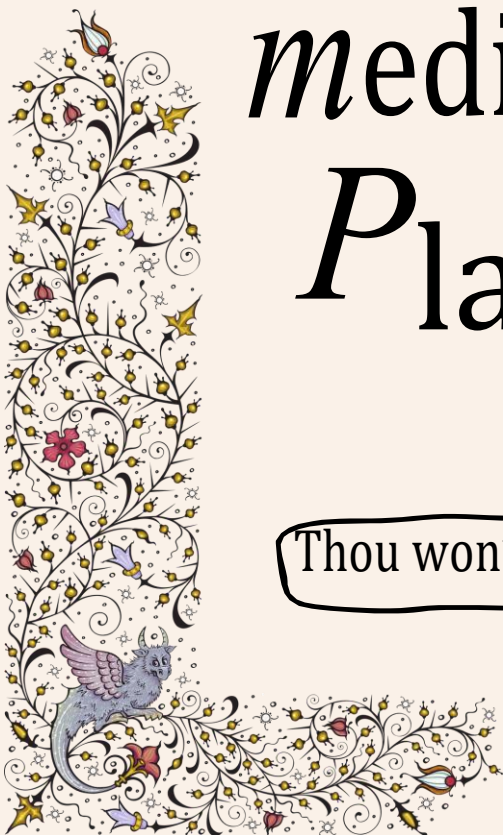




medieval *medicinal* *P*lants

Thou won't regret it!



Jubilant Patrons



“I hath been sickly, and *Medieval Medicinal Plants* hath been both a source of interest and of tissues! I read, and then I sneeze so strongly that my humors hath sullied every page. Couldst I acquire one more?”

- Lord Flibbertigibbert the Fifth

“As an apothecary, tis a great effort. I hath enjoyed ye illustration and ye conversational tone. But, what is this double blind placebo controlled trial it speaks of? I simply put my poultice on and pray.” - Apothecary Amos



Hello! Thank you for picking up this booklet. As you'll see if you flip to the acknowledgements, this wouldn't be possible without a large amount of people behind the scenes. I am incredibly grateful for their support, and for your interest! However, I thought it prudent to give some quick notes before you start.

- This isn't just about the Bishop's Garden! In an effort to vary the flora I researched, I found three plants each from three different gardens to study as well.
- I am not a doctor and I am also not a clinical researcher, so there is every possibility that a scientific nuance has gotten lost on me. These plants and their uses are incredibly varied, though, so please go look at my sources in the bibliography if you'd like to verify my writing and find out more!
- A lot of these plants were used for a wide variety of things that would never fit on just one page, so I have taken some license in choosing the information I found most credible and relevant to share.
- In science, the gold standard for testing efficacy is a double-blind placebo controlled clinical study. Many of these plants didn't have many I could find, so take every piece of possible use I share in these pages with a hefty grain of salt.
- Finally: please do not take any of this as medical advice and consult your doctor before medicating in any way.

Now that the boring but necessary stuff is out of the way, let's get on with our whirlwind tour of medieval medicinal plants!

Can't wait,
Alma

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The Bishop's Garden



Nestled next to the gorgeous Washington National Cathedral and the indispensable Open City, The Bishop's Garden is a wonderfully curated slice of nature and the inspiration for this booklet. The All Hallow's Guild that manages it granted me the opportunity to write and print this booklet and be featured in their fall newsletter! They're an incredible organization and the garden is gorgeous, so if you can, take your time and look around. All the plants in this section can be found in their medieval medicinal garden inspired by the poem "Hortulus." It's got a big stone statue in the center, you can't miss it. Also, don't forget to take some pictures in the gazebo, get mesmerized by the koi in the pond, and maybe even have a nice nap on the lawn.

Sage



Species: *Salvia officinalis*

Native Areas: Europe

Medieval Uses: coughs, colds, longevity, menopause

Quote: “Why should a man die in whose garden grows sage?”

- *Regimen Sanitatis*

Salernitanum

Sage is an overachiever. Although in medieval times it may have been confused with other strains of *salvia*, its essential oils are still thought to kill bacteria, expel gas, and ease convulsions due to the presence of camphor, 1,8-cineole, cis-thujone, and beta-thujone. (Thujones can be toxic in large amounts though, so be careful!) A study has suggested it can also alleviate memory loss in Alzheimer's, possibly by protecting neurotransmitters from chemical damage. As if that wasn't enough, its acids may even inhibit tumor growth and treat hot flashes! What a stacked resumé.

