

The cover features several botanical illustrations. In the top left, there are white line drawings of a plant with large, pointed leaves and a small flower. In the top right, there are yellow line drawings of a plant with a thick, fibrous root system and several long, narrow leaves. In the center, there are yellow line drawings of a plant with several long, pointed, textured leaves. In the bottom left, there are yellow line drawings of a plant with a complex, lattice-like leaf structure. In the bottom right, there are white line drawings of a plant with several long, thin, needle-like leaves.

Flora's Daughters

*Seven Plants Through the Lens of
Eclectic Medicine, Contemporary Herbalism,
& Botanical Illustration*

Meghan Henshaw &
Julia O. Bianco





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Meghan Henshaw & Julia O. Bianco



‘There is no ennui, no heavy time to kill, when all around us secrets of Nature invite to revealment. Then, secrets no longer, let us while away a little time in recording them.’

—Katherine Dooris Sharp, *Summer In A Bog* (1913) p. 7

To herb nerds far and wide, but especially Lina, Hector, Naoko, Mandy, and of course my mom.

~ Meghan

To Madre Tierra, for giving us the plants, sources of both healing and utter beauty.

~ Julia

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Introduction

Esteemed Art-Loving Reader...

In 1679, Maria Sibylla Merian greeted readers in a similar way in her stunning work *Caterpillar Book I*.⁵⁹ As one of the first known female botanists and illustrators, Merian—working closely with her daughters—dedicated herself to creating beautiful engravings portraying butterflies and moths on their host plants, thus revolutionizing the world of entomology. Botanical history is full of women who have collected and documented plants, made herbariums, and/or discovered new species. Many of these women are hidden contributors to science and remain largely unrecognized; Merian is but one iconic example.

Nature-based medicine has deep roots in Cincinnati, and, like the aforementioned female botanists and illustrators, also includes experts that history has overlooked and undervalued. These practitioners were called *Eclectics* after the diverse methods used in their treatments, namely using holistic procedures that supported the body's natural ability to heal. This was in stark contrast to the harmful bloodletting, purging, mercury treatments, and unnecessary surgeries popular in mainstream medicine at the time, often referred to as 'Heroic Medicine.'⁴⁷ Eclectic medicine reached its peak in the mid-1800s to early 1900s. Cincinnati was home to the Eclectic Medical Institute (EMI) where some of the first female physicians in the United States were awarded medical degrees.⁴⁶ During its nearly hundred-year tenure, EMI drew thousands of holistically-minded students, including 440 women, to Cincinnati before shutting its doors in 1942.⁵⁸

The Lloyd brothers were pharmacists who worked closely with EMI and manufactured botanical-based drugs in downtown Cincinnati. What was once the brothers' private library is now open to the public as the Lloyd Library and Museum. With its oldest book dating back to the 1500s, the library contains a vast collection of books on pharmacy, botany, medicine, fungi, and other topics related to the natural world. Texts from prominent Eclectic physicians, stunningly illustrated floras, and modern herbal books are all found on the Lloyd Library's immense shelves.

During our 2025 Curtis Gates Lloyd Fellowship, we explored the library's books on plant use in Eclectic medicine, botanical illustrations, nature-printing techniques, and modern herbal practice. Our work highlights the history, beauty, and current medicinal application of seven plants that flourish in the Ohio River Valley: calendula, horehound, motherwort, tobacco, tulsi, sage, and valerian. Our collaboration continues to build on the significant legacy of female botanists-illustrators and Cincinnati-based holistic practitioners, with the hope of elevating their longstanding contributions to the botanical world by adding a research-based, contemporary, and accessible resource to the conversation on medicinal plants in the region.

The plants highlighted in the zine have been chosen because Meghan grows them in a local community garden where she teaches herbalism classes. She also offers them as a seed mix so that others can grow medicinal herbs in their own green spaces. Meghan's research explored the historical application of the seven highlighted medicinal plants and compared it to current use by herbal practitioners. With her background in plant cultivation, herbal formulation, and ethnobotany, she focused on cultivation techniques, important plant compounds, and sustainability concerns for each plant.

Meanwhile, Julia researched nature printing techniques and learned about the rise of botany as a field of science in the 18th century. She explored the role women played in building the study of botany with their labor, intellect, and brilliant artistic capabilities.

The zine's illustrations are created using the cyanotype printing technique. This was a photography process invented by Sir John Herschel in the mid-19th century but truly embraced by Anna Atkins, the daughter of George Children who was the director of the British Museum's Natural History Museum between 1822 and 1839. Children's role is of note because Anna worked as her father's illustrator. Upon learning about this technique, Anna dedicated herself to applying this process and made over 10,000 prints in her lifetime, frequently in collaboration with long-time friend Anne Dixon. Her notable scientific publication from 1843, entitled *Photographs of British Algae: Cyanotype Impressions*,⁴⁸ is largely considered to be the world's first photography book.

