

Naturopathy - Herbs and other plant products

Medicinal, Culinary, Cosmetic and Economic Properties, Cultivation and Folk-Lore of Herbs and other plant products.

[Herbal Medicine Overview](#) - Medicinal herbs are some of our oldest medicines and their increasing use in recent years is evidence of a public interest in having alternatives to conventional medicine.

[Medicinal Herbs: NTP Extracts the Facts](#) - The National Toxicology Program (NTP) has announced that it will design and initiate studies to identify and characterize possible adverse health effects that may be associated with prolonged use or higher doses of some of the most popular medicinal herbs, including Ginkgo biloba, Echinacea angustifolia, and Panax quinquefolius (American Ginseng).

[Ayurveda](#) - Ayurveda is the ancient (before 2500 b.c.) Indian system of health care and longevity.

[Herb Terminology](#) - "The definitions below are pertinent to my use of those terms as an herbalist." (by Michael Moore)

[Agnus Castus](#) - Vitex agnus-castus

[Alfalfa](#) - Medicago sativa

[Aloe Vera](#) - Aloe barbadensis, Aloe vulgaris

[American Ginseng](#) - Panax quinquefolius

[Angelica Sinensis](#) - Angelica sinensis

[Artichoke](#) - Cynara scolymus

[Ashwagandha](#) - Withania somnifera

[Asian Ginseng](#) - Panax ginseng

[Astragalus](#) - Astragalus Membranaceus

[Avena Sativa](#) - Oats

[Bahupatra/Bhuiamla](#) - Phyllanthus niruri

[Barberry](#) - Berberis Vulgaris

[Bearberry](#) - Arctostaphylos uva-ursi

[Bedstraw](#) - Galium verum

[Bee Pollen](#) is actually pollen from flowers that is collected from bees

[Bilberry](#) - *Vaccinium myrtillus*
[Bitter Melon](#) - *Momordica charantia* L
[Black Cohosh](#) - *Cimicifuga racemosa*
[Black Currant](#) - *Ribes nigrum*
[Blackberry](#) - *Rubus fruticosus*
[Blessed Thistle](#) - *Cnicus benedictus*
[Bloodroot](#) - *Sanguinaria canadensis*
[Blue Cohosh](#) - *Caulophyllum thalictroides*
[Blue Flag](#) - *Iris versicolor*
[Blue-Green Algae](#) - *Spirulina geitler*, *S. maxima*, *S. platenis*
[Blueberry](#) - *Vaccinium myrtillus*
[Boldo](#) - *Peumus boldus*
[Boneset](#) - *Eupatorium perfoliatum*
[Borage](#) - *Borago officinalis*
[Boswellia](#) - *Olibanum*, *Frankincense*, *Salai guggal*, *Boswellia serrata*
[Bottlebrush Plant](#) - *Equisetum arvense*
[Bromelain](#) - *Ananas comosus*
[Buchu](#) - *Diosma betulina*
[Bugleweed](#) - *Lycopus virginicus*
[Burdock](#) - *Arctium lappa*
[Butchers Broom](#) - *Ruscus aculeatus*

[Calendula](#) - *Calendula officinalis*
[Capsicum](#) - *Capsicum frutescens*
[Carob](#) - *Ceratonia siliqua*
[Cascara](#) - *Hamnus purshianus*
[Catnip](#) - *Nepeta cataria*
[Cats Claw](#) - *Uncaria tomentosa*
[Cayenne](#) - *Capsicum frutescens*
[Chamomile](#) - *Matricaria recutita*
[Chaparral](#) - *Larrea tridentata*
[Chaste Tree](#) - *Vitex agnus-castus*
[Chickweed](#) - *Stellaria media*
[Chinese Angelica](#) - *Angelica sinensis*
[Chinese Ginseng](#) - *Panax ginseng*
[Cinnamon](#) - *Cinnamomum zeylanicum*
[Cleavers](#) - *Galium aparine*
[Clover Red](#) - *Trifolium pratense*

Coltsfoot - *Tussilago farfara*

Comfrey - *Symphytum officinale*

Cranberry - *Vaccinium macrocarpon*

Cranesbill - *Geranium maculatum*

Creosote Bush - *Larrea tridentata*

Daidzein - *Glycine max*

Damiana - *Turnera aphrodisiaca*

Dandelion - *Taraxacum officinale*

Devils Claw - *Harpogophytum procumbens*

Dewberry - *Rubus fruticosus*

Dong Quai - *Angelica sinensis*

Echinacea - *Echinacea angustifolia*

Elderberry - *Sambucus nigra*

Elecampane - *Inula helenium*

Eleutherococcus - *Eleutherococcus senticosus*

Ephedra - *Ephedra sinica*

Eucalyptus - *Eucalyptus globulus*

European Blackberry - *Rubus fruticosus*

Evening Primrose Oil - *Oenothera biennis*

Eyebright - *Euphrasia officinalis*

False Unicorn - *Chamaelirion luteum*

Fennel - *Foeniculum vulgare*

Fenugreek - *Trigonella foenum-graecum*

Feverfew - *Tanacetum parthenium*

Flaxseed - *Linum usitatissimum*

FleaSeed - *Plantago psyllia*

FoTi - Solomon's Seal - *Polygonatum multiflorum*

Fungi (Maitake) - *Grifola Frondosa*

Fungi (Reishi) - *Ganoderma Lucidum*

Fungi (Shiitake) - *Hua gu, Lentinan edodes*

Garcinia - *Garcinia cambogia*

Garlic - *Allium sativum*

Ge-gan - *Pueraria lobata, Pueraria thunbergiana*

Genistein - *Glycine max*

[Gentian](#) - *Gentiana lutea*

[Ginger](#) - *Zingiber officinale*

[Ginkgo](#) - *Ginkgo Biloba*

[Ginseng \(American\)](#) - *Panax quinquefolius*

[Ginseng \(Asian\)](#) - *Panax ginseng*

[Ginseng \(Siberian\)](#) - *Eleutherococcus senticosus*

[GLA \(Gamma Linolenic Acid\)](#) - See *Ribes nigrum*

[Golden Seal](#) - *Hydrastis canadensis*

[Goose Grass](#) - *Galium aparine*

[Gotu Kola](#) - *Centella asiatica*

[Grape Seed Extract](#) - Proanthocyanidins

[Green Tea](#) - *Thea sinensis*, *Camellia sinensis*

[Guarana](#) - *Paullinia Cupana*

[Guggul](#) - *Commiphora mukul*

[Gymnema](#) - *Gurmarbooti* - *Gymnema Sylvestre*

[Hawthorn](#) - *Crataegus monogyna*, *C. oxyacantha*

[He-shou-wu](#) - Solomon's Seal - *Polygonatum multiflorum*

[Hops](#) - *Humulus Lupulus*

[Horehound](#) - *Marrubium vulgare*

[Horse Chestnut](#) - *Aesculus hippocastanum*

[Horseradish](#) - *Cochlearia Armoracia*

[Horsetail](#) - *Equisetum arvense*

[Hua gu \(shitake\)](#) - *Lentinan edodes*

[Huckleberry](#) - *Vaccinium myrtillus*

[Hypericum](#) - *Hypericum perforatum*

[Indian Tobacco](#) - *Lobelia inflata*

[Inula](#) - *Inula helenium*

[Isoflavone](#) - *Glycine max*

[Juniper](#) - *Juniperus communis*

[Kava](#) - *Piper methysticum*

[Kelp](#) - *Macrocystis pyrifera*

[Kudzu](#) - *Pueraria lobata*, *Pueraria thunbergiana*

[Lapacho](#) - Pau d'arco - *Tabebuia impestiginosa*

[Lavender](#) - *Lavandula angustifolia*, *L. officinalis*

[Lemon Balm](#) - *Melissa officinalis*

[Licorice](#) - *Glycyrrhiza glabra*

[Lignan](#) - *Linum usitatissimum*

[Ligustrum](#) - *Ligustrum lucidum*

[Ling chih/Ling zhi](#) - *Ganoderma Lucidum*

[Linseed Oil](#) - *Linum usitatissimum*

[Lobelia](#) - *Lobelia inflata*

[Lomatium](#) - *Lomatium dissectum*

[Lucerne](#) - *Medicago sativa*

[Ma huang](#) - *Ephedra sinica*

[Maidenhair Tree](#) - *Ginkgo Biloba*

[Maitake](#) - *Grifola Frondosa*

[Manuka](#) - Tea Tree - *Melaleuca Alternifolia*

[Marigold](#) - *Calendula officinalis*

[Marshmallow](#) - *Althaea officinalis*

[Meadowsweet](#) - *Spireaea ulmaria*

[Melaleuca](#) - Tea Tree - *Melaleuca Alternifolia*

[Melissa](#) - *Melissa officinalis*

[Milk Thistle](#) - *Silybum marianum*

[Monk's Pepper](#) - *Vitex agnus-castus*

[Mullein](#) - *Verbascum thapsus*

[Myrrh](#) - *Balsamodendron Myrrha*, *Commiphora Myrrha*

[Nettle](#) - *Urtica dioica*

[Oak](#) - *Quercus robur*

[Oats](#) - *Avena sativa*

[Old Mans Beard](#) - *Usnea barbata*

[Oregon Grape](#) - *Berberis aquifolium*

[Papain](#) - See Enzymes

[Passiflora](#) - Passion Flower - *Passiflora incarnata*

[Pau d'arco](#) - *Tabebuia impestiginosa*

[Pepper \(Cayenne\)](#) - *Capsicum frutescens*

[Peppermint](#) - *Mentha x piperita vulgaris*

[Phyllanthus](#) - *Phyllanthus niruri*

[Pineapple](#) - Ananas comosus

[Plantago Seed](#) - Psyllium, Plantago ispaghula

[Pollen](#) is actually from flowers but is collected from bees

[Privet](#) - Ligustrum lucidum

[Pygeum](#) - African Prune, Pygeum africanum

[Psyllium](#) - Plantago ispaghula

[Purple Coneflower](#) - Echinacea angustifolia

[Qinghao](#) - Wormwood, Artemisia annua

[Red Clover](#) - Trifolium pratense

[Red Raspberry](#) - Rubus idaeus

[Reishi](#) - Ganoderma Lucidum

[Rosemary](#) - Rosmarinus officinalis

[Rumex](#) - Rumex crispus

[Sabal](#) - Sabal serrulata

[Sacred Bark](#) - Hamnus purshianus

[Sage](#) - Salvia officinalis

[Salai Guggul](#) - Olibanum, Frankincense, Boswellia serrata

[Sandalwood](#) - Santalum album

[Sarsaparilla](#) - Smilax rotundifolia, Smilax ornata

[Saw Palmetto](#) - Sabal serrulata

[Schisandra](#) - Schisandra chinensis

[Scullcap](#) - Scutellaria lateriflora

[Senna](#) - Cassia angustifolia, Cassia Acutifolia

[Shiitake](#) - Hua gu, Lentinan edodes

[Siberian Ginseng](#) - Eleutherococcus senticosus

[Silybum/Silymarin](#) - Silybum marianum

[Slippery Elm](#) - Ulmus rubra, Ulmus fulva

[Soy](#) - Glycine max

[Spirulina](#) - Blue-Green Algae, Spirulina geitler, S. maxima, S. platenis

[St. John's Bread](#) - Ceratonia siliqua

[St. Johns Wort](#) - Hypericum perforatum

[Starflower](#) - Borago officinalis

[Stevia](#) - Stevia rebaudiana

[Sundew](#) - Drosera rotundifolia

[Sweet Annie](#) - Wormwood, Artemisia annua

[Sweetleaf](#) - Stevia rebaudiana

[Taheebo](#) - Pau d'arco, Lapacho - Tabebuia impestiginosa

[Tea Tree Oil](#) - Melaleuca Alternifolia

[Thyme](#) - Thymus vulgaris

[Turmeric](#) - Curcuma longa

[Uña de gato](#) - Uncaria tomentosa

[Usnea](#) - Usnea barbata

[Uva Ursi](#) - Arctostaphylos uva-ursi

[Valerian](#) - Valeriana officinalis

[Vitex](#) - Vitex agnus-castus

[White Willow](#) - Salix alba

[Wild Cherry](#) - Prunus serotina

[Wild Indigo](#) - Baptisia tinctoria

[Wild Oats](#) - Avena fatua

[Wild Yam](#) - Dioscorea villosa

[Witch Hazel](#) - Hamamelis virginiana

[Wormwood](#) - Artemisia absinthum

[Wu-wei-zi](#) - Schisandra chinensis

[Yarrow](#) - Achillea millefolium

[Yellow Dock](#) - Rumex crispus

[Yohimbe](#) - Pausinystalia yohimbe, Corynanthe yohimbe

[Yucca](#) - Yucca schidigera

Herbal Medicine

Medicinal herbs are some of our oldest medicines and their increasing use in recent years is evidence of a public interest in having alternatives to conventional medicine. Herbal medicines currently account for one of the fastest growing markets in U.S. pharmacies and constitute a multi-billion dollar industry. Market size is predicted to approximately double between 1997 and 2001. Although approximately 1500 botanicals are sold as dietary supplements or ethnic traditional medicines, herbal formulations are not subject to FDA premarket toxicity testing to assure their safety or efficacy.

In response to concerns regarding the use and efficacy of medicinal herbs and to recent nominations of these products for study by the NTP, a workshop on herbal medicines was organized to address research needs. This workshop was sponsored by the [NTP](#) in conjunction with the [NIH Office of Dietary Supplements](#), the DHHS Office of Disease Prevention and Health Promotion, the [FDA](#) Office of Special Nutrition, and the Society for the Advancement of Women's Health Research and held 23-24 September 1998 in Raleigh, NC. Its objectives were to discuss the use, safety, and possible health-related problems associated with the use of medicinal herbs; identify how other countries evaluate and regulate medicinal herbs; establish the NTP's role in determining their long-term safety; and recommend areas for research. A broader objective of the meeting was the focus and coordination of U.S./International research efforts. Recommendations from the workshop include a call for more research, identification and standardization of product ingredients by industry, and increased consumer education through package inserts.

In follow-up to this workshop, the NTP staff is working with the NIH Office of Dietary Supplements, the FDA, the academic community, and others to further define and implement research that addresses deficiencies in our knowledge about herbal medicines and their potential toxicities. Several herbs and active or toxic ingredients found in some herbs have been nominated and selected for study by the NTP. These studies will focus on characterization of potential adverse health effects including reproductive toxicity, neurotoxicity, and immunotoxicity as well as those associated with acute high dose exposure and chronic exposure to lower doses. In addition, special attention will be given to the potential for herb/herb and herb/drug interactions and the responses of sensitive subpopulations (e.g. pregnant women, the young, the developing fetus, the elderly, etc). NTP studies include both traditional toxicological research and molecular mechanistic considerations. Comments from the public and others regarding NTP

Research in this area is welcome and should be forwarded to the NTP Liaison and Scientific Review Office.

Herbs and Active or Toxic Ingredients for Study by the NTP

[Golden Seal](#) - Second or third most popular medicinal herb used in this country

[Comfrey](#) - Herb consumed in teas and as fresh leaves for salads; contains pyrrolizidine alkaloids, which are known to be toxic

[Ginkgo](#) - Among the five or six most frequently used medicinal herbs

[Echinacea](#) - Most commonly used medicinal herb in the United States

[Berberine](#) - An active ingredient in golden seal

Thujone - A toxic compound of worm wood

Pulegone - A toxic compound found in pennyroyal

[Aleo vera](#) - 7th most widely used herb, used as both a dietary supplement and component of cosmetics

[Ginseng](#) and gensenosides - 4th most widely used medicinal herb, gensenosides are thought to be the active ingredients. Ginseng has been associated with a number of adverse health effects.

[Kava Kava](#) - Reported to be the 5th most widely used medicinal herb, has psychoactive properties and sold as a calmativ and antidepressant

[Milk Thistle Extract](#) - A medicinal herb promoted for the treatment of liver disease that is becoming increasingly popular.

For further information contact the NTP Liaison Office at: 919-541-0530 Fax: 919-541-0295
liaison@starbase.niehs.nih.gov

Medicinal Herbs: NTP Extracts the Facts

**Environmental Health Perspectives Volume 107, Number 12,
December 1999**

The National Toxicology Program (NTP) has announced that it will design and initiate studies to identify and characterize possible adverse health effects that may be associated with prolonged use or higher doses of some of the most popular medicinal herbs, including [Ginkgo biloba](#), [Echinacea angustifolia](#), and [Panax quinquefolius \(American Ginseng\)](#). The NTP studies a large variety of substances to which the population may be exposed in the environment, occupationally, in the food supply, or elsewhere.

Little has been scientifically confirmed regarding either the adverse or beneficial health effects of most of the 1,500-plus herbal products stocked in America's drug stores, grocery stores, and numerous other retail outlets that market these formulations. Many consumers mistakenly assume that because herbal preparations are natural, they are safer, gentler, and less "medicinal" than conventional drugs. Furthermore, they may neither think nor choose to tell their doctors they are using a particular herb and thus risk potential herb-drug interactions. The extent of the nation's self-medication is evidenced by the cornucopia of readily available remedies and the blossoming herbal product market, expected to reach \$5 billion next year.

Under the Dietary Supplement Health and Education Act of 1994, herbal products are not required to be proven safe before marketing. To date, there has been no legal requirement for the testing of herbal products either before or after marketing. Once marketed, the burden of proof is on the U.S. Food and Drug Administration to prove that a dietary supplement is unsafe before it can be removed from shelves. Thus, it falls to the government to test these formulations.

As part of its congressional mandate, the NTP studies biological or physical agents that might not be tested without federal involvement. This includes commercial agents first marketed prior to current testing requirements; orphan drugs, which are used to treat relatively rare diseases affecting fewer than 200,000 people and which might not be developed without federal involvement; and mixtures of chemicals for which evaluations are not required of industry. Medicinal herbs fall under each of these categories. Studies of medicinal herbs cannot be required of manufacturers unless they plan to market their products as drugs (rather than as dietary supplements).

Substances approved for NTP study undergo a series of assays to determine acute, subchronic, and chronic effects. In each case the route of exposure is designed to simulate the anticipated route of human exposure. Initially the substance is administered daily for 14 days to determine palatability (if administered in food) and how well it is tolerated. The substance may next be administered for 90 days to simulate extended exposure and any related toxicity. Finally, it may be administered chronically for up to

2 years to determine its potential to induce chronic toxicity and/or carcinogenicity. The animal models usually used are Fischer 344 rats and B6C3F1 mice. Most substances tested in animals also undergo one or more assays for genetic toxicity, and additional assays testing for specific health effects such as reproductive toxicity, neurotoxicity, or immunotoxicity may be designed and administered if the test substance is suspected of affecting one or more of those systems. Assays may be terminated at any point if the results of these or other studies make it apparent that further testing is not needed.

To date, the NTP has received several nominations for medicinal plants to be studied. Currently, studies are under way for the herb [Hydrastis canadensis \(Golden Seal\)](#). Studies on *Symphytum officinale* ([Comfrey](#)) and pulegone, a chemical found in *Mentha pulegium* (pennyroyal), are being planned, and investigators are currently gathering materials for studies on ginkgo and echinacea. Other plants and substances approved for full studies include [Aloe Vera](#), [Ginseng](#), [Piper methysticum \(kava kava\)](#), [Silybum marianum \(milk thistle\)](#), and thujone, a compound found in several different spices and herbs. The studies will be conducted by members of the General Toxicology Group within the Toxicology Operations Branch of the Environmental Toxicology Program.

Goldenseal. The root of the goldenseal plant is traditionally used to treat wounds, ulcers, digestive problems, and eye and ear infections. Today, the herb is also used as a laxative, tonic, and diuretic. Goldenseal is used in feminine products such as vaginal douches and is claimed to help with menstrual disorders such as irregular cycle and excessive bleeding. Berberine, one of the chief active components in goldenseal, has antimicrobial and vasodilatory properties and may also be effective in preventing the growth of cancer cells. The other major component of goldenseal, hydrastine (which can be made from berberine), has abortifacient effects and has been shown to induce labor in pregnant women when taken orally. Large internal doses of goldenseal may cause convulsions and irritation of the mouth, throat, and stomach, tingling of the skin, paralysis, respiratory failure, and possibly death at very high doses. Chronic use may inhibit vitamin B absorption. Goldenseal was recommended to the NTP for study of reproductive toxicity, developmental toxicity, chronic toxicity, and carcinogenicity.

Comfrey. Applied externally, comfrey acts as an anti-inflammatory to promote healing of bruises, sprains, and open wounds. The roots and leaves of the plant contain the protein allantoin, which stimulates cell proliferation. Comfrey is said to help wounds to heal and broken bones to knit. It is also taken internally as an herbal tea to treat gastric ulcers, rheumatic pain, arthritis, bronchitis, and colitis. This is a matter of some concern because comfrey contains several pyrrolizidine alkaloids, primarily symphytine, which have been linked to liver and lung cancer in rats.

Because the hepatotoxic effects of pyrrolizidine alkaloids are well established in both animals and humans, there are no plans to reproduce earlier carcinogenicity studies on comfrey that linked the herb with liver cancer in rats. Rather, the study is anticipated to focus on the reproductive toxicity effects of the herb.

Pulegone. Pulegone is the active ingredient in pennyroyal and is also found in several other species of mint. Pennyroyal is traditionally used as a carminative, insect repellent, emmenagogue, and abortifacient.

Prior studies have demonstrated hepatic, renal, and pulmonary toxicity in humans, as well as central nervous system toxicity resulting in seizure, coma, and death.

Pulegone was particularly recommended to the NTP for study because of its toxicity to the developing fetus. In addition to the standard toxicity assays, the substance will be studied for reproductive toxicity, chronic toxicity, and carcinogenicity.

Ginkgo. After several thousand years of use in China, ginkgo has recently enjoyed a swift rise to popularity in the United States. The extract of the ginkgo leaf contains a balance of flavone glycosides (including one suspected high-dose carcinogen, quercetin) and terpene lactones. Ginkgo acts as a blood thinner; it improves circulation and is therefore used to treat migraine headaches, depression, and a range of lung and heart problems. In the United States, ginkgo is probably most popularly known for its purported memory-enhancing effects. However, although studies such as that published by researchers at Tarrytown's New York Institute for Medical Research in the 22-29 October 1997 issue of the Journal of the American Medical Association indicate that ginkgo may help stabilize and perhaps enhance cognitive function in dementia and Alzheimer disease patients, the herb has not been shown to improve memory in normal, healthy people.

Ginkgo has been recommended to the NTP for studies of neurotoxicity, chronic toxicity, and carcinogenicity. At this point, the study is expected to focus on histopathological changes in the brain effected by the herb. A possible collaboration with the University of North Carolina at Chapel Hill is in the works.

Echinacea. This member of the daisy family is one of the top medicinal herb sellers in the United States. Although once used for everything from snake bites to typhoid, echinacea is most commonly used today as an immunostimulant to treat the common cold, sore throat, and flu. Echinacea is not known to have any serious adverse side effects, although there have been reports of skin rash and insomnia among users. The herb is available in many forms--dried root or leaf, liquid extract, powder, capsules, tablets, creams, gels, and injections (outside of North America). It has yet to be determined how echinacea is best administered or exactly how--or if--the plant's complex mixture of polysaccharides, flavonoids, essential oils, and other compounds actually produces beneficial effects. Echinacea was recommended to the NTP for study of immunotoxicity, subchronic toxicity, chronic toxicity, and carcinogenicity.

Aloe. The gel of the succulent aloe plant has been used as a balm for minor burns since the time of the ancient Egyptians. Aloe is also taken internally to treat constipation, colitis, peptic ulcers, and diabetes. Thanks to its highly touted powers as a skin moisturizer, aloe now appears in an extensive array of cosmetic products such as soaps, lotions, and skin creams. Several aloe juice health drinks are being marketed as general tonics. Aloe was recommended to the NTP for study in the Tg.AC transgenic mouse. No special toxicity studies were indicated.

Ginseng. Ginseng has long been a popular remedy in Eastern medicine; its Latin name *Panax* is derived from the same root as "panacea," which gives some idea of the esteem in which this herb is held among

its users. Ginseng is used as a mood enhancer, stress reducer, and aphrodisiac. It is also used to treat upset stomach, depression, diabetes, and hypertension. Reports of so-called ginseng abuse syndrome, a condition symptomized by nervousness, hypertension, insomnia, skin eruptions, diarrhea, and depression that was first described in the 13 April 1979 issue of the Journal of the American Medical Association, have been largely debunked. Ginseng was recommended to the NTP for testing of reproductive toxicity, neurotoxicity, chronic toxicity, and carcinogenicity.

Kava kava. Among the peoples of Oceania, kava kava has a long history of recreational, medicinal, and ceremonial use. Today, the herb is quickly becoming popular in the West as a calmative and antidepressant. The same psychoactive properties that induce restful sleep and promote sociability also make kava kava a likely candidate for abuse; chronic heavy use of the herb has been associated with skin problems, liver and kidney dysfunction, and possible hypertension. Kava kava has been recommended to the NTP for genotoxicity, reproductive toxicity, neurotoxicity, chronic toxicity, and carcinogenic testing.

Milk thistle. Milk thistle is used to treat a number of liver conditions including cirrhosis and hepatitis, and has been shown to stimulate protein synthesis within the liver, leading to tissue regeneration. Milk thistle is noted for its potency as an antidote to the toxins of the death cap mushroom, which attack the liver and can cause death if not treated promptly. The herb has also been used historically to treat depression and to increase breast milk production; today it is a staple for pregnant and nursing mothers who embrace the alternative medicine approach. Milk thistle has been recommended to the NTP for genotoxicity, metabolism, reproductive toxicity, chronic toxicity, and carcinogenicity testing.

Thujone. Thujone is a monoterpene found in several different herbs, including [sage](#), cedar, tansy, and [wormwood](#). Thujone is believed to be the culprit behind the hallucinations, tremors, convulsions, and paralysis that result from drinking the wormwood-based liqueur absinthe. Although the use of thujone in food is banned in the United States, the compound appears in over 20 approved flavorings and food additives. In addition, several readily available nonfood items (including medicinal products such as Vicks VapoRub, fragrances, and perfume additives) contain thujone. Thujone has been recommended to the NTP for genotoxicity, neurotoxicity, reproductive toxicity, chronic toxicity, and carcinogenicity testing.

The NTP continually solicits and receives new nominations for substances to be studied from numerous sources including academia, industry, other government agencies, and the general public. Three committees are involved in reviewing nominations for NTP studies: the Interagency Coordinating Committee for Evaluation of Chemicals (ICCEC, which is made up of scientists representing 11 federal health agencies), the NTP Board of Scientific Counselors (which reviews each nominee's background information and the recommendations made by the ICCEC), and the NTP Executive Committee (which considers the recommendations of the other two committees and formally accepts or rejects each nomination). As public exposure to herbal products continues to grow and usage trends of medicinal plants become more apparent, the NTP will continue to characterize the acute and chronic effects of these products along with those of other chemicals and agents that industry cannot be required to study.

Ginkgo biloba

Other Common Names: Ginkgo, Icho, Ityo, Maidenhair Tree, Pai Kuo, Yin Hsing, Yin Kuo, Ginkgo biloba

Range: E. Asia - N. China

Habitat: Found wild in only 2 localities at Guizhou and on the Anhui/Zhejiang border, where it grows on rich sandy soils.

