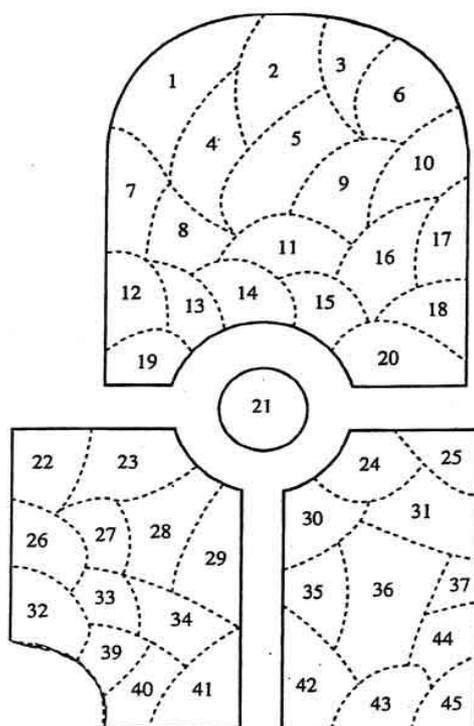


From The herb garden of the Worshipful Company of Barbers of London, 1998.



This plan of the garden should be read with the paper below, delivered by Arthur Hollman to the Company in December 2009

The Plan of the Herb Garden with the numbers of the plots

Below is the text of a talk by Arthur Hollman to the Company.

GARDENS IN THE CITY OF LONDON - PRIVATE

In the 13th and 14th centuries the City had important royal, religious and lay residences and most of them had gardens, some of them quite large such as that of the Bishop of Ely with a perimeter of over 600 yards. These medieval gardens had fruit trees, vines, and herbs for the kitchen or for strewing on the floor. Vegetables were less important because this was an age of meat eating but lettuce, spinach, cucumber and cabbage were used for flavouring and sauces. Some gardens also had bee hives, because sugar was a rare commodity. Leisure use was important too and there were fine lawns with flowers such as violets, roses and lilies.

But by the early 1600's the City's population had rapidly increased to 200,000, and the demand for housing led to a considerable loss of gardens, with private ones now being chiefly on what were then the suburbs, such as those of John Parkinson in Long Acre and John Gerard in Holborn. John Stowe wrote in 1598 that some streets such as Aldgate and Cheapside were now "fully replenished with buildings". The gardens surviving in the centre belonged to a few important people and to the City Livery Companies.

LIVERY COMPANY GARDENS

In the year 1500 there were 26 halls of Livery Companies and by 1600 there were 46 halls of which 24 had gardens. The Drapers had a large garden which was open to the public, and the Grocers also had a big garden, whilst that of the Parish Clerks in

Bishopsgate was of modest size being 72 by 21 feet. The livery gardens were valued for recreation, as well as for growing fruit, herbs and flowers, and several had bowling alleys. In 1605 the Gardeners' Company was founded. Today ten companies still have gardens in the City, and although of necessity a few are small, it is good to find that the tradition of Livery Company gardens lives on. The companies are the Barbers, Drapers, Girdlers, Goldsmiths, Grocers, Merchant Taylors, Plaisterers, Salters, Stationers, and Tallow Chandlers.

THE PHYSIC GARDEN AT BARBER-SURGEONS' HALL

The Barbers' Company which was founded 1308 had a hall near the current site in 1445. So it is possible that we had a garden as early as that time. In 1540 the company amalgamated with the Surgeons' Guild to form the Barber-Surgeons' Company, hence the name of the Hall today, but in 1745 the surgeons left and we are now again the Worshipful Company of Barbers of London. There are few references to the garden in our Annals but we do know that in October 1555 the Clerk was given an allowance for trimming, sweeping and weeding the garden. John Gerard was a surgeon who became our Master in 1607. He wrote a famous and influential Herbal in 1597 describing about 1500 plants with their medical or domestic uses. Gerard was also a renowned plantsman, and gardener. In 1630 the company bought 100 sweet briars (*Rosa rubiginosa* Eglantine rose)) to make a stout hedge and also plants of rosemary, strawberry, violets and vines. In 1666 the garden was destroyed but it prevented the Great Fire from reaching the Anatomical Theatre, though the hall itself was lost. The next hall which opened in 1675 did not have a garden. It was destroyed in a bombing raid in 1940, and our splendid new hall was opened in 1969.