Julia combines the cyanotype printing technique with watercolor and ink illumination following in the aesthetic footprints of other women botanists-illustrators such as Jane Colden, Mary Vaux Walcott, and the previously mentioned Maria Sibylla Merian. The simple elements that accompany each plant chapter are inspired by Julia's research on botanical design and aesthetics from the 18th and 19th centuries. Julia's artistic practice is anchored in direct engagement with the natural world and her embodied experience with plants of North and South America. Her work for this zine is another expression of engaging both mediated and direct knowledge to create pieces that foster understanding of the plant world in visual form.

Women have been active participants in the making of botanic science, not only through their labor but through conversation

INTRODUCTION

and imagination. In her book *Cultivating Women, Cultivating Science*, Ann B. Shteir introduces the term “Flora’s Daughters” to write about women whose professional endeavors involved the study and development of the science of botany. In the book, Shteir describes how women would engage in conversations, text, and the production of herbariums and illustrations that deepened and expanded the knowledge and understanding of plants. Some examples of collaborations amongst women in botanic history include Merian and her daughters, as well as Anna Atkins and Anne Dixon. For this project, both Meghan and Julia act as specialists, creating specific knowledge through their area of expertise and their research. The illustrations and text are two different expressions of deep engagement with the Lloyd Library’s archive to create new material.

As much as the research is comprehensive in its own right, there are many voices left out. Both Meghan and Julia acknowledge the absence of Indigenous and female botanists and illustrators of color from the library’s archive. This lack of representation is noteworthy and the result of the same systems that have made these groups historically invisible. The individuals cited in this introduction engaged in the field of botany while ascribing to historical systems of oppression—which included extracting information and labor from unattributed communities. Julia and Meghan hope that their respectful and caring collaborative research will inspire others to deepen their understanding of plants and engage critically with the archive in order to bring the past into the present in novel, reframed, and creative ways.



Plants & Illustrations



CALENDULA

Calendula officinalis

Calendula has a long history of use across the globe. Native to the Southern Mediterranean region¹ but widely cultivated, it has been known by a variety of names including pot marigold in the United Kingdom and *ringelblumen* in Germany.² The German name gives a nod to the ring of blooms that is created by both its ray and disk flowers, a characteristic of plants in the Asteraceae family.

This plant grows 1-2 feet high with green oblong, lance-shaped leaves. The leaves are thickish with rippling edges and a slightly sticky surface. The fresh flowers and leaves have a distinct smell and can vary in color from light yellow to deep orange, reaching up to 3 inches across.³ Alcohol, water, and oil extracts will draw out the plant's medicinal benefits which are found predominately in the flowers.

Historically, calendula was known as a *vulnerary*, a substance that supports the healing of wounds. Eclectic doctors favored this plant for a range of conditions such as ulcerated skin, abrasions, lacerations, burns, and abscesses.⁴ It was used both internally and applied externally to wounds.⁵ Eclectic physician John King was a lover of calendula and said ‘as a local remedy, after surgical operations, it has no equal in the materia medica [...] you need not fear to use it in wounds, and I would not be without it, for a hundred times’ (p. 169).⁶ Within the Eclectic tradition, it was also considered a simple bitter⁷ and taken for liver issues and fluid stagnation in the body.⁶ A versatile medicinal plant, the juice of the flowers was deemed beneficial for sore eyes and applied topically to warts to speed healing.⁸

Modern application mirrors much of calendula’s historical use. It is frequently included in compresses, poultices, lotions, creams, tinctures, and salves for its gentle skin and gut healing properties. Calendula-infused oil is one way to preserve the properties through the year and clinical herbalist Mimi Hernandez applies it topically to stimulate connective tissue and maintain radiant skin.⁹ Herbalist and midwife Dr. Aviva Romm incorporates calendula in soothing sitz baths and vaginal suppository formulas due to its healing abilities and mild antimicrobial properties.¹⁰ British medical herbalists Vicky Chown & Kim Walker highlight calendula alongside lavender, chamomile, and zinc oxide for diaper rash for its gentle action on tender skin.¹¹ Calendula’s reputation as a lymphagogue indicates it for fluid stagnation manifesting as sluggish menses and skin conditions.¹¹

Calendula seeds can vary greatly in shape.



CULTIVATION, HARVEST & SUSTAINABILITY: Calendula can be easily cultivated in the home garden. The spiky, curved seeds may be sown in flats indoors in early spring or broadcast directly into freshly tilled soil.³

The plants continue to bloom throughout the summer months and thrive in rich soil with regular watering. To preserve the flowers, pluck the flowerheads once the dew has evaporated and dry on screens for later use. Fresh petals can be scattered on summer salads for a colorful addition. Since the plant is widely cultivated, there are no known sustainability issues. Calendula is an annual and produces copious amounts of seeds. Once you have calendula growing in your garden, you’ll find their self-seeding, sunny offspring in all sorts of nooks and crannies for years to come. This is a great plant to grow in window boxes or pots, bringing the bright summer medicine of calendula into one’s home space.

