



375



ESSENTIAL  
OILS AND  
HYDROSOLS



JEANNE ROSE



*375 Essential Oils and Hydrosols*

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## Foreword

Ah, 1998! When one procreational/recreational drug, Viagra, reportedly killed 150 Americans (130 reported by CNN on November 25, 1998)! When *Time* magazine features alternative medicine on the cover! When the *Journal of the American Medical Association (JAMA)* devoted a whole issue to alternative Medicine! When the *New England Journal of Medicine* criticized Saw Palmetto for working and *JAMA* criticizes garlic for not working. In 1997, they lambasted the “dangers” of herbal medicine while forgetting about the numbers in their own pages; “140,000 Americans Killed by FDA-Approved Drugs in the US.” (*JAMA*, 1998). In one recent decade, more than half the new FDA approved drugs had to be recalled permanently (or recalled and re-labeled) because of side effects not anticipated by the \$500-million study it now takes to prove a new synthetic drug “safe” and efficacious. In spite of this, physicians, who average less than ten minutes with each of their patients, wonder why more Americans are turning to gentler herbal medicines. Drugs are killing thousands of us. Herbs are helping thousands of us.

Yes. The Herbal Revolution was launched back in Santa Cruz in the early 1970's, where I first met Jeanne Rose. It has marched relentlessly on, leading us into the new millennium. New Age herbs—cheaper, safer, and gentler—have slipped into the pharmacies and HMOs, side by side with synthetic pharmaceuticals. It is a consumer driven revolution, this Herbal Revolution. Yes, Jeanne and I enjoyed sunny Santa Cruz in this formative period of the Herbal Revolution. *La 'Grande Dame'*,\* Jeanne Rose and the *herbalbum*, Jim Duke, were among many luminaries there launching the momen-

\*Editor's note: Jeanne Rose was known for the publication of the first herbal book, *Herbs & Things*, the first and very popular herbal of the New Age in 1972.



tous revolution. It was my herbal coming out, a closeted herbalist, working with the Medicinal Plant Laboratory of the very conservative USDA. I recall Jeanne's passionate talk, delivered to an outdoor audience. She was herbally active for both positive and negative reasons: negative because chemicals had nearly disabled her lungs, and positive because she had seen the light of the gentler alternative medicines.

Given the choice between an herbal and a pharmaceutical alternative, I'll take the green. In my 69th year, 1998, I've taken a total of seven Advil® tablets, my cumulative synthetic drug consumption for the year. Granted, I've taken several herbs, though only one religiously—celery seed, an herbal alternative to allopurinol. I have been more depressed by the disheartening mortalities in the miniprint on the flip side of the pharmaceutical drug industry than impressed by the quality of the sponsored science in their megaprint. I can name several pairs (herbal alternative/competing pharmaceutical) where the pharmaceutical has killed and the herb has not. Not only am I enjoying good health with my herbal preventative and curative medicines; I am growing them, harvesting them in fields and forests, and spending more than the HMO standard 6 minutes with my green physician, my temple, the forests, with all its green spirits.

Like Jeanne, I have developed a growing respect for Traditional Chinese herbal medicine, Ayurvedic herbs, Native American herbs (North, Central and South American), and am particularly impressed with the power of the aromatic plants and their essential oils. Essence, of course means spirit, and the spirits of the plants are, literally and figuratively, the volatile molecules by which we unconsciously identify many plants. Our genes already know the friendly aromatic plants, if our parents, grandparents, or ancestors sniffed or ingested them.

As we languished on the sunny slopes of Santa Cruz, who could have anticipated that one of the aromatic compounds our ancestors had known, methyl salicylate, was used by the plants to communicate with one another. When one plant is attacked by an herbivore, it converts some of its relatively non-volatile salicylates to volatile methyl salicylate, a Paul Revere molecule which wafts off to the next individual plant to alert it that the herbivores are coming. On every



continent humans have learned independently the medicinal attributes of this messenger molecule. It is part of the essence of many plants, though often below the threshold at which our noses can detect the salutary spirit. This morning, my knee has the characteristic wintergreen aroma, alleviating the pain of an arthritic ex-jogger's knee which pushed the lawnmower too hard yesterday.

I feel sorry for those anosmic people I know, unable to detect the molecular messages of the fragrant flowers and herbs. But, whether I am traveling with Shuar Shamans, Sinese Scientists, Seminole Swamp-runners, or Sinai Specialists, I note that all inquiring minds, when asked about the identity of an herb, first look for the morphology, the overall appearance; then smell, for the volatile biochemistry, and sometimes even taste, for the less volatile molecules, gathering the various clues that enable us all to identify plants. Some seem even to have a sixth sense to understand the innate healing ability of the herb with no prior experience of the herb. Such is the case of my shamanistic healer, my Cocama Indian friend in Peru, Antonio Montero Pisco. He describes humanoid essences in the plants, with a characteristic suite of spirits for each species of plant. Big spirits, little spirits, good and evil, tall and short, thin and fat, male and female, hot and cold, black and white, yin and yang, etc, etc... Is he seeing the thousands of homeostatic equilibrating chemical reactions constantly taking place in living plants and animal? Homeostatic equations keep us in balance, within reason! Taking a balanced (read checks and balances, antagonisms and synergistic mixes of thousands of chemicals) herbal medicine is less likely to upset the balance of the homeostatic patient, with his or her thousands of simultaneous homeostatic equilibrating chemical reactions constantly in play. Less likely to upset than the solitary synthetic silver bullet, which may indeed act faster and stronger, both on and off target, hence accompanied by faster, more frequent and more frightening side effects.

I don't see the spirits that Antonio sees. But then again, he is often aided by molecular messengers. Atropine, n,n-dimethyltryptamine, harmine-oxide, harmine, harmaline, myristicin, nicotine, scopoletin, and scopolamine, e.g., molecules that open the mind, albeit dangerously, to see his spirit world. He sees human spirits. I, poor chemist that I am, have visions of molecular models appearing as an orgy of black, white, red and green pool balls getting it on. I



know my point of view is not real. I don't know about his. Perhaps when I peek into the soul of the ceiba tree with the sustenance of the soul vine (essence again), I'll see that the Shaman and I are seeing the same thing, from different paradigms. My energized pool-balls and his humanoid spirits are the same, the reason we hold up a plant and sniff, the essence of the plant.

Who among us would have guessed in Santa Cruz that the metabolites of the sedative lavenders could be detected on the breath, just moments after application to the skin. Or that the aromatic messenger and CNS-stimulant, cineole, would enable a rat to better negotiate a maze, whether it be inhaled, ingested or topically applied. And who would have guessed that Rosemary, the herb of Remembrance, would prove to contain nearly a dozen different aromatic compounds which slow the breakdown of acetylcholine, the mental messenger molecule often deficient in individuals with Alzheimer's and senile dementia. Who among us can describe the aroma that tells us that Cherry Birch and Wintergreen in the North Woods, and the Polygala in the South Woods share the same chemical, that pleasant anodyne, methyl salicylate? Who would not be surprised by the identical aromas of Chile's Boldo (*Peumus boldus*) and Maryland's Epazote (*Chenopodium ambrosioides*), a completely unrelated species, except chemically? Soon, the sniffer realizes that they both contain ascaridole, a useful compound, but dangerous, like all chemicals, natural and synthetic because in overdoses it upsets the body's homeostatic chemical reactions. Who can describe the unique aroma of the Sweet Annie, alias qinghao (*Artemisia annua*) unlike any other plant, unlike even any of the 500 *Artemisias*. We identify it by its odor, but cannot describe it, since it is unlike any other. It is not at all like the moxa or mugwort, *Artemisia vulgaris* being burned at the Santa Cruz Herbal Rebirthing. It smells so much like burning grass that some Native Americans and Chinese acupuncturists have been arrested on marijuana charges. JAMA's Armistice Day issue in 1998 reported clinical studies showing that moxibustion with *Artemisia vulgaris* could lower the incidence of breech births in the first pregnancy.

The modern acceptance of ancient plant knowledge has opened the minds and eyes of many converts. Despite this, many are walking around blind. The information superhighway is full of sound



bites, but nothing of real sustenance. What do the names mean, what are the differences in where the plant is grown and what part is used and how does it work? Most of us never consider these details. Why not? When you meet a new person, don't you want to find out where they are from, what their life experience has been, what they like and don't like? Unless you ask, how do you really get to know them and without these details, what will set them apart from the other faces in the crowd?

*375 Essential Oils and Hydrosols* is the aromatic equivalent of an introduction service. Let Jeanne Rose do the 'scentual' introductions. She has dug into closets and unearthed secrets. Her storehouse of information includes personal histories, family trees, with similarities and differences, individual do's and don'ts; likes and dislikes, and personal stories to make the plants come alive.

Jeanne Rose does it again, detailing the aromatic world in a new light. In this book she combines ancient and the modern biochemical knowledge, along with her revolutionary experiences, and decades of hands-on involvement in aroma and body products, natural cosmetics and medicines, these are the 'naturals' for which Americans are increasingly clamoring. Laid out for the reader in thoughtful detail are the secrets, essences, and aromatic molecules of some of our most fragrant friends, presented to you by The Grand Dame of Aromatic and Cosmetic Herbals.

—James A. "Jim" Duke, Ph.D.  
Former ethnobotanist, USDA  
Director, Duke's Herbal Vineyard  
Fulton, Maryland, Fall, 1998



## Introduction

If it is true that the word *aromathérapie* was coined by the French chemist René-Maurice Gattefossé in the 1930s and that medical aromatherapy is known and applied by thousands of French doctors and their colleagues pharmacists, it is similarly true that we attend in the North American Continent and especially in the USA, to an exponential growth of the use of essential oils. This authentic 'Aromatic Revolution,' the fourth one on planet Earth, entails, in a country full of contrasts like the US, 'the worst and the best.'

Some individuals become 'certified aromatherapists' after a few days of training and many books are mere 'copies of copies of copies'...with all the mistakes and inaccuracies involved by a hasty work of compilation!

Fortunately, this new book by Jeanne Rose belongs to the category of 'the best' and it is a delight for me to introduce the reader to the modestly entitled *375 Essential Oils and Hydrosols* whose reading gave me such pleasure and a inspiring global perspective. As Jeanne Rose points out clearly:

*I view aromatherapy as a branch of herbalism,  
and learning when use of the herb is preferable  
to use of the essential oil is an important  
aspect of aromatherapy training.*

Thanks to her encompassing understanding of the vegetal kingdom and its uncountable and powerful resources, Jeanne Rose takes the reader in a travel that remains always refreshing and exciting, rich in personal reflections and live experience, be it on herself or with her students or clients.