Composition: Seed (Dry weight) - Water: 0 Calories: 403 Protein: 10.4 Fat: 3.3 Carbohydrate: 83 Fiber: 1.3 Ash: 3.5 Calcium: 11 Phosphorus: 327 Iron: 2.6 Sodium: 15 Potassium: 1139 Vitamin A: 392 Thiamine: 0.52 Riboflavin: 0.26 Niacin: 6.1 Vitamin C: 54

Ginkgo has a long history of medicinal use in traditional Chinese medicine, where the seed is most commonly used. Recent research into the plant has discovered a range of medicinally active compounds in the leaves and this has excited a lot of interest in the health-promoting potential of the plant. In particular, the leaves stimulate the blood circulation and have a tonic effect on the brain, reducing lethargy, improving memory and giving an improved sense of well-being. They have also been shown to be effective in improving peripheral arterial circulation and in treating hearing disorders such as tinnitus where these result from poor circulation or damage by free radicals. In 1989, a product from Ginkgo biloba, often used for tinnitus, was the most widely used medicine in West Germany, where more than 5 million prescriptions were written.

Ginkgo is generally accepted as a remedy for minor deficits in brain function, such as those that occur with advancing age. It is used to improve concentration and combat short-term memory loss due to clogged arteries in the brain, and to treat dizziness, headache, and emotional hypersensitivity accompanied by anxiety.

The leaves contain ginkgolides, these are compounds that are unknown in any other plant species. Ginkgolides inhibit allergic responses and so are of use in treating disorders such as asthma. Eye disorders and senility have also responded to treatment. The leaves are best harvested in the late summer or early autumn just before they begin to change color. They are dried for later use.

The fruit is antibacterial, antifungal, astringent, cancer, digestive, expectorant, sedative, vermifuge. The fruit is macerated in vegetable oil for 100 days and then the pulp is used in the treatment of pulmonary tuberculosis, asthma, bronchitis etc. (This report might be referring to the seed rather than the fleshy fruit).

The cooked seed is antitussive, astringent and sedative. It is used in the treatment of asthma, coughs with thick phlegm and urinary incontinence. The raw seed is said to have anticancer activity and also to be antiviral. It should be used with caution, however, due to reports of toxicity. The cooked seeds stabilize spermatogenesis.

Seed - raw (in small quantities), or cooked. A soft and oily texture, the seed has a sweet flavor and tastes somewhat like a large pine nut. The baked seed makes very pleasant eating, it has a taste rather like a cross between potatoes and sweet chestnuts. The seed can be boiled and used in soups, porridges etc. It needs to be heated before being eaten in order to destroy a mildly acrimonious principle. Another report says that the seed can be eaten raw whilst another says that large quantities of the seed are toxic. See the notes on toxicity for more details. The raw seed is said to have a fish-like flavor. The seed is rich in niacin. It is a good source of starch and protein, but is low in fats. These fats are mostly unsaturated or monosaturated. A more detailed nutritional analysis is available.

It is widely held that about one quarter of Western medicines are derived from plants, although a recent study led by Francesca Grifo, director of the Center for Biodiversity and Conservation at the American Museum of Natural History, puts the figure closer to 60%. Most Western plant-derived medicines, however, resulted from isolating active ingredients and not from the complex compounds that make up most herbal remedies. Some scientists apply the term "botanical" to any product that contains ingredients of vegetable matter or its constituents as a finished product.

Research continues to accumulate evidence for and against herbal medicines. Scientific research on many herbal medicines has shown a clear correlation with health benefits. For Ginkgo biloba, for example, the [NIH's Alternative Medicine report](#) cites more than nine published scientific studies, conducted mostly in Europe, confirming ginkgo's effectiveness in improving cognitive function and circulation, and in reducing the risk of cardiovascular disease. The report also cites findings confirming the benefits of milk thistle (*Silybum marianum*, used both to prevent and repair liver damage), [saw palmetto](#) (*Serenoa repens*, effective against benign prostatic hypertrophy), and [echinacea](#) (*Echinacea purpurea* and *Echinacea angustifolia*, found to have immune-enhancing and antibacterial properties), among others.

Known Hazards: The seed contains a mildly acrimonious principle that is unstable when heated. It is therefore best to cook the seed before eating it to ensure any possible toxicity is destroyed. This acrimonious principle is probably 4'-methoxypyridoxine, which can destroy vitamin B6. It is more toxic for children, but the raw nuts would have to be eaten often over a period of time for the negative effects to become apparent.

Echinacea - Echinacea angustifolia

Other Common Names: Black Sampson, Black Sampson Coneflower, Blacksamson, Blacksamson Echinacea, Coneflower, Narrow-leaved, E Angustifolia, Var Angustifolia, Echinacea Angustifolia, Black Sampson, Kansas Snakeroot, Kansas Snakeroot, Narrowleaf Coneflower, Narrowleaved Coneflower, Narrowleaved Purple Coneflower, Niggerhead, Purple Coneflower, Roter Sonnenhut, Rudbeckia, Rudbeckie Rouge, Snakeroot, Kansas, Zonnehoed, Echinacea angustifolia

Range: N. America - Manitoba, Saskatchewan and North Dakota south to Texas; France; Germany; Netherlands; Turkey

Habitat: Dry prairies and barrens.

Echinacea are herbaceous perennials of the daisy family. Echinacea may have either simple or branched stems. The flowers are large and daisy-like and are sometimes known as coneflowers because of the raised capitulum containing disc florets to which are attached ray florets. It has a faint aromatic smell, with a sweetish taste, leaving a tingling sensation in the mouth not unlike *Aconitum napellus*, but without its lasting numbing effect. Of the nine Echinacea species, *E. angustifolia*, *E. purpurea*, and *E. pallida* are the most commonly used. All are used to boost the immune system and fight infections, but only the *purpurea* and *pallida* varieties have been definitively proven effective. In general, the medicinal effects of the leaves are better documented than the effects of the roots.

Echinacea is one of the world's most important medicinal herbs. Echinacea is an extremely popular herbal supplement; sales are nearly \$300 million a year according to the last figures available.

The genus Echinacea is native to the North American prairies. Nearly all parts of the plant are used for therapeutic preparations including the root, leaves, flowers, and seeds. Echinacea products may be derived from cultivated or wild stocks. Echinacea was widely used by the Plains Indians of North America for a variety of purposes including treatment of snake bite and relief of fever. From 1887, the plant was incorporated into a variety of patent medicines and by the 1920s echinacea was the largest selling patent medicine in North America. Plants in this genus were probably the most frequently used of all North American Indian herbal remedies. They had a very wide range of applications and many of these uses have been confirmed by modern science. The plant has a general stimulatory effect on the immune system and is widely used in modern herbal treatments.

Echinacea was included in the National Formulary of the United States from 1916 to 1950; however, after years of debate over its effectiveness, use declined in the 1930s. As interest in echinacea waned in North America it increased in Europe. A German firm (Madaus) imported *E. purpurea* seeds from the US and this species is the subject of almost all research on the genus conducted in Europe over the last fifty

years. Today, more than 280 echinacea-containing products are manufactured in Germany alone.

Research shows that it has the ability to raise the body's resistance to bacterial and viral infections by stimulating the immune system. It is also antibiotic and helps to relieve allergies. Echinacea is regarded as effective in treating certain viral and bacterial infections as well as wounds and inflammation, while stimulating the immune system. Its ability to potentiate the immune system and to reduce inflammation provide the basis for many of its suggested uses including treatment of colds, coughs, flu, other upper respiratory infections, enlarged lymph glands, sore throat, urinary tract infections, herpes and candida, wounds, skin infections, eczema and psoriasis (Herb Research Foundation (1997) Herb Information Greenpaper. Echinacea).

There has been some doubt over the ability of the body to absorb the medicinally active ingredients orally (intravenous injections being considered the only effective way to administer the plant), but recent research has demonstrated significant absorption from orally administered applications. In Germany over 200 pharmaceutical preparations are made from Echinacea. The roots and the whole plant are considered particularly beneficial in the treatment of sores, wounds, burns etc, possessing cortisone-like and antibacterial activity. The plant was used by North American Indians as a universal application to treat the bites and stings of all types of insects. An infusion of the plant was also used to treat snakebites.

The root is adaptogen, alterative, antiseptic, depurative, digestive, sialagogue. It is harvested in the autumn and dried for later use. The plant has been used as a diaphoretic.

The root and/or herb may be brewed as a tea.

No epidemiological studies or case reports investigating the association of exposure to echinacea and cancer risks in humans were identified in the available literature.

There have been no reports of serious adverse effects associated with the administration of echinacea. Occasionally the injection of echinacea extracts has resulted in a feverish reaction. Skin rashes and insomnia have also been reported. Due to cross hyper-sensitivity, echinacea should not be taken by persons allergic to flowers of the daisy family. Echinacea is contraindicated in individuals with autoimmune illnesses and other progressive systemic diseases such as tuberculosis, multiple sclerosis, and HIV infection and AIDS related illnesses.

American Ginseng - *Panax quinquefolius*

Other Common Names: Amerikaanse Ginseng, Amerikanischer Ginseng, Five Fingers, Red Berry, Tartar Root, *Panax quinquefolius*

Range: Eastern N. America - Maine to Georgia, west to Oklahoma and Minnesota.

Habitat: Requires a deep moist humus rich soil in a shady position in a woodland. Requires deep shade, growing well on north-facing slopes and in woodland.

Often grown as a medicinal plant, though considered to be inferior to Korean ginseng, *P. ginseng*. It is exported from N. America, mainly to Hong Kong.

P. Ginseng has a history of herbal use going back over 5,000 years. It is one of the most highly regarded of herbal medicines in the Orient, where it has gained an almost magical reputation for being able to promote health, general body vigour and also to prolong life. The root is adaptogen, alterative, carminative, demulcent, emetic, expectorant, stimulant and tonic. It both stimulates and relaxes the nervous system, encourages the secretion of hormones, improves stamina, lowers blood sugar and cholesterol levels and increases resistance to disease. It is used internally in the treatment of debility associated with old age or illness, lack of appetite, insomnia, stress, shock and chronic illness. The roots are harvested in the autumn, preferably from plants 6 - 7 years old, and can be used fresh or dried.

This N. American species of ginseng is said to have similar properties to the [Oriental ginseng, *P. ginseng*](#), though it is said to have a milder action and is more likely to be prescribed for younger patients. It is cultivated in some areas of America as a medicinal crop and is also often harvested from the wild. The root is said to be adaptogen, cardiogenic, demulcent, panacea, sedative, sialagogue, stimulant and stomachic. It is used in the treatment of chronic cough, low-grade fever, spontaneous or night sweating and fatigue due to chronic consumptive disease.

When taken over an extended period it is said to increase mental efficiency and physical performance whilst helping the body adapt to high or low temperatures and stress. Some caution is advised, though, because large doses are said to raise blood pressure. The root is harvested in the autumn and dried for later use.

A tea is made from the leaves and the roots. The aromatic root is candied and used as a masticatory.

A dose of 10ug/ml of ginseng saponins has been shown to be significantly radio-protective when it is administered prior to gamma-irradiation. The leaf is emetic and expectorant.

Known Hazards: Ginseng is not normally prescribed for pregnant women, or for patients under the age of 40, or those with depression, acute anxiety or acute inflammatory disease. It is normally only taken for a period of 3 weeks. Excess can cause headaches, restlessness, raised blood pressure and other side effects, especially if it is taken with caffeine, alcohol, turnips and bitter or spicy foods.

- Bown. D. Encyclopaedia of Herbs and their Uses. Dorling Kindersley, London. 1995 ISBN 0-7513-020-31

Asian Ginseng - *Panax ginseng*

Other Common Names: Chinese Ginseng, Ginseng, Jen Shen, Jen Shen Chiu, Oriental ginseng, Otane-Ninzin, Ren Shen, Shen Lu, Shen Ts' Ao, *Panax ginseng*

Range: E. Asia - China, Korea.

Habitat: Mountain forests.

Ginseng is a highly valued herb in the Far East and has gained popularity in the West during the last decade. There is extensive literature on the beneficial effects of ginseng and its constituents. The major active components of ginseng are ginsenosides, a diverse group of steroidal saponins, which demonstrate the ability to target a myriad of tissues, producing an array of pharmacological responses. However, many mechanisms of ginsenoside activity still remain unknown. Since ginsenosides and other constituents of ginseng produce effects that are different from one another, and a single ginsenoside initiates multiple actions in the same tissue, the overall pharmacology of ginseng is complex. The ability of ginsenosides to independently target multireceptor systems at the plasma membrane, as well as to activate intracellular steroid receptors, may explain some pharmacological effects.

Ginseng has a history of herbal use going back over 5,000 years. It is one of the most highly regarded of herbal medicines in the Orient, where it has gained an almost magical reputation for being able to promote health, general body vigour and also to prolong life.

The root is adaptogen, alterative, carminative, demulcent, emetic, expectorant, stimulant and tonic. It both stimulates and relaxes the nervous system, encourages the secretion of hormones, improves stamina, lowers blood sugar and cholesterol levels and increases resistance to disease. It is used internally in the treatment of debility associated with old age or illness, lack of appetite, insomnia, stress, shock and chronic illness. The roots are harvested in the autumn, preferably from plants 6 - 7 years old, and can be used fresh or dried.

A dose of 10ug/ml of ginseng saponins has been shown to be significantly radio-protective when it is administered prior to gamma-irradiation.

The leaf is emetic and expectorant.

Known Hazards: Ginseng is not normally prescribed for pregnant women, or for patients under the age of 40, or those with depression, acute anxiety or acute inflammatory disease. It is normally only taken for a period of 3 weeks. Excess can cause headaches, restlessness, raised blood pressure and other side effects, especially if it is taken with caffeine, alcohol, turnips and spicy foods.

Consuming caffeine with ginseng increases the risk of over-stimulation and gastrointestinal upset. Persons with uncontrolled high blood pressure should not use ginseng. Long-term use of ginseng may cause menstrual abnormalities and breast tenderness in some women. Ginseng is not recommended for pregnant or lactating women.

- Duke. J. A. and Ayensu. E. S. Medicinal Plants of China Reference Publications, Inc. 1985 ISBN 0-917256-20-4

Ayurveda

Ayurveda is the ancient (before 2500 b.c.) Indian system of health care and longevity. It involves a holistic view of man, his health, and illness. It is based on the idea that the body, mind, and spirit are interconnected and that all three must be "balanced" to achieve the highest degree of health. The mind is also thought to have a deep influence on the body.

Ayurvedic treatment of a disease consists of salubrious use of drugs, diets, and certain practices. Medicinal preparations are invariably complex mixtures, based mostly on plant products. Around 1,250 plants are currently used in various Ayurvedic preparations.

Many Indian medicinal plants have come under scientific scrutiny since the middle of the nineteenth century, although in a sporadic fashion. The first significant contribution from Ayurvedic materia medica came with the isolation of the hypertensive alkaloid from the sarpagandha plant (*Rouwolfia serpentina*), valued in Ayurveda for the treatment of hypertension, insomnia, and insanity. This was the first important ancient-modern concordance in Ayurvedic plants. With the gradual coming of age of chemistry and biology, disciplines central to the study of biologic activities of natural products, many Ayurvedic plants have been reinvestigated. Our work on *Commiphora wightii* gum-resin, valued in Ayurveda for correcting lipid disorders, has been described in some detail; based on these investigations, a modern antihyperlipoproteinemic drug is on the market in India and some other countries. There has also been concordance for a few other Ayurvedic crude drugs such as *Asparagus racemosus*, *Cedrus deodara*, and *Psoralea corylifolia*.

HERBAL-MEDICAL GLOSSARY

The definitions below are pertinent to my use of those terms as an herbalist. Those of you versed in medicine may find the emphasis sometimes peculiar. You are used to employing those parts of anatomy, physiology and pharmacology that explain phenomena treatable with Standard Practice Medicine. Clinical diagnosis uses the physical sciences to help define conditions with medical implications, even though much of both physiology and pharmacology deals with observations that may not have medical treatment. It isn't unimportant, simply not pertinent.

MY application of physiology and pharmacology is similarly biased towards MY tools. Herbs work rather poorly within the current medical model; they neither block nor suppress effectively (at least those that are reasonably safe). The best that can be said is that they NUDGE. We need to use the sciences to define constitutional, environmental and life-style factors, since we cannot CREATE a new state, only manipulate existing potentials. With herbs, you usually try to STIMULATE native resistance, and need to understand the factors that compromise it. The focus is on self-limiting and acute disorders, chronic and functional disorders, and the subclinical imbalances that are not "ripe" enough to warrant a medical approach but that compromise general health and that may in time lead to disease. Medicine needs to use procedures in intervening when native strengths have proved inadequate; the use of herbs needs to understand the co-factors and physiology of native strengths in order to extend them. Hence some of the definitions, while being accurate, may seem to emphasize almost trivial aspects.

It's all a journey, this process of trying to help sick people. Current medicine drives quickly, but only on roads it has built. Herbal therapies travel on horseback; poorly on the roads, best across the countryside where the cars can't go. The great evils of medicine are that it claims to be scientific (it is an art using science as a tool) and that it denies other modalities (using the standards of science, not art).

ACHENE A dry, one-seeded fruit, without a predictable opening and formed from a single carpel. It usually one of many, like an unshelled Sunflower seed.

ACHLORHYDRIA The lack of free hydrochloric acid in the stomach; more broadly, inadequate or suppressed secretions. Without enough acid, proteins are not broken down, butterfats are not digested, Vitamin B12 may not be absorbed, and there is a long-term risk for the potential of food sensitivities to undigested foreign proteins.

ACID In our context, a substance having a pH below that of neutral water (7.0) when in solution. Most metabolic waste products are acidic. Sour. See pH

ACIDOSIS Specifically, the abnormal buildup of acids in the body, classically

caused by diabetes or kidney disease. Broadly, the potential caused by increased protein intake or metabolism, coupled with inadequate intake (or loss) of alkali.

ACUTE A type of disease or disorder having a sudden onset with severe symptoms, and generally a short or self-limited duration (such as a head cold or sprain). The opposite of chronic.

ADAPTOGEN A recent (and to me, slightly flaky) term used to describe agents, often botanical, that stimulate non-specific resistance, and that seem to decrease hypothalamus and pituitary over-reactions to perceived...not real...stress.

ADENITIS An inflammation of one or several lymph nodes, or related lymphoid tissues.

ADRENAL CORTEX The outer covering of the two adrenal glands that lie atop each kidney. Embryonically derived from gonad tissue, they make steroid hormones that control electrolytes, the management of fuels, the rate of anabolism, the general response to stress, and maintenance of nonspecific resistance.

ADRENAL MEDULLA The inner part of the adrenals, derived embryonically from spinal nerve precursors, they secrete epinephrine, norepinephrine and dopamine; used locally as neurotransmitters, sensitive receptors can be mobilized totally by the adrenal medullas.

ADRENALIN Called epinephrine in the U.S., this is a substance secreted into the bloodstream and reacted to by specialized receptors throughout the body, initiating a "code blue" or flight-or-fight response. Many receptors are a regular part of sympathetic function, and respond to their own local relative, norepinephrine or noradrenalin, in the course of normal autonomic nervous system interplay. See: SYMPATHETIC, PARASYMPATHETIC, LIMBIC

ADRENERGIC Functions that are dominated by epinephrine (the blood hormone) or norepinephrine (local sympathetic adrenergic nerve stimulus)

ADRENOCORTICAL Pertaining to the adrenal cortex.

ALOPECIA The loss of hair.

AERIAL The parts of plants growing above ground.

ALKALINE In our context, a substance having a pH above that of neutral water (7.0) when in solution. Signified as pH (potential of Hydrogen), alkaline fluids, such as the blood (pH about 7.4), have the ability to neutralize acids (solutions below pH 7.0). Metabolic wastes are acids, and the alkaline reserve of the blood neutralizes them until they are excreted. See pH

ALKALOID One of a varied family of alkaline, nitrogen-containing substances, usually plant-derived, reacting with acids to form salts. Normally intensely bitter, alkaloids form a body of substances widely used in drug and herbal

therapy. They are usually biologically active and have a toxic potential. The term is more pharmaceutical and medical than chemical since alkaloids come from a variety of otherwise unrelated organic compounds. (Examples: caffeine, morphine, berberine).

ALTERATIVE A term applied in naturopathic, Eclectic, and Thomsonian medicine to those plants or procedures that stimulate changes of a defensive or healing nature in metabolism or tissue function when there is chronic or acute diseases. The whole concept of alteratives is based on the premise that in a normally healthy person, disease symptoms are the external signs of activated internal defenses and, as such, should be stimulated and not suppressed. Sambucus (Elder), as an example, acts as an alterative when it is used to stimulate sweating in a fevered state. Without a fever or physical exertion, Sambucus tea will increase intestinal, lung, and kidney secretions. With fever or exercise, the buildup of heat from combustion, and the dilation of peripheral blood supply, it takes the defense response to the next stage of breaking a sweat. You might have sweated eventually anyway, but you may be one of those people who doesn't perspire easily, and a diaphoretic such as Sambucus will act as an alterative for you by stimulating the next stage of defenses sooner than you would have on your own. The term alterative is sometimes inaccurately used as a synonym for "blood purifier," particularly by nature-cure neo-Thomsonians such as Jethro Kloss and John Christopher. "Blood purifier" is a term better applied to the liver, spleen, and kidneys, not to some dried plant.

ALTERNATE Having plant parts, particularly leaves, arranged alternately along a stem, as opposed to in pairs or whorled.

AMEBIASIS Having an amoebic infection, usually in reference to amoebic dysentery, caused by the parasitic amoeba, *Entameba histolitica*.

ANABOLIC Promoting anabolism. Specifically, an agent or function that stimulates the organization of smaller substances into larger ones. Examples: making a starch out of sugars, a protein out of amino acids, or making triglycerides out of fatty acids are anabolic functions. Anabolic steroids are internal or external substances that will induce increased body size or mass. The opposite of catabolic.

ANALGESIC A substance that relieves pain. (Examples: aspirin, Balsam Poplar.)

ANESTHETIC A substance that decreases nerve sensitivity to pain. Examples: nitrous oxide, Peppermint.

ANGIOTENSIN A substance formed in tissues or blood vessels when there needs to be local or even massive vasoconstriction. The primary precursor is renin, made by the kidneys, and elevated when the blood seems dehydrated or low in volume; the next substance needed for this reaction is a liver protein, angiotensinogen; when both are present in the blood, local factors can then form this pressor substance. Excess production is often implicated in high blood pressure.

ANORECTIC An agent that suppresses appetite for food.

ANTIBODY These are immunologic proteins, usually made from immunoglobulins, that are capable of binding to, and rendering inactive, foreign substances that have entered the skin envelope and have been deemed dangerous. They may be synthesized anew in the presence of a previously encountered substance (antigen); they may be present in small amounts at all times in the bloodstream; or they may be present in the tissues in a more primitive form designed to react to a broad spectrum of potential antigens. The latter may be responsible for some allergies.

ANTICHOLINERGIC An agent that impedes the impulses or actions of the nerves or fibers of the parasympathetic ganglia, competing with, and blocking the release of acetylcholine at what are called the muscarinic sites. Cholinergic functions affected are those that induce spasms and cramps of the intestinal tracts and allied ducts. Examples: Atropine, Datura, Garrya.

ANTICOAGULANT A medication or natural compound that slows or prevents the formation of blood clots. Examples: Heparin (endogenous), Dicumarol and warfarin (drugs), Melilotus (coumarin-containing).

ANTIDEPRESSANT Literally, substances meant to oppose depressions or sadness, and generally heterocyclic types such as Elavil, MAO inhibitors like phenelzine, or lithium carbonate. This category of substances formerly included stuff like amphetamines and other stimulants. The only plants in this program that could fit the current definition for antidepressant activity would be Hypericum, Peganum and perhaps Oplopanax.

ANTIFUNGAL An agent that kills or inhibits fungi, and, in my usage here, an herb that inhibits either a dermatomycosis like ringworm or athlete's foot, or one that inhibits Candida albicans either externally as a douche or internally as a systemic antifungal. Examples: Nystatin, griseofulvin, Tabebuia.

ANTIGEN A substance, usually a protein, that induces the formation of defending antibodies. Example: bacterial toxins, Juniper pollen (in allergies). Auto-immune disorders can occur when antibodies are formed against normal proteins created within the body.

ANTI-HISTAMINE An exogenous agent that inhibits the release of histamine, the amino acid derivative that stimulates vasodilation and permeability under many circumstances, particularly tissue irritation. The most common type of antihistamine, the H1 receptor antagonist, produces many moderate side effects, and the H2 receptor antagonist cimetidine is even more problematic. That they are so commonly used can lull both physician and patient into trivializing their iatrogenic potential. Histamines, which are most abundant in the skin, respiratory, and GI tract mucus membranes, help heal; using antihistamines to inhibit the healing response for the whole body simply in order to lessen the acute but physiologically superficial symptoms of something like hay fever is to risk many subtle side effects.

ANTIMICROBIAL An agent that kills or inhibits microorganisms.

ANTIOXIDANT A substance that prevents oxidation or slows a redox reaction. More generally, an agent that slows the formation of lipid peroxides and other free-radical oxygen forms, preventing the rancidity of oils or blocking damage from peroxides to the mitochondria of cells or cell membranes. Examples : Vitamin E, Larrea (Chaparral), Gum Benzoin.

ANTIPHLOGISTINE An agent that limits or decreases inflammation; an anti-inflammatory or antihistamine.

ANTISPASMODIC A substance that will relieve or prevent spasms, usually of the smooth muscles of the intestinal tract, bronchi, or uterus. (Examples: barbiturates, Garrya.)

ANTIVIRAL An agent that experimentally inhibits the proliferation and viability of infectious viruses. In our domain of herbal medicines, some plants will slow or inhibit the adsorption or random initial attachment of viruses, extend the lifespan of infected target cells, or speed up several aspects of immunity, including complement, antibody, and phagocytosis responses. Herbal antivirals work best on respiratory viruses such as influenza, adenoviruses, rhinoviruses, and the enteric echoviruses. Touted as useful in the alphabet group of slow viruses (HIV, EBV, CMV, etc.), they really help to limit secondary concurrent respiratory infections that often accompany immunosuppression.

ANTIPHLOGISTINE An agent that limits or decreases inflammation; an anti-inflammatory or antihistamine.

APOCRINE Secretory glands, especially found in the armpit and groin, that secrete oily sweat derived from shed cell cytoplasm, and which contain aromatic compounds that possess emotional information for those nearby. Examples: The smell of fear, the scent released after orgasm, the odor released by annually-frustrated Chicago Cubs fans.

AROMATICS Chemically, molecules containing one or more benzene rings, but in our usage, plant compounds which, upon contact to the air, form gases which can be smelled: volatile oils. (Examples: menthol, Peppermint oil.)

ARRHYTHMIAS An abnormal or irregular rhythm, usually in reference to the heart.

ARTERIAL Blood that leaves the heart. When it leaves the right ventricle, it is venous blood; and when it leaves the left ventricle, through the aorta, it is fresh, hot, oxygenated red stuff. After it has passed out to the capillaries and started to return, it is venous blood.

ASTHENIC having little tone or strength, especially in regards the nervous system or the skeletal muscles.

ASTRINGENT An agent that causes the constriction of tissues, usually applied topically to stop bleeding, secretions, and surface inflammation and distension. Some, such as gallotannins, may actually bind with and "tan" the surface layer of skin or mucosa. Examples: a styptic pencil, Oak Bark.

ATONIC Having poor tone or diminished strength.