CAUTIONS: Individuals with allergies to the Asteraceae (Sunflower) family should exercise caution with use.¹²



HOREHOUND

Marrubium vulgare

Originally from Europe, horehound (or *marrubium* as it is known in older texts) has naturalized in North America and thrives in cultivated gardens and disturbed soil alike.¹³ This perennial grows up to 1' tall and has rounded, wrinkled leaves covered in downy white hairs, which give it a wooly appearance. The small white flowers are attached directly to the stem and form dense clusters called whorls. The mild aromatic smell of the fresh plant gives the casual observer no clue that the leaves are incredibly bitter! One author describes the flavor as 'penetrating and permanent,'¹⁴ which explains why the preferred method of consumption is combined with honey or sugar in a syrup or as horehound candies. Esteemed Cincinnati pharmacist John Uri Lloyd classified it as 'domestic medicine,' due to frequent household use in the 1800s and early 1900s.¹⁵

Eclectic physicians used horehound specifically for cough and in cases of excess phlegm, a condition known as *catarrh*. Historically, it was employed as a stimulating expectorant and helpful in chronic and acute bronchial and throat irritation.⁴ Due to its bitter flavor, horehound acted as a tonic to the digestive tract and a laxative in larger doses.¹⁵ Stimulation to the organs in the lower pelvis included the uterus, thus this plant was also utilized as an emmenagogue to bring on menses.¹⁴ As a hot infusion, Eclectics favored horehound to induce sweating.⁴ For flu symptoms, renowned founder of the Eclectic Medicine movement Dr. Wooster Beach recommended drinking it as a tea with boneset (*Eupatorium perfoliatum*) combined with steam baths to promote perspiration.¹³

Horehound is not a popular herb in modern herbalism but is still utilized for respiratory issues and taken before meals to promote digestion.¹⁶ You can find horehound candies in old fashioned candy stores and herbalists such as Lucretia VanDyke use it for protection in rootwork,¹⁷ a type of African-American traditional medicine.³⁶ Naturopathic doctor Jill Stansbury recommends it for chronic bronchitis, throat irritation, hoarseness, and asthma when there is abundant mucus. She highlights its gentle effectiveness as an expectorant, diuretic, and diaphoretic.¹⁸ Dr. Sharol Tilgner, another naturopath, recommends it with elderly populations when an herb is needed that is both expectorant and bitter. Horehound stokes the digestive fire and supports strength in the respiratory system, both areas that can weaken with advanced age.¹⁶

CULTIVATION, HARVEST & SUSTAINABILITY: There are no sustainability concerns as this plant can be grown in home gardens with minimal effort. Horehound is easily cultivated and establishes itself through regrowth and self-seeding year after year. The leaves and flowering tops can be harvested during the flowering stage and dried on screens or hung in bundles for later use. To harvest the seed, allow plants to flower then wait a few weeks, cut the aerial parts and place top-down in paper bags. After a few more weeks, shake the plants while still in the bag and the seed will fall out and can be easily collected.

CAUTIONS: Since it is traditionally used as an emmenagogue, horehound should be avoided during pregnancy as it may stimulate the uterus.¹⁷





MOTHERWORT

Leonurus cardiaca

Motherwort belongs to the Lamiaceae family and is closely related to other aromatic favorites such as lavender (*Lavandula* spp.) and rosemary (*Salvia rosmarinus*). Historically, Europeans claimed this plant as their own but Anishinaabe ethnobotanist and medicinewoman Keewaydinoquay Peschel insists that motherwort is circumboreal, which includes North America as well as Eurasia in its native habitat.¹⁹

Reaching up to 5 feet tall with dark green deeply lobed leaves, motherwort is a striking plant in the landscape. Gently swaying in the summer breeze, the plant's regal appearance draws a person in. Up close, one can smell the peculiar earthy aroma that emanates from motherwort's downy, multi-shaped leaves. Pinkish white/purplish flowers grow in distinct clustered whorls along the stem and these areas become spiky to the touch later in the season once the flower petals fall away.⁶

MOTHERWORT

- Bitter
- Heart-Nourishing
- Comforting



Eclectic physician Harvey Felter classified motherwort as an emmenagogue and incorporated it in his practice to bring on sluggish menses.⁴ The plant's affinity to the lower pelvis combined with its antispasmodic action led to its reputation as a laxative.²⁰ Motherwort's bitter flavor also contributed to its capability to stimulate digestion. Felter also wrote of motherwort's power to relax the nervous system in cases of irritation and unrest⁴ and it was frequently given as a pain-reliever specifically for 'pains peculiar to females.'¹³

In the 1800s and early 1900s, motherwort was recommended for women diagnosed with hysteria, a term used by the male-dominated medical field to describe perceived emotional disturbances and outbursts experienced by women.¹³ By this time, the medical field no longer believed hysteria to be the result of the uterus freely roaming within a woman's body (!) but it is interesting to note that the root of the word hysteria comes from *hysteria*, the Greek word for uterus.²¹

Motherwort's reputation as an herb beneficial for the heart can be seen in its latin species *cardiaca* and current medicinal use also supports this application.