I have been involved with natural medicine for over thirty years



and I have practiced extensively and intensively medical aromatherapy for over twenty years. My first 'blessing' was to be introduced to the molecular understanding of EOs through my initiation with Pierre Franchomme. This is a necessary analytical stage that needs to be assimilated; it needs also to be integrated into a larger frame of reference, more holistically oriented. My second blessing was to perceive the reality and subtlety of the approach developed by English style aromatherapists. The third blessing was to be inspired in order to conceive a frame of thinking and working that I call 'Integral Aromatherapy,' where the Yang, scientifically oriented French style concept is perfectly complemented by the Yin, intuitive inspired English style way of perceiving and practicing.

In the teaching and in the work of Jeanne Rose, I can feel and recognize the existence of both influences, each at their own place, without any conflict about which one is superior to the other! In fact, the only 'superiority' lies in their conjunction and their unification, in the same way as a human being need his/her intellectual left brain and her/his artistic right brain working in perfect harmony.

On the one hand, Jeanne Rose, over decades of learning the scientific and botanical side has trained her intellectual brain in the best possible way; this accounts for the clarity and the accuracy of her presentation. On the other hand, living almost in osmosis with the world of plants since her early childhood, her intuitive brain was in no way 'strangulated or stifled' by the intellectual counterpart. This is why I acknowledge in her work this integral approach to essential oil's which I find so fascinating and so promising for the integral medicine of the next century.

I enjoyed very much the taxonomical approach and the botanical description of the overall perspective of the aromatic vegetal kingdom, topics which are rarely exposed in current English aromatherapy books.

I was fascinated to learn many details about The Aromatic Plant Project and the production of high quality hydrosols from organically grown plants by US farmers. I can only say "Bravo" and let aromatic plants be grown and floral and herbal waters (hydrosols) be produced from Florida to Alaska, from Texas to Idaho and from



California to Labrador. I loved the chapter Essential Oils Are More Than Stinky and all that Jeanne Rose wrote about the complete sensory experience. In itself, Chapter 3 is a pure jewel of reading and doing.

And I was thrilled to discover that the right time for conifers EOs to begin to be recognized for their incredible power is coming with Jeanne Rose's book. It is already a very significant step to devote a full chapter to the Conifers, who are so often confused and left on the side in most other aromatherapy books. This first accurate description of the aromatic initiators on planet Earth is to my eyes auspicious for the advent of their full recognition in the close future, when my work entitled "The First Aromatic Revolution and the World of the Conifers" will be translated and published in English.

When I discovered that Jeanne Rose had received the inspiration of including this Conifers chapter, it was for me the absolute confirmation that we are on similar wavelengths and that we share 'above spirit guides' that help us increasing the collective aromatic awareness which symbolizes the Fourth Aromatic Revolution we live nowadays all over the planet.

I am convinced that this comprehensive book will prove quite helpful both for 'old aromatherapists' who will brush up their knowledge and for newly trained aromatherapists who will be at once on a serious track that they will from then on follow with earnestness and passion.

Jeanne Rose, who is accomplished in reading French, played a major role in creating the French-American connection with her involvement in the first and original translation into English of Gattefossé's book.

This new guide represents a step further on the road that leads us towards better understanding, respect, and acceptance, and finally to a harmonious cooperation between all of us engaged in this planetary salvation task.

I wholeheartedly thank Jeanne Rose for her precious contribution. I know we will have a lot to share in the coming years.

—Daniel Péroël, M.D.

Drôme Valley, December, 1998



## Introduction to the Author

I first read Jeanne Rose's *Herbs and Things* in 1972 while living on a houseboat moored at Gate 6 on Sausalito's colorful waterfront. The word aromatherapy was not yet used at that time in the United States, but as I read about the properties of essential oils that she mentioned, the seed of curiosity was planted in my mind. Over the past ten years I have had the good fortune to get to know her better.

Jeanne Rose is a medical herbalist, educator, author and president emeritus of the National Association for Holistic Aromatherapy (NAHA). With degrees in zoology and marine biology, as well as graduate research in herbs and pesticides, she combines an academic discipline with her hands-on knowledge of healing plants. I would like to give my impression of the scent of this remarkable woman, the essence of Jeanne Rose.

She embodies what the Welsh poet Dylan Thomas called "the force that through the green fuse drives the flower." And she is a force of nature, a presence to be reckoned with. She is a dynamic and dedicated visionary activist who gets her hands dirty with the experience of growing, harvesting, and distilling aromatic plants. She radiates a discerning sense of holistic wisdom as she pollinates her students with a knowledge of plant identification, botany, chemistry, and practical usage.

Jeanne's own garden at her Carl Street home in San Francisco is planted with a great variety of herbs and flowers, including her legendary Lemon Verbena tree. In her workshops, she shares her passion for distilling essential oils and especially hydrosols—the aromatic waters which have a wide range of uses including health, beauty and skin care.

Thinking of the big picture, Jeanne Rose initiated The Aromatic Plant Project (APP) in 1990. The mission of the APP is to encour-



age a grass roots movement of small scale local growers and distillers who plant and distill quality therapeutic aromatic plants, and consumers, who use these products. The aim is to evolve a sustainable agriculture of a variety of aromatic crops which produce exceptional essential oils and hydrosols. The resulting crop diversification and distillation is the way of the future, proclaiming that variety is truly the spice of life.

Every time that I hear her talk about the APP at conferences, I feel her animated enthusiasm for the project. Distillation is envisioned as a combined art and craft with obvious parallels to vintage wine making. Central to this theme is the concept of *terroir*—the ecological atmosphere of a location which influences the aromatic composition of plants—the sum of the terrain, soil, water, light, shade, wind, plus other flora and fauna. In geomancy, we refer to this as “the spirit of place.” *Terroir* is the essence of holistic systems thinking.

Jeanne’s *375 Essential Oils and Hydrosols* is a synesthetic invitation to experience the joys of aromatic plants. Similar to a wine appreciation guide, she describes scent types, the taste, viscosity, and the colors evoked by the imagination on sampling an essence.

Many of her students know the therapeutic, behavioral, skin care, and perfume uses of essential oils, but cannot recognize the plants from which these essences originate. Jeanne Rose ceaselessly campaigns to rectify this botanical illiteracy under the banner of the APP. And she has generously bequeathed her rare and extensive herbal library to the distinguished Lloyd Library in Cincinnati, Ohio, and her collection of herb medicine bottles and botanical prints to the American Botanical Council in Austin, Texas.

As a botanical ambassador she spreads the aromatic word far and wide, educating consumers to the beneficial uses of essential oils and hydrosols. Her teaching schedule in her “AROMAtHERapy 2037” newsletter, which includes aromatherapy classes in Jamaica, Martha’s Vineyard, Texas, and British Columbia, reads like ads in a travel magazine. She does not let moss grow under her feet.

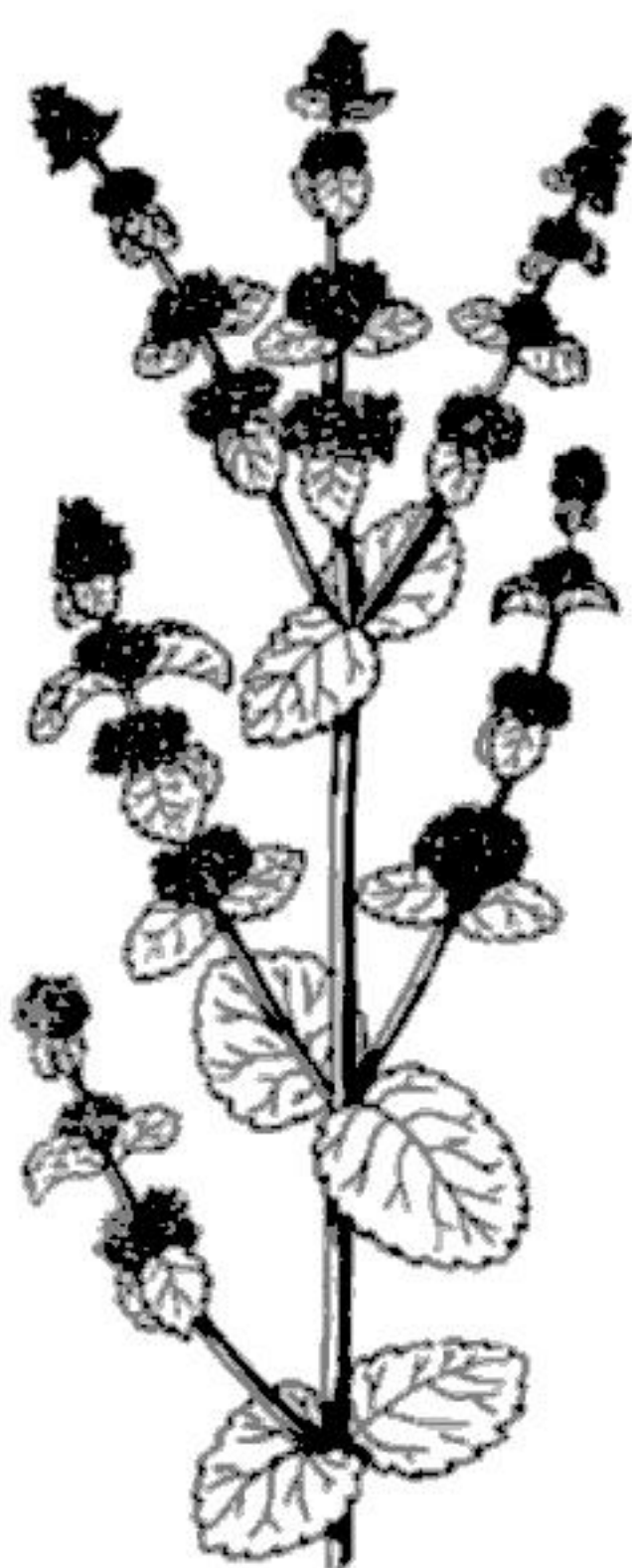
Jeanne is a Green Woman who embodies committed aromatic action. There she goes in her Honda stuffed with 250 pounds of



lavender just harvested in Santa Barbara on a mad relay drive with her son, the lavender to be distilled in Sonoma, she trails fragrant clouds of glory down the California highways.