Peppermint



Species: *Mentha x Piperita*

Native Areas: Europe,
West Asia

Medieval Uses: local
anesthetic, hygiene,
gastrointestinal health

Quote: “But if...you are
longing for rest...gather to
yourself...the water-loving,
leafy mint...” - “Theriaca”,
Nicander of Colophon

Many may think this plant is only useful for freshening breath, but it's being investigated far beyond its efficacy against halitosis. A study has investigated its dampening of sodium channels that cause pain in nerve disorders, while another suggested that its essential oil eased gastrointestinal contractions by inhibiting calcium chloride, thereby regulating gut fluid. That cool stinging sensation from mint that most know is actually it activating a compound called TRPM8, but beware, scant evidence has been found for actual cleaning benefits. Either way, Tic Tacs just got a lot more interesting!

Catmint



Species: *Nepeta racemosa*

Native Areas: Eastern Europe, Central Asia, Mediterranean

Medieval Uses: colds, cramps, inflammation

Quote: Surprise fun fact! You can find cat paws, cat pee, and cat curses on some medieval manuscripts!

To my chagrin, *catmint* is not *catnip*. It's less attractive to cats, and its other common name *nepeta* mixes research up since it's also the name for a whole genus of medicinal plants. These include *n. mussinii*, containing caffeic acid, which makes tumors slow blood vessel production and therefore stops their spread. On the other hand, catnip, the more famous *nepeta*, may have anti-inflammatory properties, possibly due to its high amounts of (Z, E) and (E,Z)-nepetalactone. Catmint's life must be tough, having such accomplished cousins.

Parsley



Species: *Petroselinum crispum*

Native Areas: Mediterranean, West Asia

Medieval Uses: urinary issues, ulcers

Quote: “Parsely grows for the wicked but not for the just.” - old English saying

Even though parsley may seem like a simple garnish, it may combat the effects of paracetamol induced liver issues in rats. In other, diabetic rats, it lowered their blood sugar, possibly due to the apigenin inside. It also contains quercetin, an antioxidant and anti-inflammatory. But, even though it helped lessen the effects of cadmium exposure in pregnant rats, be careful with it if you're a pregnant human. (You know, I didn't count on the prevalence of rats in this project considering I've mentioned them about four times in half a page.)

Madonna Lily



Species: *Lilium candidum*

Native Areas: Balkans,
West Asia

Medieval Uses: leprosy,
tumors, skin irritation

Quote: Surprise fun fact! In
Carlo Crivelli's *The
Immaculate Conception*, Mary
is next to a vase of lilies.

To many, this plant's name may sound familiar, as it has been heavily linked with purity, chastity, and Mother Mary in European Christian tradition. However, in the modern day it may serve other properties. Its compound kaempferol interacts with proteins that detoxify digestive cells and may also boost cellular regeneration. It, along with linalool, caryophyllene, and humulene has anti-cancer properties, and with citronellal instead of caryophyllene, the four massively increased glucose transportation to cells, which could help with conditions like diabetes.

Germander



Species: *Teucrium chamaedrys*

Native Areas: Europe,
Central Asia

Medieval Uses: inflammation,
wounds

Quote: “Germander...
deliverth the bodie from all
obstructions or stoppings...” -
The Herball, John Gerard

Although germander may be medically interesting, as it combatted the effects of endometriosis in rats (possibly due to its amounts of compound *n*-hexane), and is commonly used in the Balkans for digestive issues, be careful! It damages the liver, which is why medicines for weight loss and high cholesterol containing it were discontinued in the UK. The EU even had an entire committee on whether it should be allowed in flavoring after it caused multiple hepatitis cases! To think that Red 40 still runs amok.