Leonurus cardiaca

Karen M. Rose, a community herbalist in New York City, recommends motherwort to brighten, soothe, and uplift the spirit in cases of heartbreak. Motherwort tends to our emotional body and can be a great comfort to those experiencing grief and loss.²² British medical herbalists include motherwort in circulatory and heart tonic teas alongside hawthorn (*Crataegus* spp.), linden (*Tilia* spp.), and yarrow (*Achillea millifolium*) to soothe individuals experiencing stress.¹¹ Janet Kent of Terra Sylva School of Botanical Medicine teaches that ongoing stress can impact many body systems, including the circulatory system. Motherwort is specifically indicated for heart palpitations associated with anxiety, nervousness, and feelings of panic, common symptoms during stressful life chapters, including the life shift of menopause.²³

CULTIVATION, HARVEST & SUSTAINABILITY:

Motherwort thrives as a perennial in full sun and part-shade gardens. Start seeds in early spring in flats then transplant outside. Established plants can be divided with a shovel, leaving 18" between plants to allow them space to grow. Trimming back aerial parts through the summer results in 2-3 harvests each year. Motherwort can be quite prickly when mature so wear gloves when harvesting the plant to prevent skin irritation.³ For best results, top dress the plants with rich compost and mulch each fall. Since the plant is widely cultivated and used in the herb industry, there are no sustainability concerns.

CAUTIONS: Motherwort should be avoided during pregnancy due to its ability to stimulate the uterus.¹¹



SAGE

Salvia officinalis

A familiar plant for many gardeners and cooks, common garden sage grows well in the Midwest despite hailing from the Mediterranean region. Sage flourishes in hot climates and can tolerate both humid and arid conditions as long as it has access to full sun and well-drained soil. Its 2 inch long, downy leaves release fragrant essential oils when lightly rubbed. As yet another plant in the medicinally-rich Lamiaceae family, sage has square stems and its bluish-purple flowers produce smooth, round seeds that resemble mustard seeds.

Eclectic physician Harvey Wickes Felter in *The Eclectic Materia Medica, Pharmacology and Therapeutics* wrote that sage was specifically indicated for individuals with soft, relaxed skin, feeble circulation, and cold extremities.⁴ It was considered a 'domestic remedy' in fevers²⁴ and individuals were recommended to drink sage as a hot infusion to encourage sweating⁶ by John King, the author of the Eclectic classic *The American Dispensatory*. King used sage as a gargle combined

with sumac (*Rhus* spp.) berries, honey, and vinegar for inflammation and ulceration of the throat.⁶

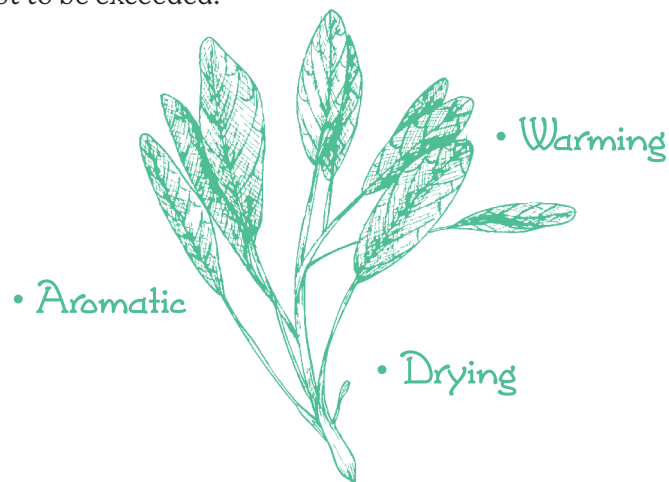
Modern herbalists and other practitioners continue to employ the plant in much the same way as those that came before them. Naturopath Dr. Jill Stansbury recommends sage as a gargle for mouth and throat infections to help tone swollen and boggy mucous membranes.¹⁸ Clinical studies have examined sage's antimicrobial and healing activity for herpes simplex virus; results showed that a topical preparation of sage and rhubarb (*Rheum rhabarbarum*) was as effective as a prescription antiviral cream.²⁵ Sage's astringent properties explain its inclusion in menopause formulas for night sweats by herbalist and naturopath Sharol Tilgner.¹⁶ It is a staple herb in brain and memory-support formulas due to its influence on circulation and the presence of rich antioxidants.¹¹

Because the earth knows the scent of history, it gave the people sage. —Fady Joudah²⁶

Its benefits are not just limited to topical and internal applications. Sage is frequently included in herbal bundles burned to purify spaces as an alternative to white sage (*Salvia apiana*), an at-risk plant incorporated into the ceremonial practices of some First Nations Peoples.²⁷ Herbalist Karen M. Rose binds sage alongside other aromatic garden plants such as thyme, oregano, rosemary, and yarrow, to create an aromatic bio-regionally-appropriate herbal bundle.²²

CULTIVATION, HARVEST & SUSTAINABILITY: Sage thrives in full sun and will return year after year if given the right conditions. Established plants will become small shrubs and leaves can be harvested year round, although cutting the top 4-6" before the flowers open in summer is the preferred timing. Gather seeds a few weeks after plants finish flowering by cutting the spent flower spikes and placing them upside down in a paper bag; the large seeds will fall out easily. Established sage plants can also be divided with a shovel, ideally in spring or early summer.

CAUTIONS: Avoid use during pregnancy and lactation.²⁸ Sage has profound warming and drying abilities. While using sage as a spice is fine, large amounts can cause breast milk to dry up and stimulate the uterus so nursing and pregnant individuals should avoid it. The constituent thujone is extracted in alcohol so sage tincture should be consumed for no more than 1-2 weeks at a time and the standard dose of 3 to 12 g of dried leaf made into tea is not to be exceeded.^{16, 28}





TOBACCO

Nicotiana spp.