—John Steele, Aromatic Consultant  
Sherman Oaks, California, December 1998





*Apple Mint*

## ONE

# Introduction to Aromatherapy Botany

### Why Botany?

It's good to know basic plant structure or morphology, which comes from the Greek word *morphos*, meaning form. Learning botany is in some ways like learning a new language, difficult, but, definitely worthwhile. Once one understands the language and begins to become aware of the terms of their meaning, it allows for a sharpening of one's focus and ability to differentiate between plant families and different types of plants. The advantage of learning terms is that it organizes one's perception, so that one can actually see patterns in the plant world.<sup>1</sup>

Knowledge of these botanical patterns, in combination with intuition, helps hone the skills of the practicing aromatherapist in choosing oils to match clients' patterns in order to create the perfect fit of health and beauty; furthermore, a clear understanding of botany will afford the aromatherapist a more precise and broad ranging ability in developing synergistic blends. As research projects and scientific papers in aromatherapy grow, this knowledge will be essential.

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<sup>1</sup>Inspired by H. J. Fuller and O. Tippo, *College Botany* (New York: Henry Holt, 1948).



## Why Taxonomy?

Taxonomy is the study of plant classification and relationships. It's also called *systematic botany*. It's needed because there are so many kinds of plants; at least 500,000 living species have been described. A top taxonomist may only be able to identify 5000 species.

There are several systems of classification. Pliny, A.D. 23–79, used size and form as criteria and established three primary groupings—herbs, shrubs, and trees. During the Middle Ages plants were described on the basis on their use: medicinal plants, edible plants, and poisonous plants. Linnaeus (Carolus Linnaeus, a great Swedish botanist, 1707–1778) established a classification based on the number of stamens. Stamens were considered to be sex organs, and many of Linnaeus' contemporaries considered his system to be obscene. These three systems are considered *artificial systems*: they consist of classes set up arbitrarily.

A *natural system*, on the other hand, is based on natural relationships. In other words, similar plants are placed in groups based on their true affinities to one another. Typically, the simpler plants are placed first, and the more complex ones follow. Essentially, natural systems reflect evolution. Natural systems of classification are relatively recent in origin. Their development is based upon the accumulated research and interpretation of structure and development of generations of botanists.

## Definition of Terms

*Genus* (Latin for race or kind)—a group of closely related species. The first part of the Latin binomial (e.g. *Artemisia*) is the name of the plant. Its first letter is always capitalized, and it is written in italics. *Species* (sp=a specie) (spp=species) (L. species—form, kind)—usually the smallest unit in the classification of organisms; a group of individuals of the same ancestry, of nearly identical structure and behavior, and of relative stability in nature. The individuals of a species ordinarily interbreed freely and maintain themselves and their characteristics in nature. The second part of the Latin binomial name is written in lower case (e.g. *Artemisia arborescens*), and it is written in italics.

*Subspecies* (ssp=subspecies)—subdivision of a species; a taxonomic



category that generally is the lowest used below a species, designating a *morphologically* distinguishable group whose members are at least partially or wholly *isolated* geographically. Think of such plants and animals as those of the Galapagos Islands (e.g. *Citrus aurantium* ssp. *aurantium*).

*Variety/subspecies (var/ssp)*—often a named, cloned type. (Think of wine, such as the 200 varieties of Cabernet). It is an inferior category to a species, and has nothing to do with geographical isolation.

*Variety*—Like the subspecies, the variety has been employed in several ways. It is often used today for local facies (the particular look) of species (apparently comprising a few biotypes), morphologically distinct and occupying a restricted geographical area (DuRietz, 1930; Rothmaler, 1994). Emphasis is on the small-scale, more localized range of the variety, compared with the large-scale, regional basis of the subspecies (Heywood, 1959a). In this sense, varieties may be geographical, ecological (ecotypes), cytological (cytodemes), or a combination of these (several varieties are often recognized within one subspecies). The variety is also used for variations whose precise nature is not understood; a treatment often necessary in the pioneer phase of taxonomy.

This distributional hierarchical construction is to some extent independent of the morphological differences involved: subspecies may differ from one another in fewer and less well-marked characters than varieties or even forms within the same species.

*Race*—an intraspecific category characterized by conspicuous physiological (physiological race), biological (biological race), geographical (geographical race), or ecological (ecological race) properties. Usually restricted to animal groupings (e.g. in humans: Asian, Caucasian, etc.).

*Breed*—usually reserved for animals. A group of organisms related by descent; an artificial mating group having a common ancestor; used specifically in genetic studies of domesticated species (e.g., for cows: Angus, Hereford, Guernsey, Holstein).

*Cultivated Variety (CV)*—made and cultivated by man, also called a Cultivar—not made by nature. (e.g., in Lavender, *Lavandula x intermedia* cv: Abriali, Super, Grosso)



*Clone*—propagation of a particular plant by budding or by cuttings through many vegetative generations (nonsexual).

*Chemotype (CT)*—chemical composition of the essential oil where one chemical dominates over the norm—is dependent on terroir (e.g., in Basil, *Ocimum basilicum* CT, Linalool, thymol, eugenol, etc.)

## Terroir

A French word that reflects the expression of the earth, the particular planting site (its topology), in the resultant essential oil. The factors of soil, shade, wind, water, altitude, rain, and terrain make up the terroir.

One of the mystiques of essential oils is the variations available. First, let's consider some of the variables in agriculture.

*Clone Type* (Clonal selection of the variety)—Clones are like identical twins but even closer, yet they show some different characteristics that can have a rather dramatic difference in the end product. As an example, there are over twenty-five different identified clonal selections of Basil.

*Where Planted* (Location of the planting)—Any place, while only a relatively small area in relation to other growing regions of the world, exhibits widely different soil types, depths, textures, drainage, fertility, slopes (from steep hillsides to flat land), sun exposure, altitude, etc. Even within a small property, we see finite differences within a small distance.

*Weather* (Weather variations)—The amount of rainfall and the time of year in which it falls can directly affect flower and seed size, chemical concentration, and health of the plant. We see a wide variation of rainfall within any area. Regarding local temperature, there are hot spots and cool spots in any area.

*Location* (Location relative to the water or mountains and the amount of wind present are also factors)—Finally, there are the year-to-year weather variations, which can be significant. In recent years there have been both unusually hot seasons and long, cool growing seasons.

A significant number of variables have been covered here without



even touching on growing or distillation techniques, which are some of the most important variables. We will talk about these later.

## **Why Do Plants Smell?**

We read in *Leaflet* magazine that plants have a scent for two basic reasons: *defense* and *attraction*. The essential oil smell from leaf, root, and bark **defend** plants against being browsed or chewed; flower and fruit scents **attract** animals for pollination and seed dispersal. The goals of these two strategies are often diametrically opposed. For example, the Western Azalea (*Rhododendron occidentale*) has skunk scented leaves but the flowers are sweetly perfumed.

Leaves are often covered with a mass of tiny cells filled with smelly molecules known as volatile, essential, or ethereal oils. Many of these oils belong chemically to a family of compounds called terpenes. Not only do these oils render the leaves unappetizing or downright sickening to animals seeking a meal, they also evaporate readily on hot days to cool the leaf surfaces. In addition, some of these terpenes have been implicated with inhibiting the growth of neighboring plants and seeds when they are carried into the soil on water droplets.

Flower fragrances are primary or secondary attractants of pollinators. Pollinators may be attracted to flowers from a distance by a combination of color, shape, and fragrance, although all of these factors may not be involved for all pollinators. For example, dung beetles are strongly attracted to certain aromas such as the putrid odor of the spadix of the Voodoo Lily (*Sauromatum guttatum*). The putrid odor is caused when certain amine-containing molecules are broadcast efficiently and far as the flowers' spadix heats up. Many tropical bats are attracted by the odor of overripe fruit. Hawkmoths hone in on flowers from some distance when they perceive the cloyingly sweet odors of such night bloomers as Angel's Trumpet (*Datura* spp.), night-blooming Jasmine (*Cestrum noctiflorum*), and Nicotianas (*Nicotiana* sp.).

Other flowers offer scent that is only perceptible at short range, and sometimes only when the pollinator has already landed on the flower. By providing cues in the form of color guides and odor trails,



these flowers help guide pollinators to their reward of pollen or nectar. Many members of the pea family (Fabaceae) and orchid family (Orchidaceae) are particularly noted for their specific odor patterns.

The nature of flower odors varies according to the group of pollinators that are attracted: Flowers that attract bees and butterflies often have pleasantly sweet fragrances but not necessarily overpowering ones. Flowers that attract moths are typified by heavily cloying, sweet odors. Flowers attractive to bats often produce musky or rotting fruit odors. Flowers attractive to dung beetles and flies have—at least to humans—spectacularly unpleasant odors, typified by the names of the compounds involved: putracine, skatol, and cadaverine.

The strength of the scent of plants is also a factor of terroir. Terroir is a factor of soil, shade, water, altitude, rain, and terrain.

## How Plants Store Essential Oils

Aromatic substances are formed and stored in certain organs of a plant as by-products or as the end result of its metabolism.

*Glandular Cells, Glandular Hairs, and Glandular Scales*—These are single or multi-cell protuberances, or ‘pockets,’ on the surface of the plant’s epidermis. Plants that store essential oils in this manner include: Thyme, Marjoram, Rosemary, Sage (that is, all of the family Lamiaceae [Labiates]).

*Oil Cells and Resin Cells*—These are cells (still living in some cases) which are filled with oil or resin in plants of the Laurel family (Lauraceae). These include Laurel leaves, Cinnamon, and Cassia.

*Oil or Resin Canals*—Inter-cellular spaces in plant tissues store essential oils and resin. When adjoining glandular cells move apart, the spaces expand into tubular canals or ducts. Essential oils formed in this way are found in the schizocarp fruits of the Apiaceae (Umbellifers). These include Caraway, Aniseed, Fennel, Coriander, and Celery.

Conifers, too, have resin canals. Large quantities of resin can be extracted from a damaged tree. Some resins are gathered by the method of ‘tapping.’

*Oil Reservoirs*—Lysigenous secretory reservoirs are formed inside a plant as the wall. Secretory cells gradually disintegrate. This is called secondary cavity formation. Particularly noted for their lysige-



nous cavities, or oil reservoirs are the Rue family (Rutaceae) and Citrus varieties, including Lemon, Orange, and Bergamot.