The SITE of the present garden is interesting. In 122 AD the Roman Emperor Hadrian built a stone wall around London and in about 300 AD defensive bastions were added to contain ballistas which were spring guns to shoot iron bolts at an enemy. We are in bastion number 13. On the initiative of Past-Master Sir Francis Avery Jones the present garden, only our second one, was commenced in 1987. It was constructed on a derelict bomb site by Liveryman David Jones of the Open Spaces Department of the Corporation of London who supplied original Victorian tile edging to define the plots. The garden is managed jointly by the Department and by the Barbers' Company.

PLANT MEDICINES

Plants are the origin of over 30 major medicines (drugs) whose value has been proven by scientifically controlled therapeutic trials and which are used world wide to day.

How were they found?

Some of these plants were discovered entirely by folk medicine, as with the opium poppy. But in other cases the folk remedy was just the starting point for the development of a better medicine by means of scientific investigation-and this was done in two ways: numbers take one to the plant list.

(A) a new use was discovered for the plant compound (36) or,

(B) an entirely new medicine was synthesised from the plant compound (40).

However folk medicine is not the only way in which our modern medicines have been discovered from plants. Valuable discoveries have been made in academic chemistry (28), from veterinary medicine (26)by large scale screening programmes (32), and by perceptive observations of people on themselves (41)

How is the medicine actually obtained from the plant?

1. It is extracted directly from the plant (23,36)
2. The plant provides the basic material for a semi-synthetic process (22)
3. The plant itself is no longer used, but the compounds in it have provided the inspiration for the synthetic production of new medicines, either by altering the molecular structure or by copying the mode of action as with curare (plants not in the garden).

The practice of **Herbal Medicine** is different and consists of prescribing the whole plant, or part of it, and not a pure substance extracted from the plant, nor a synthetic medicine. Herbal preparations are not authenticated with therapeutic trials.

The way in which the plants were selected for the physic garden

It was desirable to present a broad view of the way in which plants had been used, from the earliest times to the present day, in relation both to the practice of medicine and surgery and to the use of plants in domestic and civic environments. And also to show the relationship of plant use to our Company, and we chose to do this by selecting plants which were especially mentioned by our former Master, the celebrated surgeon and gardener, John Gerard (1545-1607).

The plants fall into four main categories.

A. "Gerard" plants related to surgery, dentistry, wounds and burns.

Parsley . Spurge . Daisy . Lady's Mantle . Comfrey . Self Heal . Henbane .

B. Plants used traditionally for pleasant smells, for strewing on the ground, for nosegays, against insects and for dyeing.

Meadowsweet. Camomile . Marjoram . Apothecary's Rose. Lavender .

Sweet Woodruff . Cotton Lavender . Dyer's Woodruff .

C. Medicinal plants, now discarded, which were formerly in the official pharmacopoeia.

Lily of the Valley . Rhubarb . Aconite. Pulmonaria Valerian .

D. Plants which yield modern pharmaceutical medicines with confirmed efficacy.

Camellia. Sweet Clover. Meadowsweet. Meadow Saffron. Mandrake. May Apple. Foxglove. . Liquorice Yew . Madagascar periwinkle . Henbane . Feverfew . Opium poppy . Willow . Barley .

A list of the plants in the garden, with their plot numbers

1 Camellia sinensis (Theaceae), Tea, contains **theophylline** which is a good drug for an acute attack of asthma. Formerly it was used as a diuretic to treat the oedema of heart failure.