Orris



Species: *Iris germanica* var *florentina*

Native Areas: Balkans

Medieval Uses: respiratory issues, diuretic

Quote: “/And I must not pass you by, my iris, in silence/” - “Hortulus”, Walafrid Strabo

Orris, derived from bearded iris, isn't popular medicinally, but it is a sought after perfume ingredient. Its small main production area of Tuscany and long maturation time contribute to its very hefty price tag. A few substances in it, including irilone, iriflogenin, and genistein, may aid in preventing cancer. Orris may also be anti-diabetic, possibly due to the prevalence of anthocyanins in its oil. If you're more familiar with this plant through rapper MF Doom's song “Orris Root Powder,” congratulations, you have impeccable taste.

Pennyroyal



Species: *Mentha pulegium*

Native Areas: Europe, North Africa, West Asia

Medieval Uses: neurological issues, cold, abortion

Quote: “Pennyroyale... cleanseth the lungs and cleareth the breast...” - *The Herball*, John Gerard

In a sobering turn, this page will be focused on the harms of pennyroyal. Though research provides few articles on the potential benefits of the plant, such as its possible anti-microbial effects, it also provides overwhelming evidence of its harmful nature. Pennyroyal essential oil contains a substance called pulegone, which shifts into another substance called menthofuran, a substance that harms the brain and liver. It has caused multiple deaths over many ages, and its use is widely discouraged.

Horehound



Species: *Marrubium vulgare*

Native Areas: Europe, North Africa, Central Asia

Medieval Uses: respiratory issues, gastrointestinal issues

Quote: “The horehound is warm and has...juice...” -

Physica, Hildegard von Bingen

If you’ve ever used a Ricola cough drop, you’ve actually already tasted horehound! The European Medicines Agency said that it could be used medicinally to treat colds, appetite issues, and to aid digestion based on the fact it has been used informally for years, although their conclusion was unsupported by clinical studies. A study did investigate whether the plant’s extract showed possible antioxidant effects due to it containing caffeic acid, ferulic acid, catechin, quercetin, and rutin. However, its effects actually got weaker as the concentration approached 10%! Strange.

Agrimony



Species: *Agrimonia eupatoria*

Native Areas: Europe, North Africa

Medieval Uses: wounds, colds, renal issues

Quote: “...[Agrimony] should be tied warm over the heart...”

- *Physica*, Hildegard von Bingen

This plant has a much more fun colloquial name: church steeples! No idea why though. Even better, the European Medicines Agency says it's legal to use for diarrhea, inflammation, and wounds, although like horehound, the reason was traditional use, not clinical trials. A study investigated the pain-relieving properties of agrimony and found that it may actually relieve some pain in rats treated with cisplatin, a substance commonly used in chemotherapy. It may also aid liver issues caused by alanine transaminase buildup, which can be brought on by conditions such as alcoholic liver disease or hepatitis.

Wormwood



Species: *Artemisia absinthium*

Native Areas: Europe, Asia, North Africa

Medieval Uses:
gastrointestinal issues

Quote: “/To weed this wormwood from your fruitful brain/” - *Love’s Labors Lost*, Shakespeare

This strangely named plant got its wriggly fame from being used to dispel stomach worms. It’s not to be confused with its cousin sweet wormwood, the source of a malaria drug. Although it contains toxic thujone (like sage), a study showed that people with Crohn's disease might be able to combat steroid treatment dependency and perhaps avoid it altogether by taking the plant. Another study investigated its use with breast cancers and found that it may encourage those cancer cells to self-destruct. (Note: Forgive me! The quote isn't medieval, but I have a Shakespeare soft spot.)

Betony



Species: *Betonica officinalis*

Native Areas: Europe,
Central Asia

Medieval Uses:

gastrointestinal issues,
neurological issues

Quote: “/...the wonderful
powers/ Which [betony] has
will supply all your needs./” -
“Hortulus”, Walahfrid Strabo

Betony is an all-around superstar in traditional medicine, popular with the ancients through to the Middle Ages and extolled for its many uses, interestingly including warding off supernatural evil in the form of love spells. Ooh la la! Although there are no human clinical trials including it, a study did find it contained harpagoside, a sought-after medicinal substance whose original source faces threat due to overharvesting. Another proposed that the reason for its antioxidative benefits may be the phenols and flavonoids it contains. Well, now all we need is a study on its purported anti-witch effects.