Kurt Schnaubelt, writing in his book *Medical Aromatherapy*, has made some interesting comments regarding standards in essential oils. "Essential oils may be impossible to standardize because they reflect the intrinsic variability of nature...essential oils should be as rich and complex as they are when they come out of the still. Seasonal or yearly variations (or variations originating from different distillation processes) should be permitted because they are the legitimate expression of the regional geographic and climatic influences as well as the interaction of the grower with nature in crafting the oil."





*Tansy*

## TWO

# Plant Names Mean Something

When plants are named, botanists classify them according to their relationship to other plants. Their individual names are often given to describe an attribute of the plant. In these common and technical names you can find a history of botany, a romance of adventure, and for the adventurous it can be a mental trip to far lands and ancient worlds. Found here are descriptions of natural habitats, colors, and scent which are described and noted. With this new vocabulary, you will be better able to determine where a plant was originally found, who found it, and where you might go to look for it in a natural environment. Knowing the name of something and what it means will provide useful clues and tools to aid you in your plant research.

I will linguistically dissect as many plant names as I know. Some definitely need more research and I urge you to obtain two books: *The Plant Book* by D. J. Mabberly and *Jaeger's Source Book of Biological Names and Terms* by Edmund C. Jaeger. *The Plant Book* is a dictionary of the higher plants, including common names, Latin binomials, who named the plant, family name, and habitat. *Jaeger's Source Book of Biological Names and Terms* defines the terms simply, while giving some background; I have had my copy since I attended San Jose State College in 1956. It has served me well all these years, and I still take pleasure in reading it. Jaeger dedicated this book to David Starr Jorden,





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## *Plant Names Mean Something*

*Myroxylon balsamum* var. *pereirae* derives its name from Callao, Peru, the port of export, although the center of commercial production lay in northwestern El Salvador.

According to Lloyd, "The substance was mentioned in all the early editions (of the *USP*) under the name *Myroxylon* until 1850, when the modern name [*Balsamum Peruvianum*] was employed. In consequence of the fact that the exports of Guatemala came through the port of Lima, Peru. The misleading name of "Peruvian Balsam" was in the early days affixed to it, paralleling somewhat the record of "Mocha Coffee," which is not grown in Mocha, or even thereabouts, but was exported therefrom in the early days of Arabian coffee."

**Balsam Tolu** (*Toluiifera balsamum*, *Myroxylon balsamum*, *Myrospermum toluiferum*)

*Toluiifera* = Tolu balsam, first brought from Santiago de Tolu, a seaport of Columbia; *balsamum* = balsam

**Sweet Basil** (*Ocimum basilicum*)

*Ocimum* = a sort of clover or aromatic plant; *basilicum* = comes from the Greek word meaning a petty king, royal, princely, or a kind of serpent with a spot on its head like a crown.

**Bay** (*Laurus nobilis*)

*Laurus* = evergreen trees, Laurel; *nobilis* = notable, or noble, or noble.

**Bay Rum** (*Pimenta racemosa*)

*Pimenta* = pepper; *racemosa* = prone to producing a cluster of berries

**Benzoin** (*Styrax benzoin*)

*Styrax* = an ancient name for a tree producing a fragrant gummy resin called "storax" by Pliny, can also mean the spike at the lower end of a spear shaft; *benzoin* = the frankincense of Java

**Bergamot** (*Citrus bergamia*)

*Citrus* = like a citrus; *bergamia* = after an Italian town where the tree was first observed

**Birch Bark** (*Betula lenta*)

*Betula* = the birch; *lenta* = tough, but flexible

**Birch Tar** (*Betula spp.*) (i.e., *pubescens*, *alba*, *pendula*)

*Betula* = the birch; *pubescens* = refers to the downy hairs of puberty; *alba* = white; *pendula* = pendulous branchlets





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## Plant Names Mean Something

erties; *sclarea* = refers to the sclera or white of the eyeball and here refers to the seeds and leaves used to clear obstruction in the eye

### Cloves (*Syzygium aromaticum*)

*Syzygium* = a joining or yoking together; *aromaticum* = aromatic

### Clove bark (*Dicypellium caryophyllatum*)

*Dicypellium* = *di* which means two and *cypellium* is from the Greek, *Kypellon* or a beaker, cup or goblet; *caryophyllatum* = clove-leaved, a kind of plant, the clove tree

### Copaiba (*Copaifera officinalis*)

*Copaifera* could come from a report from Petrus Martys to Pope Leo X referring to a South American tree called copei, which meant plentiful, or a South American river called Copaibo; *officinalis* = used officially in medicine

### Coriander (*Coriandrum sativum*)

*Coriandrum* = an ancient name for coriander; *sativum* = that which is sown or grown

### Croton (*Croton eluteria*) [Other common name = *Cascarilla* bark]

*Croton* = a tick or a bug; *eluteria* = to wash off

### Cubeb (*Piper cubeba*)

*Piper* = pepper; *cubeba* = cubeb

### Cumin (*Cuminum cyminum*)

*Cuminum* = an aromatic herb; *cyminum* = cumin seed

### Cyclamen (*Cyclamen europaeum*)

*Cyclamen* = Greek name for cornous herbs, sow bread; *europaeum* = from Europe

### Cypress (*Cupressus sempervirens*) several trees are termed Cypress including Cupressus and Chamaecyparis and others

*Cupressus* = the cypress; *sempervirens* = always green

### Dill Seed or Weed (*Anethum graveolens*)

*Anethum* = dill or anise; *graveolens* = heavily scented

### Douglas Fir (*Pseudotsuga menziesii*)

*Pseudotsuga* = false larch or false evergreen conifer; *menziesii* = named after Archibald Menzies (1754–1842), naval surgeon and naturalist to Vancouver's Pacific coast expedition. This is the same plant that is also called *Pseudotsuga douglasii*.

### Elemi (*Canarium commune*)

*Canarium* = from a Malai word meaning the Java almond; *commune* = common





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**MQV or True Niaouli (*Melaleuca quinquenervia viridiflora*)**

*Melaleuca* = black and white contrast of the peeling bark on trunks and stems; *quinquenervia* = five parts; *viridiflora* = green flowers

**Melilot (*Melilotus officinalis*)**

*Melilotus* = honey-scented plant; *officinalis* = plant officially used in medicine

**Melissa (*Melissa officinalis*)**

*Melissa* = refers to the honeybee, because the plant attracts bees; *officinalis* = plant officially used in medicine

**Mimosa absolute (*Acacia spp.*)**

*Acacia* = means acacia and refers to a sharp point, the thorns

**Mint (*Mentha arvensis*)**

*Mentha arvensis* = mint that grows in a plowed field or a field weed

**Mugwort (*Artemisia herba alba* or *A. vulgare*)**

*Artemisia* = named for the ancient Goddess Artemis; *herba alba* = white herb; *vulgare* = common herb

**Myrrh (*Commiphora molmol*, or *C. myrrha*)**

*Commiphora* = gumbearing; *molmol* = the original Somali word for this bitter, resinous exudation; *myrrha* = bitter

**Myrtle (*Myrtus communis*)**

*Myrtus* = the Greek and Latin name for the myrtle; *communis* = common

**Neroli (*Citrus aurantium*, *C. vulgaris*, *C. bigaradia*)**

*Citrus aurantium* = gold-colored citrus; *C. vulgaris* = common citrus; *C. bigaradia* =?

**Niaouli (*Melaleuca viridiflora*) or MQV**

*Melaleuca* = refers to the black and white contrast of the peeling bark on trunks and stems; *viridiflora* = green flowers

**Nutmeg (*Myristica fragrans*)**

*Myristica* = fit for anointing; *fragrans* = fragrant

**Oakmoss (*Evernia prunastri*)**

Oakmoss is not a moss, it is a lichen. *Evernia* = sprouts well; *prunastri* = *prun* which means prune or plum, and *astri*, which means sort of like, and may refer to the wrinkled look of the fruiting body





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ing to Linnaeus, it was hung above pictures to ward off evil spirits; *perforatum* = to perforate and refers to the foliage

**Sandalwood (*Santalum album*)**

*Santalum* = the Sanscrit name for the sandalwood tree; *album* = white

**Sassafras (*Sassafras albidum*)**

*Sassafras* = probably adapted by French settlers from an American Indian name; *albidum* = whitish, from the underside of the leaves

**Savory (*Satureia hortensis* and *S. montana*)**

*Satureia* = savory; *hortense* = that grows in the garden; *S. montana* = savory that grows wild in the mountains

**Spearmint (*Mentha viridas*)**

*Mentha viridas* = mint that is green

**Spikenard (*Nardostachys jatamansi*)**

*Nardostachys* = the Indian spikenard which yields a fragrant substance used for unguents, it grows like the ear of grain or a spike; *jatamansi* = an Indian name for this plant

**Spruce**

**Black Spruce (*Picea mariana*)**

*Picea* = spruce; *mariana* = named after Mary, Virgin mother of Jesus. It is commonly called Black Spruce because of a lichen that is dark to black in color and grows on this tree, giving this type of spruce forest a black color from a distance

**White Spruce (*Picea alba*)**

*Picea alba* = spruce that is white

***Tsuga heterophylla***

*Tsuga* = refers to larch, from a Japanese name; *heterophylla* = with variable leaves this tree is commonly called a spruce and is usually not used in aromatherapy.