2 **Buxus sempervirens (Buxaceae), Box.** The leaves and sawdust were once used to dye the hair auburn. Gerard wrote, "foolish empericks and women leaches do minister it against the apoplexie"

3 **Convallaria majalis (Liliaceae), Lily of the Valley,** contains cardiac glycosides, like those in the foxglove. It is less potent than foxglove and is not used in Britain to treat heart disease.

4 **Sedum spectabile (Crassulaceae) Stonecrop** This species represents the several species of *Sedum* which were used in herbal medicine. The biting stonecrop,

Sedum acre, was in the famous worm expelling medicine “therine” (treacle). The white stonecrop, *Sedum album*, was used as a cooling plaster for painful haemorrhoids.

5 **Filipendula ulmaria** (Rosaceae), Meadowsweet, (formerly **Spiraea**), is the plant from which salicylic acid was first made in 1835, leading to the introduction of the very valuable drug **acetyl-salicylic acid** in 1899. It was given the name Aspirin from *a* for acetyl, *spir* from spiraea and *in* as a common drug termination. Gerard said it was the best strewing herb, "for the smell thereof makes the heart merrie".

6 **Rheum palmatum** (Polygonaceae), **Chinese or Chinghai rhubarb**, was also called Turkey rhubarb because it was imported through that country into Europe. It contains purgative compounds similar to those found in cascara and senna, and is used to treat chronic constipation. Prior to antibiotic treatment it was undoubtedly of value in treating bacillary dysentery. It was used medicinally in China in 2700 BC and was described in the herbal of Dioscorides in 100 AD.

7 **Chamaemelum nobile** (Asteraceae), **Chamomile**, was one of the aromatic strewing herbs of the Middle Ages giving out a strong fragrance when walked upon. The ancient Greeks noted that it had an apple like scent and named it *kamai* (on the ground) *melon* (an apple). Chamomile tea was a popular old fashioned remedy for "nervous affections" and chamomile lotion was applied externally for toothache and earache. Gerard declared it to be "a speciall helpe against wearisomenesse".

8 **Origanum vulgare "Aureum"** (Lamiaceae), Golden Marjoram, has a fragrant odour which persists when the herb is dry, and was valued for strewing in rooms. The great herbalist John Parkinson said in 1629 that it was widely used to make "swete bags" and "swete powders". These were prized before the introduction of foreign perfumes. Marjoram oil was put into the cavity of a carious tooth to relieve the pain and Gerard said the leaf could be chewed to relieve toothache.

9 **Aconitum napellus** (Ranunculaceae), **Aconite**, was once widely used to treat neuralgia and fever and in 1869 Dr Sidney Ringer wrote, "Perhaps no drug is more valuable than the aconite". But it is highly poisonous even if used externally, with only a minor therapeutic value and is a good example of how formerly widely respected medicines can fail when they are scientifically assessed.

10 **Narcissus pseudo-narcissus** (Liliaceae) **Daffodil** The medicine Galantamine which is used to treat mild or moderate dementia in Alzheimer's disease was obtained from Daffodil bulbs though it is now synthesised. It potentiates the action of the neurohormone acetylcholine (by inhibiting the action of acetylcholinesterase) and was first found in a snowdrop –*Galanthus*- hence the name of the medicine.

10 **Datura stramonium** (Solanaceae) **Thornapple** Contains a mixture of alkaloids such as hyoscyamine and atropine and was used with success in Parkinson's disease before modern drugs were developed. They block the cholinergic excess of this condition and their mode of action (an anti muscarinic effect) is the same as the modern anti muscarinic drugs such as orphenadrine ('Disipal') and benztropine ('Cogentin').

11 **Rosa gallica 'Officinalis'** (Rosaceae), **the Apothecary's rose**, is the Red Rose of Lancaster. Known since 1310 its fragrance even when dried and powdered gave rise to an industry in preserves, confections and pot-pourri by the apothecaries of Provins, near Paris, around 1500.

12 **Petroselinum crispum** (Apiaceae), **Parsley**, is one of our best known herbs for garnishing. Gerard wrote, "being chewed it helpeth the tooth-ache".