Black Cumin



Species: *Nigella arvensis*

Native Areas: Africa, West Asia

Medieval Uses:

gastrointestinal issues, liver issues

Quote: ““This black cumin is healing for all diseases except...death.”- *Sunnah*

Seen as a cure-all in ancient times, most health benefits of black cumin are from thymoquinone. The plant eased ulcers in rats and improved gastric mucus levels in others, possibly due to prostaglandin keeping cells safe or to its mild irritant effect helping cells adapt to more intense irritants. It also alleviated rat liver injuries by scavenging troublesome free radicals through its antioxidant properties. That’s a big job for a plant that shares a name with TV cook Nigella Lawson!

Rue



Species: *Ruta graveolens*

Native Areas: Balkans

Medieval Uses: purgative,
abortive

Quote: “/I’ll set a bank of rue,
sour herb of grace./” - *Richard
II*, Shakespeare

Personally, I only knew rue as the name of a beloved character in *The Hunger Games*. (The books are better than the movies.) It’s a formidable force on its own: you can get blisters and other skin damage from touching it, and the oil can damage your kidneys and liver. But, a key substance in it, rutin, may inhibit MAO-B, an enzyme that contributes to the neurodegeneration seen in Parkinson's. When extracted with n-butanol, it acted at 68.7% the strength of a selected oxytocin concentration in uterodilating. Rue’s got game! (P.S: Sorry, Shakespeare again.)

Winter Savory



Species: *Satureja montana*

Native Areas: Southern Europe

Medieval Uses:
gastrointestinal issues,
respiratory issues

Quote: “Winter savory...[is]
lower, more tender and
brittle...” - *The Herball*, John
Gerard

Forgive me for being juvenile, but a very charming fact about winter savory is that it is known as the “bean herb” for preventing flatulence after eating. But, it’s not only good after seven-layer dip! Rats treated with dry extract of the plant after ingesting toxic amounts of paracetamol had lower levels of liver damage! It’s also being investigated for good effects in combating *Campylobacter jejuni*, a common cause of gastroenteritis, possibly due to the antimicrobial properties of its constituents carvacrol, thymol, and thymoquinone interacting with other substances.

Rosemary



Species: *Rosmarinus officinalis*

Native Areas: Mediterranean

Medieval Uses: neurological issues, gastrointestinal issues

Quote: “/There’s rosemary, that’s for remembrance./” - *Hamlet*, Shakespeare

A kitchen hero, rosemary may have more to it than the surface of a steak. It caused a reduction in subjective stress testing, possibly due to carnosic acid and carnosol, and decreased common signs of stress by increasing the production of monoamine hormones such as dopamine and adrenaline. But even in its most famous arena, the stomach, it decreased colon weight to length ratios in rats, elevated levels of which are common in colitis, possibly due to the anti-inflammatory effects of alpha pinene. Rejoice, I’ve found an excuse for eating fancy ham! (I’ll stop apologizing for Shakespeare now.)

Fennel



Species: *Foeniculum vulgare*

Native Areas: Mediterranean

Medieval Uses:

gastrointestinal issues

Quote: “/Let us not forget to honor fennel.../” - “Hortulus”, Walahfrid Strabo

Fennel is truly legendary, carried during the historic run that birthed the marathon and vessel for the fire of Prometheus. It's also been used for dieting and weight loss for generations. In a study, its tea did make people feel subjectively more full and less likely to eat, possibly due to the trans-anethole in it, but the experiment only included nine women, so it wasn't the biggest nor the most varied. In another study on postmenopausal women, it failed to produce any noticeable change in body weight or composition either. The old wives' tales might be wrong with this one.

Garlic Chives



Species: *Allium tuberosum*

Native Areas: China

Medieval Uses:

gastrointestinal issues, wound care

Quote: “He who has chives on his breath is safe from being kissed to death.” - Martial, ancient comedian, allegedly

Your favorite garnish may have a secret superpower. A study investigated its antioxidant properties and found they were most powerful in the second or third year of growth. These properties could be due to its high polyphenol count, and its stems are good sources of carotenoids and chlorophyll. The extract could even combat the growth of many bacteria, including *Staphylococcus aureus*, and the thiosulfinates in it possibly encouraged cell death in a certain breast cancer type and slowed growth of a certain colon cancer type. Much better than just a source of halitosis!