ATOPIC A type of inherited allergic response involving elevated immunoglobulin E. Sometimes called a reagin response, it means that you have hay fever, bronchial asthma, or skin problems like urticaria or eczema. It can be acquired, sometimes after hepatitis or extended contact with solvents or alcohol, but if your mama sneezed and your daddy itched, you will probably have one form or another of the above stuff at different times of your life. Solution: since you can't change your stripes, keep in balance and avoid, if possible, the distortions of constant medications, both prescription and over-the-counter.

ATROPINE An alkaloid derived from Belladonna (*Atropa belladonna*) and related plants that blocks some cholinergic or parasympathetic functions. It has been used to stop the cramps of diarrhea and is still found in some OTC cold remedies, since it dries up secretions. The main current medical use is in eye drops used to constrict the pupil.

AUTOIMMUNITY The state of having acquired an immunologic memory that says a normal cell membrane is "other", and having forming antibody responses against it. A viral infection or organic chemical (haptene) may have started the response, but surviving healthy cells may have so close a charge pattern (epitope) that acquired immunity keeps on as if the cell was still "other". Any physical stress that causes the target tissue to become inflamed or replicate rapidly to heal can restimulate the auto-immune response.

AWN A terminal or lateral bristle on a seed or plant organ.

AXIL The upper angle formed by a leaf or branch with a stem. Things that pop out in the axils are called AXILLARY.

AZOTEMIA The abnormal presence of urinary waste products in the blood.

BACTERIOSTATIC Slowing or stopping the proliferation of bacteria.

BASAL METABOLISM The basic rate of combustion by a person, usually measured after sleep and while resting.

BALSAMIC Soft or hard plant or tree resins composed of aromatic acids and oils. These are typically used as stimulating dressings and aromatic expectorants and diuretics. This term is also applied loosely to many plants that may not exude resins but which have a soothing, pitchy scent. Examples: Balsam Poplar, *Eriodictyon*.

BASAL At or near the base, and, if leaves, those that sprout directly from the root or crown.

BETA BLOCKERS Drugs used to slow the response to epinephrine only (as released hormonally by the adrenal medulla), usually to attempt controlling high blood pressure

BILIOUSNESS A symptom-picture resulting from a short-term disordered liver, with constipation, frontal headache, spots in front of the eyes, poor appetite, and nausea or vomiting. The usual causes are heavy alcohol consumption, poor ventilation when working with solvents, heavy bingeing with fatty foods, or moderate consumption of rancid fats. The term is genially archaic in medicine; people who are bilious are seldom genial, however.

BILIRUBIN A waste product of hemoglobin recycling, it is primarily excreted in feces, oxidizing into that familiar brown color (except for beets).

BIODIVERSE The state of life interdependency that is possible when large and small plants, soil organisms, insects, and fuzzy beasts exist in the ebb and flow created by the natural environment. Cut down the trees once and you lessen the biodiversity drastically. Wait fifty years and cut again and you have a small fraction of the life-form variety that you started with; the old diversity will never return...never.

BIOMASS The actual amount of existing material within a species or genus.

BIOSPHERE Literally, the part of the earth that supports life; more broadly, a large community of life-forms sharing a similar environment, such as a rain forest or prairie grassland.

BIPINNATE A pinnate compound leaf whose leaflets, in turn, are stems that have pinnate leaflets.

BITERNATE A compound leaf divided in threes, whose leaflets are in turn divided in pairs.

BITTER TONIC A bitter-tasting substance or formula used to increase a deficient appetite, improve the acidity of stomach secretions and protein digestion, and slightly speed up the orderly emptying of the stomach. A good bitter tonic should possess little, if any, drug effect, only acting on oral and stomach functions and secretions. Dry mouth, bad gums, teeth problems with bad breath in the morning, and weak digestion, often with constipation, are the main deficiency symptoms. A bitter tonic has little effect in normal digestion. Example: Gentiana

BORBORYGMUS The bubbling, gurgling passage of gas across the transverse colon...NOT a small North African rodent.

BRACTS Reduced or modified leaflets that are usually parts of flowers or an inflorescence, generally subtending or beneath the floral parts.

BRADYCARDIA A distinctly slow heartbeat, which may be a normal idiosyncrasy or with causes ranging from regular strenuous exercise to abnormally slow heart

stimulus to the side-effects of medication. Bradycardia is usually defined as a pulse below sixty beats a minute, or seventy in children.

BRADYKININ A plasma polypeptide that tends to lower blood pressure and increase capillary permeability.

BRICK DUST The presence of reddish brown sediment in the urine, indicating uric acid, hippuric acid and creatinine excess in the blood...an anabolic greaseball who needs more liquids and alkali and who has over-acidic urine. It can be symptomatic of more serious problems as well.

BROMIDES A binary salt of bromine, formerly used as a simple sedative. Given so freely and with no intent of affecting a healing, it became synonymous with a useless treatment only meant to shut up the patient. Excessive bromide use can cause some pronounced neurologic disturbances... they disappear with cessation of the drug.

BUFFERING SYSTEM The several blood factors that enable the acid waste products of metabolism to be carried in the alkaline blood without disrupting its chemistry. These include carbolic acid, carbonates, phosphates, electrolytes, blood proteins, and erythrocyte membranes.

CALYX The outer set of sterile, floral leaves; the green, clasping base of a flower.

CAPILLARY The smallest blood or lymph vessel, formed of single layers of interconnected endothelial cells, sometimes with loosely attached connective tissue basement cells for added support. Capillaries allow the transport across their membranes and between their crevices of diffusible nutrients and waste products. Blood capillaries expand and contract, depending upon how much blood is needed in a given tissue and how much is piped into them by the small feeder arteries upstream. They further maintain a strong repelling charge that keeps blood proteins and red blood cells pushed into the center of the flow. Lymph capillaries have many open crypts, allowing free absorption of interstitial fluid that has been forced out of the blood; these capillaries further tend to maintain a charge that attracts bits of cellular garbage too large to return through the membranes of exiting venous capillaries.

CARBOS Carbohydrates, like starch or sugar.

CARDIOGLYCOSIDES Sugar-containing plant substances that, in proper doses, act as heart stimulants. Examples; digitoxin, strophanthin.

CARDIOTONIC A substance that strengthens or regulates heart metabolism without overt stimulation or depression. It may increase coronary blood supply, normalize coronary enervation, relax peripheral arteries (thereby decreasing back-pressure on the valves), or decrease adrenergic stimulation. Examples: magnesium, Crataegus, Selenicereus.

CARDIOPATHIES Heart diseases, usually needing medical intervention.

CARPEL A simple pistil or one of the modified leaflets forming a compound pistil.

CATABOLIC The part of metabolism that deals with destruction or simplification of more complex compounds. Catabolism mostly results in the release of energy. Examples: the release of glucose by the liver, the combustion of glucose by cells.

CAULINE Belonging to the stem, as in cauline leaves emerging from the stem

CELIAC Pertaining to the abdomen.

CENTRAL NERVOUS SYSTEM A collective term for the brain, spinal cord, their nerves, and the sensory end organs. More broadly, this can even include the neurotransmitting hormones instigated by the CNS that control the chemical nervous system, the endocrine glands.

CERUMINOSIS Too much beeswax.

CHOLESTEROL A fatty substance produced predominantly by the liver, and necessary for building cell membranes, insulating the CNS, covering fats for blood transport, forming bile acids, oiling the skin and making steroid hormones. Blood cholesterols are not derived from food (digestion breaks them down) but are intentionally synthesized by the liver, in response to seeming need. Elevated cholesterols are the result of certain types of stress or metabolic imbalances, and the liver makes more than the tissues need. Although not a direct cause, high consumption of fats and proteins will convince the liver to kick into a fat/protein or anabolic stance...THEN it may oversecrete cholesterols, perhaps thinking you are putting food away for the winter.

CHOLINERGIC Pertaining to functions primarily controlled by the parasympathetic nervous system. See PARASYMPATHETIC

CHRONIC A disease or imbalance of long, slow duration, showing little overall change and characterized by periods of remission interspersed with acute episodes. The opposite of acute.

CHYLOMICRONS These are organized blobs of fats, synthesized in the submucosa of the small intestine out of dietary fats, phospholipids, specialized proteins and cholesterol, carried out of the intestinal tract by the lymph, and slowly released into the bloodstream. In the capillaries, the triglycerides inside the chylomicrons, recognized by their protein markers, are absorbed into the tissues for fuel or storage, and the outside cholesterol and phospholipid transport-cover continues through the blood to be absorbed by the liver for its use. This sideways approach takes (ideally) a large part of dietary fats into the lymph back alleys, spreading their release into the bloodstream out over many hours, thereby avoiding short-term blood fat and liver fat overload. To synthesize the maximum amount of dietary fats into chylomicrons, you need well-organized emulsification and digestion of lipids by the gallbladder and pancreas.

CIRRHOSIS, LAENNECS The most common type of cirrhosis, caused by chronic alcoholism and a lousy diet (or malabsorption).

CIRCUMBOREAL Plants that are found worldwide, encircling the lands around the north pole.

CISTERNA CHYLI A sac in the back of the pelvic region that drains the lymph from the intestinal tract, pelvis and legs, and acts as the beginning of the thoracic duct. See **LACTEALS, THORACIC DUCT**

CLONIC Smooth muscle spasms or colic that alternate rhythmically with a rest state...like birthing contraction or waves of nausea.

CMV (Cytomegalovirus) This subtle, worldwide microorganism is a member of the herpes virus group. It is large for a virus, contains DNA, and has a complex protein capsid. It forms latent, lifelong infections, and, except for occasional serious infections in infants and malnourished youngsters, seldom produced a disease state. With increased use of immunosuppression therapies for conditions ranging from arthritis to cancer to organ transplants, the incidence of adults with major infections of CMV increases yearly.

CNS Central nervous system.

COLIFORM BACTERIA Intestinal bacilli that are gram-negative, sugar-digesting, and both aerobic and anaerobic. They are usually from the family *Enterobacteriaceae*; *Escherichia coli* is the best known of the group.

COLLAGEN The fibrous insoluble structural protein that forms almost a third of our total body protein and holds everything together. Too much collagen is what makes a steak tough.

COLLOID Goopy substances, usually proteins and starches, whose molecules can hold large amounts of a solvent (usually water) without dissolving. In lifeforms, virtually all fluids are held suspended in protein or starch colloids (hydrogels). Examples: cell protoplasm, lime Jell-O.

COLOSTRUM The first breast milk after birth, containing minerals and white blood cells. This is followed gradually by true milk.

COMPLEMENT A large body of blood proteins (over 20), initiated in the liver, and intimately involved in nearly all aspects of immunity and nonspecific resistance. They form two types of self-mediated cascade reactions to antigens, antibody-antigen complexes, dead tissue and the like, and are almost solely able to initiate the rupture and killing of bacteria. The protein strings they form around foreign substances are the main "hooks" used for absorption by macrophages as they digest and clean up.

CONGESTION Thick and boggy tissues, usually resulting from excess inflammation, or irritation that is unremitting. It is characterized by the accumulation of an excess volume of fluid, with impairment of venous and lymphatic drainage, and the buildup of unremoved cellular waste products.

COMPOUND Leaves that are made up of leaflets, such as pinnate and palmate leaves.

CONJUNCTIVA The mucus membrane which covers the underside of the eyelids and the front surfaces of the eyeball.

CONSTITUTIONAL Deriving from basic hereditary strengths and weaknesses, and including early environmental factors.

CONTUSIONS A bruise, characterized by a trauma in which the skin is not broken but underlying blood vessels are busted, causing a deep or lateral hematoma, with disorganized blood and interstitial fluid buildup. see EXUDATE

CORDILLERA The mountain ridge that spans North America, from Mexico through the Rocky Mountains into Alaska.

CORM The fleshy, bulblike, solid base of a stem, often rising out of a tuber or bulb.

CORPUS LUTEUM A temporary endocrine gland formed at ovulation from part of the former egg follicle, and the source of progesterone. See PROGESTERONE, ESTROGEN, MENOPAUSE

CORTICOSTEROIDS Natural steroid hormones or synthetic analogues, usually taken for suppressing inflammation (and immunity) and therefore having cortisone-like functions, or taken as analogues to adrenocortical androgen...or even testosterone, in order to impress the other gym members, make varsity by your junior year or to join the WWF and get newbie-mangled for two years by The Hangman or even the Hulkster Himself. Then, if your gonads don't fall off and your back holds up you get promoted to Good Guy, have your chance to Take A Name and finally wear your chosen costume...a spandex violet nurse's uniform.

COUNTERIRRITANT A substance applied to the skin to produce an irritating, heating, or vasodilating effect, in order to speed local healing by increasing circulation of blood, radiating the heat inward to inflamed tissues deep below the skin. It can also be used to induce reflex stimulation to seemingly unrelated internal organs. (see DERMATOMES)

CREATININE It is the waste product of creatine, an enzyme found in large amounts throughout the tissues, and mainly excreted in the urine. The parent compound creatine enables the body to use the "blue flame" of anaerobic combustion (as opposed to the yellow flame of oxidation). Elevated creatinine in the blood may be an early symptom of kidney disease.

CRENELATED (or CRENATE) Leaves having rounded, scalloped teeth along the edges.

CRUDE DRUG A dried, unprocessed plant, and referring to one that was or is an official drug plant or the source of a refined drug substance. A **CRUDE BOTANICAL**, on the other hand, is one of our herbs that has no official

standing. Examples: Digitalis leaves (crude drug), White Sage (crude botanical).

CYSTORRHEA Mucus in the urine, usually following infection or from chronic congestion of the bladder mucosa.

CYTOKINE Also lymphokine, a broad term for a variety of proteins and neuropeptides that lymphocytes and macrophages use to communicate between themselves, often from long distances. They stimulate organization and antibody responses, seem to induce the bone marrow to proliferate the type of white blood cells needed for immediate resistance, and generate sophistication and fine tuning for an overall strategy of resistance. A lymphocyte FAX.

CYTOPROTECTANT A substance or reaction that acts against chemical or biological damage to cell membranes. The most common cytoprotectant actions are on the skin and the liver (hepatoprotectant), although there has been recent research involving lymphocyte T-cell cytoprotectants.

DECIDUOUS A plant that drops its leaves in the fall or, in some cases, during drought.

DECOMPENSATION The failure of the heart to maintain full and adequate circulation.

DEMULCENT An agent that soothes internal membranes, traditionally separated from external soothing agents, emollients.

DERMATOMES As spinal chord nerves branch out into the body, some segments fan out across the skin; these are the nerves that monitor the surface and are the source of senses of touch, pain, hot, cold and distension. All this information is funneled back in and up to the brain, which learned early on to correlate WHAT information comes from WHERE. Think of the brain as the CPU, with the spinal chord nerves uploading raw binary data; the brain has to make a running program out of this. It must form a three-dimensional hologram or homunculus from the linear input, and retranslate it outwards as binary data. The surface of the forearm, as an example, has sensory input gathered from several different and very separate spinal chord nerves. The brain will origami-fold these separate data streams into FOREARM. If you were to inject novacaine into the base of the left first sacral nerve (LS1), you would find that a whole section of skin became numb. So well defined a section that you could outline in charcoal the demarcation between sensation and numbness. This section would be a long oval of numbness around the left buttock, under to the groin, perhaps part of the thigh...and the left heel. That spinal nerve is solely responsible for carrying sensation from that zone of skin...that dermatome; your brain mixes all the dermatomes together to get a working hologram of your total skin surface. That particular nerve also brings and sends information about the uterus, abdominal wall and pelvic floor. If you are a woman suffering pelvic heaviness and suppressed menses, a hot footbath might be enough S1 (heel dermatome) stimulation to cross-talk over to the S1 pelvic functions...and heat up the stuck uterus. Much of acupuncture,

Jinshinjitsu, and zone and reflex therapy (not to mention Rolfing) uses various aspects of this dermatome crossover phenomena (by whatever name) and zone counterirritation was widely used in American standard medicine up until...penicillin. It was still being described in clinical manuals as late as 1956, although with the mention that it was only used infrequently and with a "mechanism not understood" disclaimer.

DIAPHORESIS Sweating.

DIAPHORETIC A substance that increases perspiration, either by (1) dilating the peripheral blood vessels, (2) directly stimulating by drug action the nerves that affect the sweat glands, or by (3) introducing a volatile oil into the bloodstream that performs both tasks.

DIASTOLIC The lower number of a blood pressure reading signifying the myocardial and arterial relaxation between pump strokes. Too close to the higher number (systolic) usually signifies inadequate relaxation of the heart and arteries between heartbeats.

DIE-OFF The phenomenon of killing so many infectious organisms so quickly that the amount of dead biomass itself causes liver overload, allergic reactions, or a mild foreign-body response. It can occur with antibiotic therapy, treatment of candidiasis, and even with use of some herbal antivirals. Outside of prescription antifungals, it is seldom acknowledged as a medical problem. If you use a liver stimulant, diaphoretic, and diuretic, you will increase the efficiency of transport, catabolism, and excretion, and lessen the effects of die-off.

DISTENTION An excess expansion of a tissue or organ, either from inflammation, injury or, as in the Bean Syndrome, gas.

DIURETIC A substance that increases the flow of urine, either by increasing permeability of the kidneys' nephrons, decreasing the reabsorption of filtered serum back into the blood exiting the nephron, increasing blood supply into the nephrons, or increasing the blood into each kidney by renal artery vasodilation.

DUODENUM This is the beginning of the small intestines, and it empties the stomach. It is 9 or 10 inches long, holds about the same amount of food as the digestive antrum or bottom of the stomach, and, through a papilla or sphincter, squirts a mixture of bile and pancreatic juices onto the previous stomach contents. These juices neutralize the acidic chyme; the pancreatic alkali and bile acids form soap to emulsify and aid fat digestion; and the duodenum walls secrete additional fluids and enzymes to admix with the pancreatic enzymes to initiate the final upper digestive investment. The duodenal wall secretes blood hormones to excite gallbladder and pancreas secretions, and, if overwhelmed, can inhibit the stomach from sending anything else down for a while, until they can catch all their collective breath.

DYSCRASIA Presently a term referring to inadequate synthesis of blood proteins

by the liver, especially clotting factors. Formerly the term described an improper balance between blood and lymph in an organ or a whole person. Archaically, it referred to an imbalance between the four humors: blood, phlegm, yellow bile, and the postulated black bile.

DYSENTERY Severe diarrhea, usually from a colon infection, and containing blood and dead mucus membrane cells.

DYSPEPSIA Poor digestion, usually with heartburn and/or regurgitation of stomach acids.

DYSPLASIA Abnormal tissue growth...classically midway between hyperplasia (overgrowth) and neoplasia.

DYSPNEA Air hunger with pained breathing. It occurs normally from physical exertion, and abnormally either from impaired respiration, emotional distress, or a breakdown in nerve responses

DYSURIA Painful urination.

EBV Epstein-Barr Virus, a relative of the herpes virus, is the cause of infectious mononucleosis, an African malignancy called Burkitt's lymphoma, and at least part of Chronic Fatigue Syndrome. A very common virus, most of the time it only causes a head cold.

ECLECTICS The name commonly applied to the American School Physicians, a distinct group of Medical Doctors who trained in their own schools, and were licensed as M.D.s. They specialized in low-tech, nonhospital rural health care...the famous country doc with a black bag. Besides standard medical procedures, they used a more wholistic approach to disease, sometimes terming themselves Vitalists. They grew out of the settlement and usurpment of the Ohio and Missouri Valleys, with a sparse population and no organized hospitals, relied on methods that were not invasive (unless emergencies dictated), used therapies that relied on strengthening natural resistance (no hospitals, just someone's sod hut) and made particular care to explain and prepare the family or neighbors for THEIR part in caring for the patient...long after the physician left. Scudder, John King, Felter, Ellingwood and Clyde Wilson were some of the more famous Eclectics, and John Uri Lloyd was the most famous pharmacist/ pharmacologist within the profession. The Eclectic movement lasted from 1840 to 1937...when the only remaining medical school, unwilling to change to a Flexner Curriculum (as had the rest) closed its doors in Cincinnati. They lost the licensing wars and are no more. Their tradition was exported by practitioners in Germany and Mexico, and the German Eclectics, transformed by that peculiar culture into wild-eyed Nature Curists such as Ehret and Lust, started the nucleus for the Naturopathic movement in Yellow Springs, Ohio (next-door to Goddard College) in 1947, helping to found the initial form of the National College of Naturopathic Medicine...10 years after, and 50 miles away from the last Eclectic Medical School. Without benefit of Tanna Leaves or Charleton Heston and an armful of pickled mummy-organs, Eclecticism was reborn into the body of Naturopathy.

ECTOMORPH A thumbnail description of the somatotype who is dominated by the ectoderm, specifically the skin, nervous system, and endocrine glands. Less arcane, a tall and thin person, with long limbs, narrow chest, and a somewhat oversensitive nervous system.

ECZEMA A chronic dermatitis, more common in those with thin skin or allergies of an atopic or IgE-mediated type, and often clearly and distinctly aggravated by emotional stress.

EDEMA A localized or systemic condition in which the body tissues contain an excessive amount of fluid. Systemic edema can be as mild as premenstrual water retention (I mean mild by comparison) or involve loss of blood proteins or kidney and heart failures. Local edema is the result of extensive or extended inflammation, with blood protein leakage and the loss of interstitial colloid.

ELECTROLYTES In my context, acids, bases, and salts that contribute to the maintenance of electrical charges, membrane integrity, and acid-alkaline balance in the blood and lymph.

EMPHYSEMA A pulmonary condition with loss of elasticity in the alveoli and the interalveolar septa...the meat-foam and their interleaving sheaths that you fill up when you breathe. If a septum gets too stretched over time, several of the little sacs will coalesce together, decreasing the surface area for oxygen and carbon dioxide exchange. If enough of these sacs lose their separateness, like small soap bubbles joining to make a few larger ones, breathing gets harder because each breath accomplishes less interchange of gases, resulting in emphysema. Caused by years of bad asthma, tobacco smoking, chemical damage, and other chronic lung disorders, it can be halted but not reversed. The first breath you take defines forever the number of the alveolar bubbles...they cannot be regenerated if they coalesce together.

ENDEMIC Confined to a limited geographic or ecologic niche.

ENDOGENOUS From within the body, either a native function or the product of the extended colony...normal flora in the colon are considered endogenous.

ENDOMETRIOSIS The presence of endometrial tissue outside of the uterus. The endometrium is the mucus membrane inner lining of the uterus, with glandular cells and structural cells, both responding to estrogen by increasing in size (the proliferative phase); if there is endometrial tissue outside of the uterus, the tissue expands and shrinks in response to the estrus cycle, but the normal shedding of the menstrual phase can be difficult. The most common type of endometriosis is found in the fallopian tubes; the abnormal fallopian endometrial tissue can shed and drain into the uterus, but it hurts! It's funny, but little tiny ducts, like the ureters, bile ducts, and fallopian tubes really cramp. The colon and uterus are big muscular tubes and, when cramped up, cause rather strong pain. When one of those little bitty things gets tenesmus, your face gets white (or light tan), you start to sweat, shiver, and revert to a fetal position. Endometriosis that occurs around the ovaries or

inside the belly and therefore can NEVER drain is a purely physical and medical condition, but fallopian presence of endometrium usually reaches its peak in the early thirties. It can be helped by ensuring a strong estrogen and progesterone balance, thereby decreasing the tendency to form clots in the tubes, and to experience severe cramps every month

ENTERIC pertaining to the small intestines.

ENTIRE A leaf with a straight, untoothed margin. >

EPIPHYTE An air plant, growing on or with other plants but not in any way parasitic.

EPSTEIN-BARR VIRUS A large, ubiquitous, and normally benign, herpes-like virus with both DNA and capsid. It is sometimes implicated in mononucleosis and at least two types of lymphomas. Recently it has been become connected with the symptom picture called chronic fatigue syndrome (as has been CMV) and can produce many ill-defined (but subjectively distressful) symptoms, including fatigue, fevers of an unknown origin (FUO...love those acronyms!), and emotional lability. Immunosuppression, from whatever cause, allows the syndrome to occur. Many people in and out of medicine have come to regard it as both another form of Multiple Chemical Sensitivities (MCCOY, naturally) and a sequel to excessive medical use of immunosuppressant anti-inflammatories.

EXOGENOUS Arising from the outside; the opposite of endogenous

EXPECTORANT A substance that stimulates the outflow of mucus from the lungs and bronchial mucosa.

EXTRASYSTOLES A premature contraction of the heart. It can be caused by nervousness, indigestion, a tired and enlarged heart - anything up to overt organic heart disease.

EXUDATES The feral and congested fluids built up in a bruise or infection. Unlike a transudate, which is merely edema from lymphatic congestion, exudates contain dead cells, erythrocytes, white blood cells and often pus.

FEBRILE Feverish.

FLATUS Intestinal or stomach gas. If it rises upwards, it is an eructation (burp or belch); if it descends, causing borborygmus (love that word), you are flatulent (fartish).

FLAVONOIDS From flavus, Latin for yellow. A 2-benzene ring, 15-carbon molecule, it is formed by many plants (in many forms) for a variety of oxidative-redox enzyme reactions. Brightly pigmented compounds that make many fruits and berries yellow, red, and purple, and that are considered in European medicine to strengthen and aid capillary and blood vessel integrity, they are sometimes (redundantly) called bioflavonoids.

FLUIDEXTRACT An extract of an herb that is made according to official (and

unofficial) pharmaceutical practice, with a strength of 1:1. That means each ounce of the fluidextract has the solutes found in an ounce of the dried herb. Advantageous for some herbs (such as Arctium or Taraxacum), where the active constituents retain the same proportions as in the plant, even though reduced to a very small volume of menstruum, it is deadly for others (such as Hydrastis or Lobelia), whose constituents may have wildly varying solubility, and whose fluidextract will contain only the most soluble constituents and lack others completely. The gradual disappearance of herbal preparations in Standard Medicine in the 1930s can partly be attributed to the almost complete reliance on fluidextracts. Some manufacturers (notably Lilly and SK&F) sold Tinctures (1:5 strength and meant to, at the least, contain EVERYTHING in the plant) that were made from diluted fluidextracts. Some fluidextracts were even made from dilutions of what were termed Solid Extracts...heat-evaporated tars, easy to store, easy to make in huge labor-minimal batches, where 100 pounds of Blue Cohosh could be reduced to 25 pounds of solid extract. This convenience pitch, with many constituents oxidized by heat, others never even extracted, could be diluted four times to sell as a fluidextract, TWENTY time to market as a tincture. These practices by American pharmaceutical manufacturers, with eyes perhaps on the larger drug trade (the use of crude drugs being a diminished part of their commerce, yet needing MANY different preparations...and being labor-intensive and profit-minimal...and sort of old-fashioned) ended up supplying terminally impaired products. Their value being reduced, physicians relied more and more on mainstream pharmaceuticals...and the medical use of whole plant preparations died.

FOMENTATION A hot, wet poultice used on painful, inflamed areas. The usual form is a towel dipped in tea and applied hot or warm to the swollen tissue, being changed when it cools.

FUNCTIONAL An imbalance of response, without permanent tissue damage, and generally reversible.

GANGLIA (singular: ganglion) Colonies of neurons outside the brain and spinal cord sometimes acting to control local functions. These latter are little affected by normal stress conditions. (Example: the solar plexus, made of two separate ganglions.)

GARBLE Rummaging through and cleaning out herbs; sorting.