Endemic to South America, archeological records document tobacco consumption by early humans in North America over 12,000 years ago.⁵³ Indigenous use was noted by early explorers and tobacco trade was extensive between those that grew it, like the Mandan, Crow, and Blackfoot tribes, and those that did not, such as the Cree and Comanche.⁵⁶ Europeans learned of tobacco in the 1500s when it was presented as a medicinal plant to the Queen of France, Catherine de Medici, who said it relieved her chronic headaches.³⁴ Its popularity spread despite much social opposition. King James I of England in 1604 famously called tobacco 'loathsome to the eye, hateful to the nose, harmful to the brain,' and 'dangerous to the lungs.'⁵⁴

In the 1800s, medical practitioners in the United States recognized the danger of using tobacco internally. It was known to possess powerfully sedating, anti-spasmodic, and anti-parasitic capabilities. Higher doses could cause vomiting and was considered poisonous.⁵ Tobacco was a digestive stimulant but applied only for extreme cases of chronic constipation and bowel obstructions.¹⁵ Eclectic physician John King recommended infusing tobacco smoke into milk or water before injecting it as an enema for these ailments. Despite these instructions, he also stated that 'tobacco

ought never to be used internally, as we have other agents, much safer and fully as effectual, to meet every indication desired' (p. 620).⁶ Topical application was a safer option and the leaves were frequently applied for scabies and other skin conditions.¹⁵ Its antispasmodic action was helpful for hernias⁵⁰ and tobacco smoke was prescribed for spasmodic asthma due to its relaxing action on the bronchioles.¹⁴

Tobacco is still utilized for therapeutic purposes throughout the world. Traditional healers in the Amazon, specifically maestros tabaqueros, specialize in tobacco-based treatments for illnesses both physical and psychological in nature.⁵⁵ Modern herbalist Rachel Budde infuses tobacco, cayenne (*Capsicum annuum*), and st. john's wort (*Hypericum perforatum*) into sunflower (*Helianthus annuus*) oil to create a warming salve for sore muscles. Southern herbalist Lucretia VanDyke uses tobacco smoke to bless other medicines and tools used in rootwork.¹⁷ Notably, Anishinaabe ethnobotanist and medicine woman Keewaydinoquay Peschel points out that it is *N. rustica* not *N. tabacum* that is traditionally made as an offering during prayer.¹⁹

Commodification has shifted usage away from small-scale and ceremonial application to purely recreational. Tobacco is frequently portrayed in such a negative light that it can overshadow the significant spiritual and social roles it has played



throughout history. As one of 1500 plant species burned by humans worldwide, its ethnobotanical impact is vast.³⁴ Smoking is associated with contemplation, meditation, and linked to artists and their creative process, summarized in the following poem excerpt from 1835:

*I owe to smoking, more or less,
Through life the whole of my success.
With trusty pipe I'm sage and wise;
Without I'm dull as cloudy skies.
When smoking all my ideas soar;
When not they sink upon the floor [...]*

—Anonymous⁵² (p. 236)

CULTIVATION, HARVEST, & SUSTAINABILITY: While over 64 species of tobacco exist, *Nicotiana tabacum* is the type grown commercially.¹⁴ Its leaves can reach up to 2 feet in length and the plant is covered in sticky hairs. Wild tobacco (*N. rustica*) is much smaller in size, with delicate stems and leaves. All tobacco varieties have pretty, tubular flowers and can be grown as an ornamental. The burley tobacco variety has been grown commercially in the Midwest since the Civil War and produces large leaves with a highly desirable flavor.^{49,57} Tobacco produces copious amounts of seeds which germinate easily. Start seeds indoors in the spring then transplant outside after the last frost. Plant in full sun and keep well-watered. If harvesting the leaves for use, trim flowers before they bloom to encourage leaf growth. Cut the entire plant in late summer and hang in a humid place with good air circulation to cure. If cured correctly, leaves will soften and eventually darken to the color of an old penny.⁵⁷

CAUTIONS: Chronic use is obviously problematic for the respiratory and circulatory systems, and nicotine remains a powerfully addictive alkaloid. Nicotine is absorbed through the skin so use caution when applying it topically, especially around mucus membranes.



TULSI

Ocimum sanctum syn. *O. tenuiflorum*

Of all the plants outlined in this zine, tulsi is the only plant that the Eclectics did not mention. Since tulsi is native to the Indian subcontinent, it's quite possible that knowledge of the plant hadn't made its way into Eclectic pharmacies by the early 1900s when many of the Eclectic texts were written. While awareness of tulsi might have been limited in the Global North around the turn of the 20th century, tulsi has been deeply revered in India with a long history of cultural and medicinal use that reaches back thousands of years. Everything associated with tulsi is sacred, hence the common name 'holy basil.'²⁹ Tulsi symbolizes purification, protection, and the sacred goddess Tulasi,⁹ and is often found growing in Hindu courtyards and near temples since it is still used as part of daily rituals to Lord Vishnu.^{30,31}

Like many plants found in the Lamiaceae family, holy basil is highly aromatic. Merely brushing by the plant releases riotous plumes of a clove-like fragrance. Two different varieties are most commonly cultivated

in North America: *rama* tulsi and *krishna* tulsi. An additional variety, called *vana* tulsi, is actually *Ocimum gratissimum*, a different species.³² Medicinally, the different tulsis are used interchangeably but differ slightly in their appearance. Plants are bushy and erect, growing over 2 feet tall with oval leaves and either purple or green stems, depending on the variety.³² Its flowers are pale purple and grow on elongated spikes. Despite being a perennial in India, holy basil can be grown as an annual in temperate areas such as the Midwest but truly flourishes in the steamy heat of late summer.