Purple Loosestrife



Species: *Lythrum salicaria*

Native Areas: Eurasia

Medieval Uses: dysentery,
wound care

Quote: “Purple loosestrife...
[shook its] luxuriant locks over
the edge of the mirror...” -

The Wind in the Willows,
Kenneth Graham

Purple loosestrife’s name makes some real big promises. Possibly fulfilling them, at 15 g/kg, it seemed to reduce blood glucose levels in diabetic rats and also have a greater ability to combat free radicals than vitamin E. Although it had some ability to control *Staphylococcus aureus* in studies and aided in wound contraction too, you shouldn’t get too excited. It acts as an invasive species in North American wetlands, though some say that reports of its pervasiveness are exaggerated. Still, it seems it may bring more strife than it loses. (The only quote I could find isn’t medieval, sorry.)

Spiny Sowthistle



Species: *Sonchus asper*

Native Areas: Europe,
Mediterranean, West Asia

Medieval Uses:

gastrointestinal issues, urinary
issues

Quote: “Like some mumbling
old eccentric uncle,
Sonchus...is at once comforting
and amusing.” - Earth
Medicine Institute blog post

The thing that most surprised me about spiny sowthistle is that it has a hollow stem! However, it's got other things going for it, as it may lower liver enzyme levels and protect against liver lesions. It is also being investigated for its powerful antioxidant potential, possibly due to the presence of high weight phenols that are highly efficacious at combatting free radicals.

These same properties also lowered high levels of certain enzymes in rats, caused by CCl₄, that can lead to thyroid issues. But still, the stem's the best bit. (P.S: The quote is about *Sonchus oleraceus*, but it made me laugh.)

Mulberry Weed



Species: *Fatuosa villosa*

Native Areas: East Asia

Medieval Uses:

gastrointestinal issues,

menstruation issues

Quote: “/A weed is but an

unloved flower!/" - “The

Weed”, Ella Wheeler Wilcox

Personally, I like mulberry weed’s other name, hairy crabweed. A cure-all mainly used in Asia, although it’s now an invasive plant, specifically in the south of the US. Surprisingly, it isn’t actually part of the mulberry plant, and its fruit can also forcefully eject the seed! It may contain compounds that are toxic to certain types of tumors and substances that have UV-A activated antimicrobial activity. It had a 51% rate of inhibiting AChE in a petri dish, a trait that is valuable in anti-Alzheimer medication. Who knew hairy crabs could be so interesting. (Sorry, the quote was cute and weed related.)

Lemon Balm



Species: *Melissa officinalis*

Native Areas: Europe,
West Asia, Central Asia

Medieval Uses: longevity,
wound care, depression

Quote: “/...meadows all
enflower’d/ With sweet
balm-gentle.../” - “The
Odyssey”, Homer

Although some of lemon balm’s medieval uses don’t appeal, like its role as bee attractor, its other traits may hold up. Its constituents of rosmarinic acid and terpenoids may combat AChE, a valuable trait in Alzheimer’s treatment, and rosmarinic acid also stops the enzyme that breaks down GABA, increasing its levels in the brain in a similar manner to modern anti-insomnia medication. It reduced infant colic crying, improved elementary school kids’ sleep, and dealt with some effects of PMS in teens. Well, maybe the bees aren’t so bad after all.

Common Tansy



Species: *Tanacetum vulgare*

Native Areas: Europe

Medieval Uses: abortions, gastrointestinal issues

Quote: “Tansy...is effective against all overabundant humors which flow out.” -

Physica, Hildegard of Bingen

The common tansy is uncommonly fun-fact filled! For example, in 1668 the first president of Harvard was buried with a tansy wreath in a tansy lined coffin. It also doesn't wilt when dried, and the compounds it contains depend on where it grows. A sobering fact: it contains alkaloids and beta thujone, which are both poisonous in large amounts of consumption. However, its constituent luteolin-7-glucoside may have antimicrobial effects, possibly aiding in its wound healing-properties. I think that tips the balance back towards fun!