GARDNERELLA Formerly Haemophilus, this is an anaerobic bacteria that is a main contributor to bacterial vaginosis. It is sometimes sexually transmitted, but can stick around for years as a passive part of the vaginal flora, only to flare up. It seems to occur in up to a quarter of relatively monogamous women and in half of women with multiple male partners. As bacterial vaginosis, Gardnerella is one of the three main causes of vaginal discharges, along with Trichomonas and Candida albicans. Antibiotic therapy for male partners seems of only marginal value, and the distinguishing characteristic of the infection is nearly no Lactobacillus vaginal presence, the main part of the flora that retains the lactic acid and peroxide balance so important in a healthy vagina. Live culture yogurt, as both food and douches help the problem.

GASTRIC Pertaining to the stomach.

GASTROESOPHAGEAL REFLUX The involuntary regurgitation of stomach contents or surface acids into the throat, with heartburn; it can be simple or serious.

GI Gastrointestinal

GLOSSITIS Inflammation of the tongue.

GLUCAGON A hormone produced by the alpha cells of the pancreas that increases the release of sugar by the liver: it is hyperglycemic. The substance produced by the beta cells, insulin, induces many tissues (muscles particularly) to absorb glucose through their membranes and out of the blood; it is hypoglycemic.

GLUCOSIDE A plant compound containing a glucose and another substance (the bioactive part). A special-case glycoside.

GLYCOSIDE A plant compound containing one or more alcohols or sugars and a biologically active compound. The sugar part is called a glycone, the other stuff is called an aglycone. The important things to remember about some glycosides is that they may pass through much of the intestinal tract, with the hydrolysis of the molecule only occurring in the brush borders of the small intestine. The result is that the bioactive part, the aglycone, is absorbed directly into the bloodstream, and is often not floating around the intestinal tract contents at all. Quinones are irritating and even toxic when ingested, but when taken as glycosides, they are absorbed directly into the bloodstream, where they are not dangerous (in moderation), and get excreted in the urine, where they inhibit infections. Plants like Madrone, Uva Ursi, and Manzanita work in this fashion. Some plant-derived heart medicines are only safe in proper doses because they, too, are glycosides, and they can be carried safely bound to proteins in the bloodstream, whereas if the aglycone were in the free form in the gut it might be either toxic or be digested directly into an inactive form.

GLYCOSURIA Sugar in the urine, from hyperglycemia, diabetes, or most simply, sugar binges.

GRAM-POSITIVE/NEGATIVE Gram's Method is a staining procedure that separates bacteria into those that stain (positive) and those that don't (negative). Gram-positive bugs cause such lovely things as scarlet fever, tetanus, and anthrax, while some of the gram negs can give you cholera, plague, and the clap. This is significant to the microbiologist and the pathologist; otherwise I wouldn't worry. Still, knowing the specifics (toss in anaerobes and aerobes as well), you can impress real medical professionals with your knowledge of the secret, arcane language of medicine.

GRANULOCYTES These are a group of white blood cells that have many and well-pigmented granules, and derive from the bone marrow myeloblasts. The granules are sources of digestive, immunologic, and inflammatory proteins. The

classic granulocytes are neutrophils, eosinophils, and basophils, but one should also include mast cells. Also, macrophages, which start out as agranulocytic monocytes but get lots of granules when they grow up.

GU Genital-urinary tract...of particular application to males.

HEMORRHAGE Bleeding, pure and simply. Menses is not blood but the carefully orchestrated excretion of excess endometrium. If the membranes fail to vasoconstrict and bleed further, THAT is hemorrhage.

HEMATURIA The presence of blood in the urine.

HEMOLYSIS The breakdown of senescent red blood cells into recycleable constituents, with particular importance given to the reuse of the heme part of hemoglobin.

HEMOLYTIC Promoting the breakdown of red blood cells; a normal process, hectic and skillfully balanced, the term is usually applied to excess conditions or toxic substances that degrade the bonds between healthy red blood cells and their hemoglobin coat or cause the liver and spleen to hypercatabolize otherwise healthy erythrocytes.

HEMOPATHY A disease of the blood.

HEMORRHOIDS Enlarged veins protruding into the anorectal area, either internal or externally visible. They are either the result of poor sphincter tone and portal congestion, or sphincter hypertonicity, skeletal muscle and adrenergic excess..."Jock Hemmies".

HEMOSTATIC A substance that stops or slows bleeding, used either internally or externally.

HEPATIC Pertaining to the liver.

HEPATOCYTES A functional or parenchymal liver cell, specializing in enzyme synthesis.

HEPATOMEGALY An enlarged liver. Hepatosplenomegaly is both an enlarged liver and spleen. Hepatosplenopalestrinamegaly is an enlarged liver, spleen and 17th century Italian composer.

HISTAMINE The defense substance responsible for most inflammation. It is synthesized from the amino acid histidine and is secreted by mast cells, basophils, and blood platelets. It stimulates vasodilation, capillary permeability, muscle contraction of the bronchioles, secretions of a number of glands, and attracts eosinophils, the white blood cells that are capable of moderating the inflammation. Mast cell histamine release is what usually causes allergies.

HIV Human immunodeficiency virus, the retrovirus that is at least partially responsible for AIDS. At this time it is not clear what other disorders

besides AIDS may come from HIV infections. AIDS is a syndrome, partially (perhaps totally) produced by HIV. As with EBV, it is quite possible that the virus may cause only moderate immunosuppression in some people, while in others it will progress further to AIDS. The jury (all of them/us) is still out.

HOMEOPATHY Almost two centuries old, it is a system of medicine in which the treatment of disease (symptom pictures) depends on the administration of minute doses (attenuations) of substances that would, in larger doses, produce the same symptoms as the disease being treated. Homeopaths don't like that "disease" word, preferring to match symptoms, not diagnostic labels. Although by no means harmless, homeopathic doses are devoid of drug toxicity. Many practitioners these days prefer high, almost mythic potencies, sometimes resorting to a virtual "laying on of hands" to attain the alleged remedy. When M.D.s used homeopathy frequently (turn of the century), there were violent battles between low potency advocates and the high potency charismatics. Some preferred low potencies or even mother tinctures (herbs!), which I find quite reasonable (naturally), such as Boericke. Others sought ever higher and higher potencies, tantamount to dropping an Arnica petal in Lake Superior in September and extracting a drop of water at the mouth of the St. Lawrence River the following April. Kent and Clarke were such homeopaths. Philosophically, to me, we are all surrounded in a subtle tide of unimaginably complex pollutants and organochemical recombinants...all low and middle potency homeopathic attenuations...our milieu itself is Mother Nosode...how can we be expected to respond to elegant but unimaginably subtle influences when our very bones radiate a low-potency gray noise. If you have no idea what I am talking about, just consider it a family argument.

HYALURONIDASE An enzyme made by traumatized cartilage (to soften and regenerate itself when injured), sperm cells (to dissolve the protective layer around an ovum), the spleen (to speed up hemolysis), added to an IM injection (so it doesn't get surrounded by connective tissue and never disperse) and produced by some really nasty bacteria so they can dissolve connective tissue and get deep into the body. Hyaluronic acid is the target, and it is a basic mucopolysaccharide rivet, keeping large masses of polymerized compounds in the state of constant colloid jello (or more technically, a hydrogel facilitant).

HYBRID This is produced by a cross-fertilization between two species. This happens a lot more often than botanists would like, since a species is presumed to have distinct genetic characteristics and shouldn't do this hybridizing thing as often as it does. Most of the dozen or so species of Silk Tassel are really genetically the same, and the three hundred species of Aconite worldwide are all capable of hybridizing as well.

HYDROCELE An organized mass of serous or lymphatic fluid, usually encapsulated by connective tissue. An internal blister. The term is usually applied to a hydrocele of the testes, but a breast cyst is also a hydrocele.

HYPERCORTICAL Overly anabolic; used here to describe the constitutional, not pathologic state

HYPEREMIA Excessive presence of blood, usually arterial; and the resultant increase in heat and metabolic rate. Hyperemia can be a pathology, blowing out blood vessels and the like; used here to describe the chronic or subclinical condition of functional vascular excess and excitation.

HYPEREXTENSIONS The excessive extension of a limb or joint, usually followed by pain and some inflammation.

HYPERGLUCONEOGENESIS Also hyperglyconeogenesis. The state of excessive synthesis of glycogen (storage starch) or glucose by the liver, derived from non-sugar sources, such as amino acids, lactate and the glycerol remnants from triglyceride breakdown. In strictly subclinical terms it signifies a yinny, catabolic excess, wherein building materials are less desirable than FUEL, and it is singularly difficult to buff up in any way. There are disease states where this can occur...starvation would induce it as well, but I am not addressing this aspect, since I don't consider this to be the realm of alternative approaches.

HYPERGLYCEMIA Elevations of blood glucose, either from the various types of diabetes, excessive sugar intake (short term) or from adrenalin or stimulant causes.

HYPERGLYCOGENOLYSIS The tendency, usually by the liver, to convert glycogen into glucose at too rapid a rate for metabolic needs.

HYPERKINETIC Too physically active, jittery, peripatetic.

HYPERLIPIDEMIA Elevated blood fats, either from heredity, from having so many calories in the diet that they are ending up as liver-synthesized storage fats, from an excessively anabolic metabolism...and from a constellation of less common disease causes.

HYPERNATREMIA An excess of sodium in the blood...a short-lived condition since the body retains water until the concentration is back to normal...and the blood volume (as well as blood pressure) has increased.

HYPERSECRETION Oversecretion of fluids by a gland. It may occur from irritation, infection, or allergy, as in the nasal drooling in a head cold or hay fever, or, as in gastric hypersecretion, from a functional imbalance in the chemical and neurologic stimulus of the stomach lining.

HYPERTHYROID Elevated thyroid levels, either functional and constitutional in nature or the more profound state of thyrotoxicosis and overt disease.

HYPOCHONDRUM The regions of the belly below the ribcage and to the sides, as in left or right hypochondrium.

HYPOCORTICAL Having low adrenocortical function.

HYPOGLYCEMIA Low blood sugar. It can be an actual clinical condition (rather rare), but the term is usually applied to LABILE blood sugar, where the highs

are socially acceptable, if zappy, but the lows cause headaches, depression ...and sugar cravings...which only kick the sugars UP (adrenalin stimulates a quick emergency release of sugar from the liver, and soon THAT is overlapped by the first wave of dietary sugar from whatever you ended up actually eating) ...which forces the sugars DOWN (from the insulin secreted because of a sudden rise in blood sugar)...etc. This is a subclinical condition that usually goes nowhere, at least clinically, but can drive you (or your companion) crazy. Some normal and healthy foods produce a VERY quick and VERY short elevation of blood sugar, and can leave you hanging if you have this type of metabolism; fruits, potatoes and carrot juice are LOUSY. On the other hand, legumes, particularly beans, supply slow and extended release of calories over many hours ...partially because of high levels of soluble fiber, partially because of slow, even laborious digestion. If you can't handle legumes too well, or you have a daily "bean threshold" and any beans or peanuts or soya past that amount causes lots of gas or semi-allergic reactions, simply adding such nutritionally useless non-legumes as Psyllium Seed and Chia Seed to some of your common foods will add enough soluble fiber to REALLY slow down sugar spiking.

HYPOTENSION Low blood pressure. Not always a bad thing unless you need 11 hours of sleep or faint if you stand too quickly.

HYPOTESTOSTERONISM Having either low secretion levels of testosterone by the testes, having low functional effects because of poor circulation, having competition by less active testosterone metabolites, or having high levels of adipose-released estradiol (former testosterone) in obesity that ends up suppressing testosterone. There are, of course, organic diseases that can cause the condition.

HYPOTHALAMUS A part of the diencephalon of the brain, it is a major actor in the limbic system. This is a functional, not anatomic, system in the brain that influences and is influenced by emotions. Call the limbic system an ad hoc committee that decides how things are going today, based on the past, the present, the potential, and the myriad informational inputs from the somatic body. The hypothalamus gathers the data and sets the levels of the pituitary thermostat. The pituitary does what the hypothalamus tells it to do, and our whole chemical nervous system responds to the pituitary, which responds to the hypothalamus, which, along with the rest of the limbic system, decides the kind of day we need to get ready for. And to think that some doctors used to (and still) scoff at a "psychosomatic disorder."

HYPOXIA Lack of sufficient oxygen, such as occurs at high altitudes.

IATROGENIC Illness, disease, or imbalances created by medical or nonmedical treatment that were not present before treatment. In medicine the therapy is blamed (not the therapist) and changed to something else. In alternative medicine it may be called a "healing crisis" and deemed good for you. Beware: if the therapy makes you feel worse in a new way, it is almost always the wrong therapy.

IgE Immunoglobulin E is a type of antibody produced by IgE plasma cells. These

are specialized B-cell lymphocytes that make free-floating antibodies for what is termed humoral resistance. IgE is peculiar for several reasons. It is not made to be specific against only one antigen like other gamma globulins, but instead can bind with a number of dangerous proteins. Further, IgE travels to mast cells, sticks to their surfaces, and when antigens get stuck to the IgE, the mast cells secrete inflammatory compounds like histamine. Since IgE is a generalist, coded for a number of potential toxins, not just a single substance, it can decide that Juniper pollen and cat dander are antigens...and you have an allergy. Elevated production of IgE is often inherited, which is why allergies run in a family-and why, once you have an allergy, the mast cells and IgE can decide that, for the duration, a whole bunch of other stuff causes hypersensitivity reactions, stuff that wouldn't normally bother you without an ongoing allergy.

ILEOCECAL Pertaining to both the last section of the small intestine (the ileum) and the beginning of the large intestines, the ascending colon or cecum.
EXAMPLE: Ileocecal valve

ILEUM The lower two-thirds of the small intestine, ending in the ileocecal valve and emptying into the cecum of the colon. The last foot of the ileum is the only absorption site available for such important dietary substances as vitamin B12, folic acid, some essential fatty acids, fat soluble vitamins, and recycled bile acids.

IMMUNITY The ability to resist infection and to heal. The process may involve acquired immunity, (the ability to learn and remember a specific infectious agent), or innate immunity (the genetically programmed system of responses that attack, digest, remove, and initiate inflammation and tissue healing).

IMMUNOSTIMULANT An agent that stimulates either innate or acquired immunity. In the U.S., immunotherapy is relegated to experimental medicine, but a number of plant substances are used in Europe as immunostimulants. The presumption of immunostimulation is that you increase native resistance and let it run its course. American Standard Practice, with all good intentions, tends to aggressive procedures, and feels empowered only when intervening against, not with, physiologic responses. Medicine is the only approach to many problems, but in the U.S. we all tend to forget that our brand of standard practice is uniquely aggressive and invasive amongst the industrialized nations. There are other ways...which is presumably why you have this glossary in the first place.

IMMUNOSUPPRESSANT An agent that acts to suppress the body's natural immune response. This is totally understandable in tissue and organ transplants, and in some dangerous inflammatory conditions, but nearly all anti-inflammatory medications are immunosuppressant, including cortisone, antihistamines, and even aspirin. Some medical radicals are convinced that the chronic viral and fungal disorders of our age are partially facilitated by such medications.

INCONTINENCE The inability to retain urine in the bladder for a reasonable length of time. It can be caused by urethral irritation, loss of tone to the basement muscle of the bladder (the trigone), scarification or growths on

the urethral lining, nerve damage, or emotional stress.

INDOLENT A sluggish and unresolving condition, often with ulcerations and necrosis.

INGUINAL NODES The lymph nodes on both sides of the groin and next to the genitalia

INTERSTITIAL FLUID The hydrogel that surrounds cells in soft tissues. It is a mucopolysaccharide starch gel, and the serum that leaves the blood capillaries flows through this gel, some to return to the exiting venous blood, some to enter the lymph system. There is an old medical axiom: the blood feeds the lymph, and the lymph feeds the cells. Interstitial fluid that flows through the starch colloid is this lymph.

INTRINSIC Arising from the nature of a thing...native or inherent. Intrinsic asthma, as an example, arises from congestive inflammation, neurohormonal and auto-allergic conditions of the lung and bronchial membranes themselves, not from **EXTRINSIC** causes, like Juniper pollen or a bee sting.

INTRINSIC FACTOR One of two proteins secreted from the lining of the stomach whose sole purpose is (it seems) to cradle B12 in a pre-fitted styrofoam mold and (A) carry it through the Seven Levels of Digestive Hell until it reaches those few absorption sites in the last foot of small intestine that understand its "Special Needs" (sounds either sexually kinky or the airplane dinner label on kosher food for flying Hassidim jewelers) and finally (B) slip it from one protein to the other, and thence into the cell membranes where its handed over to (C) the specialized blood protein that can carry it safely to the final target tissues (3 times out of 4, the bone marrow). Apparently cyanocobalamin (B12) has parts that fall off, radicals that twirl around in five directions on three charge potentials, and is as durable as a 49 cent water pistol. And, if we have an ulcer, chronic enteritis or long-standing steatorrhea, we either get B12 shots (and hope the liver still makes that blood carrier) or walk vaguely around with pernicious anemia and a hematocrit of 16.

ISOTONIC Having the same salinity as body fluids. You can make a quart of water isotonic by adding a slightly rounded measuring teaspoon of table salt to a quart of water.

JAUNDICE The presence of bilirubin deposits in the skin, whites of the eyes and mucosa. Bilirubin, the unrecycleable waste products of hemoglobin, are normally excreted in the bile, get carried down the intestinal tract and color our feces its usual comfortable brown. If the bile ducts are blocked, or blood breaks down too quickly, or the liver itself is diseased (it performs much of the recycling), then the yellow/orange/brown bilirubin has nowhere to go but out the urine (making it the standard hepatitis color) and into the skin. Jaundice ain't bad...its the causes that one should worry about.

KLEBSIELLA A bacteria genus of the Enterobacteriaceae. *K. pneumoniae* is implicated in much pneumonia, particularly when it is a secondary infection

following a simple chest cold.

LACHRYMITIS (also Lacrimitis) Inflamed lacrimal or tear ducts.

LACTEALS Specialized lymph formations found in the small intestine mucosa. Together with enzymatic activities in the submucosa, they collect digested fats into stable transport bubbles called chylomicrons, and draw them up into the lymph system. There they are gradually leeched into the blood as the lymph passes upwards through the body, the remainder discharged into the venous blood with the lymph...12-24 hours later. Time-Released fat capsules. Fats lower the blood charge and make it sticky, which can interfere with vascular capabilities; the sideways bypassing of the blood in this manner spreads the fats out over long periods. The rest of the digested constituents can happily flow up to the liver through the portal system, unsludged, and the liver itself has little lipid stress to face. If fats are poorly digested in the upper intestinal tract, the floating bubbles are larger, broken down too slowly to be well absorbed into the lymph system, and the portal blood...and liver...get sludged. Ever wonder why a bunch of lousy pizza can give you hemorrhoids the next day? Sludgy portal blood and backed-up venous drainage from the legs is why.

LACTOBACILLUS A genus of gram-positive, acid-resistant bacteria in the Lactobacillaceae family. We know of lactobacillus because of its use in making yogurt and the conventional wisdom of taking it in one form or another after antibiotic therapy, but it is an integral part of the colon and mouth flora, and is the critical acidifying agent in vaginal flora. There is a growing body of rather ignored data showing the value of regular consumption of a lactobacillus-containing food in immunosuppression, slow virus, and candidiasis conditions.

LANCEOLATE A leaf that is lance-shaped.

LATERAL At or on the side, usually from a stem.

LDL Low Density Lipids. The levels are usually indicative of liver function and metabolic tendencies, and the relative proportions of LDL, VLDL and HDL show relationships between caloric intake, anabolic energy, skeletal muscle metabolism and adipose tissue health. They are not innately wrong, anymore than is cholesterol; all are ABSOLUTELY necessary for health. It's all a matter of proportion, and the relationship between consumption and tissue needs.

LEAFLET A small leaf that is part of a compound leaf.

LEUKOCYTES White blood cells, of whatever race or creed.

LEUKOCYTOSIS Having abnormally high numbers of white blood cells, usually the result of a non-viral infection.

LEUKOPENIA Having abnormally low numbers of white blood cells.

LIMBIC SYSTEM A functional, not physical, system in the brain, generally considered to mediate emotions with metabolism.

LIMBIC/HYPOTHALAMUS Broadly the accumulative process of emotional and metabolic evaluation, as carried on by the various parts of the brain that are part of the ad hoc "evaluations" committee (the limbic system) and those changes in metabolism that, based on the evaluations, are acted out in the whole body by the hypothalamus. The hypothalamus, the main part of the system with tools, acts through a blood translator, the pituitary gland.

LINIMENT A liquid containing therapeutic agents for topical application. It may be an alcohol, oil, or water preparation.

LIPID A descriptive term, rather than chemical one, for fats. Broadly, it means true fats (like triglycerides), lipoids (like phospholipids) and sterols (like cholesterol).

LIPOTROPIC FACTORS Various compounds and processes that enable the liver to metabolize fats properly or prevent the formation of cholesterolic stones in the gall bladder by supporting the continued emulsification of gall bladder bile. **EXAMPLES:** Lecithin, choline, Aristolochia

LITHIASIS Having stones, usually in reference to the kidneys and urinary tract, sometimes to the gall bladder apparatus. Technically this can also refer to salivary gland calculi and impacted precipitants in the seminal vesicles or prostate.

LOCHIA The uterine discharge following birth, changing from reddish the first few days, to yellowish or clear after a couple of weeks. Many traditional skills of a midwife or partera center around evaluating the qualities and progress of lochia.

LUMBAR REGION The lower back, five segments of the spinal chord and column, between the sacrum and thoracic regions.

LUTEINIZING HORMONE (LH) This is a sugar-bearing protein manufactured by the anterior pituitary. Like a lot of the pituitary hormones, it surges on and off, since constant secretion would overload and deaden receptors. In women, it builds up after menses, stimulating the release of estrogen from the ovaries. Estrogen in turn stimulates the hypothalamus to increase its stimulation of LH from the pituitary, until, a day or two before ovulation, they produce a guitar-amp feedback, and the cells that produce LH start to surge follicle-stimulating hormone (FSH). The egg pops, being replaced by the corpus luteum, which produces progesterone for the next eleven to twelve days. Progesterone inhibits and lowers LH levels, as well as inhibiting levels of estrogen already being produced by the young follicles that will produce next month's egg. In men, LH is responsible for stimulation of testosterone, although FSH and the testes hormone inhibin are responsible for both the production of sperm and controlling testosterone.

LUTEINIZING-HORMONE RELEASING HORMONE (LH-RH) The same substance as

Follicle-Stimulating-Hormone Releasing Hormone (FSH-RH), both of which are actually Gonadotrophin-Releasing Hormone (GnRH or GRH). Confused? Imagine being an endocrinologist 20 years ago. These (This) are (is) a peptide secreted into the little portal system that drains from the hypothalamus to the pituitary. If it is surged hourly and not too strongly, the pituitary secretes LH and the ovaries secrete estrogen. If it is surged hourly and strongly, the estrogens rise drastically, the pituitary secretes FSH, you pop an egg, start the corpus luteum and begin progesterone secretion. The surge is now slowed to every four or five hours, not too strongly, and the pituitary secretes LH every four or five hours...and the ovaries make progesterone. The same hypothalamic hormone triggers different pituitary responses based on AMPLITUDE and FREQUENCY.

LYMPH Pertaining to the lymph system or lymph tissue, the "back alley" of blood circulation. Lymph is the alkaline, clear intercellular fluid that drains from the blood capillaries, where the arterial blood separates into thick, gooey venous blood and lymph. It bathes the cells, drains up into the lymph capillaries, through the lymph nodes for cleaning and checking against antibody templates, up through the body, and back to recombine with the venous blood in the upper chest. Blood in the veins is thick, mainly because part of its fluid is missing, traveling through the tissues as lymph. Lymph nodes in the small intestine absorb most of the dietary fats as well-organized chylomicrons. Lymph nodes and tissue in the spleen, thymus, and tonsils also organize lymphocytes and maintain the software memory of previously encountered antigens and their antibody defense response. Blood feeds the lymph, lymph feeds the cells, lymph cleanses the cells and returns to the blood.

LYMPH NODES The central drainage and metabolic organs strung along the lymph vessels. The mesenchymal structure is native, being present at birth. The functional cells have all migrated there, some recently from the marrow, spleen, thymus or blood, others have resided since a few months after birth. Much of the antibody memory is stored in these nodes, and having only venous blood supply, lymph nodes are constantly shunting metabolized substances back into the blood, so the final lymph drainage from the thoracic duct into the left subclavian vein (or the right subclavian) contains fluid already screened and cleansed by many nodes.

LYMPHATIC Pertaining to the lymph system...sometimes more broadly to include immunity.

LYMPHOMA A neoplasia of the lymph tissue, such as Hodgkin's Disease. Although it is frequently useful to stimulate immunity when a person is undergoing chemotherapy for cancer, since the resultant immunosuppression is a major side effect of the treatment, in lymphatic cancer this the POINT of the therapy...let it be.

MACROPHAGE This is a mature form of what is released from the marrow as a monocyte. A macrophage lives long, can digest much detritus, and is able to wear particles of odd food on its outer membrane. This allows T-cell and B-cell lymphocytes to taste the particle (an epitope) and form an antibody

response. Further, these macrophages, traveling as monocytes, will take up permanent residence in many tissues, providing them with immunity. They line the spleen, form the cleansing Kupffer cells in the liver, make up the "dust cells" that protect the lungs, protect the synovial fluids of the joints, and form the microglial cells that provide protection to the brain and nerve tissues. On and on, the macrophages clean up messes and acting as the intermediates between innate and acquired immunity.

MALABSORPTION Improper utilization of needed and available nutrients, either from impaired digestive function (such as B12 being unabsorbed because of gastritis), impaired absorption (poor Vitamin E absorption because of an inflamed ileum) or impaired transport (the diminished blood proteins of the advanced alcoholic). There are other causes as well, but you get the idea.

MALAISE A fretful and low energy state, often considered an early sign of infection or low fever. Ask someone with Chronic Fatigue Syndrome or Multiple Chemical Sensitivities...they'll tell you how it feels.

MAO INHIBITION The suppression of monoamine oxydase (flavin-containing amine oxydase). MAO is critical in modifying nerve-ending storage of certain mono-amines (in this case, epinephrine, norepinephrine and dopamine...another type of MAO works on histamines), and MAO inhibitor drugs were, along with tricyclics, the first wave of anti-depressants. The problem was that if you ate brie cheese or chopped chicken livers while taking the drugs you could get a nosebleed or cerebral aneurysm...a double adrenergic whammy, since some foods are also strongly MAO-inhibiting. Although most current manuals (Merck's and Harrison's among others) consider these first generation drugs as safer and preferable to the recent Prozac and such, fashion am fashion, with docs as much as patients. Most of the patients a doctor sees are People That See Doctors (most Americans have infrequent medical contact). Some come with clippings in hand, a few find out about new stuff before their doctor does (they only have ONE patient..themselves) and the pressure for guilt-edged newness is hard to resist all around. The only herb I know of with any consequential MAO inhibition is Hypericum, and its effect, although not to be ignored, is less than French semi-soft cheeses.

MAST CELLS These are a group of cells that line the capillaries of tissues that come in contact with the outside, like skin, sinuses, and lung mucosa. They, like their first cousin basophils, are produced in the red bone marrow and migrate to the appropriate tissues, where they stay. They bind IgE, supply the histamine and heparin response that gives you a healing inflammation, and cause allergies.

MATRIX The intercellular substance of a tissue. It forms the primary mass in some cartilage, bones, and the lens of the eye...where living cells are so separated they communicate with e-mail.