13 **Colchicum autumnale (Liliaceae), Meadow Saffron**, was used in the 1st century against arthritis. It contains **colchicine** which is a good treatment for acute gout. This alkaloid is used in genetic and cancer research and in the development of new strains of plants from its ability to double the number of chromosomes. It should not be called the autumn crocus, because the genus *Crocus* belongs to the Iris family, Iridaceae. But so does Saffron –*Crocus sativus*!

14 **Euphorbia polychroma (Euphorbiaceae), Spurge**, has a very irritant milky latex in its stem. Gerard said, "the juice or milke is good to stop hollow teeth". Probably the poisonous latex destroyed the nerve endings.

15 **Pulmonaria officinalis (Boraginaceae), Lungwort**, was selected as a medicinal plant by the ancient Doctrine of Signatures which decreed that the appearance of a plant would indicate its therapeutic use. The spotted leaves resemble the surface of the lung and therefore it was used for respiratory diseases such as bronchitis. From Latin *pulmo*, the lung.

16 **Artemisia abrotanum (Asteraceae), Southernwood**, which was introduced into this country from southern Europe in 1548, has a pungent aromatic scent. It was used to keep moths off clothes ("garde robe"), for nosegays to ward off infection in courtrooms, and by ladies to keep them awake in church during the sermon.

17 **Teucrium chamaedrys (Lamiaceae), Wall Germander**, was used as a herbal medicine from the 16th century for digestive complaints. But this long continued use did not reveal its toxicity until modern medical practice showed that it can cause serious liver disease.

18 **Bellis perennis (Asteraceae), Daisy**, was valued in surgical practice by Gerard who wrote, "it taketh away bruises and swellings...whereupon it was called in old time Bruisewort".

19 **Mandragora officinarum (Solanaceae), Mandrake**. An extract of the root was used at the time of Christ to lessen the pain of cautery and amputation, and to relieve the agony of crucifixion... "they filled a sponge with vinegar and put it to His mouth.." The sponge contained wine of mandrake. The active ingredient in the root is the alkaloid **hyoscine (scopolamine)** and this drug is used in its pure form (obtained now from other sources) as a pre-medication injection prior to anaesthesia and surgery. It is exciting to find a medicine whose use has been unchanged for 2000 years. Hyoscine is good too for travel sickness (Kwells).

20 **Lavandula angustifolia "Munstead Dwarf" (Lamiaceae), Lavender**, was used by the Romans as a perfume in the bath, hence the name, from "lavare"-to wash. It was popular as a strewing herb, for scenting linen and as a cosmetic scent from the earliest times. Oil of lavender was obtained by distillation and was used as an insecticide and also medicinally for rheumatism, toothache, and faintness. Gerard recommended it highly for the palsy (paralysis). "Lavender" was one of the old street cries of London.

21 **Acanthus mollis (Acanthaceae), Bear's Breech**, is grown here because it is a handsome plant, the origin of the decoration at the top of Corinthian columns. The great herbalist Dioscorides said in 100 AD that it was good for burns, but it has never been of much use in medicine. The common name is an obscure corruption of the medieval Latin *branca ursina* "claw of a bear" referring to the spiny bracts of another species, *Acanthus spinosus*.

22 **Podophyllum hexandrum (Berberidaceae), May Apple.** The related species, *P.peltatum*, was used by the Penobscot tribe in Maine in the 19th century to treat skin growths. Then doctors used it to treat the benign tumours called genital warts. But it was too toxic to use by injection until Sandoz produced the semi-synthetic derivative **etoposide**, which is a first class anti-cancer drug. This is a good example of folk medicine identifying a plant, with medical research then producing the effective modern drug. Our plant is the Himalayan species which has beautiful pink flowers and is as effective as *P.peltatum*.

23 **Digitalis purpurea, lanata & lutea (Scrophulariaceae), the Foxgloves,** contain cardiac glycosides which control and prevent abnormal heart rhythms and also strengthen the heart beat. The modern glycoside is **digoxin** which is extracted directly from the leaves of *D.lanata*, the woolly foxglove.