Apothecary's Rose



Species: *Rosa gallica*

Native Areas: Central Asia

Medieval Uses: inflammation

Quote: “...[it strengthens] the heart and takes away the shaking and trembling thereof.” - *The Herball*, John Gerard

If you're a history buff, you'll be pleased to know that the red rose emblem of the Lancasters in the War of the Roses is *R. Gallica*. Although it's been famous for years, even hailed the “queen of flowers” by Greek poet Sappho, its effects could be useful today. It contains gallic acid, which along with quercetin and cachetin may inhibit the activation of skin-aging genes by sun rays. Also, in mice experiencing chronic stress, those treated with this plant were more active after recovery, possibly due to the extract combatting the oxidative forces that play a role in mental illness.

Lovage



Species: *Levisticum officinale*

Native Areas: Mediterranean

Medieval Uses:

gastrointestinal issues,
infection

Quote: “This plant is hot and
dry in the third degree.” -

The Herball, John Gerard

Lovage was used in love potions, but that’s not all it may do. It induced death in breast cancer and leukemia cells and combatted inflammation, possibly due to its constituents quercetin, kaempferol, and rutin. It also has antioxidant effects that may be connected to the high amount of phenols it contains. It may also interfere with compounds involved with Alzheimer's like monoamine-oxidase B that stimulates plaque formation on the brain or glucocorticoid receptors that regulate brain activity and decrease one’s risk of developing Alzheimer's. Lovage seems truly lovely.

Royal Physician's Garden



Near the cream townhouses of Regent's Park and the London Zoo, the Royal College of Physicians has its gorgeous modernist offices. Their garden is small yet varied, growing plants from all over the world and even some from the plays of Shakespeare! It's free, too, and wasn't busy when I went, so it's perfect for a little stroll around and maybe a sit down and sandwich in the shadier bits. If you're ever in London, I recommend a visit, not least because it's only a short walk over to some fantastic shopping areas.

Deadly Nightshade



Species: *Atropa belladonna*

Native Areas: Europe,
West Asia

Medieval Uses: poisoning,
beauty

Quote: “Night-shade is very
dangerous of what sort soever
it be...” - *De venenis*,
William Ramesey

Its name may seem a bit dramatic (ex: *Atropa* comes from the name of the Greek Fate that severs the thread of life), but nightshade does in fact have an array of important medical (and nefarious) uses. Its constituent atropine blocks the neurotransmitter acetylcholine which governs many important bodily functions. Although its powers to induce hallucinations and raise heart rate have been used for many a poisoning, you may have experienced its effects in dilating your eyes for optometric surgery or treating an abnormally low BPM (a.k.a bradycardia). A little drama isn't so bad after all.

Chamomile



Species: *Chamomilla recutita*
or *Chamaemelum nobile*

Native Areas: Europe, Asia

Medieval Uses:

gastrointestinal issues,
swelling, irritation

Quote: “...the/more
[chamomile] is trodden on, the
faster it grows...” - *Henry IV
Part 1*, Shakespeare

A usual suspect in Sleepytime tea, chamomile’s effects are far from sleep-inducing. Flavonoids may be the reason for its anti-inflammatory properties, and in a study that tracked the eating habits of elderly men, it was shown that the higher the consumption of said flavonoids, the lower the appearance and fatality of heart disease and heart attacks. The plant may even combat *Helicobacter pylori*, a bacteria involved in the growth of stomach ulcers, and possibly aided in the drying and healing of tattoo removal wounds. Its efficacy sure makes me feel relaxed.

Mandrake



Species: *Mandragora officinarum*

Native Areas: Mediterranean

Medieval Uses: fertility, sedative

Quote: “There have been many ridiculous tales brought up of this plant...” - *The Herball*, John Gerard

As the above quote suggests, mandrake has a prominent history in storytelling, mentioned everywhere from the Bible to Harry Potter. Known for the human-like appearance of its roots, countless myths surround this plant, exacerbated by the alkaloids it contains producing similar effects to deadly nightshade.

Atropa is in the same family along with petunias, potatoes, and tomatoes (what a strange family tree), and it caused a rise in alkaline phosphatase in rats, potentially injuring the biliary tract, an important part of the digestive system. Oh, if those human-like roots could talk...