MENARCHE The beginning of the reproductive phase of a woman's life. It usually begins with night sweats, continues a few months later with estrogen, followed by ovulation, then the full cycle and the growth of secondary sexual

characteristics...in various order. Also called adolescence or puberty, it is mirrored in reverse at the end of the reproductive years as menopause.

MENOPAUSE The several years, in the late forties or early fifties, when the great birth reservoir of potential ovarian follicles has been reduced to only a few, many with innately poor hormone-sensitivities (which is perhaps why they are still remaining...they never heard the clarion call of FSH). As fewer follicles are capable of fully-programmed function, corpus luteal fragilities start to show as diminished progesterone levels...later, even the pre-ovulatory estrogens start to diminish. The pituitary, sensing first the progesterone wobbles, then, maybe a year later, the erratic estrogens, tries to jump start the ovaries, sending increasing levels of Luteinizing Hormone (LH)...with diminishing results. Since the brain (hypothalamus) is actually controlling things, it is sending out higher levels of pituitary stimulating hormones, which the pituitary matches with its blood-carried trophic or gonadotropic hormones...in this case, LH. What the pituitary hears from the hypothalamus is TYPE of brain chemical, MAGNITUDE of chemical, and, as much of this is being pulsed, FREQUENCY of the chemical. At a certain point, the gonadotropic-releasing-hormone sent out by the hypothalamus is so loud and frequent that the pituitary starts sending out things like TSH (thyroid-stimulating hormone) and somatotropins (growth hormone) as well as LH...hot flashes, changes in food cravings, sleep cycles, skin texture...whatever. Like old partners in an ancient dance whose music is ending, the hormonal imbalances are the reverse of those experienced by the woman years ago in menarche. As above, so below. When the dust settles, the metabolic hormones have found a new interaction, anabolic functions have been transferred from the ovaries to the adrenal cortex, and that reservoir of stored estradiol still present in the "Womanly Flesh" of the breasts, thighs, hips and buttocks, started many years ago, maintains a low blood level, diminishing over the following years, easing some of the estrogen-binding tissue into the change.

MENOPAUSE, SURGICAL A term rather callously used to describe the cessation of ovarian hormones as a result of a radical hysterectomy...or what the British more honestly refer to as castration.

MENSTRUUM The solvent used in extraction. For a dry tincture, the menstruum might be 50% alcohol and 50% water. The menstruum for mint tea is hot water.

MESENCHYMAL CELLS Literally, those derived from embryonic mesoderm; practically, those in a tissue that give it structure and form. The opposite of parenchymal.

MESENTERIC Pertaining to the great fold that holds the small intestines, blood vessels and lymph in a great curtain, connected with the back of the abdominal wall.

MESOMORPH In somatotyping, a mesoderm-muscle-structural dominant person. The Incredible Hulk syndrome.

METABOLISM The sum total of changes in an organism in order to achieve a balance (homeostasis). Catabolic burns up, anabolic stores and builds up; the sum of their work is metabolism.

METABOLITES A by-product, waste product, or endotoxin produced as the result of metabolism, both normal and defensive.

METRORRHAGIA Uterine bleeding at times other than menstrual

MITOSIS The classic four-phased cellular division of somatic cells, wherein (when the dust settles) two new daughter cells contain full chromosomal information of the parent, complete nuclei, and half the cytoplasm. This is distinct from cloning (as in the bone marrow) and the chromosome splitting of meiosis (ovum and sperm).

MITTELSCHMERZ Abdominal pains that occur midway between menstrual periods and which are caused either by ovulation or the normal short pre-ovulatory surge of estrogen.

MONONUCLEOSIS Properly, infectious mononucleosis, a viral infection of the lymph pulp most frequently caused by the Epstein-Barr virus. The spleen, lymph nodes, and (sometimes) the liver are involved. The general symptoms are fever, sore throat, exhaustion, and abnormal white blood cells.

MUCOEPITHELIAL Tissues with mixed characteristics of both mucous membranes and epidermis, found around the entrances into the body.

MUCOPURULENT A discharge of mixed mucus and pus, usually from congested and moderately infected membranes.

MUCOUS MEMBRANES (MUCOSA): The mucus-secreting skin that lines (and protects against the environment) all openings, cavities or entrances into the body, such as the intestinal tract, lungs, urinary tract, sinuses, vagina, etc.

MYALGIA Tenderness or pain of the muscles themselves; muscular rheumatism.

MYENTERIC PLEXUS Broadly, the several neuron masses, ganglia, and nerve fiber plexus that lie in the walls of the intestinal tract, particularly the small intestine. They monitor and stimulate local muscle and glandular functions as well as blood supply, with little interface or control by the central nervous system or the autonomic. Each synapse away from the CNS gives greater autonomy, and these nerves only listen to God ... and food. This means the small intestine is relatively free of stress syndromes.

MYOCARDIUM The middle, muscular layer of the heart.

MYXEDEMA Puffiness and fluid retention resulting from thyroid hypofunction, either organic (serious, and often complicated by pituitary or adrenal cortical deficiencies) or functional (often a bipolar depressive thyroid phase).

NARCOLEPSY A chronic neurologic condition characterized by reoccurring and

inexplicable drowsiness and sleep. There is no organic cause and no seeming changes in EEG readings.

NARCOTIC A substance that depresses central nervous system function, bringing sleep and lessening pain. By definition, narcotics can be toxic in excess.

NDGA Nordihydroguaiaretic acid, a substance found in abundance in the oleoresins of Larrea (Chaparral) and the Guaiacum genus (Lignum Vitae). It is strongly antioxidant to lipids and is antifungal, antimicrobial and antibacterial. Both plants contain a constellation of related compounds and do not have the potential kidney toxicity found in pure NDGA...and the reason it is no longer used as an EDTA-type edible oil stabilizer in food manufacturing.

NECROSIS Death of tissue or cells, either from infection or the loss of normal circulation and autotoxicity.

NEOPLASIA The presence of abnormal cells forming a growth or tumor, unable to perform their normal functions, and replacing healthy cells.

NEPHRITIS Inflammation or infection of the kidneys, as opposed to lower urinary tract inflammations such as cystitis or urethritis, which are usually comparatively mild. Nephritis can be a far more serious condition, and usually requires medical care.

NEURALGIA Pain, sometimes severe, that manifests along the length of a nerve and arises within the nerve itself, not in the tissue from which the sensation seems to arise.

NEURASTHENIA Tiredness or exhaustion, often in excess of what would seem appropriate from purely physical causes.

NEURITIS Nerve inflammation, usually with an abnormal amount of pain, and often part of a degenerative process.

NEUROGENIC Sensations or conditions derived solely from the nervous system

NEUROPATHIES A disease of the central or peripheral nervous systems. In more common reference, a neuropathy is primarily a disorder of peripheral nerves. CNS diseases are often life threatening; neuropathies are generally disorders of the control and sensory nerves out in the body.

NEUTROPHILS Another name for polymorphonuclear leukocytes, the most common type of blood-carried white blood cell, and the first mobile resistance cell to come to the rescue in injury.

NITROGENOUS A compound or molecule that contains nitrogen; in my context, a substance that is or was a part of protein metabolism.

NUCLEOPROTEIN A molecule that is formed from a structural protein that is combined with nucleic acid, and generally found in cell nuclei and other proliferative points in cells. Upon cell death, nucleoproteins, unlike others,

cannot be catabolized and recycled efficiently; instead, part of the protein is degraded to purines, and thence to uric acid. Uric acid, unlike recycleable urea, is an excretory dead end.

NURSE LOGS In old-growth forests, these are ancient downed trees that rot so slowly that they themselves become the fungus and growth media for new and growing trees and other life-forms.

OIL, FIXED These are lipids, esters of long-chain fatty acids and alcohols, or generally related oily stuff. If you drop some fixed oil on a blotter, it just stays there-forever. (Example: olive oil.)

OIL, VOLATILE The aromatic, oxygenated derivatives of terpenes that can be obtained from plants (in our case), usually by distillation. Unlike a fixed oil that has no scent (unless rancid), volatile oils are all scent. (Example: oil of Peppermint.)

OPHTHALMIA Severe eye inflammation, including conjunctivitis, iritis, severe hay fever, etc.

OPHTHALMALGIA Very simply, eye pain.

OPPOSITE Plant parts, usually leaves, that form pairs at nodes.

ORBITAL HEADACHE A headache around the eyes. There are supra-orbital headaches and suborbital headaches as well...the difference escapes me.

ORCHITIS Inflammation of the testes, manifested by swelling and tenderness, usually infectious, sometimes the result of trauma.

ORGANIC DISEASE A disease that started as, or became, impairment of structure or tissue. The smoker may have coughing and shortness of breath for years, and suffer from functional disorders; when the smoker gets emphysema, it is an organic disease.

OXYTOCIN A short-lived, fast acting hormone, made by the hypothalamus of the brain, along with its close relative vasopressin (anti-diuretic hormone), stored in the posterior pituitary, and released into the blood as needed. It stimulates certain smooth muscle coats, constricts certain blood vessels and facilitates the sensitivity of some tissues to other hormones and nerves. The main tissues affected are the uterus, including endo- and myometriums, vagina, breasts (both sexes), erectile tissue (both sexes), seminal vesicles, and with special-case effects on uterine muscle contractions in both birth and orgasm, the vascular constriction that lessens placental separation bleeding, and the let-down reflex that nursing mothers have when babies cry (or kittens mew...or husbands whine)

PALMATE Having a leaf shaped like a hand.

PANCREAS This is a gland situated above the navel in the abdominal cavity that extends from the left side to the center, with its head tucked into the curve

of the duodenum. It is 6-8 inches long, weighs 3 or 4 ounces, secretes pancreatic enzymes and alkali into the duodenum in concert with the gallbladder and liver, and secretes the hormones insulin and glucagon into the blood. Insulin acts to facilitate the absorption of blood glucose into fuel-needing cells, and glucagon stimulates a slow release of glucose from the liver, primarily to supply fuel to the brain. That most cherished organ uses one-quarter of the sugar in the blood and has no fuel storage. Pancreatic enzymes are basically those that digest fats, carbohydrates and proteins into their smaller components of fatty acids+glycerol, maltose, and amino acids...as well as curdling milk (thought you might want to know).

PANICLE A compound flower head that forms a raceme.

PAPILLAE Small raised bumps or nipples on a tissue surface. Lingual papillae are taste buds.

PARASYMPATHETIC A division of the autonomic (involuntary) nervous system that controls normal digestive, reproductive, cardiopulmonary, and vascular functions and stimulates most secretions. This subsystem works as a direct antagonist to the sympathetic division, and organ functions balance between them.

PARASYMPATHOMIMETIC A substance that mimics some major aspects of parasympathetic function. **EXAMPLES:** Amanita muscaria mushrooms, Pilocarpine, Lobelia.

PARATHYROIDS These are several minute glandular masses embedded in the lower edge of the thyroid gland. They produce Parathyroid Hormone, part of the calcium-phosphorus control system. Calcium levels in the blood **MUST** be within a narrow band of safety. If free calcium drops too low, PTH acts on the kidneys and blocks calcium loss in urine, amplifies calcium absorption into the portal blood (from food and from submucosal storage) and stimulates release of calcium from bone storage. When levels are back up, the hormone backs off. Oddly enough, the thyroid gland secretes its virtual antagonist, calcitonin, which, when calcium levels are too high, stimulates the urine excretion, bone retention and digestive resistance to calcium, and when the blood levels drop, recedes. The body finds calcium levels to be so critical that it has in place **TWO** separate, mutually antagonistic negative feedback systems...like a binary star system. (Be thankful I didn't bring in the calcium maintenance of mineralocortical steroid hormones or vasopressin)

PARENCHYMAL These are cells in a tissue or tissues in an organ that are concerned with function. These are the characteristic cells or tissues that do the actual stuff. The importance to us is that parenchymal tissues expend much vital energy in their functions and are less tolerant of a degraded environment than the structural mesenchyme. A congested and impaired organ like the liver of a heavy drinker has so much regular dysfunction that eventually the more tolerant and metabolically less particular mesenchymal cells become more common, and the distressed, overworked, and metabolically compromised parenchymal cells become a minority. The structural cells can multiply with

ease in a poor environment, the more delicate functional cells cannot-and you end up with the type of cirrhosis sometimes termed mesenchymal invasion disease. The point of this is that the sooner you return an organ or tissue back to the healed state, the more likely you are to have a healthy balance between the structural and functional.

PARESTHESIA Numbness, prickly sensations without point specificity, or abnormal hypersensitivities, all local to one part of the body, and without an obvious cause. Your foot falling asleep is paresthetic, but not paresthesia...the cause is you sat funny.

PAROTID A pair of salivary glands tucked into the notch in front of each ear and emptying through parotid ducts by each upper 2nd molar. Although the fluid has some of the thick viscous lubricant nature of saliva from the glands in the floor of the mouth, the parotids secrete high levels of ptyelin and amylase (starch-digesting enzymes) lysozymes (antimicrobial enzymes) and a group of proteins loosely called parotin that stimulate epithelial and nerve cell growth...a lot more here than just spit.

PATHOLOGY Disease, particularly one with clear and obvious changes in structure or function; the study of same.

PEDICEL The stem of a flower within a floral cluster.

PEDUNCLE The stem or stalk of a single flower or a whole floral cluster.

PERIAPICAL ABSCESS An abscess or pus pocket around the apex of the root of a tooth...sometimes called a gumboil

PERIPHERAL At the edges, especially circulation or nerves. Peripheral functions are usually controlled and modified more by local conditions than systemic (central) controls.

PETIOLE A leafstalk or stem, or an unexpanded section.

PG INHIBITOR Usually, a PGE inhibitor like aspirin, and usually intended to lessen joint inflammation and uterine spasms.

PGE Short for Prostaglandin E, presumably the fifth subtype discovered, and usually separated into PGE1 and PGE2. These two, if made by the kidneys, slow sodium reabsorption; if within the uterus, induce a stronger response from less stimulus; if made in the stomach lining inhibit gastric secretion; if secreted by macrophages, target tissues become more accessible to infiltration...and inflammation. These are the two prostaglandins whose levels are meant to be stabilized by gamma-linolenic acid (GLA) supplements. See PROSTAGLANDIN

pH The potential of hydrogen. A "neutral" pH is expressed as 7.0 (water), with greater being alkaline and lesser being acidic. Expressed logarithmically like the Richter's Scale, 6.9 pH is twice as acidic as 7.0. 9.0 is ten times as alkaline as 8.0, etc., all based on the presumed amount of hydrogen ion (acidity) present. This is a chemical literality, not to be confused with the

vitalist and cyto-hologrammic implications of Acid and Alkaline metabolism or foods. A complex protein has a literal pH close to neutral. Run it through your body and it gets broken down into an incredible array of amino acids, ending up as nitrogenous acid waste products. The more rapid the metabolism, the more acids are produced...the ashes of life are acids. The literal pH of the life media, such as blood, lymph and cytoplasm...and most food, is alkaline. This acid/alkaline is a concept only applicable "in vivo"; pH defines acid/alkaline "in vitro".

PHAGOCYTOSIS The act of absorbing and digesting fragments, detritus, or whole organisms, as an amoeba does. Granulocytes do this in the body.

PHLEGM Mucus in the throat or bronchi.

PHOSPHATURIA The presence of excess phosphates in the urine. This occurs in...and can even cause, alkaline urine (it's normally acidic), resulting in cloudy urine, small particle sedimentation, and the more common kinds of kidney stones.

PHOSPHOLIPIDS Fats containing phosphorous, and, along with cholesterol, the primary constituents of cell membranes.

PHOTOSENSITIVE Reacting poorly to sunlight, either by skin reactivity or by forming abnormal sunlight-mediated serum metabolites

PHYTOSTEROLS Plant lipids, with little other than dietary value, but often excitedly referred to as "Hormone Precursors", using incorrect but well-meaning pseudo-science. See: STEROIDS, PLANT

PHYTOTHERAPY Botanical or herbal medicine, often with a heavy emphasis on studies and monographs and their medical implications (with virtually none from North America), and with a philosophy of "little drug" medical uses and the reliance on the European phytopharmaceutical industry (where the studies came from). No judgment here; this approach is of great value to physicians, since it offers clear implications for medical use. This approach is, however, medical and mechanistic, not vitalist and wholistic

PILOCARPINE A plant alkaloid and the primary bioactive substance reducible from *Pilocarpus* spp. (Jaborandi leaves). It is an almost pure parasympathomimetic (cholinergic), inducing lowered blood pressure and stimulating glandular secretions...EVERYWHERE. It stimulates sweating as well, a sympathetic cholinergic response. Anyway, it is used in eye drops these days to contract the pupil, lower ocular fluid pressure and take some of the stress off glaucoma. The refined alkaloid is better in the eyes, but the dried leaves are the usual complex agents of herb use and have some therapeutic values in low doses. Good Lobelia or *Asclepias* will work similarly and are both safer, fresher and more predictable as botanicals.

PINNAE The leaflets or primary division of a pinnate leaf.

PINNATE A compound leaf, having the leaflets arranged on each side of the

stem.

PINNATIFID A leaf that is pinnately cleft, but into lobes that do not reach the midrib, and not into separate leaflets.

PINNULE A division of a pinna.

PINWORMS Also Threadworm, this is a widespread parasitic nematode, usually benign, but having a rural, white trash, skanky stigma. It mates and reproduces in the intestines of several mammals (including us) and the female exits the anus, usually at night, to shed its eggs and expire. The eggs become like dust motes, kids and puppies scratch their butts, the eggs spread into other mammals, until only a thermonuclear device or burning/razing/earth-salting will clear out a heavy infestation. It's also the only worm likely to be encountered in temperate zones and the high country.

PISTILLATE A female flower that has pistils but no stamens.

PITUITARY An endocrine gland somewhat behind the eyes and suspended from the front of the brain. The front section, the anterior pituitary, makes and secretes a number of controlling hormones that affect the rate of oxidation; the preference for fats, sugars, or proteins for fuel; the rate of growth and repair in the bones, connective tissue, muscles, and skin; the ebb and flow of steroid hormones from both the gonads and adrenal cortices. It does this through both negative and positive feedback. The hypothalamus controls these functions, secreting its own hormones into a little portal system that feeds into the pituitary, telling the latter what and how much to do. The hypothalamus itself synthesizes the nerve hormones that are stored in the posterior pituitary, which is responsible for squirting them into the blood when the brain directs it to. These neurohormones act quickly, like adrenalin, to constrict blood vessels, limit diuresis in the kidneys, and trigger the complex responses of sexual excitation, milk let-down in nursing, and muscle stimulus in the uterus (birthing, orgasm, and menstrual contractions), prostate, and nipples.

PLATELET AGGREGATION Platelets are the small, rather uniform fragments of large bone marrow cells that aid the blood in coagulation, hemostasis, inflammation, and thrombus formation. Mild subclotting and sticking is a common early condition that can lead to thrombosis, atherosclerosis, and strokes, and can be helped by an aspirin a day, better fat digestion, and Ceanothus.

PLEURISY An inflammation of the serous membranes that both surround the lungs and line the inside of the chest cavity; the two membranes supply fluid lubrication between the expanding and contracting lungs and the body. Most pleurisy (and usually the milder form) follows or accompanies bronchitis or late winter chest colds...sort of pulmonary cabin fever. It may be dry pleurisy (with few secretions and sharp sticking pain that prevents any but moderate inhalation), or acute or effusive pleurisy (with fever, coughing, and built up serous fluids...usually tossed off as bronchitis). Some types are

part of serious cardio-pulmonary disorders and/or chronic disease.

POLYURIA Excess urination. The excreted wastes may stay unchanged but they are dissolved in a far higher volume of water. The causes range from diabetes, kidney disease, elevated thyroid function and the aftermath of diuretic-treated heart failure to booting a half keg of generic beer at a frat blowout

PORTAL CIRCULATION This is a type of circulatory bypass used when substances in blood or fluid need to be kept out of the general flow. A portal system begins in capillaries and ends in capillaries, and nothing leaves it undocumented. The hypothalamus sends hormones into the portal system between it and the pituitary, and the pituitary responds to it by secreting its own hormones, but dissolving the hypothalamus ones. Blood that leaves the intestinal tract, spleen, and pancreas (partially) goes into the liver's portal system and does not leave that organ until it has been thoroughly screened and altered.

POSTPARTUM After birthing.

PRESSOR An agent, neurologic or hormonal, that increases blood pressure.

PROGESTERONE This is the hormone secreted after ovulation by the corpus luteum. It is a steroid (a cholesterol with a funny hat), enters receptive cells to stimulate their growth, and acts as an anabolic agent. Estrogen should be viewed as the primary coat underneath all the cycles during a woman's reproductive years, with progesterone, its antagonist, surging for ten or twelve days in ovulatory months. Most of the actions of progesterone cannot occur without estrogen having previously induced the growth of progesterone-receptive binding sites. In the estrus cycle, estrogen stimulates the thickening of membranes (the proliferative phase), and progesterone stimulates their sophistication into organized and secreting mucosa (the secretory phase). The new secretions contain anticoagulants, antimicrobials, and rich mucus fluids. If there is pregnancy, the uterine membranes are fully structured for the long haul; if menses occurs, the thickened tissues can erode away without clotting, becoming infected, or flowing poorly. If there is not enough estrogen, the corpus luteum will not mature. If the corpus luteum is weak, menses becomes disorganized, clotty, and painful. It is also the first part of the cycle to become disorganized in early menopause, since the available ovarian proto-follicles have been reduced over the years to only a few. In earlier years, dozens of potential follicles may attempt maturity each month, with only the strongest one able to reach dominance, form a corpus luteum and an ovum...the rest disintegrating. In a manner of speaking, the better the follicle, the better the corpus luteum and (presumably) the sounder the ovum. Since the number of potential follicles is fixed at birth, by early menopause those that still remain contain a high number of hormone-resistant and unsound proto-follicles, resulting in more and more cycles having less predictable estrogen and especially progesterone levels.

PROSTAGLANDIN A group of a dozen or more fatty acid derivatives made by many tissues for paracrine (local) hormone use. Because they are only meant for

local use, the same compound may serve opposite purposes in different tissues...inhibiting inflammation in the stomach lining while increasing uterine irritability.

PROSTATE This is a walnut-sized gland that surrounds the beginning of the urethra in men. It secretes the alkaline transport fluid that mixes with sperm from the testes to form semen. The prostate needs adequate anabolic steroid stimulation for its health and growth, especially testosterone. Because of diminished healthy hormone levels, pelvic congestion, and decreased blood (and hormone) circulation, or because of sexually transmitted or urinary tract infections, a male may get prostatitis. (See BPH.)

PROTEINURIA The presence of protein in the urine, sometimes a symptom of kidney compromise. See ALBUMINURIA

PROTEOLYTIC An enzyme or agent that speeds up the breaking down or digestive hydrolysis of proteins into smaller proteins, peptides, polypeptides, oligopeptides, amino acids, and all that delicious nitrogenous slurry-stuff.

PURINES These are waste products or metabolites of nucleoproteins. They are not recycleable and are broken down further to the primary excretable form, uric acid. High purine presence in a tissue signifies a recent high turnover in nucleoproteins from injury or cell death, which is why some purines, such as allantoin, will stimulate cell regeneration. Many plants contain allantoin, most noticeably Comfrey. Some foods are heavy purine producers and can elevate serum uric acid levels. These include organ meats, seafood, legumes, and such politically correct foods as spirulina, chlorella, and bee pollen. Caffeine and theobromine are purine-based alkaloids and can mildly increase uric acid, but they pale beside algae, pollen, and glandular extracts from the chiropractor.

PYORRHEA Broadly, any discharge of pus, but usually referring to periodontitis or Pyorrhea alveolaris, with inflammatory and degenerative conditions in the gums, jaw bone and cementum. There may be alveolar bone resorption, teeth loss and receding gums...and hefty dental and oral surgery bills. These costs may be valid, but there is some thought in some radical dental circles that there is overdiagnosis of the condition.

PYOGENIC MEMBRANE The granular emergency membrane that lines and isolates abscesses.

PYRROLIZIDINE ALKALOID A type of alkaloid found in many plants of the Composite and Borage families, once termed a Senecio alkaloid. Some of the pyrrolizidine group have been shown to cause several types of liver degeneration and blood vessel disorders. Several deaths have been attributed to improperly identified plant usage of a Senecio, and some of the desert Boraginaceae annuals and Senecio annuals are overtly toxic. Young leaves and spring roots of Comfrey hybrids should be avoided as well. Not all PAs are toxic, but those that are can produce an insidious time bomb, causing spontaneous necrosis in the liver hepatocytes of a perfectly healthy person.

RACEME A flowering spike or cluster where the flowers are borne along the peduncle on pedicels of similar length.

RALES Abnormal sounds in the lungs, either from excess secretions or the narrowing of the bore by inflammation or congestion.

RAY FLOWERS The margin flowers on a composite head, usually sterile, that resemble single petals. (Example: the white "petals" of a Daisy.)

RBC Red blood cells or erythrocytes

REFLEXED Turned down or curved backwards.

REGRANULATION Granulation is the forming of connective tissue fibroblasts, epithelium and inflammatory cells around the nucleus of new capillaries in tissues that have been burned or scraped. This delicate tissue is often reinjured, and regranulation becomes a slower process, with more formation of scar tissue. Some plant resins will quickly stimulate the process, increase the complexity of healing, and lessen fibroblast scar formation.

REGURGITATIONS, MITRAL Backflow of blood from the left ventricle of the heart (pumping arterial blood outwards to the aorta) into the left atrium (receiving oxygenated blood from the lungs) because of faulty closure of the mitral (bicuspid) valve that guards between the two chambers.

REGURGITATIONS, TRICUSPID Backflow of blood from the right ventricle (pumping deoxygenated thick venous blood into the lungs) into the right atrium (receiving used blood from the rest of the body) because of faulty closure of the tricuspid valve that guards between the two chambers.

RENAL Pertaining to the kidneys

RESINS These are wax-containing plant oils, often secreted to fill in injured tissues, much like a blood clot, sometimes used to protect leaves from loss of water through evaporation or to render them unpalatable. (See **BALSAMICS**.)

RHEUMATOID Broadly, having dull aching in joints, muscles, eyes, and so forth. In a more literal sense, it is having an autoimmune response, usually between certain IgM and IgE antibodies, that may have started as a bacterial infection or as some autoimmune reaction. The severity is increased under emotional, physical, dietary, and allergic stress-or any stress. Hans Selye showed a few years ago that once a chronic disease response occurs, any stress above metabolic tolerance will aggravate the chronic disease, which is why some people, stressed by cold, wet weather, must avoid it; but someone else is stressed by legumes, still another person gets upset (and stressed) by watching too much CNN. You know best what stresses you; it's not fair to ask a doc to find it out for you. Rheumatoid arthritis is so named because it somewhat resembles the joint inflammations that can occur in rheumatic fever, a completely different disease caused by a strep infection.

ROULEAU A group of red blood cells arranged together like a roll of coins,

usually only noticed on a slide under a microscope. Since red blood cells in a reasonably healthy person should have a mutually repelling membrane charge, this means that something like an inflammatory response or an elevation of liver-synthesized lipids (LDLs and VLDLs) is occurring. Inflammation makes the blood "sticky," and the lipids from the liver lower the charges. Remember, of course, that I am talking about subclinical imbalances...such things as rouleau can accompany some pretty gnarly diseases. Our kind of rouleau can give you a headache or make your hands and feet cold because it's hard to push rolls of coins through little bitty capillaries.