**Star Anise (*Illicium verum*)**

*Illicium* = seductive, refers to the fragrance; *verum* = an adverb from verus, meaning true or genuine

**Styrax (*Liquidambar styraciflua*)**

*Liquidambar* = refers to the resin; *styraciflua* = an ancient name for a tree producing a fragrant gummy resin, called storax by Pliny and Vergilius Maro

**Tagetes (*Tagetes glandulifera*)**

*Tagetes* = a plant name said to be named after Tages, Etruscan





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***You Will Know Them by Their Scent***

Some of the words that are used traditionally in perfumery to describe odor and some of the plant scents that are representative are:

Floral	can be Rose, Jasmine, Lilac, Orange flower
Fruity	can be Peach, Plum, Strawberry
Citrus	can be Orange, Lemon, Grapefruit
Conifer	can be Spruce needles, Fir needles, Pine
Minty	can be Spearmint, Peppermint
Green	can be Galbanum, Green Pepper, Green Peas
Vegetable	can be freshly sliced Potatoes, Cabbages, Carrots
Woody	can be Sandalwood, Cedarwood
Herbaceous	the scent of withered leaves, Thyme, Marjoram
Hay	the smell of the sun on warmed plants, Tonka beans
Smoky	smoldering leaves in the yard, castoreum
Leather	saddles, harness, and shoes
Powdery	traditional baby powder, soft and lightly fragrant
Fungal	dark and cool, undergrowth, Mushroom CO <sub>2</sub> , or ripe mushrooms
Camphoraceous	smells like Camphor, Rosemary, Lavender Camphor
Earthy	warm earth, sun-baked soil, Patchouli, Oakmoss
Marine	seaweed, the sea, fresh ocean fish
Mossy	dried moss or lichens, chypre, Oakmoss, Treemoss
Oily/Fatty	Olive oil, any fatty oil
Aldehydic	synthetic, any of the new perfumes
Waxy	the smell of beeswax, paraffin
Honey	typical warm honey odor, Wallflowers
Civet	cat urine (very specific)
Musky	a clean, bright, sexy odor (an example is ambergris, an unknown (ambered) odor to most of us)
Balsamic	balsam of Tolu, Peru, or Benzoin





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*Camomile*

## FOUR

# Botanical Classification of Essential Oil Plants

Divsion: *Eumycetes (Thallophyta)*

Subclass: *Ascolichenes*

Family: *Usneaceae*

Genus: *Evernia*

Divsion: *Embryophyta Siphonogama* (seed plants)

Subdivision: *Gymnospermae*

Class: *Coniferae*

Family: *Podocarpaceae*

Genus: *Dacrydium*

Family: *Pinaceae*

Genera: *Picea*

*Tsuga*

*Pseudotsuga*

*Abies*

*Cedrus*

*Pinus*

Family: *Taxodiaceae*

Genera: *Sciadopitys*





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*Botanical Classification of Essential Oil Plants*

*Spartium*

*Wisteria*

*Hardwickia (Oxystigma)*

*Myrocarpus*

Family: *Geraniaceae*

Genera: *Geranium*

*Pelargonium*

Family: *Zygophyllaceae*

Genus: *Bulnesia*

Family: *Rutaceae*

Genera: *Xanthoxylum*

*Ruta*

*Pilocarpus*

*Cusparia*

*Boronia*

*Barosma*

*Amyris*

*Clausena*

*Citrus*

Family: *Burseraceae*

Genera: *Boswellia*

*Bursera*

*Commiphora*

*Canarium*

Family: *Euphorbiaceae*

Genera: *Croton*

Family: *Anacardiaceae*

Genera: *Pistacia*

*Schinus*

Family: *Tiliaceae*

Genus: *Tilia*

Family: *Malvaceae*

Genus: *Abelmoschus (Hibiscus)*





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Rosemary

## FIVE

# Guide to Essential Oils

### Abbreviations Used Throughout

S-D	Steam distilled	
AT	Aromatherapy	
EO	Essential Oil	
$\alpha$ /a/A	alpha	} <i>variety of forms for components of essential oils</i>
$\beta$ /b/B	beta	
$\gamma$ /g/G	gamma	
$\delta$ /d/D	delta	
CT	chemotype	
HPA	hypothalamus/pituitary/ adrenal axis	
S-E	Solvent extracted	

**Allspice** (*Pimenta officinalis* or *P. dioica*)

*Family:* Myrtaceae

*Habitat & Growth:* Native to West Indies and South America.

Cultivated in Central America. Evergreen tree 15 to 30 feet high.





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***Artemisia douglasiana* aka White Sage or White Mugwort, the essential oil is called Blue Sage.**

*Family:* Asteraceae

*Habitat & Growth:* Grows wild in the northwestern United States.

*Scent:* This pale blue oil has a cooling, herbal, and eye-clearing odor with Sage and conifer notes.

*Components:* Tops S-D. *Artemisia* ketone and yomogi alcohol.

*Properties, Indications, & Uses:* Inhaled for mental states. Applied for muscular aches.

*Indicated for:* mental and physical conditions.

*Uses:* The herb is used in sweat lodges for cleansing the body and clearing the mind. The EO is used in blends for aching muscles and joints.

*Contraindications:* Do not use excessively.

**Balsam Peru (*Myroxylon balsamum* or *M. pereirae*)**

*Family:* Fabaceae

A different physiological form of Balsam Tolu.

*Habitat & Growth:* Native to South America. Tropical tree about 50 feet. The balsam is a pathological product from older trees.

*Scent:* Balsamic, healing, vanilla-type, warm, and smoky odor.

*Components:* Balsam is extracted by volatile solvents. Contains mainly Benzyl Benzoate; Benzyl Cinnamate (Esters up to 70%); an alcohol with a pleasant odor; Farnesol; Vanillin; and others.

*Properties, Indications, & Uses:* Anti-infectious, antibacterial, antiparasite, antiseptic, anticatarrh, expectorant, and cicatrix.

*Indicated for:* Bronchitis, chronic asthma, bad colds, virus, parasites, and skin disease.

*Uses:* Primarily used for skin care, the massage of muscles for circulation, and as an inhalant for respiratory and immune systems. Commercial use primarily in cough syrups and as a fragrance in soaps and lotions. Effective at relieving the itch of scabies, ringworm, pruritis, and eczema. It is also useful for relieving chapped hands and feet.

*Contraindications:* Prolonged skin use.

**Balsam Tolu (*Myroxylon balsamum*) aka many synonyms**

*Family:* Fabaceae

A different physiological form of Balsam Peru.





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## **Benzoin (*Styrax benzoin*)**

*Family:* Styracaceae

*Habitat & Growth:* Native to Asia. Large tropical tree up to 60 feet high. Benzoin itself is the pathological product that forms when the bark is cut.

*Scent:* Sweet, warm-scented, brown balsamic resin with fragrance of spice and vanilla. Caramel, warm honey, a little waxy.

*Components:* Mainly Benzoic acid, 70% Benzoate, some Vanillin.

*Properties, Indications, & Uses:* Anticatarrh, expectorant, and pulmonary antiseptic.

*Indicated for:* Acne, eczema, psoriasis, and respiratory afflictions.

*Uses:* Inhalant for the respiratory system and preservative in food-stuffs. Used externally as a deodorant and antiseptic. When taken internally, it has an expectorant and diuretic effect.

## **Bergamot (*Citris bergamia*)**

*Family:* Rutaceae

Bergamot as a common name is also applied to an annual herb. These plants are in no way similar, and recently a company has supplied aromatherapy note cards with the fragrance of citrus Bergamot but a picture of the herb by the same name. Some believe Bergamot is a mutation of the sour Orange and not a hybrid. Bergamot Orange of the United States is cv. Bouquet.

*Habitat & Growth:* Native to Asia, naturalized in Italy, and grown commercially in several places. Delicate citrus tree approximately 12–15 feet in height. Small, round citrus fruits are often picked when green. The most delicate of all citrus plants, demanding special climate and soil.

*Scent:* Citrus spice with a high floral note.

*Components:* Oil of petitgrain Bergamot is occasionally produced.

Oil from peel extracted by cold expression or vacuum distillation to produce a Terpene-free oil. The main component is Linalyl acetate, with free Linalool, varying from 20–30%, among others. Ester content changes depending on climate in that year.

*Properties, Indications, & Uses:* Calming and anti-inflammatory. Used by application for a variety of skin problems. Used by inhalation for anxiety and depression. Used as a gargle for a sore throat.





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**Cabreuva (*Myocarpis frondosus*)**

*Family:* Fabaceae

*Habitat & Growth:* South American legume. A tall tree, 30 to 50 feet in height.

*Scent:* Softly floral and fruity. A pale yellow oil.

*Components:* S-D of wood. Farnesol, Sesquiterpene, alcohols, other components, mainly Nerolidol, up to 80%, among others.

*Properties, Indications, & Uses:* Hormone-like with possible action on hypothalamus. Aphrodisiacal and possible corticosteriod action.

*Indicated for:* Sexual debilities and various types of arthritis.

*Uses:* Scenting soap.

**Cade (*Juniperis oxycedrus*)**

*Family:* Cupressaceae

See Evergreen

*Habitat & Growth:* Native to France and common in Europe. The tar is produced mainly in Spain and Yugoslavia. A large evergreen shrub, up to 12 feet.

*Scent:* A black tar with an oily, leathery, black smoke odor.

*Components:* Produced by destructive distillation of this particular Juniper. Process is called empyreumatic or partly decomposed.

Also called Juniper tar. Sesquiterpene called Cadinene;

Hydrocarbons and Phenols, among them Creosol.

*Properties, Indications, & Uses:* Skin disease, eczema, and severe dandruff.

*Indicated for:* Bad skin and greasy hair.

*Use:* In therapeutic soaps for chronic eczema. Used in ointments and salves for a variety of skin problems, including psoriasis.

There is also a true EO from S-D of the bark.

**Cajeput (*Melaleuca leucadendron* and *M. cajuputi*)**

*Family:* Myrtaceae

Part of the group of plants called Tea Trees. The Melaleucas have great value in skin care and for wound cleansing.

*Habitat & Growth:* Grows wild in Indonesia and cultivated in other





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facial neuralgia. In its native habitat, plant and oil have been used medicinally to treat a variety of ailments, mostly skin related. Leaves are calmative in skin and ocular infections. A hot bath for 30 minutes has proven useful in the treatment of dermatosis, urticaria, and eczemas. Maceration of the young leaves in water is used as an eyewash to kill the pain of irritated eyes. Young shoots are used with other plants internally and externally for treatment of burns, as well as the treatment of hernias. Oil or a plaster of fresh, crushed seeds diluted in sterilized coconut oil contains cicatrization properties and is used for scabs, varicose ulcers, fistulas, leprous ulcers, and burns. The oil of *Calophyllum* easily saponifies and produces an abundant lather on contact with sea water. The oil is analgesic and is used for sciatica and rheumatism. The pulverized seeds have been used to cure ulcers and bad wounds.