Chelsea Physic Garden



It must have been fate that I selected this garden for a visit, as they actually had a student-planted section specifically dedicated to the medicinal plants grown by St. Hildegard of Bingen! (She's absolutely fascinating and was one of the only saints who didn't die a tragic death, so I recommend reading up on her if you're interested.) Divine providence aside, the garden is large and lush, containing all matter of gorgeous green things. If you stop by, spend some time in the fern greenhouse and order their Victoria Sponge Cake in the café.

Foxglove



Species: *Digitalia purpurea*

Native Areas: Western Europe, Mediterranean

Medieval Uses: cleansing, poisoning

Quote: “Sometimes I like to hide in the word / *foxgloves*...”

- “Foxglove Country”,
Zaffar Kunial

I added this plant purely because it's my favorite. I mean, look how pretty it is! Unfortunately, it can also cause heart failure and vision disturbances that tint the world yellow and produce halos around light. These traits, displayed in Van Gogh's paintings, lead some to believe that he may have been influenced by the foxglove he used to treat his epilepsy. Today, the leaves are used to prompt the heart to beat more powerfully by increasing calcium levels in the heart through the substance digoxin. (P.S: I just had to do some nice poetry for one of my favorite flowers, forgive me for the frivolity.)

Feverfew



Species: *Tanacetum parthenium*

Native Areas: Balkans, Caucasus

Medieval Uses: fever, gastrointestinal issues

Quote: “...once [it] has a hold, it persists in spite of weeding and contempt...” - *The Englishman’s Flora*, Geoffrey Grigson

Feverfew’s scientific name actually comes from allegedly being used to cure a man who fell from the Parthenon! Continuing on the naming trend, it contains parthenolide, which may inhibit the substance prostaglandin, high levels of which can lead to pain and inflammation. It could have also reduced the movement of rabbit aorta, which it may have done by blocking potassium channels. Some may use it for migraine control, but the proof for its efficacy is inconclusive at best and sudden withdrawal can cause untoward effects, so it’s good to be careful with this plant so your fevers can truly be few.

Wild Celery



Species: *Angelica archangelica*

Native Areas: Northern Europe, West Asia

Medieval Uses: plague, purification, gastrointestinal issues

Quote: “...it cureth the bitings of mad dogs...” - Barber-Surgeon John Gerard, allegedly

This plant’s charming name may hold a ring of truth. Although it may cause mild contact dermatitis, it also has medicinal properties that mostly lie in fixing imbalances between free radicals and antioxidants that may lead to organ damage. It contains xanthotoxin, angelicin, and imperatorin, all of which may hasten regulated cell death in cancer cells. It also contains isquercetin a possible bladder contraction aid, and in a larger study was shown to help with other issues with frequency and controllability of bladder ejections. Truly an angel.

NLM Garden



The herb garden at the National Library of Medicine is truly one-of-a-kind. Grown around a master carved totem pole celebrating the story of the Medicine Woman in the Moon, it's a moment of calm in the bustle of one of the world's most renowned government research centers. The plants in this section weren't necessarily used in medieval times, but their stories are still worth telling.

Lamb's Ear



Species: *Stachys byzantina*

Native Areas: West Asia

Traditional Uses: wounds

Quote: “As I stroke its softness, / I bleat, ‘Baa-a-a.’ / With my hand, waggle an ear. ...[We] laugh. / No dictionary needed.” - “Lamb’s Ears”, Joy Neal Kidney

Called *peixinho-da-horta* or “fish from the garden” in Brazil for its supposed aquatic taste and also used by some as toilet paper, lamb’s ear has many useful properties. In the medical field, a common traditional use is as an antibiotic dressing that speeds up blood clotting, therefore promoting healing. A study did find that extracts of the plant inhibited nitric oxide, a free radical the presence of which is highly correlated with increased inflammation. Upon further study on irritated rat ears, it’s been suggested that the extract blocks certain steps in the chemical process that lead to inflammation. (Not a medieval quote, sorry.)

Madagascar Periwinkle



Species: *Catharanthus roseus*

Native Areas: Madagascar

Traditional Uses: diabetes, hypertension, leukemia

Quote: Surprise fun fact!

The gene line dihydroprecondylocarpine acetate was so tough to sequence it was nicknamed “angry-line.”