SACRAL NERVES These are five pairs of CNS nerves that exit through the sacral foramen and sacral hiatus, and bring information in and out of the spinal cord. Much of their function relates to the sciatic nerve, and they bring information in from the skin sensory zones (dermatomes) of the heel, back of the legs, buttocks, and the pelvic floor.

SALICYLATES Esters or salts of salicylic acid, such as aspirin, and including glycoside forms such as salicin. They are widely used as topical irritants and (especially) as anti-inflammatory and analgesic agents and prostaglandin inhibitors.

SALMONELLA A widespread genus of gram-negative motile-rod bacteria, some of them can cause moderate GI infections, while several can produce metabolites in food that cause serious toxic reaction when the food is eaten

SAPONIN Any plant glycoside with soapy action that can be digested to yield a sugar and a sapogenin aglycone. Many (but not all) saponins can be toxic and speed up hemoglobin degradation. Some herbs with important saponin constituents are Yucca and Agave.

SCAPE A long flower-bearing stem or peduncle that arises from the ground. It is leafless, or the leaves are reduced to bracts.

SCIATICA This is neuralgia of the sciatic nerve. These are the two largest nerves in the body, composed of the tibial and common perineal nerves, bound together and containing elements of the lowest two lumbar and upper three sacral spinal cord nerves. Sciatica is felt as severe pain from the buttocks, down the back of the thighs, often radiating to the inside of the leg, even to the point of paresthesia or prickly numbness. Although tumors can cause the problem, far and away the most common causes are a lower back subluxation (responding to adjustment) or pelvic congestion and edema (responding to laxatives, exercise, and decreasing portal vein and lymphatic congestion).

SEBACEOUS GLAND Oil secreting glands, mostly clustered around hair follicles. The oil, sebum, is released into the oil glands from the disintegrated cytoplasm of shedding holocrine cells that line the alveolar surfaces. The nature of the secretion is often a direct reflection of the state of the body's lipid metabolism.

SEBORRHEA A disorder of the sebaceous glands, with changes in the amount and

quality of the oils secreted. Although it can occur in any part of the body, seborrhea of the scalp (dandruff) is most common.

SEMINAL VESICLES These are a couple of spongy glands, 1.5 to 2 inches long, that secrete high-sugar, acidic, and thick, ropy colloid into the ductus deferens (containing sperm from the testes) during ejaculation. The two fluids empty into the prostate, where they are mixed with alkaline prostatic fluids to form semen.

SENSORS cells or tissues that monitor the internal and external environment, either neurologically or chemically, and can initiate compensatory action or communicate to other parts that can react.

SEPAL A leaf or segment of the calyx.

SEPSIS Like septicemia, an infection that has moved deeply into the body, involving the subcutaneous or submucosal layers, connective tissue, lymph system...or blood

SEPTICEMIA The presence of pathogenic bacteria or other microbes in the blood stream...a serious business, since most defenses are focused outside the bloodstream and the infection has bypassed them either due to its virulence, the depth and severity of the original focal infection or the weakened state of the body's immunity and life energy. Blood poisoning.

SEPTUM A membrane wall separating two or more cavities, such as the one between the nasal fossae and those separating the air sacs (alveoli) of the lungs.

SEROUS MEMBRANES Membranes that line many internal organs and cavities, secreting a thin, lymph-like fluid, that lubricates and slowly circulates.

SGOT and SGPT Liver enzymes that are normally only present in minute quantities in the blood, they become elevated under a variety of circumstances, particularly hepatitis.

SPLEEN The large organ lying to the left of, below, and behind the stomach. This organ is partially responsible for white blood cell formation (red blood cells in childhood), and it is lined with resident macrophages that help it filter the blood, remove and recycle old and dead red blood cells, and send this all up to the liver in the portal blood. The liver, in fact, does most of the recycling of splenic hemoglobin derivatives. The spleen initiates much resistance and immunologic response, being made mostly of lymph pulp, and it stores and concentrates a large number of red blood cells. These can be injected into the bloodstream for immediate use under flight or fight stress, since the spleen is covered with capsule and vascular muscles that constrict in the presence of adrenalin or sympathetic adrenergic nerve stimulus.

SPLENOMEGALY For practical purposes a term interchangeable with splenitis, since neither will have the usual symptoms associated with inflammation. Splenomegaly is often associated with viral hepatitis, mononucleosis, typhoid

fever and abnormally high levels of red blood cells or platelets.

STAMENS The male, pollen-producing organs in flowering plants. A staminate flower is only male, with pistillate (female) flowers on the same or different plants. Most flowering plants have both parts on the same flower, although they may mature at different times to avoid self-pollination.

STAPH This is short for Staphylococcus, a genus of micrococci bacteria with many members that can cause disease. They are gram-positive, nonmotile bacteria that are aerobic-(unless they need to be anaerobic). Staph of various types are responsible for boils and carbuncles; they may be involved in impetigo, toxic shock syndrome, endocarditis, osteomyelitis, and urinary tract infections, as well as some food poisoning. They stay around hospitals and veterinary clinics waiting to get you. They are also a normal part of the mouth, throat, and skin flora in a third to a half of all of us, causing no problems, but just waiting. Staph has always been with us. Some even eat our antibiotics for breakfast.

STASIS Static, atonic, unable to resolve or initiate change, resulting in lymphatic and venous stasis, congestion or stagnation...such as an intestinal blockage.

STEATORRHEA The presence of undigested fat in the feces. This may be the result of failing to inoculate fatty foods with enough surfactant (biliary soap) to digest them, the failure of the lower small intestine to absorb them, or simply too much fat for even normal digestion to handle. Sometimes this can indicate liver, gall bladder or lipid metabolism diseases. Usually the causes are subclinical and treatable with less invasive approaches...like herbs.

STEROID HORMONE These are fats similar to, and usually synthesized from, cholesterol, starting with Acetyl-CoA, moving through squalene, past lanosterol, into cholesterol, and, in the gonads and adrenal cortex, back to a number of steroid hormones. Nearly all of the classic hormones are proteins or smaller peptides; they don't get inside a cell (the membrane keeps them out); instead, they bind to, and initiate, cell changes from the outside. The exceptions are the thyroxines (from the thyroid) and the steroid hormones. They move into the cell, bind with receptors, and initiate changes in the way a cell regenerates itself or synthesizes new compounds. Because the steroid hormones stimulate cell growth, either by changing the internal structure or increasing the rate of proliferation, they are often called anabolic steroids. Estrogen, an ovarian steroid, when secreted into the bloodstream, will be bound within a short time by internal receptors inside those cells that need estrogen for their growth; the unused portion is partially broken down, mostly in the liver, and partially stored in a less active form by adipose tissue. Since luteinizing hormone from the pituitary is surged in pulses an hour apart, the estrogen is also surged from the reacting ovaries, and by the time more estrogen is available, the binding cells need more; their program of synthesis has run out and needs to be started again. Of course, most steroid hormone reactions are less measured than this, but you get the idea.

STEROIDS, PLANT The previous subject is obviously an endless one, but as this

is the glossary of an herbal nature, let me assure you, virtually no plants have a direct steroid hormone-mimicking effect. There are a few notable exceptions with limited application, like Cimicifuga and Licorice. Plant steroids are usually called phytosterols, and, when they have any hormonal effect at all, it is usually to interfere with human hormone functions. Beta sitosterol, found in lots of food, interferes with the ability to absorb cholesterol from the diet. Corn oil and legumes are two well-endowed sources that can help lower cholesterol absorption. This is of only limited value, however, since cholesterol is readily manufactured in the body, and elevated cholesterol in the blood is often the result of internal hormone and neurologic stimulus, not the diet. Cannabis can act to interfere with androgenic hormones, and Taraxacum phytosterols can both block the synthesis of some new cholesterol by the liver and increase the excretion of cholesterol as bile acids; but other than that, plants offer little direct hormonal implication.

The first method discovered for synthesizing pharmaceutical hormones used a saponin, diosgenin, and a five-step chemical degradation, to get to progesterone, and another, using stigmasterol and bacterial culturing, to get to cortisol. These were chemical procedures that have nothing to do with human synthesis of such hormones, and the plants used for the starting materials - Mexican Wild Yam, Agave, and Soy were nothing more than commercially feasible sources of compounds widely distributed in the plant kingdom. A clever biochemist could obtain testosterone from potato sterols, but no one would be likely to make the leap of faith that eating potatoes makes you manly (or less womanly), and there is no reason to presume that Wild Yam (Dioscorea) has any progesterone effects in humans. First, the method of synthesis from diosgenin to progesterone has nothing to do with human synthesis of the corpus luteum hormone; second, oral progesterone has virtually no effect since it is rapidly digested; and third, orally active synthetic progestones such as norethindrone are test-tube born, and never saw a Wild Yam.

The only "precursor" the ovaries, testes and adrenal cortices EVER need (and the ONLY one that they can use if synthesizing from scratch) is something almost NONE of us ever run out of...Low Density Cholesterol. Unless you are grimly fasting, anorectic, alcoholic, seriously ill or training for a triathlon, you only need blood to make steroid hormones from. If hormones are off, it isn't from any lack of building materials...and any product claiming to supply "precursors" better contain lard or butter (they don't)...or they are profoundly mistaken, or worse.

The recent gaggle of "Wild Yam" creams actually do contain some Wild Yam. (*Dioscorea villosa*, NOT even the old plant source of diosgenin, *D. mexicana*... if you are going to make these mistakes, at least get the PLANT right) This is a useful and once widely used antispasmodic herb...I have had great success using it for my three separate bouts with kidney stones...until I learned to drink more water and alkalizing teas and NEVER stay in a hot tub for three hours. What these various Wild Yam creams DO contain, is Natural Progesterone. Although this is inactive orally (oral progesterone is really a synthetic relative of testosterone), it IS active when injected...or, to a lesser degree, when applied topically. This is pharmaceutical progesterone, synthesized from stigmasterol, an inexpensive (soy-bean oil) starting substance, and, although it is identical to ovarian progesterone, it is a completely manufactured

pharmaceutical. Taking advantage of an FDA loophole (to them this is only a cosmetic use...they have the misguided belief that it is not bioactive topically), coupled with some rather convincing (if irregular) studies showing the anti-osteoporotic value of topical progesterone for SOME women, a dozen or so manufacturers are marketing synthetic Natural Progesterone for topical use, yet inferring that Wild Yam is what's doing good.

I am not taking issue with the use of topical progesterone. It takes advantage of the natural slow release into the bloodstream of ANY steroid hormones that have been absorbed into subcutaneous adipose tissue. It enters the blood from general circulation the same way normal extra-ovarian estradiol is released, and this is philosophically (and physiologically) preferable to oral steroids, cagily constructed to blast on through the liver before it can break them down. This causes the liver to react FIRST to the hormones, instead of, if the source is general circulation, LAST. My objection is both moral and herbal: the user often believes the hormonal effects are "natural", and that the Wild Yam somehow supplies "precursors" that her body can use if needed, rejected if not. This implies self-empowerment and the honoring of a woman's metabolic choice... something often lacking in medicine. This is a cheat. The creams supply a steady source of a pharmaceutical hormone (no precursor here) normally only available by prescription, but are SOLD as if the benefits come from the Wild Yam extract, seemingly formulated with the intent of having Wild Yam the most abundant substance so it can be listed first in the list of constituents. I have even seen the pharmaceutical Natural Progesterone labeled as "Wild Yam Progesterone- " or "Wild Yam Estrogen precursor" or, with utter fraud, "Wild Yam Hormone". To my knowledge, the use of Mexican Yam for its saponins ceased to be important by the early 1960's, with other processes for synthesizing steroids proving to be cheaper and more reliable. I have been unable to find ANY manufacturer of progesterone that has used the old Marker Degradation Method and/or diosgenin (from whatever Dioscorea) within the last twenty years.

Just think of it as a low-tech, noninvasive and non-prescription source of progesterone, applied topically and having a slow release of moderate amounts of the hormone. Read some of the reputable monographs on its use, make your choice based solely on the presence of the synthetic hormone, and use it or don't. It has helped some women indefinitely, for others it helped various symptoms for a month or two and then stopped working, for still other women I have talked to it caused unpleasant symptoms until they ceased its use. Since marketing a product means selling as much as possible and (understandably) presenting only the product's positive aspects, it would be better to try and find the parameters of "use" or "don't use" from articles, monographs, and best of all, other women who have used it. Then ask them again in a month or two and see if their personal evaluation has changed. If you have some bad uterine cramps, however, feel free to try some Wild Yam itself...it often helps. Unless there is organic disease, hormones are off is because the whole body is making the wrong choices in the hormones it does or doesn't make. It's a constitutional or metabolic or dietary or life-stress problem, not something akin to a lack of essential amino acids or essential fatty acids that will clear up if only you supply some mythic plant-derived "precursor". End of tirade.

STHENIC Strong of body or function, even to an excess.

STIPULES A little leafy appendage formed at the juncture of a leaf and the main stem.

STOLONIFEROUS A plant that tends to form lateral roots, sometimes green and potentially stemming, sometimes blanched and tending to root from the nodes...or both.

STRANGURY Painful, sporadic and drop-by-drop urination, caused by the presence of kidney stones, chronic inflammation such as interstitial cystitis, or urethral scar tissue. This is not a specific disease, but a symptom, like nausea or a sore joint.

STREP A genus of gram-staining chain-forming cocci bacteria. Some are responsible for common and potentially serious human infections, ranging from scarlet fever and strep throat to bacterial endocarditis and pus pockets. Most of the disease-potential streps are also a normal part of the skin, mouth and upper respiratory flora.

SUBACUTE Having characteristics of both acute and chronic. This is the state in a disease when most of the aches and pains have subsided and you are likely to overdo things and not completely recover. The chest cold that lingers for weeks as a stubborn cough is a subacute condition, as is the tendonitis that lingers because you won't stop playing tennis long enough to completely heal.

SUBCLINICAL This is our turf, the period of time when a potential disease is still potential, and a functional imbalance or tendency has not caused any organic disruption. Those years of poor digestion, heartburn, and the systematic suppression of upper intestinal function by adrenalin stress have not become overt gastritis, ulcers, or IBS. You have symptoms of distress (subclinical) but no real, ripened clinical disease. Some medical authorities (usually administrative docs from the spokesman and quack-patrol ranks of industry, academia or agency) actually insist that there is no such thing as a subclinical condition...you are either SICK or NOT SICK and presumably well. Sort of like the mechanic saying that the car works or doesn't work...four quarts low on oil, but it WORKS. Only when it is five quarts low and has a seized-up engine is there a need for a mechanic.

SUBCUTANEOUS Below the surface of the skin, but probably above the following term...well anyway, definitely lower than the TOP of the skin

SUBDERMAL Below the surface of the skin, and probably below the previous term, which should really be suprasubdermal. Well, anyway, definitely higher up than the muscles.

SUCCUS ENTERICUS Intestinal Juice. These are enzyme-rich secretions produced by the lining of the upper small intestines. Apparently the enzymes produced compensate for any pancreatic enzymes that are deficient for that particular meal.

SYMPATHETIC A division of the autonomic or involuntary nervous system that works in general opposition to the parasympathetic division (q.v.). Many of the sympathetic functions are local, specific, and involve secretion of acetylcholine, like any other of your normal nerves...stimulating or suppressing a specific muscle, gland, or whatever. A certain number of these nerves, however, unlike any others in the body, secrete epinephrine (adrenalin) and norepinephrine (noradrenalin). These are called adrenergic. Since the adrenal medulla also secretes the same substances into the bloodstream as hormones, all the muscles or glands that are affected by the adrenergic sympathetic nerves also react in toto to the epinephrine secreted into the blood. This forms the basis for a potentially lifesaving emergency fight or flight response and is meant for short, drastic activities. A chronic excess of the adrenergic response, however, is a major cause of stress-and a major contributor to many types of chronic disease. The more you use a particular nerve pathway or induce a particular group of functions, the more blood, fuel storage, and mitochondria are produced to strengthen that group of actions. Using adrenergic energy excessively gives literal dominance to those things that are stimulated or suppressed, and the effects of adrenalin stress linger in the body after the adrenalin is long gone. Since one of the first subjective symptoms of subclinical malnutrition, metabolic imbalances, and environmental pollution is irritability of the central nervous system, hypersympathetic function acts as an intermediate between poor diet, pollution, and disease.

SYMPATHOMIMETIC A substance that mimics at least part of adrenalin or catecholamine responses. The term is a little biased towards the minority of sympathetic functions that are adrenergic. A better name might be adrenomimetic, epinephromimetic, catecholamimetic...or speedomimetic. Examples: coffee, ephedrine, amphetamines.

SYSTOLIC The measurement of arterial blood pressure at the point of heart contraction (greatest pressure); the higher of the two BP numbers, with diastolic (q.v.) being the lower.

TACHYCARDIA Abnormally fast heartbeat.

TANNINS A group of simple and complex phenol, polyphenol, and flavonoid compounds, bound with starches, and often so amorphous that they are classified as tannins simply because at some point in degradation they are astringent and contain variations on gallic acid. Produced by plants, tannins are generally protective substances found in the outer and inner tissues, often breaking down in time to phlebotannins and, finally, humin. All of the tannins are relatively resistant to digestion or fermentation, and either decrease the ability of animals to easily consume the living plant, or, as in deciduous trees, cause shed parts of the plant to decay so slowly that there is little likelihood of infection to the living tree from rotting dead material around its base. All tannins act as astringents, shrinking tissues and contracting structural proteins in the skin and mucosa. Tannin-containing plants can vary a great deal in their physiological effects and should be approached

individually.

TENESMUS The painful expelling cramps of the tubular smooth muscles and ducts. Normal peristalsis of various types produce no pain or sensation (except for the dreaded borborygmies); only the energetic expulsion contraction can induce referred pain. Examples: Nausea, gas pain, uterine cramps, gall bladder pain.

TERNATE Divided into threes.

TESTOSTERONE The principal reproductive androgen of males, largely responsible for sexual maturation, some libido, and a range of metabolic reactions that, while supplying short-term strengths, creates a long-term fragility and brittleness if not in balance with less garish but more sustainable metabolic buffers. It is secreted by the Leydig cells of the testes, as well as smaller amounts in the adrenal cortices of both sexes. It is made under the direction of LH from the pituitary, and, if oversecreted, can be inhibited by sperm-producing cells, diminished pituitary support, and a rise in blood levels of its waste-product, stored in adipose tissues...estradiol

TERPENES Any of a group of hydrocarbons that are made up of building blocks of isoprene (C₅H₈) or similar five-carbon units, with a monoterpene made up of two units (example: limonene and pinene), a sesquiterpene made up of three units (example: humulene, a Hops aromatic), and a diterpene made up of four units. The terpenes, in our context, are the primary constituents in the aromatic fractions of our scented plants.

T4 Also termed tetraiodothyronine, the nickname is thyroxine. Secreted by the thyroid along with T3(triiodothyronine...confusingly shortened to thyroxine), this thyroxine is mostly conjugated in the blood by TBG (thyroxine-binding globulin), whereas the more active T3 tends to float free. T4 is broken down to T3 and forms a stable feeder reserve, preventing rapid shifts in its more labile relative

THOMSONIAN MEDICINE That school of medical philosophy and therapy founded by the American messianic nature therapist Samuel Thomson (b. 1769). Thomson's great axiom was, "Heat is life, and cold is death." He lived in New England, which explains some of this. He and the later Thomsonians made great use of vomiting, sweating, and purging to achieve these ends...crude by present standards, but saner than the standard practice medicine of the times. The Thomsonians split vehemently from the early Eclectics before the Civil War; the latter, larger group preferred to train true professional physicians as M.D.s. The first group disavowed any overt medical training ("physicking") although the small medical sect of Physio-Medicalists, with several medical schools of their own and some east-coast physician converts, used Thomsonian precepts within an otherwise orthodox armamentarium. Their training, however, became less rigorous and more charismatic in time, and, unlike the Eclectic Medical Schools that, with one exception, chose to change to an A.M.A.-supported curriculum to stay in business (thereby selling their souls), the Physio-Medicalist schools were too radical and erratic, and faded into history as their graduates were left, finally, with only Michigan allowing them to

practice. Many of the practices of Jethro Kloss (Back to Eden) and John Christopher are neo-Thomsonian, and much of what still goes on in the old guard of alternative therapy is what Susun Weed calls the "Heroic Tradition" (no compliment intended). Rule of thumb: If you see Lobelia and Capsicum together in a formula, along with recommendations for colonics, it's probably something Sam Thomson did first.

THORACIC DUCT This is the body's main lymph collecting vessel. It starts in the little collecting bladder in the abdomen (the cisterna chyli), moves up the center of the body in front of the spinal chord, alongside the esophagus and aorta to the neck, where it drains into the left subclavian vein. It drains the lymph from the entire body, except the head, right thorax and arm, which collects lymph separately and drains into the right subclavian vein. Lacking the ability to contract and expand, the thoracic duct relies on its valves and the kinetic energy of breathing and nearby arterial pumping to drain lymph upwards.

THROMBOSIS The formation of a blood clot within the circulatory system. It may form in the roughened vein wall in a varicosity, form around arteriosclerotic plaques, or result from trauma and surgery. The tendency rises with thick blood, age, obesity and in those once physically active and now sedentary.

THYROGLOBULIN The iodine-containing protein that is stored in the thyroid gland. It is converted into circulating thyroxines when the thyroid is stimulated by TSH (Thyroid Stimulating Hormone) from the pituitary (in turn stimulated by the hypothalamus, where thyroxine levels are actually monitored). See: T4

THYROTOXICOSIS A pathologic thyroid hyperfunction. It is sometimes referred to as exophthalmic goiter. An overt disease, sometimes life-threatening, it is very different from the moderately elevated basal metabolism some constitutional types manifest under stress.

TINCTURE An extract, usually herbal, and usually made with a mixture of water and alcohol, although there were official tinctures that also used acetic acid, chloroform and glycerin. Only a few tinctures are still official in the U.S., including Tincture of Arnica and Compound Tincture of Benzoin. In herb commerce, the term should really only be appropriate when the extract at least RESEMBLES the formerly official methods for making plant extracts. The strength should be listed, usually as a ratio (1:5 being the most common) or a percentage (20%...the same strength as 1:5). Green Tinctures of fresh plants, are usually appropriate when defined as 1:2 or 50%. The alcohol percentage should be given, and, if below 45%, is made incorrectly. Dry plant tinctures, the norm, are official when percolated (usually), although maceration was and is allowed as an alternative method. The term Tincture is still pharmaceutical in implication, so the FDA periodically objects to its use in the herb industry. Nonetheless, if it is IMPLIED, it should reasonably resemble the former pharmaceutical media. Glycerin, although a very inferior solvent, is used as a substitute for moral reasons by some manufacturers, and others try to

make do with low percentages, like 25%...others use Vinegar for making their "tinctures". There are many alternative methods for preparing herbs in concentrated forms, in ours and other cultures (the Unani honeys, the pills used in Ayurveda and TCM), but trying to emulate a tincture with other media results in inferior products...and a moral waste of Plant Energy. Methods and recommended strengths are outlined in my pamphlet HERBAL MATERIA MEDICA See: FLUIDEXTRACT, MENSTRUUM

TINEAS A dermatomycosis; any number of skin fungus infections, such as ringworm, athlete's foot, and so forth. It is generally slow to acquire and hard to get rid of.

TINEA VERSICOLOR A chronic skin fungus, often without symptoms...except the light skin splotches of infected surfaces that don't tan. It seems easily transmitted from one part of the body to another or one person to another. It is also called Pityriasis Versicolor.

TMJ The temporomandibular joint. These are the two joints that connect the jawbone to the skull under the zygomatic arch. TMJ syndrome involves pain in the joint, clicking in the joint from degradation of the sinovial fluids, and sharp, shooting pain when chewing. The two main causes are malocclusion (improper tooth alignment) and tension. Some people grind their teeth, others clench their jaws, perhaps from the inability to say what is felt. Chiropractors and osteopaths love helping these folks, some even specializing in TMJ work.

TOMENLOSE Having woolly hairs.

TONIC A substance taken to strengthen and prevent disease, especially chronic disease. Formerly, tonics were widely available both as over-the-counter and prescription formulas. Unfortunately, the increased sophistication of medicine has led to the abandonment of preventative or strengthening approaches that utilize the innate abilities of an organism (like ourselves) to right itself with a little prodding in the correct direction. The last several decades have seen increased focus on disease-at-a-time medicine, with more and more patients receiving treatment at acute care facilities like hospitals and clinics, circumstances that delegate against preventative or tonic approaches. Tonics tend to stimulate deficient functions, therefore are best suited for functional disorders, not organic ones.

TRACHEA The cartilage tube that brings air from the larynx to the two bronchi that enter the lungs. It is lined with mucus membranes and ciliated epithelia.

TRIFOLIATE Having three leaflets in a compound leaf, like a clover.

TRIGEMINAL NEURALGIA Facial neuralgia or tic douloureux. This is pain of the gasserian ganglion or one or more branches of the trigeminal nerves. It is felt as pain along the side or top of the head, the scalp and around the eyes...a skin headache...and sometimes accompanied by facial muscle cramps. It is usually initiated by trigger points, with blood sugar irregularities and

substance sensitivities often lowering their threshold of irritation.

TRIGONE This is the triangular basement muscle of the urinary bladder. It differs in structure and nerves from the top of the bladder, the detrusor muscle, which expands as the bladder fills, and contracts during urination under parasympathetic nerve stimulus. The trigone does not expand, is under sympathetic nerve stimulus, and supplies the rigidity and sphincter support for the urethra in front and the ureters in back.

TRIMESTER The three three-month sections of a pregnancy.

TRIPINNATE Thrice pinnately compound leaf.

TUBER A short, fleshy, underground part of a stem or root. Example: potato, Paeonia.

TURBINATES The three nasal conchae, bone ridges that help spiral and flutter inhaled air, increasing the efficiency of heating, moistening and cleansing

UMBEL A flowering head where the pedicels (individual flower stems) all spring from one point, usually the end of the peduncle. Compound umbels, found in some Umbelliferae, have umbels branching from peduncle umbels that themselves are branching from the main stem.

UNIPOLAR Having only one polarity; primarily in reference to individuals who only manifest a manic or depressive phase in personality or thyroid bipolarity.

URATE The salts of uric acid, found in the urine, some kidney stones, and (unfortunately) in gouty joints.

URETERALGIA Spasm or pain of the ureters, the ducts that milk urine from the kidneys to the bladder.

URETHRITIS Any inflammation of the urethra, whether from external irritation, overly acidic or scalding urine, passage of stones, or an active infection of the canal. (See CYSTITIS.)

URIC ACID The final end product of certain native or dietary proteins, especially the nucleoproteins found in the nucleus of cells. Unlike the much smaller nitrogenous waste product urea, which is mostly recycled to form many amino acids, uric acid is an unrecycleable metabolite. It is a bent nail that won't restraighten, and it must be excreted: nucleoprotein to purine to uric acid to the outside in the urine or the sweat. (See GOUT, PURINES.)

URINARY TRACT (UT) The kidneys and the lower urinary tract, which includes the ureters, bladder, and urethra.