*Calophyllum* is used as a treatment for various problems of the hair and scalp, and for eczema, psoriasis, and facial neuralgia. The essential oil of *Ravensara* and the vegetable oil of *Calophyllum* have been studied together by Dr. D. Pénœl and mentioned in *Phytomedicine*, 1981 as a treatment for shingles (zona) and has been shown to have pronounced amelioration of the problem. A good mixture would be 25% *Calophyllum* vegetable oil, 25% Walnut oil, 40% Jojoba unrefined oil, and 10% *Ravensara* essential oil. Mix these together, label your container, and apply to the scalp (or skin problem) night and morning. You could also use 50% *Calophyllum*, 40% olive oil, and 10% *Ravensara*. The bark also has medicinal uses as an infusion or in other herbal remedies.

### **Camomile (*Matricaria recutita*)**

*Family:* Asteraceae

There is much discussion in the botanical world regarding the nomenclature and correct name for the two varieties of Camomile called German, Hungarian or Blue Camomile (*Matricaria recutita*) and Roman or English Camomile (*Chamaemelum nobile*). The Lewis<sup>2</sup> believe these two plants to be identical in two morphological forms: the annual and perennial.

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<sup>2</sup>Lewis, Walter H. "Notes on Economic Plants." *Economic Botany*, 1992: 426-430.



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Camphor production is very big in Asia, although much Camphor produced today is synthetic.

*Habitat & Growth:* Generally cultivated in Asia. This is a large, tall evergreen tree up to 90 feet, producing a crystalline substance from the wood of mature trees. The true Camphor tree is called Hon-sho although other morphologically distinct varieties exist, as already described.

*Scent:* Spicy, herbal, and mothball-like odor.

*Components:* S-D from wood. Leaves and stalks contain: Camphor, L-Linalool and other components. Roots are mainly Safrol, some Camphor, alcohols, and Esters among others. When the crystalline substance is S-D, it produces Camphor oil which contains 50% Camphor, some Piperitone, and Cineol. (There is a 100 page monograph on Camphor in Guenther's *Essential Oils*, vol. IV.)

*Properties, Indications, & Uses:* Tonic, general stimulant, and in larger doses a cardiac excitant.

*Uses:* As a painkiller for rheumatism and neuralgia. Inhaled for catarrh and bronchitis. *Glaucescens* has few contraindications and is anti-infectious, antiviral, antifungal, and a general stimulant. Used primarily externally in massage or inhaled for the respiratory system.

*Contraindications:* Not to be used on babies and pregnant women.

### *Cananga odorata*

*Family:* Anonaceae

Since this is closely related to true Ylang-Ylang and rarely available on the open market, we will discuss it in the section on Ylang-Ylang. The oil is made by S-D and used in perfumery.

*Habitat & Growth:* Native of Molucca. Occurs wild and may obtain the height of 160 feet.

*Scent:* Sweet and floral odor with a little bit of citrus.





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mainly produced in India. A biennial herb up to several feet in height.

*Scent:* The seed oil is pale yellow. Spicy, musky, and slightly vegetative odor.

*Components:* Seed is S-D or used in cooking. Herb used in food preparation. Root cultivated as well. Up to 60% Limonene with Selenine and Sesquiterpene alcohols among other components.

*Properties, Indications, & Uses:* Tonic, sedative, lymphatic drainage, and decongestant.

*Indicated for:* Asthenia, anxiety, and hemorrhoids.

*Uses:* Inhaled for respiratory system.

*Contraindications:* Some photosensitivity occurs when used externally.

## **Champa, Champac (*Michelia champaca*)**

*Family:* Magnoliaceae

An East Indian tree. The yellow flowers infused in oil yield a perfumed oil. The flowers are also worn in the hair. There is very little essential oil known. Essentially Yours, an essential oil company in England, has found a Champa that they feel sure has been distilled from the flower. Not much is known about the components. The incense called Champa is not from the flower and is probably totally synthetic.

*Scent:* Very sweet, rich, floral, and fruity odor with aldehyde, wax, and honey notes.

## **Chilé (Red Pepper) (*Capsicum annuum*)**

*Family:* Solanaceae

*Habitat & Growth:* Indigenous to the Americas. Medium-sized plant producing fruits of various size, color, and taste from sweet to *extremely* hot.

*Scent:* Hot, vegetative, and musty smell; it gives no indication of the burning sensation you would feel if you tasted it. A deep red oleo-resin.

*Components:* Oleo-resin of fruit prepared and then S-D. Contains mainly Capsaicin.

*Properties, Indications, & Uses:* This is a very concentrated oil. Used



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*Indicated for:* Respiratory infections, insufficient liver function, insomnia, nightmares, and disinfectant for air in the sick room for contagious ailments.

*Citrus medica var. vulgaris* or Cedrat peel oil: Soothes stomach.

*Citrus paradisi* or Grapefruit peel oil: Antiseptic for the air and disinfectant for any area where it is diffused. Also very important in skin care.

*Citrus reticulata var. mandarin* or Mandarin peel oil: Moderates CNS symptoms. Relaxing and soothing.

*Indicated for:* Insomnia, pain, and gas in the gut. Somewhat helpful for dyspnea. Petitgrain or leaf oil is calming and is used for anxiety and stress.

*C. reticulata var. Tangerine:* Same as Mandarin, but is grown in U.S.

*Citrus sinensis* or Sweet Orange peel oil: Mainly antiseptic, calming, and sedative. Used to disinfect local areas. Inhaled for anxiety and nervousness. Wonderful in blends for a fresh, sweet scent.

*Citrus x spp. var. Clementine* (Algerian mandarin): A cross between the sour orange and the mandarin. Most sold in the United States are imports from Spain. The Clementine is the parent of other hybrid mandarins, including the Fairchild and Robinson. A very rich, sweet Citrus scent, bright and sharp with a floral tone.

“Clementines, also known as Algerian mandarins, are commonly believed to have been an accidental hybrid that was planted by the Reverend Clément Rodier around the turn of the century in the garden of the Catholic orphanage he ran in Algeria. Clementines are a cross between the sour orange and the mandarin. Most of the Clementines sold in the United States are seedless imports from Spain and are available from November to March. The Clementine hybrid is also the parent of other mandarin hybrids, including the Fairchild and the Robinson.” — *Country Living*, January 1996

## Clary Sage (*Salvia sclarea*)

*Family:* Lamiaceae

*Habitat & Growth:* Native to Europe. Cultivated worldwide. Can be a very tall biennial or perennial herb up to 6 feet in height with large, hairy green leaves.





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*Indicated for:* Headache.

*Uses:* Bark is sometimes used to flavor tobacco. The bark tea is sometimes used for stomachache.

*Contraindications:* Can be toxic when used orally, sometimes a skin irritant.

### **Cubeb (*Piper cubeba*)**

*Family:* Piperaceae

*Habitat & Growth:* Native to Indonesia. Evergreen vine up to 20 feet. Related to Black pepper. Not to be confused with *Litsea cubeba*, which is a shrub and not a vine.

*Scent:* Hot and spicy with a citrus note and a vegetable afternote.

*Components:* S-D from the unripe berries. Mainly Sesquiterpenes, among others.

*Properties, Indications, & Uses:* Anti-inflammatory

*Indicated for:* Urinary tract infections, cystitis, vaginitis, and externally for rheumatism.

*Uses:* Presently EO is not generally available.

*Historical use:* In the urinary system in the late stages of gonorrhea, as well as an inhalant to stimulate mucous membranes in the treatment of severe bronchitis.

### **Cumin (*Cuminum cyminum*)**

*Family:* Apiaceae

*Habitat & Growth:* Native of Turkey or Egypt. Grown heavily in the Mediterranean countries. Seed has been known since at least 2000 B.C. Slender, pretty, annual herb. Up to 1 foot in height.

*Scent:* Hits you in the stomach and makes your mouth water. Warm, spicy, nutty, and fatty.

*Components:* Plant contains up to 2.5% EO, S-D. Mainly 60% Aldehydes including Cuminaldehyde 35–65% and up to 52% Monoterpenes.

*Properties, Indications, & Uses:* Calming, stupefying, strong antispasmodic, and stimulating digestive.

*Indicated for:* Dyspepsia, gas and spasms in the gut, insomnia, hyperthyroid function, and orchitis.

*Uses:* Ritually used to protect the home and for internal protection. Recommended as a massage oil for poor circulation and lymphatic congestion.





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and the least expensive is the one most often used for distillation of essential oil, and this is generally called oil of Olibanum.

*Scent:* Expansive, clean, dry, woody, conifer, fruity, dry, pepper, and spicy odor. Pale, green-gold oil.

*Components:* Pinene; Phellandrene; mainly Monoterpene hydrocarbons among others. There is also a small quality of Verbenone.

*Properties, Indications, & Uses:* It is considered antitumor and a strong immuno-stimulant with antidepressive and expectorant qualities.

*Indicated for:* Asthma, bronchial catarrh, immune deficiencies, and nervous depression. Particular value in perfume blends of the Oriental style, because it rounds out and gives alluring tones that are particularly difficult to identify as to the source. It has powerful value in the perfume and incense industry as a fixative as well as a main scent.

*Uses:* Has been used for 5000 years for spiritual healing and was used in ancient Egypt in the embalming process.

### **Galanga (*Alpinia officinarum*)**

*Family:* Zingiberaceae

*Habitat & Growth:* True Galanga is grown in Southeastern China. It is a reedlike plant about 3 feet tall and whose rhizomes are used in the spice trade and the EO industry. Similar species are True Ginger and Large Galanga (The dried rhizomes of *Alpinia galanga* is known as Large Galanga, and it is rarely available. Composition was mainly Cineol.)

*Scent:* Spicy and pepper.

*Components:* EO is extracted by SD from the gum. Pinene; Cadenene; and Sesquiterpenes among others.

*Properties, Indications, & Uses:* Antiseptic and disinfectant.

*Uses:* Certain types of flavors and perfumes.

### **Galbanum (*Ferula spp.* often called *F. gummosa*)**

*Family:* Apiaceae

Galbanum is produced as an excretion from the bases of the shoots and leaves. There are two types: soft and hard. Galbanum is one of those herbs that has been in use many thousands of



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**Scent:** Strong honey and hay odor with herbaceous notes. Greenish colored oil.

**Components:** Entire above-ground plant is S-D to produce a sweet, honeylike, aromatic fragrance considered by some to be of Rose and Chamomile. Neryl acetate, Nerol, Pinene, and italdione. The concrete S-D for their EO. Many varieties of *Helichrysum* are S-D for the EO. Others include *Helichrysum stoechas*, and *H. italicum*.