Although this plant is toxic if eaten, once its medicinal effects are extracted, it is truly extraordinary. Not only has vincoline, a diabetes medication, been made from it, but it is also used to treat childhood leukemia due to the ingredients vincristine and vinblastine. These vinca alkaloids bind to microtubules and halt cell division, making them a valuable resource in chemotherapy. Both compounds occur at tiny concentrations, so scientists have even sequenced the plant’s genome to find how to make them synthetically. Thankfully, they have succeeded, so this plant’s benefits may be more widely available.

Sorrel



Species: *Rumex acetosa*

Native Areas: Europe, Asia

Traditional Uses:

inflammation, wounds,
gastrointestinal issues

Quote: “...Sorrel hath large
leaves like Patience,
confusedly growing
together...” - *The Herball*,
John Gerard

Many may see sorrel as a garden villain, but it may be more useful than we know. It combatted gastric ulcers in mice, with ethanol extract being especially efficacious against the inflammation and against our old friend nitric oxide. Its ability to dispatch with said free radical points to possible antioxidant effects. It also lowered blood pressure in rats, with a further study suggesting that it does this by activating muscarinic receptors that govern much of the parasympathetic nervous system, of which blood pressure control is a part of. No longer a pesky weed, indeed!

Hello again! I hope you enjoyed the tour. As I foreshadowed in the introduction, I'd like to take this space to name some people, organizations, and things that have made this booklet possible. Also, my references are all on the next page, if you'd like to fact-check me. (Please do.)

Firstly, the only reason I could make this is because of a grant I was awarded by the All Hallows Guild through my school, the National Cathedral School. I profusely thank the Guild for their generosity in giving an inexperienced fifteen year old their trust and support through my myriad questions. Along with all their amazing work at the Cathedral, I'm truly grateful they spared some time for me. Also, thanks to Ms. Thurman, Head of Global Programs and Fellowships, for guiding me through my first grant proposal with her open door and bowl full of candy.

I'd be remiss if I didn't thank the garden staff at every place I visited for both keeping them in such great shape and being amazing help when I arrived. And the TFL and WMATA employees who got me there. And my family who put up with me carting them around both London and DC to deep fry in the sun, specifically my aunt who formatted this with her graphic design skills. And the phone I took all the photos with. Oh, and the people who made the app Picture This, the Met's Medieval Garden Enclosed website, Botanical.com, MyBib, and PubMed! If I had a quarter for every time I'd visited them...

Although I'd like to, it's sadly physically impossible to list every single person who in some way contributed to this booklet, so consider this my group thank you. And finally, thank you, reader, for taking some time out of your day to read about these plants. It means a lot.

Goodbye and have a fantastic day,
Alma

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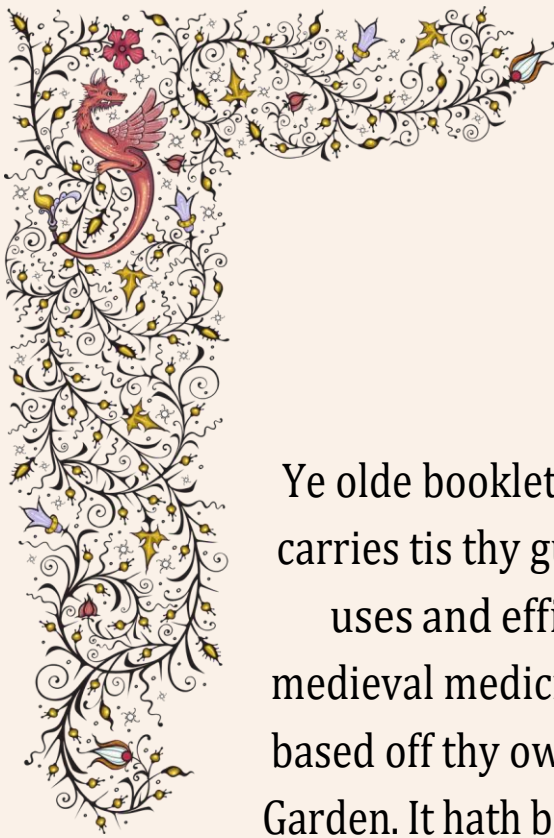
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