U.S.P.-N.F United States Pharmacopoeia and National Formulary. The U.S.P. was first published in 1820 and ever ten years thereafter until the Second World War, after which it has been revised every five years. It has always been meant to define the physical, chemical, and pharmaceutical characteristics of the

most accepted and widely used drugs of the time, and to set the standards for purity. The N.F. was first published in 1888, and, up until 1980, in the same year as the United States Pharmacopoeia. Since 1980, both have been issued in the same volume. The National Formulary was originally intended as a list of the official recipes for pharmaceutical formulas; characteristics of those drugs or plants used in the formulas or that were still recognized as secondary drugs; and the substances needed for the manufacturing of drugs but that were not active, like gelatin or pill binders. With the decreased use of tonics and less invasive medications after the Second World War, the National Formulary became primarily a text defining the inactive substances used in drug manufacturing; the United States Pharmacopoeia now lists the active substances; and all the rich heritage of tonics, elixirs, bitters, syrups, and alternate preparations has disappeared from the short memory span of Standard Practice Medicine. If an herbalist wanted to practice as a pharmaceutical antiquarian, the U.S.P.s and N.F.s of the years between 1890 and 1950 would supply virtually every needed formula and herbal preparation that a Western herbalist would ever need-it's all there (-and all forgotten). To a great degree, the contemporary herbal renaissance is reinventing the wheel.

UTI Urinary Tract Infection.

VAGUS NERVE Also called the pneumogastric nerve, this is the tenth cranial nerve, with many fibers leading to parasympathetic ganglia in internal organs, and can be considered the presynapse starter for the upper parts of the parasympathetic functions.

VARICOSITIES Enlarged veins or an engorged complex of smaller vessels.

VASCULAR Pertaining to blood vessels

VASCULITIS Inflammation of one or more blood vessels

VASOCHOLINERGIC An agent that stimulates blood flow to the viscera, and more closely mimicking the balance of circulation induced by parasympathetic states. This is one way to oppose excessive adrenergic circulatory states.

VASOCONSTRICTOR A nerve, agent or substance that narrows blood vessels.

VASODILATION, PERIPHERAL The increase of blood into the skin, resulting from the relaxation of the small arterioles that lead into the capillary beds at the edges of the body. This is a gentle way to lessen early high blood pressure, decreasing the difficulty of pushing columns of arterial blood through miles of capillaries.

VASODILATOR Nerves, hormones or substances (like herbs) that induce the relaxation of blood vessels.

VASONEUROSIS Spasms and cramps of blood vessels that are caused by neurologic factors. Also called angioneurosis

VENEREAL WARTS Caused by human papillomavirus (HPV) and also known as

condylomata acuminata, anal warts, and genital warts. It is nearly always transmitted from person to person by sexual contact, can increase the risk for women of cervical cancer, and occurs in near epidemic proportions in sexually active teenage women.

VENOSITY An area where there is a buildup of excess venous blood, with enlarged veins and tissue congestion

VENOUS Pertaining to the veins, or more broadly to include both venous AND lymphatic circulation.

VENOUS STASIS Having congested venous blood and lymph. Usually a larger condition effecting tissue or organ function, as opposed to the more vascular implications of venosities and varicosities.

VESICAL IRRITATION In my context, irritation of the bladder and urethra.

VINCENTS INFECTION Trench Mouth or NUGS. It is usually a symptom of extreme physical stress, nutritional deficiencies and heavy metal poisoning (but not of the type accrued from excess exposure to Metallica or Scorpion)

VLDL Very Low Density Lipids. These are blood transport fats, consisting mainly of triglycerides (made from sugar by the liver) and loosely covered in specialized proteins and phospholipids so they don't dissolve in the blood and the target tissues can recognize them. Chronic elevation occurs when the tissues cannot absorb them or the liver is overwhelmed by carbohydrates...such as in alcoholism, some hepatitis, and diabetes.

WBC White Blood Cells, including those of innate immunity, including basophils, neutrophils, eosinophils, monocytes, macrophages (and others) and those of acquired immunity, the various types of lymphocytes. Also called leukocytes.

WHEAL An inflammatory response to mild skin irritation, with a well-defined, raised redness, lasting for perhaps an hour and then disappearing. The cause is usually atopic allergies in an IgE-excess person, although mild, subclinical adrenocortical deficiency can be another factor.

XEROPHYTE A plant that is adapted to, and needs, dry desert climate or is particularly hardy in periodic droughts.

Copyright 1995 by Michael Moore.

[Michael Moore](#)

SOUTHWEST SCHOOL OF BOTANICAL MEDICINE

122 Tulane SE, Albuquerque, NM 87106

(505) 255-9215

FAX (505) 268-0196

Internet: hrbmoore@rt66.com
CompuServe: 73744,1621
AOL: HrbMichael

Michael Moore, Director
Donna Chesner, Administrator

This page hosted by [Geocities](#) Get your own [Free Home Page](#)

Agnus Castus

Other Common Names: Agno Casto, Agnocasto, Bish Barmagh Aghaji, Chaste Tree, Daribrahim, Gatilier, Hayit, Hemp Tree, Kaff Maryam, Keuschlamm, Lilac Chastetree, Lygos, Monk'S Pepper, Monk's Pepper Tree, Monks Pepper, Panjangusht, Pepper, Monks, Poivre De Moine, Ranukabija, Sauzgatillo, Seiyo-Ninzin-Boku, Shajerat Ebrahim, Vitex, Vitex agnus-castus

Range: Europe; France; Germany; India; Iraq; Italy; Kurdistan; Mediterranean; Sanscrit; Spain; Turkey; USA

Habitat: Damp places by streams and on the littoral

Agnus castus has been used for thousands of years for its beneficial affect on the female hormonal system. Modern research has confirmed this use, the seeds being used to restore balanced functioning to the female reproductive system.

The seeds and fruits are anaphrodisiac, aphrodisiac, galactogogue, ophthalmic, sedative, stomachic, women's complaints. Prolonged usage restores corpus luteum function.

The berries of this plant have a range of medicinal actions but possibly the most important is its ability to rectify hormonal imbalances caused by an excess of oestrogen and an insufficiency of progesterone. It acts upon the pituitary gland, reducing the production of certain hormones and increasing the production of others, shifting the balance in favour of the gestagens. Thus it has a wide application of uses in malfunctions of the feminine reproductive system and has been used with great effect in restoring absent menstruation, regulating heavy periods, restoring fertility when this is caused by hormonal imbalance, relieving pre-menstrual tension and easing the change of the menopause. Some caution is advised since excessive doses can cause a nervous disorder known as formication, which manifests as a sensation of insects crawling over the skin.

The berries are considered to be an aphrodisiac, though other reports say that they are anaphrodisiac. The reason for this apparent disagreement is that the berries have a regulating effect on the body and so are likely to increase sexual activity in those who are not very active in this area whilst reducing it in those who are very active.

The fresh berries are pounded to a pulp and used in the form of a tincture for the relief of paralysis, pains in the limbs, weakness etc.

Alfalfa - *Medicago sativa*

Other Common Names: Jatt, Kaba Yonca, Lucerne, Mielga, Mu Su, Sai Pi Li Ka, Yonja, *Medicago sativa*

Range: Europe - Mediterranean; China; Iraq; Kurdistan; Turkey; USA

Habitat: Waste ground, avoiding acid soils.

Composition: Leaves (Fresh weight)- Water: 82.7 Calories: 52 Protein: 6 Fat: 0.4 Carbohydrate: 9.5 Fiber: 3.1 Ash: 1.4 Calcium: 12 Phosphorus: 51 Iron: 5.4 Vitamin A: 3410 Thiamine: 0.13 Riboflavin: 0.14 Niacin: 0.5 Vitamin C: 162

It may possibly have been a native of Europe; it is of great antiquity, having been imported into Greece from the East after Darius had discovered it in Medea, hence its name. It is referred to by Roman writers, and is cultivated in Persia and Peru, where it is mown all the year round. It first came into notice in 1757 in Britain.

Alfalfa leaves, either fresh or dried, have traditionally been used as a nutritive tonic to stimulate the appetite and promote weight gain. The plant has an oestrogenic action and could prove useful in treating problems related to menstruation and the menopause. Some caution is advised in the use of this plant, however. It should not be prescribed to people with auto-immune diseases such as rheumatoid arthritis.

The plant is antiscorbutic, aperient, diuretic, ecboic, haemostatic, nutritive, stimulant and tonic. The expressed juice is emetic and is also anodyne in the treatment of gravel. The plant is taken internally for debility in convalescence or anaemia, hemorrhage, menopausal complaints, premenstrual tension, fibroids etc. A poultice of the heated leaves has been applied to the ear in the treatment of earache. The leaves can be used fresh or dried. The leaves are rich in vitamin K which is used medicinally to encourage the clotting of blood. This is valuable in the treatment of jaundice. The plant is grown commercially as a source of chlorophyll and carotene, both of which have proven health benefits. The leaves also contain the anti-oxidant tricin. The root is febrifuge and is also prescribed in cases of highly coloured urine. Extracts of the plant are antibacterial.

Leaves and young shoots - raw or cooked. The leaves can also be dried for later use. Very rich in vitamins, especially A, B and C, they are also a good source of protein. The leaves are a rich source of vitamin K. A very nutritious food in moderation, though it can trigger attacks in patients with systemic lupus erythematosus and large quantities can affect liver function and cause photosensitization. A nutritional analysis is available.

The seed is commonly used as a sprouted seed which is added to salads, used in sandwiches etc or cooked in soups. The seed is soaked in warm water for 12 hours, then kept moist in a container in a warm place to sprout. It is ready in about 4 - 6 days. The seeds can also be ground into a powder and used as a mush, or mixed with cereal flours for making a nutritionally improved bread etc.

An appetite-stimulating tea is made from the leaves it has a flavor somewhat reminiscent of boiled socks and is slightly laxative.

The plant can be grown as a low dividing hedge in the vegetable garden.

Known Hazards: The plant contains saponin-like substances. Eating large quantities of the leaves may cause the breakdown of red blood cells. However, although they are potentially harmful, saponins are poorly absorbed by the human body and so most pass through without harm. Saponins are quite bitter and can be found in many common foods such as some beans. Thorough cooking, and perhaps changing the cooking water once, will normally remove most of them from the food. Saponins are much more toxic to some creatures, such as fish, and hunting tribes have traditionally put large quantities of them in streams, lakes etc in order to stupefy or kill the fish. Alfalfa sprouts (and especially the seeds) contain canavanine. Recent reports suggest that ingestion of this substance can cause the recurrence of systemic lupus erythematosus (an ulcerous disease of the skin) in patients where the disease had become dormant.

Aloe Vera - *Aloe barbadensis*, *Aloe vulgaris*

Other Common Names: Aloe, Aloes Des Jardins, Alwat, Barbados Aloe, Curacoa Aloe, Djadam Arab, Hsiang Tan, Jadam, L'Alois, Laloï, Lidah Buaya, Lu Hui, Medicinal Aloe, Musambra Aloe, No Hui, Sabila, Sarisabir, Zabida, Zabila, *Aloe barbadensis*, *Aloe vulgaris*

Habitat: Requires a well-drained soil and a very sunny position. Plants are tolerant of poor soils. If trying to grow this plant outdoors then it will need the sunniest and warmest area in the garden plus some protection from winter cold (a glass frame perhaps). This species is not very cold-hardy outdoors, it is best grown in a pot placed outdoors in the summer and put in a greenhouse for the winter. It grows very well in a sunny windowsill.

Aloe vera is a fairly well known herbal preparation that is often available in proprietary herbal preparations. It has two distinct types of medicinal use. The clear gel contained within the leaf makes an excellent treatment for wounds, burns and other skin disorders, placing a protective coat over the affected area, speeding up the rate of healing and reducing the risk of infection. This action is in part due to the presence of aloectin B, which stimulates the immune system. To obtain this gel, the leaves can be cut in half along their length and the inner pulp rubbed over the affected area of skin. This has an immediate soothing effect on all sorts of burns and other skin problems.

The second use comes from the yellow sap at the base of the leaf. The leaves are cut transversally at their base and the liquid that exudes from this cut is dried. It is called bitter aloes and contains anthraquinones which are a useful digestive stimulant and a strong laxative. When plants are grown in pots the anthraquinone content is greatly reduced.

The plant is emmenagogue, emollient, laxative, purgative, stimulant, stomachic, tonic, vermifuge and vulnerary. Extracts of the plant have antibacterial activity.

Apart from its external use on the skin, aloe vera (usually the bitter aloes) is also taken internally in the treatment of chronic constipation, poor appetite, digestive problems etc. It should not be given to pregnant women or people with hemorrhoids or irritable bowel syndrome. The plant is strongly purgative so great care should be taken over the dosage.

The plant is used to test if there is blood in the faeces.

This plant has a folk history of treatment in cases of cancer.

Dong Quai - *Angelica sinensis*

Other Common Names: Angelica, Chinese Angelica, Dan Gui, Dang Gui, Dong Quai, *Angelica sinensis*

Habitat: High ground in cool and damp areas of western and northwestern China.

Dang Gui is a well-known Chinese herb that has been used in the treatment of female ailments for thousands of years. Its reputation is perhaps second only to ginseng (*Panax ginseng*) and it is particularly noted for its 'blood tonic' effects on women. The root has a sweet pungent aroma that is very distinctive and it is often used in cooking, which is the best way to take it as a blood tonic. One report says that the root contains vitamin B12 and can be used in the treatment of pernicious anemia.

The root is alterative, analgesic, anticholesterolemic, anti-inflammatory, antispasmodic, deobstruent, emmenagogue, emollient, hepatic, laxative, sedative and peripheral vasodilator. It is commonly used in the treatment of a wide range of women's complaints where it regulates the menstrual cycle and relieves period pain and also to ensure a healthy pregnancy and easy delivery. It is an ideal tonic for women with heavy menstruation who risk becoming anaemic. The water-soluble and non-volatile elements of the root increase the contraction of the uterus whilst the volatile elements can relax the muscle of the uterus. Its use prevents the decrease of liver glycogen and protects the liver. It has an antibacterial action, inhibiting the growth of various bacteria including *Bacillus dysenteriae*, *Bacillus typhi*, *B. comma*, *B. cholerae* and haemolytic streptococci.

The root is an ingredient of 'Four Things Soup', the most widely used woman's tonic in China. The other species used are *Rehmannia glutinosa*, *Ligusticum wallichii* and *Paeonia lactiflora*.

The root is harvested in the autumn and dried for later use.

Known Hazards: All members of this genus contain furocoumarins, which increase skin sensitivity to sunlight and may cause dermatitis.

Artichoke - *Cynara scolymus*

Other Common Names: Alcachofa, Alcachofera, Artichaut, Globe Artichoke, Tyosen-Azami, *Cynara scolymus*

Range: Not known in the wild, it probably arose from a form of *C. cardunculus* on the sandy shores of Northern Africa.

Habitat: Grown in a deep, moist, rich soil. Not known in the wild.

It is one of the world's oldest cultivated vegetables, grown by the Greeks and the Romans in the heyday of their power.

The globe artichoke has become important as a medicinal herb in recent years following the discovery of cynarin. This bitter-tasting compound, which is found in the leaves, improves liver and gall bladder function, stimulates the secretion of digestive juices, especially bile, and lowers blood cholesterol levels.

The leaves are anticholesterolemic, antirheumatic, cholagogue, digestive, diuretic, hypoglycaemic and lithontriptic. They are used internally in the treatment of chronic liver and gall bladder diseases, jaundice, hepatitis, arteriosclerosis and the early stages of late-onset diabetes. The leaves are best harvested just before the plant flowers, and can be used fresh or dried.

Flower buds - raw or cooked. Used before the flowers open. The flavor is mild and pleasant. Globe artichokes are considered to be a gourmet food but they are very fiddly to eat. The buds are harvested just before the flowers open, they are then usually boiled before being eaten. Only the base of each bract is eaten, plus the 'heart' or base that the petals grow from. Small, or baby artichokes, that are produced on lateral stems can be pickled or used in soups and stews. Plants yield about 5 to 6 main heads per year from their second year onwards.

Flowering stems - peeled and eaten raw or cooked. A sweet nutty flavor.

The dried flowers are a rennet substitute, used for curdling plant milks.

Ashwagandha - *Withania somnifera*

Other Common Names: Ajagandha, Clustered Wintercherry, Kanaje Hindi, Orovale, Sann Al Ferakh, Strychnos, *Withania somnifera*

Range: Australia, E. Asia, Africa.

Habitat: Open places, disturbed areas etc. An undershrub in stony places.

Ashwagandha is one of the most widespread tranquilisers used in India, where it holds a position of importance similar to ginseng in China. It acts mainly on the reproductive and nervous systems, having a rejuvenative effect on the body, and is used to improve vitality and aid recovery after chronic illness. The plant is little known in the West.

The whole plant, but especially the leaves and the root bark, are abortifacient, adaptogen, antibiotic, aphrodisiac, deobstruent, diuretic, narcotic, strongly sedative and tonic. Internally, it is used to tone the uterus after a miscarriage and also in treating post-partum difficulties. It is also used to treat nervous exhaustion, debility, insomnia, wasting diseases, failure to thrive in children, impotence, infertility, multiple sclerosis etc. Externally it has been applied as a poultice to boils, swellings and other painful parts. The root is harvested in the autumn and dried for later use. Some caution is advised in the use of this plant since it is toxic.

The fruit is diuretic. The seed is diuretic and hypnotic. The seeds are used to curdle plant milks in order to make vegetarian cheeses. The fruit is rich in saponins and can be used as a soap substitute. The leaves are an insect repellent.

Astragalus Membranaceus

Other Common Names: Astragalus, Chinese Astragalus, Chinese Milkvetch, Huang Qi, Huang Qui, Huang-qi, Membranous Milk Vetch, Milk Vetch Root, Yellow Vetch

Range: E. Asia - China

Habitat: Dry sandy soils

Huang Qi is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs. The root is a sweet tonic herb that stimulates the immune system and many organs of the body, whilst lowering blood pressure and blood sugar levels. It is particularly suited to young, physically active people, increasing stamina and endurance and improving resistance to the cold - indeed for younger people it is perhaps superior to ginseng in this respect. Huang Qi is used especially for treatment of the kidneys and also to avoid senility. The plant is often used in conjunction with other herbs such as *Atractylodes macrocephala* and *Ledebouriella seseloides*.

The root is adaptogen, antipyretic, diuretic, tonic and vasodilator. It is used in the treatment of cancer, prolapse of the uterus or anus, abscesses and chronic ulcers, chronic nephritis with oedema and proteinuria. Recent research in the West has shown that the root can restore normal immune function in cancer patients. Patients undergoing chemotherapy or radiotherapy recover faster and live longer if given Huang Qi concurrently. The root of 4 year old plants is harvested in the autumn and dried for later use.

The plant is antipyretic, diuretic, pectoral and tonic. Extracts of the plant are bactericidal, hypoglycaemic and hypotensive. Cardiogenic, vasodilator.

Known Hazards: Many members of this genus contain toxic glycosides. All species with edible seedpods can be distinguished by their fleshy round or oval seedpod that looks somewhat like a greengage. A number of species can also accumulate toxic levels of selenium when grown in soils that are relatively rich in that element.

Oats - *Avena sativa*

Other Common Names: Avena, Common Oat, Cultivated Oat, Dousar, Oat, Oatmeal, Oats, Yulaf

Range: N. Europe; Britain; Chile; Iraq; Spain; Turkey; USA

Habitat: Dry wasteland, cultivated ground and meadows, especially on heavier soils

Whilst used mainly as a food, oat grain does also have medicinal properties. In particular oats are a nutritious food that gently restores vigour after debilitating illnesses, helps lower cholesterol levels in the blood and also increases stamina.

The seed is a mealy nutritive herb that is antispasmodic, cardiac, diuretic, emollient, nervine and stimulant. A gruel made from the ground seed is used as a mild nutritious aliment in inflammatory cases, fevers and after parturition. It should be avoided in cases of dyspepsia accompanied with acidity of the stomach. A tincture of the ground seed in alcohol is useful as a nervine and uterine tonic. A decoction strained into a bath will help to soothe itchiness and eczema.

A poultice made from the ground seeds is used in the treatment of eczema and dry skin.

When consumed regularly, oat germ reduces blood cholesterol levels.

Oat straw and the grain are prescribed to treat general debility and a wide range of nervous conditions. They are mildly antidepressant, gently raising energy levels and supporting an over-stressed nervous system. They are of particular value in helping a person to cope with the exhaustion that results from multiple sclerosis, chronic neurological pain and insomnia. Oats are thought to stimulate sufficient nervous energy to help relieve insomnia.

The seed ripens in the latter half of summer and, when harvested and dried, can store for several years. It has a flouy texture and a mild, somewhat creamy flavor. It can be used as a staple food crop in either savory or sweet dishes. Used as a cereal, it is probably best known as the breakfast cereal porridge but it can also be used in many other ways. The seed can be sprouted and used in salads, the grain can also be ground into a flour and used in making biscuits, sourdough etc. The seed is especially good for convalescents and people with stomach problems. Oats are also one of the cereals used as a basic ingredient for making whisky.

The roasted seed is a coffee substitute. An edible oil is obtained from the seed, it is used in the manufacture of breakfast cereals.

Bahupatra - Phyllanthus niruri

Other Common Names: Bhuamalaki, Bhuy amalaki, Niruri, bhuiamla, bahupatra, Phyllanthus niruri, Phyllanthus urinaria, Phyllanthus amarus

Range: India, China, and the Tropics.

Phyllanthus has been used in [Ayurvedic](#) medicine for over 2,000 years and has a wide number of traditional uses. This includes employing the whole plant for jaundice, gonorrhea, frequent menstruation, and diabetes and using it topically as a poultice for skin ulcers, sores, swelling, and itchiness. The young shoots of the plant are administered in the form of an infusion for the treatment of chronic dysentery.

Phyllanthus niruri is the most effective of a group of closely related species that grow in India, China, and tropical locations ranging from the Philippines to Cuba. Scientists have not identified the ingredient responsible for its medicinal effect, but the herb has been shown to block an enzyme that plays a crucial role in reproduction of the hepatitis B virus. As a result, a majority of patients show an improvement in blood tests after a month of treatment.

In a preliminary study, carriers of hepatitis B virus were treated with a preparation of the plant Phyllanthus amarus for 30 days. 22 of 37 (59%) treated patients had lost hepatitis B surface antigen when tested 15-20 days after the end of the treatment compared with only 1 of 23 (4%) placebo-treated controls. Some subjects have been followed for up to 9 months. In no case has the surface antigen returned. Clinical observation revealed few or no toxic effects. The encouraging results of this preliminary study recommend continued evaluation of this plant and the active principles isolated from it.

To be effective, the herb must be taken regularly for a month or longer. At customary dosage levels, no side effects have been reported.

Barberry - Berberis Vulgaris

Other Common Names: Agracejo, Amberparis, Barberry, Berbery, Common Barberry, Epine Vinette, European Barberry, Pipperidge Bush, Berberis Vulgaris (Vulgaris=Common)

Range: France; Spain; Turkey; USA; Barberry Coast. Naturalized, or possibly native, in Britain

Habitat: Hedges, roadsides, clearings etc, preferring a sunny position

Barberries have long been used as a herbal remedy for the treatment of a variety of complaints. All parts of the plant can be used, the plant is mainly used nowadays as a tonic to the gallbladder to improve the flow of bile and ameliorate conditions such as gallbladder pain, gallstones and jaundice. The bark and rootbark are antiseptic, astringent, cholagogue, hepatic, purgative, refrigerant, stomachic and tonic. The bark is harvested in the summer and can be dried for storing. It is especially useful in cases of jaundice, general debility and biliousness, but should be used with caution. The flowers and the stembark are antirheumatic.

The roots are astringent and antiseptic. They have been pulverized in a little water and used to treat mouth ulcers. A tea of the roots and stems has been used to treat stomach ulcers. The root bark has also been used as a purgative and treatment for diarrhea and is diaphoretic. A tincture of the root bark has been used in the treatment of rheumatism, sciatica etc. The root bark is a rich source of the alkaloid berberine (about 6%).

Berberine, universally present in rhizomes of Berberis species, has marked antibacterial effects. Since it is not appreciably absorbed by the body, it is used orally in the treatment of various enteric infections, especially bacillary dysentery. It should not be used with Glycyrriza species (Liquorice) because this nullifies the effects of the berberine. Berberine has also shown antitumour activity and is also effective in the treatment of hypersensitive eyes, inflamed lids and conjunctivitis.

A tea made from the fruits is antipruritic, antiseptic, appetizer, astringent, diuretic, expectorant and laxative. It is also used as a febrifuge. The fruit, or freshly pressed juice, is used in the treatment of liver and gall bladder problems, kidney stones, menstrual pains etc.

The leaves are astringent and antiscorbutic. A tea made from the leaves is used in the treatment of coughs. The plant (probably the inner bark) is used by homeopaths as a valuable remedy for kidney and liver insufficiency.

Fruit - raw or cooked. A very acid flavor, it is mainly used in preserves, though children and some adults seem to like it raw when it is fully ripe. A refreshing lemon-like drink can be made from the fruit. The

fruits are about 10mm long.

Young leaves - used as a flavoring or as an acid nibble. They can be used in much the same way as sorrel (*Rumex acetosa*). The dried young leaves and shoot tips make a refreshing tea.

Plants can be grown as a medium-size hedge in exposed positions but they cannot tolerate extreme maritime exposure. They are very tolerant of trimming but can also be left untrimmed if required. A good quality yellow dye is obtained from the roots, bark and stem. As well as being used on cloth, it is also used to stain wood.

The unripe fruit is dried and used as beads. Wood - fine grained, yellow. Used for carving, toothpicks, mosaics etc. It is also used as a fuel.

Bearberry - *Arctostaphylos uva-ursi*

Other Common Names: Ayiuzumu, Bear's Grape, Coralillo, Gayuba, Kinnikinick, Kinnikinnick, Red Bearberry, Uva Ursi, *Arctostaphylos uva-ursi*

Range: Britain. Northern N. America. N. Europe. N. Asia.

Habitat: Dry open woods, often on gravelly or sandy soils. It is also found on sand dunes along the coast and is also found on limestone in the European Alps.

Bearberry was commonly used by many native North American Indian tribes to treat a wide range of complaints and has also been used in conventional herbal medicine for hundreds of years, it is one of the best natural urinary antiseptics. The leaves contain hydroquinones and are strongly antibacterial, especially against certain organisms associated with urinary infections. The plant should be used with caution, however, because hydroquinones are also toxic.

The leaves are antiseptic, astringent, diuretic, lithontripic, hypnotic and tonic. The dried leaves are used in the treatment of a variety of complaints. These leaves should be harvested in early autumn, only green leaves being selected, and then dried in gentle heat. A tea made from the dried leaves is much used for kidney and bladder complaints and inflammations of the urinary tract such as acute and chronic cystitis and urethritis, but it should be used with caution and preferably only under the supervision of a qualified practitioner. The tea is more effective if the urine is alkaline, thus it is best used in combination with a vegetable-based diet. Externally, a poultice of the infused leaves with oil has been used as a salve to treat rashes, skin sores etc, and as a wash for a baby's head. An infusion of the leaves has been used as an eyewash, a mouthwash for cankers and sore gums and as a poultice for back pains, rheumatism, burns etc.

The dried leaves have been used for smoking as an alternative to tobacco. One report says that it is unclear whether this was for medicinal purposes or for the intoxicated state it could produce, whilst another says that the leaves were smoked to treat headaches and also as a narcotic.

The herb should not be prescribed to children, pregnant women or patients with kidney disease. Another report says that some native North American Indian tribes used an infusion of the stems, combined with blueberry stems (*Vaccinium* spp) to prevent miscarriage without causing harm to the baby, and to speed a woman's recovery after the birth.