24 **Hypericum perforatum (Clusiaceae), St.John's Wort,** is an important Gerard plant. He wrote of it as, "a most precious remedy for deep wounds and those which are thorrow the body...for I undertake to cure any such wound as absolutely better than any man with naturall balsam".

25 **Asperula odorata (Rubiaceae), Sweet Woodruff,** was hung up and strewed in churches in the Middle Ages. When it is dried it gives off a sweet and pleasant smell, like that of new mown hay, due to the release of coumarins. Gerard said, "it doth very well attemper the air, and to be good for the heart and liver".

26 **Hyssopus officinalis (Lamiaceae) Hyssop,** has a very pleasant aromatic odour and was used as a strewing herb. Its essential oil was valued as a perfume, and used in liqueurs such as Chartreuse. Hyssop tea was a popular household remedy for stomach complaints. The hyssop of the Bible was probably marjoram.

26 **Melilotus officinalis (Fabaceae), Sweet clover,** was introduced from Europe into the prairies in the 1920's to make hay as a winter feed for cattle. When some animals in Alberta died from bleeding it was found that they had eaten mouldy hay and a perceptive veterinary surgeon realised that this hay must contain a haemorrhagic agent. This was identified as **dicoumarol** and it became the first or anticoagulant medicine for the treatment of thrombosis. The related synthetic compound, **Warfarin**, is now used in its place and it is also a good rat poison.

27 **Eryngium variifolium (Apiaceae), Sea Holly** is an old herbal remedy. The celebrated Dutch physician Herman Boerhaave in the 17th century prescribed it for kidney complaints and scurvy. John Gerard used it for bladder stones. The roots could be candied by boiling in sugar and sold as a sweetmeat. It was said to be an aphrodisiac which might explain why Falstaff called it "kissing comfits".

28 *Glycyrrhiza glabra* (Fabiaceae), Liquorice, is an old remedy for indigestion and the source of a modern drug, **carbenoxalone**, for mouth ulcers. It contains a steroid which causes salt retention, and liquorice was used by Roman soldiers to combat thirst. Liquorice water is sold in the bazaars in Egypt.

28 **Hordeum vulgare (Poaceae), Barley,** is a reminder that medicines from plants have been discovered in several different ways. Our best local anaesthetic, **lignocaine**, was developed from an investigation by an organic chemist who wished to see if genetically different plants had different compounds in them. He chose a chlorophyll deficient strain of barley and isolated a local anaesthetic called Gramine, from which chemists developed lignocaine