**Properties, Indications, & Uses:** The French primarily use this as an anti-inflammatory to regulate cholesterol, stimulate the cells of the liver, and as an antispasmodic. Italian everlast has powerful antibruiise properties.

**Indicated for:** Primarily indicated to resolve old scar tissue, for the Bartholin glands, and as an application for arthritis. Another interesting use is as a massage on the contracted penis and for Dupuytren's contracture (when the fingers contract into the palm). I personally have had great results applying Heliochrysum (in a 10% mixture) on my painful arthritic fingers.

**Uses:** Antiviral and regenerative, it stimulates the production of new cells, treats burns, scars, and acne. It is also detoxifying and can be used for drug (including cigarette) withdrawal.

## **Heliotrope (*Heliotropium peruvianum*)**

**Family:** Boraginaceae

Heliotrope is not processed for its fragrance. This plant is very fragrant usually with purple flowers that smell like cherry pie.

## **Hemlock-Spruce**

(See Spruce)

**Hinoki (*Chamaecyparis obtusa*)** trunk, root, and needles.

(See Cypress)

## **Honeysuckle (*Lonicera spp.*)**

**Family:** Caprifoliaceae

**Habitat & Growth:** A perennial vine producing sweet-scented flowers.

**Scent:** Sweet, floral, honey, and fatty. Infused oil is golden.



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shock therapy for the respiratory system and can be used in a diffuser over a long period of time to disinfect and heal an infected ear, nose, or throat.

*Indicated for:* Arrhythmia and conditions of the ear, nose, throat, and tonsils. External use for treating skin rashes, eruptions, and herpes.

## Iris

See Orris root.

The Iris flowers are rarely, if ever, used in commercial perfumery but can be used by the home distiller or maker of infused massage products.

Jasmine (*Jasminum officinale* [French Jasmine] ,  
*J.o. var. grandiflorum* [Spanish Jasmine] and  
*J. sambac* [Tea Jasmine])

*Family:* Oleaceae

As people in the perfume and AT are wont to say, "This is the King of Flowers."

*Habitat & Growth:* There are many species of Jasmine. It is thought to be native to China, but is now cultivated worldwide. Jasmine is either an evergreen shrub or a vine that can climb up to 30 feet high and wide.

*Scent:* The leaves are bright green, and the beautiful white flowers are very fragrant with its very specific scent. Intensely floral and fatty with musk or civet notes and some hay and honey.

*Components:* Jasmine is a classic example of a flower that continues to develop and emit its natural odor up to 24 to 36 hours after it has been picked; therefore, it is supremely suitable for the enfleurage technique of extracting the scent via maceration in warm fat. A concrète and absolute are obtained by petroleum ether and high-proof alcohol. The concrète is reddish-brown and waxy with a powerful odor. The absolute is clear yellowish-brown with a beautiful odor more characteristic of the live flowers. On steam or water distillation, Jasmine flowers give a low yield of oil, but the hydrosol may be useful.

Process of enfleurage was developed in Southern France in the eighteenth century and is wonderfully discussed in the book



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*Uses:* The *flower* is chewed and the juice is taken for constipation, the dose is 16 flowers per dose. The *root* is used for birthing problems or for chest pain. The plant is cultivated for its ornamental value and is a staple on some Pacific atolls where a black dye is prepared from the *roots*. The oil is used in perfumery for a very particular note.

Perfume Fixatives	
Animal Fixatives	Vegetable Substitutes
Ambergris-whale	Labdanum
Civet-cat	Spikenard
Castorium-beaver	Galbanum/Oakmoss/Carrot seed
Musk-deer	Musk-ambrette/Cistus
	Oakmoss
	Opopanax

## Labdanum (*Cistus ladanifer*)

*Family:* Cistaceae

*Habitat & Growth:* Perennial shrub up to 6 feet. Grows wild, in large stands, and in warm sheltered places on some Mediterranean islands.

*Scent:* Fragrant and unforgettable balsamic odor of musk and smoke.

*Components:* There are five products produced (For more description, see Guenther, Vol. VI, p. 46):

1. Crude gum. It is prepared by boiling the dried leaves and twigs in water. It is then skimmed off the surface of the water and dried. Crude gum smells very much like ambergris and is a vegetable substitute for this mammalian product. See table that follows.
2. Resinoid of Labdanum. The crude gum is treated with alcohol and filtered.
3. Oil of Labdanum. EO prepared by S-D of the crude gum. This is the most valuable of the perfumer's raw materials. It is sometimes marketed as a synthetic ambergris.
4. The concrète and absolute of Labdanum. Prepared by extract-





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*citrata*, *M. longifolia*, *M. rotundifolia*, *M. alopecuroides*, *M. aquatica*, *M. cripa*.

*Whorls of flowers all axillary*, including *M. cardiaca*, *M. arvensis*, *M. canadensis*, *M. gentilis*.

Mints include Pennyroyal, Peppermint, Japanese Mint (Menthol), Chinese Mint, Wild Mint, Brazilian Mint (Menthol), Spearmint, Watermint, and Bergamot Mint. I have covered Spearmint and Peppermint in alphabetical order with a discussion of Menthol under Mint, Corn Mint.

### **Mint, Corn Mint (*Mentha arvensis*)**

Japanese Mint oil is distilled from this species.

*Scent:* Strongly mint.

*Components:* It contains such a high percentage of Menthol that the Menthol can be obtained simply by freezing the S-D oil and bottling the crystals. The Menthol content can be up to 90%, and the Menthone content up to 20% with other components. When you can purchase Menthol as a crystal, it makes a fine addition to creams and remedies that are used for coughs, colds, and flus; however, for most uses, Peppermint oil works quite well.

Menthol is considered an antibacterial and a soother for the motor nerves. It is stimulating to the brain but also associated with constriction of the blood vessels. It has been used for sciatica, migraines, headaches, and in blends to discourage all types of vermin. A teeny bit on a sugar cube or in honey can be used for indigestion and vomiting. It is contraindicated for those who are taking homeopathic remedies (it will antidote the remedy), babies, or those with serious respiratory problems where inhaling menthol will cause temporary loss of breathing.

*Properties, Indications, & Uses:* Considered a tonic stimulant, stupefying at elevated doses. Can cause trembling and agitation.

Considered an anticephalic. Indicated for: Migraines, headache, and to kill vermin.

*Contraindicated:* Not to be used on babies and children.

***Mentha x citrata*** Common name is **Bergamot Mint**

*Habitat & Growth:* Can be a perennial herb up to 2 feet high with glossy leaves and colorful flowers.





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Uses of Herbal Hydrosols, cont.

Herbal Hydrosols	External/Skin Care	Mental Care	Internal/Culinary
Peppermint	relieves itching, redness, inflammation and acne, cooling, for bathing	uplifting, energizing, cooling, for hot flashes	taken by itself to soothe digestion/on all mint-loving foods
Rose Geranium	for bathing, cellular regenerative, balances oil glands oily or dry skin, cleans up doggy odor	stimulates adrenal cortex, antidepressant, cooling, for hot flashes	woman hormonal imbalance/water, jellies, fruit desserts
Rosemary	revitalizes skin, for bathing	restores energy, alertness, for tired feet	internal stimulant/meat dishes, sprinkle on steamed veggies
Thyme	acne, dermatitis, eczema, insect bites	stimulating, increases circulation, revitalizes	antiseptic, digestive/for lamb or non-sweet cookies, for veggies
Witch Hazel	anti-inflammatory, antiseptic, antifungal, spray for varicose veins and hemorrhoids	none	cleansing/mildly tasty
Herbal hydrosols are hydrosols made from herbs and their green parts.			



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A chemotype of *Pinus pinaster* contains large quantities of terebenthine which is composed of 62%  $\alpha$ -Pinene and 27%  $\beta$ -Pinene. This oleo-resin is used as a powerful expectorant, antiseptic, and to oxygenate the air. Indicated for infections of the respiratory system. In hot water for steam inhaling treatments. Mainly used as an aerosol treatment with possible allergies if used externally.

*Pinus palustris* (Long Leaf Pine, Turpentine) (See Terebinth). A tall, evergreen, up to 150 feet with attractive, reddish-brown, deeply fissured bark with long, stiff needles that grow in pairs. Is used mainly for the distillation of American gum sprits of Turpentine. This is a tall, evergreen tree native to the Southeast United States.

The main component is Terpeneol.

It has been considered a powerful antiseptic spray and disinfectant, especially in veterinary medicine. It has mainly been used externally as a massage for arthritis, muscular aches and pains and stiffness, and natural Turpentine has often been inhaled for asthma and bronchitis. This has been much used in commercial industry to manufacture paint, but has now been largely replaced by synthetic Pine oil (synth. Turpentine).

*Pinus sylvestris* (Scotch Pine or Norway Pine). A tall, evergreen, up to 150 feet with attractive, reddish-brown, deeply fissured bark with long, stiff needles that grow in pairs. Essential oil is produced mainly in the Baltic states. The components are greatly influenced by geographical origin and consist mainly of Monoterpenes, Pinene, some Limonene.

*Pinus sylvestris* is considered to have hormone-like, cortisone-like qualities. It is indicated for convalescence, inhaled for bronchitis, sinusitis and asthma and is used to tone the respiratory system, balance the hypothalamic/pancreas axis as well as the HPA (hypothalamus-pituitary-adrenal). It is a hypertensive, tonic stimulant.

## Group II. *Picea* (Spruce)

The second group of trees of the *Pinaceae* family are generally called Spruce trees. Some Spruce trees also have the common name of Fir.

Genera *Picea* leaves are linear, often obtuse or emarginate base of leaves persistent on the branches. The leaves are sessile, 4-sided, or flattened and stomatiferous.



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Cedar oil from *Thuja occidentalis* is rather toxic and is a skin irritant. *T. occidentalis* foliage are water or steam distilled to produce their essential oil. It has been used to burn off warts, which gives you an idea of just how irritating it is! To use it in this manner, apply a ring of glycerine around the wart, plantar wart or verruca, and apply the oil only to the wart itself. It is fine diluted for use as a disinfectant in household cleaning, but is not an oil to be used in the diffuser or in a massage oil. You can see why it is important that you, as someone using essential oils be educated and why it is important that companies properly label the essential oils they are selling.

