or Mussorski's Opera "Love for Three Oranges". Remarkably enough, the meaning of the flowers still remained important: Looking at popular books about the "language of flowers" health, chastity and exoticness were still represented by citrus flowers. **(ills.)** In contrary to the United States where citrus fruits became common around 1900, in Europe they were wider spread only after the Second World War due to successful cultivation in Spain, Marocco and Palestine. Interesting enough, the cultivation there started in bringing American citrus Specialist from the estate of the Rothschild in 1913.

This background makes it clear that the construction of orangeries is an out-dated task for today's architecture. Cold houses for Cactuses or Camelias are still built for Botanical Gardens or private owners but orange houses are rather out of date. Nevertheless, the increasing interest in the history of citrus fruits has brought back the idea again: One example is found in the garden of the residence Ansbach. **(ills.)** The old Orangerie was transferred into a multifunctional hall and restaurant years ago, leaving no room for any stock of plants in the winter time. After the gardeners decided to re-install orange trees in the baroque parterre a few years ago, a modern glass house was built on the former ground of the kitchen garden, inspired by modern pavilion architecture, and the traditional glass house, equipped with the modern heating techniques.

Another Orangery was built by the German architect Christoph Sattler for a private owner near Paris, reflecting the terraced model of the far more grander orangery in Versailles, surrounded by a garden design closely formed after Schinkel's little palace of Charlottenhof. **(ills.)** For Sattler, who is used to build airports, museums or city-quarters like the Potsdamer Platz in Berlin, the architecture was a challenge to follow the needs of the plants and the wish of the owner to use it in the summer for festivities. The result which will be finished this year is a modernized version of a baroque orangery – probably the first one of the new millenium.

Hercules has brought the citrus fruits to the antique world, - with my lecture I have not brought them to the States, for sure, but I hope I could carry along some valuable information about the 99-cent-fruits. If you will look to objects of art in the next days you will find them appearing very often, and maybe as often as our daily orange juice.

(ills.)