Within the Ayurvedic tradition of medicine, tulsi has been and continues to be valued for treating a broad spectrum of health issues ranging from fevers and skin problems to respiratory and digestive imbalances.³³ It is considered a *rasayana*, an herb that improves overall health and well-being.¹⁰ The leaf is the plant part included in teas and applied topically, but the seeds and root are sometimes used in preparations as well.³⁰ The roots can be carved into mala prayer beads and the seeds are consumed to quiet sexual desires.²⁹ Tulsi clears mucus from the upper respiratory tract and encourages sweating during a fever.³³ Its warming nature stimulates digestive fire and the leaves can be applied to boils, bites, fungal infections, and eczema to calm and heal inflamed areas.³¹

As a mild nervine, holy basil has a reputation for heightening awareness and clearing the mind.³³ Western herbalists consider tulsi an adaptogen, a category of herbs that helps the body to respond to stress with ease and fluidity.⁹ These qualities support the Ayurvedic perspective that the plant increases life force, thus imparting more vigor to the body systems of regular tulsi

consumers. A versatile plant, holy basil can be taken for long-term mood and stress support as tea, tincture, and capsules.¹⁰

The plant's aroma is part of its medicinal action and is quite distinct from other basil (*Ocimum basilicum*) due to its eugenol levels.³⁰ A symphony of additional essential oils creates the plant's unique essential oil profile and can explain why tulsi was specifically burned to repel insects.³⁴

CULTIVATION, HARVEST & SUSTAINABILITY: Tulsi can be propagated from cuttings or seed, although the seeds may take up to 3 weeks to germinate. Scatter seed into flats then transplant after the last frost into prepared garden beds. Harvest by cutting the entire plant while flowering but leave 6-8 inches of the stem to allow tulsi to regenerate.³ Additional harvests are possible, depending on the first frost date. Tulsi is widely loved and grown in the herb industry, as well as in its homeland of India, thus sustainability is not a concern.

CAUTIONS: Although animal studies showed that tulsi may temporarily decrease sperm motility,³⁵ no significant safety concerns are known.





VALERIAN

Valeriana officinalis

Over 400 species of valerian flourish in an array of environments, ranging from Arctic Europe and Asia to North America.^{42, 41} Plants thrive in moist, cool places and can reach up to 3 feet tall with deep green, pinnate leaves. Valerian's small whitish pink flowers waft a delicate floral aroma, a gentle prelude to the smell of the root which has been described as fetid and disagreeable by some and sweet and earthy by others.^{6, 3} Pale brown on the exterior with a whitish interior, the root resembles a tangled rag mop when dug up.³ As it dries and ages, the root becomes increasingly more pungent. Seasoned growers say that it pushes the boundaries of interesting and even 'plant lovers find them somewhat stinky if not downright offensive' (p. 345).³ Despite mixed olfactory reviews from humans, valerian is a beloved plant to beneficial insects: ladybugs in all development stages can be found on the plant in the summer.

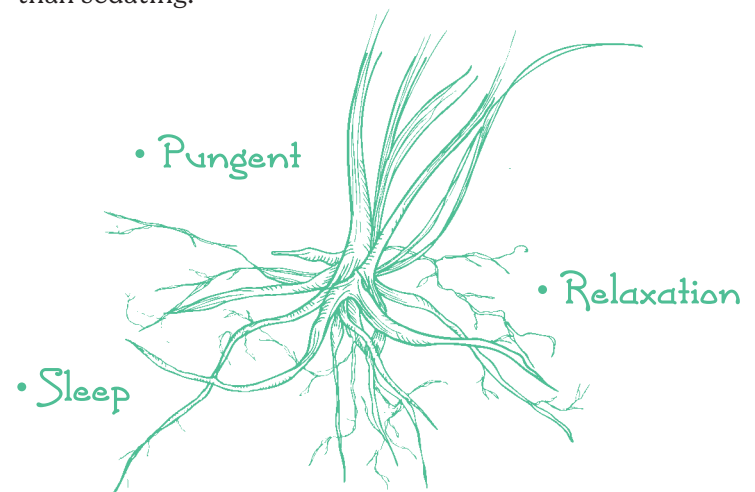
Medicinal use of valerian dates back 2000 years to texts written by Greek and Roman physicians Dioscorides and Galen who both reported on valerian's sedative effects.⁴³ Favored by the Eclectics for diverse applications, valerian was indicated for conditions ranging from spasms and hysteria to depression, headache, and nerve pain.^{4,15,24} Eclectic physician Harvey Felter said 'in mental depression, due to worry or imaginary wrongs, valerian is an admirable drug' (p. 441) and he considered the plant one of the best calmative agents for nervousness.⁴ Copious volatile oils meant that it acted as a carminative, reducing gas and discomfort after eating.⁴ Notably, the Eclectics classified it as both a cerebral stimulant and relaxant, with its action determined by the dose; large doses were stimulating to the system and low doses were relaxing.²⁴