The wood of *Thuja plicata*, called "Cedarwood" (on S-D of the wood, a volatile oil is obtained that contains a poisonous ketone—thujopsone). This oil contains thujone and internal use is discouraged as it is considered a convulsant poison. Small amounts of the leaves and bark can be infused for baths and this is especially useful for cleaning the skin of the oils of Poison Oak and Poison Ivy. The scent is refreshing and stimulating. Use of the essential oil in this manner is carefully recommended.

### ***Chamaecyparis (Cypress).***

This is called a Cypress. It is similar to the Thuja with minute opposite, 4-ranked scale-like leaves. The filaments are broader and shield-shaped.

Hinoki essential oil from *Chamaecyparis obtusa* containing 40% Terpenes and some borneol. It has a camphor odor and is used extensively in Japan in the scenting of soap and in insecticides. It is also immune stimulating and an antibacterial.

The Port Orford Cedar, *Chamaecyparis lawsoniana* containing up to 46% d- $\alpha$ -Pinene, 3%  $\delta$ -Limonene, 26%  $\delta$ -borneol, 21%  $\delta$ -cadinene and 4% cadinol. It is a topical fungicide. Infuse the needles and wood in Olive oil for 12 hours at 140°, paint this on boats to rot-proof the wood.

### ***Cupressus (True Cypress).***

Trees of the Genera *Cupressus* are the True Cypresses. They have 4-angled branchlets more or less in one plant. The fruit is a cone.





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detected except by examining the optical rotation of the oil molecule.

Cumin oil is considered calming to the nerves when inhaled, to the point of stupefaction, it is a strong antispasmodic to the digestive system and stimulates digestion when taken internally. In this case it can be added to foods to produce a strong Indian or Mexican flavour to the food, 1 drop per serving for medicinal use and 1 drop per four servings as flavor. Cumin oil is indicated as a tonic for dyspepsia and gas and spasms in the gut, it can be inhaled for insomnia, taken for low thyroid function and used as a treatment externally as well as internally for orchitis. In 1988, a study using Cumin oil showed that an aqueous extract of Cumin seeds possessed antifertility and abortifacient activity when administered to female rats.<sup>2</sup>

### **Opopanax (Bisabol-Myrrh).**

Another ancient plant is Opopanax. It is a member of the Burseraceae family which also includes Linaloe, Myrrh, Olibanum (Frankincense) and Elemi. These plants are closely related to the Umbels. Guenther states that in the past "true Opopanax meant the concrete juice or oleo-gum-resin of *Opopanax chironium* which is related to the Parsnip and is native to the warm countries of the Levant"<sup>3</sup>. But apparently this type is no longer available and what is found on the market is a Bisabol-Myrrh, the sun-dried exudation from the bark of *Commiphora erythraea* which is a tall tree growing in the western part of Somaliland. The ancient Opopanax was used as an antispasmodic while modern Opopanax is generally considered an anti-inflammatory useful to the practitioner as a deterrent to internal parasites.

Opopanax contains Bisabolene and other components including resins and gums. The compounds that are chiefly responsible for the strong and interesting odor have not yet been identified. Guenther describes the odor as interesting while I feel that it seems a cross between Olibanum and Myrrh with an elusive 'bite'.

Bisabol-Myrrh is a valuable ingredient in perfumery because of its warm, balsamic, and exotic odor. It works well in perfumes and

<sup>2</sup>Brian M. Lawrence. Monographs on Essential Oils. *Perfumer and Flavourist*. Carol Stream: Allured Publishing, 1975-94.

<sup>3</sup>Guenther, Ernest. *The Essential Oils*. Malabar, FL: Krieger Publishing Co., 1976.



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## Essential Oil Profiles

### ***Ammi visnaga* (Ammi visnaga)**

*Common Name:* Ammi

*Family:* Apiaceae

*Most important use:* Allergic asthma

*Purchasing Guide:* The color is deep golden yellow to warm golden brown. The deeper the color the more viscous (or thick) the oil. The odor is rich, deep, aromatic, and very memorable. The more you inhale the odor, the more it can be upsetting to your stomach.

*Availability:* Best places to obtain are mail order:

Prima Fleur (415-455-0957), and Original Swiss Aromatics (415-479-9120)

*Countries of Origin:* Mediterranean, North Africa, Morocco

*Other Common Names:* Toothpick plant, Spanish carrot, carotte cure-dent, herbe aux cure-dents, swak en-nebi, khelal, khellin

*History:* A tea made from the seeds of this plant has been in use for centuries as an anti-asthmatic and for other respiratory problems. In 1897, a major constituent was isolated in crystalline form and called "khellin". This was found on examination to be a relaxant on various types of smooth muscle tissue, i.e., the gut and bronchial tubes. However, the point at which the tea eases an asthmatic attack is also where it causes nausea and vomiting. The oil was studied in India and the noxious element was chemically removed. Ultimately this compound came to be called cromolyn sodium and is used in modern respiratory medicine. When cromolyn sodium is inhaled, it masks the function of the mast cells thereby decreasing attacks of allergic asthma. *Ammi visnaga* can also be used as an inhalant with other essential oils such as *Rosemary pyramidalis* and *Eucalyptus smithii*. The seed is often used in tincture form with other herbs such as turmeric, which acts as an anti-inflammatory. However, too much of the tincture can also result in nausea and vomiting. (Take only 10 drops 3x/day.)

*Description of plant:* The plant is very similar in appearance to the Carrot or Umbelliferae family. It is an annual plant growing up to two feet high, with a longish white root. The stem is erect, fluted



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are protected on Cyprus and in Lebanon and the essential oil is no longer used.

*Contraindications:* None known.

***Pelargonium graveolens* or *P. asperum*** Pelargonium oil, Rose Geranium oil, or Geranium oil

*Family:* Geraniaceae

*Most important use:* Skin care. Conditions relating to women's reproductive organs

*Purchasing Guide:* The color of this oil ranges from a deep golden yellow to yellow to clear emerald green. The emerald green oil comes from plantings that have been made in California in the United States from *P. graveolens*, while the oil simply labeled Geranium is golden-yellow-brown from China. Geranium Bourbon from Morocco and Madagascar is pale yellowish-green. Cost: \$8-9 per ½ oz. wholesale, up to \$30 per ½ oz. retail. It pays to shop around for the best quality at the best price.

The scent of the oil is eponymous—an herby green odor with rose-like overtones and a deep rich undertone of mint and citrus.

*Availability:* This essential oil is easily obtainable from a variety of sources, and ranges from standardized oils for commercial skin care products to exquisite selections used mainly for therapeutic aroma uses.

*Countries of Origin:* Morocco, Madagascar, Egypt, China and California. Unfortunately, though the plant is indigenous to South Africa, at this time this lovely product is not available from this country.

*Other Common Names:* None.

Popularly known as scented geraniums, these plants are actually scented Pelargonium. Unlike the common garden geraniums, they belong to the genus *Pelargonium*. The generic name, from the Greek *pelargos*, “stork”, comes from the notion that the long, narrow seed capsule resembled a stork's bill. Storksbill is also an old common name. The word *graveolens* means ‘heavily scented’. Pelargoniums belong to the geranium family (Geraniaceae), as does the genus *Geranium*, which includes cranesbills and herb Robert.



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These are very general instructions for the use of essential oils and hydrosols. *The Aromatherapy Book: Applications & Inhalations* has more specific instructions.

**Measurement Chart in Drops, Milligrams, milliliters**

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1 oz. =	29.75 ml
1 ml. =	29–30 measured drops (depending on the size of the dropper opening)
1 drop =	15 mg. (Penoël) or 25 mg. (Schnaubelt)
150 mg. =	10 drops (Penoël) or 6 drops (Schnaubelt)

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(The difference in amounts between Penoël and Schnaubelt are due to the different sizes of the openings of droppers.)

Remember that milliliters (ml.) is a volume measurement while milligrams (mg.) is a weight measurement. Since not many of us have a milligram scale, it is often easier to use milliliter as a measurement. (A measured milliliter dropper can be obtained from any pharmacy.) Ounces (oz.) can be either volume or weight and are not a reliable indicator of precise essential oil measurements.

## **How to Use Essential Oils and Hydrosols**

**Bath Water** Add 5–15 drops of EO to tub of warm water. Swish with hand to mix. The number of drops used depends on the size of the bath tub. Use the larger amount for a deeper bath.

**Body Lotion or Oil** Use 1/2–1 teaspoon EO per pint of unscented body lotion or botanical oil such as sunflower or Olive or other oil or 2 drops to 1 dram.

**Candles** Light candle and wait for wax to begin melting. Add 1–2 drops of EO to melting wax, being careful not to get flammable oil on burning wick.

**Carpet Freshener** Mix 1 teaspoon EO with 1/2 cup each baking soda and cornstarch. Blend well with mortar and pestle or spoon. Set for 30 minutes. Sprinkle on carpet, wait 30 minutes, then vacuum. If you substitute Borax for the soda and starch, and leave it on the carpet overnight, you can also kill the fleas and mites.

**Cotton Balls** Put 1–3 drops on cotton ball to diffuse scent. Put the cotton balls in your drawers, in bed clothes or clothes closet. Lavender oil promotes restful sleep.



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*How to Use Essential Oils and Hydrosols*

**Face** Spritz with hydrosol for hot flashes and/or to cool the skin.

Use as a toner after cleansing the face or use to set makeup.

**Laundry** Spritz in the last rinse of hand washables for pleasant aroma.

**Pets** Spritz sensitive areas on animals for healing and soothing.

**Shaving** Use as aftershave spritz to tone and soothe the skin.





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**\$16.95**

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**Health/Herbs**

In this major field guide to a wide range of essential oils and hydrosols, Jeanne Rose profiles 375 different substances used in aromatherapy according to botanical family, habit and growth, chemical components, actions, and uses. Rose, a leading herbalist involved in aromatherapy, adds historical lore from Chinese alchemy and botany as well as western botanical sources, enhancing what we know about these substances. Rose describes medical properties and uses, and provides new information about hydrosols, what she calls "the homeopathy of aromatherapy," a true synergism of herbalism and aromatherapy.

Included are Jeanne Rose's essays on evergreens, lavender, chamomile, jasmine, essential oils of the Old Testament, descriptions of distilleries and the process of distillation, as well as a marvelous and thorough listing of all the many kinds of thyme.

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"Jeanne Rose does it again, detailing the aromatic world in a new light! In this book she combines ancient and modern biochemical knowledge with decades of her own hands-on involvement in aroma and body products, natural cosmetics, and medicines to make a wonderful whole."

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