- 29 **Santolina chamaecyparissus (Asteraceae), Cotton Lavender**, is an aromatic herb introduced from southern Europe in the 16th century. It was placed among clothes to repel moths. The name comes from "sanctum linum", holy flax.
- 30 **Alchemilla mollis (Rosaceae), Lady's Mantle**, collects dew in the folds of its leaves and the 16th century alchemists thought dew had magical properties. It is a Gerard plant, and he wrote, "it is applied to all inward wounds and outward hurts, it stoppeth bleeding, it keeps downe maidens paps or dugs.
- 31 **Tanacetum vulgare (Asteraceae), Tansy**, was used in the Middle Ages as a strewing herb and as an insect repellent being rubbed over meat to keep flies away. Tansy cakes, called Tansies, were eaten in the 16th century as a remembrance of the bitter herbs eaten at the Passover, in memory of Christ's sufferings.
- 32 **Taxus brevifolia (Taxaceae), the Pacific yew tree**, was found to be active against malignant cells when it was one of 650 plants tested in a laboratory screening programme in the 1960's. Clinical trials showed it to be a first class drug, named **paclitaxel (Taxol)**, for treating ovarian cancer and breast cancer. But eight trees were needed to treat one patient, and fortunately it is now possible to obtain the drug from yew tree clippings, including those from the English yew, *Taxus baccata*.
- 33 **Valeriana officinalis (Valerianaceae), Valerian**, has a sedative action and was formerly used for anxiety states, migraine and insomnia. The plant is attractive to rats and it is thought that the Pied Piper of Hamelin may have kept valerian roots in his pockets. It was used in epilepsy in 1592.
- 34 **Symphytum officinale (Boraginaceae), Comfrey**, whose root contains a lot of mucilage which becomes hard after being pounded and was used to set fractures hence the old name Knitbone. The mucilage was used too as a demulcent medicine especially for diseases of the lungs. Gerard wrote, "the slimie substance of the root made in a posset of ale is given to drinke against the paine in the backe gotten by overmuch use of women".
- 35 **Prunella vulgaris (Lamiaceae), Self Heal**, was used from the 15th century to treat wounds and especially to stop bleeding. Culpeper said, "Self-Heal whereby when you are hurt, you may heal yourself". Being a very common plant it was always available. *Prunella* is derived from the German for quinsy, Die Braune, the shape of the flower being linked by the Doctrine of Signatures to the throat.
- 36 **Catharanthus roseus (Apocynaceae), Madagascar periwinkle**, contains the **vinca alkaloids** which are very important in chemotherapy for several types of cancer. These drugs are extracted directly from the plant, which is cultivated in large plantations, the yield being very small. The plant came to notice as a West Indian folk remedy for diabetes and the cytotoxic action was discovered during medical research, which also showed it was of no use in diabetes!
- 37 **Hyoscyamus niger (Solanaceae), Henbane**, contains **hyoscyine** (see No. 19) and related alkaloids which were formerly used in asthma. They were used too in Parkinson's disease, and their mode of action in this disease has been copied to make more effective synthetic anti-cholinergic drugs. Gerard wrote, "yellow henbane...to cure inveterate ulcers...wherewith I have gotten both crownes and credit."
- 39 **Tanacetum parthenium (Asteraceae), Feverfew**, was one of the medicinal herbs grown in the 18th century for the London market. It was used to treat fevers and headache. Modern research has proven its value, if taken daily, in preventing migraine.

40 **Papaver somniferum (Papaveraceae), Opium poppy**, contains three important alkaloids which are present in the white latex of the unripe seed capsule (*Opus* Greek for milk). They are **morphine**, still unrivalled for severe pain, **codeine** for pain and diarrhoea and **papaverine** whose synthetic analogue, **verapamil**, is a good drug for high blood pressure and angina.

41 **Salix hastata "Wehrhahnii" (Salicaceae), Willow**. The value of willow bark in treating fevers was discovered in 1763 by the Reverend Edward Stone of Chipping Norton when he noticed that it tasted like quinine bark, which was then a standard remedy for fevers of all kinds. The bark contains salicin and this became the first treatment for acute rheumatic fever in 1878. Salicin is converted in the body into salicylic acid (see No. 5).

42 **Iris pallida 'Variegata' (Iridaceae) Iris** Is one of the species of Iris which from ancient times were used to produce 'Orris Root'. The dried root has a violet like odour and was widely used in perfumery. It was made into face powder and tooth powder, and distilled to produce Oil of Orris which was used to make scents.

43 **Scutellaria laterifolia (Lamiaceae), Virginian Skull Cap**, is especially valued in homeopathy. Formerly the whole plant was used for "nervous complaints" and was even used in hydrophobia, being known in the United States as Mad-Dog Skullcap.

44 **Asperula tinctoria (Rubiaceae), Dyer's Woodruff**, is a Mediterranean plant which was formerly valued because its root yields a red dye. This plant is a reminder of the age old tradition of using plants for dyeing cloth and wool and is a pleasant link with the venerable Dyers' Company of London.

45 **Solanum rantonnetii (Solanaceae), a Nightshade**, Other plants have this name particularly the Deadly Nightshade, *Atropa belladonna*, whose compound atropine is a good modern drug. (Berries poisonous hence not planted here) The term "nightshade" is curious and not well explained. Perhaps it refers to the narcotic action of these plants.

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Written by Dr Arthur Hollman, as the ex-Honorary Curator of the Barbers' Physic Garden and **Copyright** of the Worshipful Company of Barbers of London.

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