Modern herbalists frequently employ valerian in similar ways to the Eclectics. Midwest herbalist Lisa M. Rose classifies it as a nervine and blends it with lemon balm (*Melissa officinalis*), passionflower (*Passiflora* spp.), and skullcap (*Scutellaria lateriflora*) for anxiety and insomnia.³⁸ East Coast herbalist Maria Noël Groves uses valerian especially when pain keeps a person from sleeping.⁴⁰ In her clinical practice, Meghan frequently incorporates it in sleep formulas, especially when individuals don't tolerate ashwagandha (*Withania somnifera*) due to Solanaceae sensitivities and kava (*Piper methysticum*) is deemed too potent.

CULTIVATION, HARVEST, & SUSTAINABILITY: Valerian's life-force begins to wane after 3-5 years of growth so roots are best dug in their second or third year. There are mixed reviews about root harvest time: some growers

recommend harvesting it in early spring when the roots are thickest³ while others advise digging roots in the fall.⁴⁴ Valerian is great at self-seeding and baby plants can be found throughout the garden and lovingly dug up and replanted. Its copious small seeds are topped with a tuft of fluff which helps them travel on the wind.³ Fresh seed germinates best; since plants need light to germinate, cover the seed with only a thin layer of soil.⁴⁴

CAUTIONS: Some sources recommend caution when taking valerian and doing activities that require an alert mind but clinical trial evidence for this concern is lacking.¹² A small percentage of the population (~2-3%) reports valerian's stimulating effects, which includes increased heart rate and agitation.¹² Southwest herbalist Michael Moore cautions that regular use of the dry root can cause mental agitation.³⁹ Since a person's individual response to valerian varies, it is wise to start with a small dose when taking it for the first time and choose another relaxing herb if valerian proves to be stimulating rather than sedating.



Medicine Making

Caring for medicinal plants and making herbal preparations with the harvest is one of the best ways to cultivate a relationship with our plant allies. Spending time with them in both wild and cultivated places deeply nourishes our spirit. Just being outside helps shift our human-centric perspective to be more inclusive of the other living beings that share our world. Our ancestors tended and consumed herbs for their therapeutic and nutritional needs and that history is embedded in our bodies. I encourage you to spend time in the green spaces that surround you and get to know the names and characteristics of the plants that call those places home. Tend to the land, touch the earth, and know that those that came before you did the same.

Below you will find the basics of how to make a few fundamental herbal preparations but there are many great books available when you want to dig deeper. I recommend starting with *The Herbal Dispensatory* by Thomas Easley and Steven Horne, *The Handmade Apothecary* by Vicky Chown and Kim Walker, *Making Plant Medicine* by Richo Cech, and any book written by the southwestern herbalist Michael Moore. After over twenty years of fiddling around in the apothecary, the best advice I can give to budding herbalists is: 1. take meticulous notes of each step as you make things 2. keep trying different combinations; some of the best formulas begin as unexpected formulations.



Herbal Teas

Teas are typically made with the more delicate parts of a plant, such as its flowers and leaves. Medicinal compounds are found in these parts and are easily extracted in water since the cellular walls are so thin. Chopping or crumbling the flowers and leaves into smaller pieces can help the extraction process since it increases the surface area. While some herbal traditions teach the practice of boiling the flowers and leaves, I was taught that this is to be avoided as it can damage the more fragile compounds.

STANDARD TEA DIRECTIONS: Boil water and remove from heat. Pour 8-12 oz of boiling water over 2-3 tsp of herbal tea. Steep for 3-5 minutes, strain, sweeten as desired, and drink as needed. *Note:* a longer steep time and a smaller amount of water makes a stronger cup of tea.

HERBALIST TIP: Buy a french press to be used with herbal teas only: it's so much easier to clean than a teapot! Avoid using the same press for coffee since it will overpower the herbal flavors and make the tea taste vaguely like coffee.



Decoctions

Roots, berries, and barks are typically simmered in water over low heat for 15-30 minutes or longer, depending on the recipe. The extended time on the stove breaks down denser plant material and extracts the medicinal compounds into the water. Chopping, grinding, and powdering the plant increases the surface area and creates a more thorough extraction.

STANDARD DECOCTION DIRECTIONS: Add 1-3 Tbsp of desired roots, berries, and barks to 2 cups of water in a small saucepan. Bring to a boil, then reduce to a simmer. Keep covered with the lid slightly askew to allow some water to evaporate so that the final decoction is more concentrated. After the desired time, strain the decoction, sweeten to taste, and drink as needed.

HERBALIST TIP: Use a cast iron or enamel saucepan to minimize the possibility of burning the tea as it simmers. For decoctions simmered for a long time (1-2 hours), use a small crockpot on the lowest heat setting.

Tinctures

A tincture is an alcohol extract of one or more herbs. The alcohol acts as the solvent or *menstruum* and the herb, which is eventually strained out, is called the *marc*. Alcohol acts as a natural preservative and extracts a broad array of plant compounds. Tinctures are swiftly absorbed in the body through the stomach lining. Many types of alcohol can be used in tincture-making but vodka is easy to start with: it is inexpensive, has no flavor, and extracts many medicinal compounds well.

STANDARD TINCTURE DIRECTIONS: Combine one part dried herb with five parts menstruum, place in a large jar, shake well, and allow to steep at room temperature for 2 weeks. Shake the jar every few days. After 2 weeks, strain the mixture through a cloth into an amber jar and take as needed. For example, 20 grams dried catnip (*Nepeta cataria*) in 100 mL vodka creates a 1:5 ratio tincture.



HERBALIST TIPS: Keep detailed records each time you make a tincture: weigh your herbs on a digital kitchen scale, keep track of how much alcohol you started with and how much final tincture you ended up making. Get curious about extraction

techniques and different formulas. Read up on ideal alcohol ratios in Dr. Sharol Tilgner's book *Herbal Medicine From The Heart Of The Earth*. Tincture making is a special skill within the world of herbalism!

Salves

A salve is a mixture of oil and beeswax that is applied topically for its therapeutic benefits. Sunflower, coconut, argan, and apricot oils are all excellent in salves and can be combined or used individually. Herbs can be infused into the oils to impart their medicinal qualities. Essential oils (EOs) may also be added for scent and/or medicinal action or the salve can remain unscented. Beeswax is used to harden the mixture. Salves are especially great in the depths of winter for cracked and chapped skin.

STANDARD SALVE DIRECTIONS: Heat 1 cup of oil(s) in a double boiler over medium heat. Shave beeswax using a cheese grater or serrated knife. Measure 15 grams of beeswax, add to oil, then stir gently until completely melted. Test salve hardness using the frozen spoon tip below. Add more beeswax a few grams at a time until the desired hardness is reached. If adding essential oils, remove pot from heat then add EOs and stir gently. Pour into small jars or tins, allow to cool, label, then use as needed.

HERBALIST TIP: Place a few spoons in the freezer before you begin making your salve. When you are testing the consistency and deciding on whether to add more beeswax, dip one of the frozen spoons in the beeswax/oil mixture and allow it to harden. Add more beeswax and retest with another spoon until the mixture is the desired consistency.



RESOURCES

Lloyd Library Literary Gems

This list highlights a slice of the exceptional resources housed at the Lloyd Library in Cincinnati, Ohio that were critical in the research and crafting of this zine. These texts span almost 200 years and offer a wealth of knowledge from nature-based physicians and pharmacists, female botanists and artists, Indigenous scholars, poets, modern herbalists, cultural anthropologists, and medicinal plant growers. We honor the expertise and significant contributions of these authors as well as the many unnamed and unrecognized keepers of plant knowledge that are woven into these texts and the broader botanical world, often from historically marginalized communities throughout history.

A Curious Herbal: Elizabeth Blackwell's Pioneering Masterpiece Of Botanical Art by Martha McDowell (2023)

African American Herbalism by Lucretia VanDyke (2022)

American Herbal Products Association's Botanical Safety Handbook by Zoe Gardner & Michael McGuffin (editors) (2013)

Anna Atkins: Blue Prints by Rolf Sachsse et al (2021)

Botanic Manuscript Of Jane Colden 1724-1766 by Elizabeth C. Hall (1963)

- Burley: Kentucky Tobacco in a New Century* by Ann K Ferrell (2013)
- Capturing Nature: 150 years Of Nature Printing* Mark Zucker (editor) et al (2022)
- Cultivating Women, Cultivating Science: Flora's Daughters and Botany In England 1760-1860* by Ann B Shteir (1996)
- Family Physician and Home Guide to Health and Happiness* by Wooster Beach (1861)
- Herbal Formularies for Health Professionals: Volumes 1-5* by Jill Stansbury (2018)
- Herbal Materia Medica* by Michael Moore (1995)
- King's American Dispensatory* by Harvey Wickes Felter & John Uri Lloyd (1909)
- Medical Flora* by Constantine Samuel Rafinesque (1828)
- Plants Have So Much To Give Us, All We Have To Is Ask: Anishinaabe Botanical Teachings* by Mary Siisip Geniusz (2015)
- Summer In a Bog* by Katharine Dooris Sharp (1913)
- The American Dispensatory* by John King (1854)
- The Handmade Apothecary* by Vicky Chown & Kim Walker (2017)
- The Organic Medicinal Herb Farmer* by Jeff & Melanie Carpenter (2023)
- The Plant Baby and its Friends* by Kate Louise Brown (1897)
- The Town of the Beautiful River* by Elizabeth Rockey Kellogg (1915)
- Tobacco Harvest: An Elegy* by James Baker Hall & Wendell Berry (2022)
- Uses and Abuses of Plant-Derived Smoke* by Marcello Pennacchio (2010)



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