Fruit - raw or cooked. Insipid, dry and mealy, it becomes sweeter when cooked. Added to stews etc, it is a good source of carbohydrates. The fruit can also be used to make a cooling drink or used for preserves etc. It can be dried and stored for later use. The fruit is about 6mm in diameter. A tea is made from the

dried leaves.

Known Hazards: This plant is best not used by pregnant women since it can reduce the supply of blood to the foetus.

Bedstraw - Galium verum

Other Common Names: Baqlat Al Laban, Caille Lait, Cheese Rennet, Cheese Renning, Cleavers, Gaillet Jaune, Galio, Khitharah, Lady's Bedstraw, Maid's Hair, Our Lady's Bedstraw, Petty Mugget, Yellow Bedstraw, Yellow Spring Bedstraw, Yogurtotu, Galium verum

Range: Britain; Europe; France; Iraq; Spain; Turkey; USA

Habitat: Waste ground, roadsides etc, mainly near the sea, on all but the most acid soils.

The common English name of this plant, 'Our Lady's Bedstraw,' is derived from its use in former days, even by ladies of rank, for stuffing beds.

The plant has the property of curdling milk, hence another of its popular names 'Cheese Rennet.' It was called 'Cheese Renning' in the sixteenth century, and Gerard says (quoting from Matthioli, a famous commentator of Dioscorides), 'the people of Tuscan do use it to turne their milks and the cheese, which they make of sheepes and goates milke, might be the sweeter and more pleasant to taste. The people in Cheshire do use it in their rennet, esteeming greatly of that cheese above others made without it.' The rich color of this cheese was probably originally derived from this plant, though it is now obtained from annatto.

The name of this genus, Galium, from the Greek word gala, milk, is supposed to have been given from this property of the plants which is shared more or less by most of the group

Lady's bedstraw has a long history of use as a herbal medicine, though it is little used in modern medicine. Its main application is as a diuretic and as a treatment for skin complaints.

The leaves, stems and flowering shoots are antispasmodic, astringent, diuretic, foot care, lithontripic and vulnerary. The plant is used as a remedy in gravel, stone or urinary disorders and is believed to be a remedy for epilepsy. A powder made from the fresh plant is used to soothe reddened skin and reduce inflammation whilst the plant is also used as a poultice on cuts, skin infections, slow-healing wounds etc. The plant is harvested as it comes into flower and is dried for later use.

A number of species in this genus contain asperuloside, a substance that produces coumarin and gives the scent of new-mown hay as the plant dries.

Asperuloside can be converted into prostaglandins (hormone-like compounds that stimulate the uterus and affect blood vessels), making the genus of great interest to the pharmaceutical industry.

Bee pollen

"Bee pollen" is actually pollen from flowers that is collected from bees as they enter the hive or is harvested by other means. Pollen granules stick to the bees' legs and other body parts as they help themselves to nectar (the precursor of honey) inside the flowers. Pollen products are marketed through health-food stores, multilevel distributors, drugstores, mail-order advertising, and the Internet.

Honeybees collect pollen for their own nutritional purposes because Bee Pollen is incredibly nutrient dense. Bee Pollen provides the honeybee with all of the nutrients that it needs for growth and development.

Bee Pollen is approximately 25% protein and very low in fat and sodium. It contains many minerals and vitamins - notably potassium, calcium, magnesium, iron, zinc, manganese, copper and the B vitamins.

Bee pollen can be taken as a dietary supplement to maintain good health, aid recuperation after an illness, and rejuvenate general health and well being. Pollen can be used as a nutritional supplement for women, pregnant and breastfeeding. Research indicates that bee pollen can aid the treatment of chronic prostatitis; reducing inflammation, discomfort and the pathology of benign prostatitis.

Bee pollen is rapidly absorbed into the blood stream and stimulates immunological responses. It has proved beneficial for nausea, sleep disorders, and urinary and rectal disorders following radiation treatment.

With reference to bee pollen's value for humans, the FDA debunks some claims made by many promoters: (1) pollen is not a giant germ killer in which bacteria do not exist; it is rapidly attacked by bacteria, yeast and other fungi, (2) pollen cannot be called nature's most perfect food; it isn't even perfect for bees which require supplementary carbohydrates (nectar or honey) to survive, (3) pollen doesn't retard aging by peoples in the Caucasus region of Soviet Georgia; a study of eating habits there doesn't even mention pollen, (4) pollen is not the richest source of protein known to science; the major constituent of pollen is carbohydrate, not protein, and the (5) bee pollen does not relieve allergy, asthma and hay fever; no scientific studies support this. On the contrary, persons eating pollen must be on the lookout for potential allergic reactions, (6) pollen improves athletic performance; extensive study at Louisiana State University reveals no significant improvement in either training or performance.

Known Hazards: Bee pollen and royal jelly should be regarded as potentially dangerous because they cause allergic reactions. People allergic to specific pollens have developed asthma, hives, and anaphylactic shock after ingesting pollen or royal jelly.

Many Americans whose diets are not nutritionally balanced may be persuaded that some "perfect" food

or product will make up for all their nutritional shortcomings. Various food products-- such as bee pollen, over-the-counter herbal remedies, and wheat germ capsules--are promoted as sure-fire cures for various diseases. Though usually not harmful, neither have these products been proven beneficial.

In 1992, an Arizona company and its owners agreed to pay \$200,000 to settle Federal Trade Commission charges of falsely claiming that bee pollen products could produce weight loss, permanently alleviate allergies, reverse the aging process, and cure, prevent, or alleviate impotence or sexual dysfunction. They were also charged with falsely stating that bee-pollen products cannot result in an allergic reaction. Some of the false claims were made in "infomercials" that were misrepresented as news or documentary programs, even though they were paid ads. One such program ("TV Insiders") featured an interview "by satellite" with "Dr. Gary Null . . . the authority on health and nutrition." Null said that the human body ages because it doesn't produce enough enzymes, and that "you can't get any better food than bee pollen" because it is "loaded" with enzymes and contains a nutrient that "can help the inside of your body prevent the capillaries from aging." Records from the Union Institute state that Null "graduated " on August 31, 1989, which, according to an FTC document, was at least three months after broadcasting of the infomercial began. However, Null was not charged with wrongdoing.

Bilberry - *Vaccinium myrtillus*

Other Common Names: Airelle, Arandano, Black Whortles, Bleaberry, Blueberry, British Bilberry, Cayuzumu, Dwarf Bilberry, Huckleberry, Hurtleberry, Hurts, Trackleberry, Whinberry, Whortle-berry, Whortleberry, *Vaccinium myrtillus*. The name Bilberry (by some old writers 'Bulberry') is derived from the Danish 'bollebar,' meaning dark berry.

Range: Britain; Europe; Spain; Turkey

Habitat: Heaths, moors and woods on acid soils to 1250 metres

The dried leaves of bilberries are used in the treatment of a variety of complaints. These leaves should be harvested in early autumn, only green leaves being selected, and then dried in gentle heat. The leaves should not be used medicinally for more than 3 weeks at a time.

A tea made from the dried leaves is strongly astringent, diuretic, tonic and an antiseptic for the urinary tract. It is also a remedy for diabetes if taken for a prolonged period. Another report says that the leaves can be helpful in pre-diabetic states but that they are not an alternative to conventional treatment. The leaves contain glucoquinones, which reduce the levels of sugar in the blood.

A decoction of the leaves or bark is applied locally in the treatment of ulcers and in ulceration of the mouth and throat. A distilled water made from the leaves is an excellent eyewash for soothing inflamed or sore eyes.

Whilst the fresh fruit has a slightly laxative effect upon the body, when dried it is astringent and is commonly used in the treatment of diarrhea etc. The dried fruit is also antibacterial and a decoction is useful for treating diarrhea in children. The skin of the fruits contains anthocyanin and is specific in the treatment of hemeralopia (day-blindness). The fruit is a rich source of anthocyanosides, which have been shown experimentally to dilate the blood vessels, this makes it a potentially valuable treatment for varicose veins, hemorrhoids and capillary fragility.

Fruit - raw or cooked. Sweet and very tasty, they make an excellent preserve, their small seeds making them suitable for jam (jelly). A slightly acid flavor when eaten raw. The fruit can be dried and used like currants. The fruit is up to 10mm in diameter.

A tea is made from the leaves.

Other Species: *V. arboreum*, or Farkleberry. This is the most astringent variety, and both berries and root-bark may be used internally for diarrhea, chronic dysentery, etc. The infusion is valuable as a local

application in sore throat, chronic ophthalmia, leucorrhoea, etc.

V. resinosum, *V. damusum*, and *V. gorymbosum* have properties resembling those of *V. myrtillus*.

The Bog Bilberry (*V. uliginosum*) is a smaller, less erect plant, with round stems and untoothed leaves, greyish green beneath. Both flowers and berries are smaller than those of the common Bilberry.

The berries of both species are a favorite food of birds.

The 'Huckleberry' of North America, so widely appreciated there, is the British Bilberry - the name being an obvious corruption of 'Whortleberry.'

Bitter Melon - *Momordica charantia* L

Other Common Names: Balsam pear, Bitter cucumber, Bitter gourd, Foo gwa, Karela, La-kwa, *Momordica charantia* L.

Range: China, Hong Kong, Philippines, Taiwan.

Ampalaya (Tagalog) or Amargozo (Aklanon). Known in the west as Chinese bitter melon or bitter gourd, ampalaya became popular in the news recently because of its putative medicinal value especially against HIV/AIDS (Compound Q). The truth is, it is considered medicinal by many native herbolarios. In folk medicine, the more bitter this vegetable is, the more medicinal value it has. It's really an ugly looking vegetable and considered an acquired taste because of its bitterness. The smaller (or more elongate) and greener variety is more bitter than the larger (or plumper) pale green ones that are usually found in Asian-American markets.

Momordica charantia is a plant used for centuries in traditional Indian, Chinese, and African pharmacopeia as laxative, anthelmintic and abortive. Fruit is useful in gout, rheumatism and sub-acute cases of the spleen and liver. Doctors in India are so confident of bitter melon's positive effect on diabetics, they dispense bitter melon in some of the most modern hospitals.

Try it as an omelet or as a salad (with onions, tomatoes, and cilantro in vinaigrette dressing) in between courses to clean your palate. As a main dish, ampalaya con carne with black bean sauce is also wonderful - the saltiness of the black beans counteracts the bitterness - and pinakbet (a melange of tropical vegetables like squash, eggplant, string beans and ampalaya in piquant shrimp paste sauce) is heavenly. The young leaves (ampalaya tops) are also used in dishes like ginisang monggo.

A medium-size bitter melon has only about 20 calories and contains potassium, folate and vitamin C.

Here's a tip: to remove the bitterness, roll sliced ampalaya pieces in salt; the juice will start to flow; squeeze the juices some more.

Black Cohosh - *Cimicifuga racemosa*

Other Common Names: Actee A Grappes, American Baneberry, Amerikansk Slangeroed, Black Snakeroot, Cimicaire, Rattle Root, Sauco, Slangenwortel, Tahta Bitiotu, Wanzenkraut, *Cimicifuga racemosa*

Range: Eastern N. America - Massachusetts to Ontario, south to Georgia and Tennessee, Britain; Canada; Denmark; France; Germany; Netherlands; Spain; Turkey

Habitat: Moist or dry shady rich woods

Cimicifuga racemosa contains triterpene glycosides, resin, salicylates, isoferulic acid, sterols, and alkaloids. This plant was used by Native Americans for a myriad of problems, including headache (note the presence of salicylates... the forerunner of aspirin). It is still used in western medicine for tinnitus (ringing of the ears), and by herbalists to increase the intensity of uterine contractions during childbirth. However, administration should not be a self-application, but should be monitored by a physician, or M.D. Even moderate doses can affect the nervous system, induce vomiting, and lower the pulse.

Black cohosh is a traditional remedy of the North American Indians where it was used mainly to treat women's problems, especially painful periods and problems associated with the menopause. A popular and widely used herbal remedy, it is effective in the treatment of a range of diseases.

The root is alterative, antidote, antirheumatic, antispasmodic, astringent, cardiogenic, diaphoretic, diuretic, emmenagogue, expectorant, hypnotic, sedative, tonic and vasodilator. It is harvested in the autumn as the leaves die down, then cut into pieces and dried. The root is toxic in overdose, it should be used with caution and be completely avoided by pregnant women!

The medically active ingredients are not soluble in water so a tincture of the root is normally used. It is used in the treatment of rheumatism, as a sedative and an emmenagogue. It is traditionally important in the treatment of women's complaints and for use in childbirth. Research has shown that the root has oestrogenic activity and is thought to reduce levels of pituitary luteinizing hormone, thereby decreasing the ovaries production of progesterone. It may be used beneficially in cases of painful or delayed menstruation. Ovarian cramps or cramping pain in the womb will be relieved by Black Cohosh.

Women in the United States are increasingly turning to botanical medicines to treat conditions throughout their life cycles. Many herbs traditionally used for women's health conditions have been found to contain phytoestrogens. Phytoestrogens and their metabolites can bind estrogen receptors and can have both estrogenic and anti-estrogenic effects. Many women are attracted to the idea of using phytotherapy as an alternative to hormone replacement therapy. It is unclear, however, whether these

herbs are safe for women at risk for breast cancer or its recurrence.

The reproducible quality of phytopharmaceuticals--herbal medicines--is an essential prerequisite for good efficacy and tolerability in the treatment of functional disorders. In clinical trials and scientific investigations, standardized assessments (i.e., validated, internationally recognized and accepted scales) provide the basis for establishing clinical efficacy and tolerability. Extracts (ethanolic and isopropanolic aqueous, Remifemin) of the rootstock of the herb *Cimicifuga racemosa* (black cohosh) are active ingredients developed for the treatment of gynecologic disorders, particularly climacteric symptoms. Drug-monitoring and clinical studies documenting experience with *C. racemosa* rootstock extracts comprise the database of this herbal treatment for menopausal symptoms (e.g., hot flashes, profuse sweating, sleep disturbances, depressive moods). These studies show good therapeutic efficacy and tolerability profiles for *C. racemosa*. In addition, clinical and experimental investigations indicate that the

Rootstock of *C. racemosa* does not show hormone-like activity, as was originally postulated. (Therapeutic efficacy and safety of *Cimicifuga racemosa* for gynecologic disorders. Liske E. Schaper Brummer GmbH Co. KG, International Sales Division, Salzgitter-Ringelheim, Germany.)

In this review (A review of the effectiveness of *Cimicifuga racemosa* (black cohosh) for the symptoms of menopause. Lieberman S. University of Bridgeport, Connecticut, USA.) of eight human studies on the effectiveness of an extract of *Cimicifuga racemosa* on alleviating menopausal symptoms, it is apparent that it is a safe, effective alternative to estrogen replacement therapy for those patients in whom estrogen replacement therapy is either refused or contraindicated.

The root is also hypoglycemic, sedative and anti-inflammatory. Used in conjunction with St. John's Wort (*Hypericum perforatum*) it is 78% effective in treating hot flushes and other menopausal problems. An extract of the root has been shown to strengthen the male reproductive organ in rats. The root is also used in the treatment of various rheumatic problems and its sedative action makes it useful for treating a range of other complaints including tinnitus and high blood pressure.

Both the growing and the dried plant can be used to repel bugs and fleas.

Known Hazards: The plant is poisonous in large doses

Black Currant - Ribes nigrum

Other Common Names: European Black Currant, Grosellero Negro, Quinsy Berries, Siyah Frenkuzumu, Squinancy Berries, Ribes nigrum.

Range: Chile; Europe; Turkey; USA

Habitat: Hedges and woodlands, often by streams.

It was not so popular originally as the Red and White Currants, for Gerard describes the fruit as being 'of a stinking and somewhat loathing savour.'

The berries are sometimes put into brandy like Black Cherries. The Russians make wine of them, with or without honey or spirits, while in Siberia a drink is made of the leaves which, when young, make common spirits resemble brandy. An infusion of them is like green tea, and can change the flavor of black tea. Goats eat the leaves, and bears especially like the berries, which are supposed to have medicinal properties not possessed by others of the genus.

Blackcurrant fruits are a good source of minerals and vitamins, especially vitamin C. They have diuretic and diaphoretic actions, help to increase bodily resistance to infections and are a valuable remedy for treating colds and flu. The juice, especially when fresh or vacuum-sealed, helps to stem diarrhea and calms indigestion.

The leaves are cleansing, diaphoretic and diuretic. By encouraging the elimination of fluids they help to reduce blood volume and thereby lower blood pressure. An infusion is used in the treatment of dropsy, rheumatic pain and whooping cough, and can also be used externally on slow-healing cuts and abscesses. It can be used as a gargle for sore throats and mouth ulcers. The leaves are harvested during the growing season and can be used fresh or dried.

It is believed that an infusion of the leaves increases the secretion of cortisol by the adrenal glands, and thus stimulates the activity of the sympathetic nervous system. This action may prove useful in the treatment of stress-related conditions.

An infusion of the young roots is useful in the treatment of eruptive fevers. A decoction of the bark has been found of use in the treatment of calculus, dropsy and hemorrhoidal tumours.

Evening primrose oil, black currant seed, and borage seeds all contain an omega-6 fatty acid called gamma linolenic acid (GLA). The claim is that gamma-linolenic acid works by increasing the body's production of prostoglandin E-1 or by correcting a deficiency of gamma-linolenic acid. Prostoglandin E-

1 helps to increase blood flow, decrease blood clotting, and reduce inflammation.

This process is commonly blocked in the body, causing disorders that affect the uterine muscles, nervous system and metabolism.

Wu D. and others have shown that the age-associated increase in prostaglandin E(2) production contributes to the decline in T cell-mediated function with age. Black currant seed oil (BCSO), rich in both gamma-linolenic (18:3n-6) and alpha-linolenic (18:3n-3) acids, has been shown to modulate membrane lipid composition and eicosanoid production. BCSO has a moderate immune-enhancing effect attributable to its ability to reduce prostaglandin E(2) production.

The oil from the seed is added to skin preparations and cosmetics. It is often combined with vitamin E to prevent oxidation.

Blackberry - *Rubus fruticosus*

Other Common Names: Allegheny Blackberry, Bly, Bramble, Bramble-Kite, Brambleberry, Brameberry, Brummel, Bumble-Kite, Common Blackberry, European blackberry, Scaldhead, *Rubus fruticosus*.

Range: Britain; Europe; India; Italy; Sicily; Spain; Turkey; USA

Habitat: A very common and adaptable plant, found in hedgerows, woodland, meadows, waste ground etc

Blackberry leaf has been found effective for diarrhea and mild sore throat. The root is sometimes taken to prevent water retention and swelling, but is not considered effective.

The root-bark and the leaves are strongly astringent, depurative, diuretic, tonic and vulnerary. They make an excellent remedy for dysentery, diarrhea, hemorrhoids, cystitis etc, the root is the more astringent. Externally, they are used as a gargle to treat sore throats, mouth ulcers and gum inflammations.

A decoction of the leaves is useful as a gargle in treating thrush and also makes a good general mouthwash.

Although the tannin in Blackberry leaves has a drying, tightening effect that can relieve diarrhea, researchers have failed to identify any other medicinal properties. Nevertheless, the flowers and fruit have long been invested with magical powers. Blackberry was believed to confer protection from "evil runes" and was used to cure snakebites. Merely sitting under a Blackberry bush was considered sufficient to cure rheumatism and boils.

Fruit - raw or cooked. The best forms have delicious fruits and, with a range of types, it is possible to obtain ripe fruits from late July to November. The fruit is also made into syrups, jams and other preserves. Some people find that if they eat the fruit before it is very ripe and quite soft then it can give them stomach upsets.

Root - cooked. The root should be neither too young nor too old and requires a lot of boiling.

A tea is made from the dried leaves - the young leaves are best. The leaves are often used in herbal tea blends.

Young shoots - raw. They are harvested as they emerge through the ground in the spring, peeled and then eaten in salads.

Plants are spread by seed deposited in the droppings of birds and mammals. They often spring up in burnt-over, logged or abandoned land and make an excellent pioneer species, creating the right conditions for woodland trees to move in. The trees will often grow in the middle of a clump of blackberries, the prickly stems protecting them from rabbits.

Blessed thistle - *Cnicus benedictus*

Other Common Names: Ash Sherka Al Mubarakka, Cardo Santo, Chardon Beni, Derga Peroza, Holy Thistle, Mubarek Diken, St Benedict's Thistle, *Cnicus benedictus*

Range: S. Europe to W. Asia. Czechoslovakia; France; Iraq; Italy; Kurdistan; South Africa; Spain; Turkey; USA

Habitat: Dry sunny places in arable, stony and waste ground. The plant is harvested in the summer as it comes into flower and is dried for later use.

The blessed thistle was widely cultivated in the middle ages, when it was seen as a cure-all for all manner of diseases including the plague. The plant is praised for its medicinal powers in Shakespeare's "Much Ado About Nothing" and was recommended in early herbal treatises as a remedy for migraine and other headaches. Although less widely used nowadays, it is still seen to have a wide range of applications.

Despite its past popularity, Blessed Thistle is now considered genuinely useful only for digestive problems. It works by stimulating the production of saliva and digestive juices.

The whole plant is astringent, bitter, cholagogue, diaphoretic, diuretic, emetic in large doses, emmenagogue, galactagogue, stimulant, stomachic and tonic. A warm infusion of the plant is said to be one of the most effective means of improving the milk supply of a nursing mother. An infusion of the whole plant has also been used as a contraceptive and is often used in the treatment of liver and gall bladder problems. The plant is also used internally in the treatment of anorexia, poor appetite associated with depression, dyspepsia, flatulant colic etc.

The whole plant was infused overnight in cold water and the liquid drunk three times daily in the treatment of VD. Men were required to run after each dose in order to encourage sweating. The treatment often caused nausea and vomiting - excessive doses of the plant cause vomiting.

The plant is used externally in the treatment of wounds and ulcers.

A homeopathic remedy is made from the plant. It is used in the treatment of the liver and gall bladder.

It's possible to develop a sensitivity to Blessed Thistle that extends to similar plants such as mugwort and cornflower. Outright allergic reactions are, however, quite rare.

Blood root - *Sanguinaria canadensis*

Other Common Names: Coon Root, Indian Paint, Kanotu, Paucon, Red Pucoon, Red Root, Snakebite, Sweet Slumber, Tetterwort, *Sanguinaria canadensis*

Range: Eastern N. America - Nova Scotia to Arkansas and N. Florida, west to Nebraska; Canada; Turkey; Russia

Habitat: Rich soils in open broadleaved woodland and on shaded slopes

Blood root was a traditional remedy of the native North American Indians who used it to treat fevers and rheumatism, to induce vomiting and as an element in divination. It is native to the northeast U.S. and Canada, and was used as body paint by native Americans. As its name suggests, the root is dark red.

In modern herbalism it is chiefly employed as an expectorant, promoting coughing and the clearing of mucus from the respiratory tract.

The root is locally anaesthetic, cathartic, emetic, emmenagogue, expectorant, diuretic, febrifuge, sedative, stimulant, tonic. It is taken internally in the treatment of bronchial, respiratory tract and throat infections, and poor peripheral circulation. Use with caution and preferably only under the guidance of a qualified practitioner. The root is toxic, containing a number of opium-like alkaloids that are also found in other members of this family. An excessive dose depresses the central nervous system, causes nausea and vomiting, and may prove fatal. This remedy should not be prescribed for pregnant or lactating women.

Externally, the root is used in the treatment of skin diseases, warts, nasal polyps, benign skin tumours, sore throats and chilblains. An infusion of the root or the sap of the fresh root is used. The root can be harvested in the autumn, dried and stored for later use. It should not be allowed to become damp since it will then deteriorate.

Bloodroot contains a mixture of antimicrobial compounds that fight plaque-forming bacteria. Sanguinarine, which is obtained from the root, is used as a dental plaque inhibitor. An extract of the herb is found in many toothpastes and mouthwashes.

The root is used to make a homeopathic remedy that is used to treat migraine.

Known Hazards: This species contains many alkaloids and is poisonous in large doses. This herb should not be used by women when they are pregnant or lactating. The sap, fresh or dried, can cause intense irritation to the mucous membranes.

Blue Cohosh - *Caulophyllum thalictroides*

Other Common Names: Aslankulagi, Blue Ginseng, Blueberry Root, Pappoose or Pappoose Root, Squawroot, Yellow Ginseng, *Caulophyllum thalictroides*

Range: Eastern N. America - New Brunswick to South Carolina, Arkansas, North Dakota and Manitoba.

Habitat: Rich moist soils in swamps, by streams and in woods.

Pappoose root is a traditional herb of many North American Indian tribes and was used extensively by them to facilitate child birth. Modern herbalists still consider it to be a woman's herb and it is commonly used to treat various gynaecological conditions. An acrid, bitter, warming herb, it stimulates the uterus, reduces inflammation, expels intestinal worms and has diuretic effects.

The root is anthelmintic, antispasmodic, diaphoretic, diuretic, emmenagogue, oxytocic and sedative. An infusion of the root in warm water is taken for about 2 weeks before the expected birth date in order to ease the birth. This infusion can also be used as an emmenagogue and a uterine stimulant. Pappoose root should therefore be used with some caution by women who are in an earlier stage of pregnancy since it can induce a miscarriage or early delivery. The plant is also taken internally in the treatment of pelvic inflammatory disease, rheumatism and gout. It should not be prescribed for people with hypertension and heart diseases. Any use of this plant is best under the supervision of a qualified practitioner.

The roots are normally harvested in the autumn, because they are at their richest at this time, and are dried for later use.

The root harvested in early spring as new growth is beginning is used to make a homeopathic remedy. It is used especially in childbirth and in some forms of rheumatism.

The roasted seed is a coffee substitute. The seeds are about the size of large peas, but are not produced in abundance.

Known Hazards: This plant should not be used during pregnancy prior to the commencement of labour.

Blue Flag - *Iris versicolor*

Other Common Names: Amerikan Suseni, Dagger Flower, Dragon Flower, Flag, Flag Lily, Harlequin Blueflag, Iris, Larger Blue Flag, Liver Lily, Poison Flag, Snake Lily, Water Flag, *Iris versicolor*

Range: Eastern N. America - Newfoundland to Manitoba, south to Florida and Arkansas.

Habitat: Swamps, wet meadows, scrub and by lakes and rivers. Wetlands.

Owing to the similarity of name, and the appearance before blooming, this flag is sometimes mistaken by American children for Sweet Flag or Calamus, which grows in the same localities, often with disastrous results.

Of the 100 species of true *Iris*, twenty-two inhabit the United States, but only one, *Iris Missouriensis*, much resembles this species (the rhizome of which yields an official American drug), or has a rhizome likely to be mistaken for it.

The root is an official drug of the United States Pharmacopoeia and is the source of the Iridin or Irisin of commerce, a powdered extractive, bitter, nauseous and acrid, with diuretic and aperient properties.

Blue flag was one of the most popular medicinal plants amongst various native North American Indian tribes. In modern herbalism it is mainly employed to detoxify the body - it increases urination and bile production and has a mild laxative effect. Some caution should be exercised in its use, however, since there are reports that it is poisonous.

The fresh root is quite acrid and when taken internally causes nausea, vomiting, colic and purging. The dried root is much less acrid. This remedy should not be prescribed for pregnant women.

The root is alterative, anti-inflammatory, cathartic, cholagogue, diaphoretic, diuretic, emetic and sialagogue. Taken internally as a tea, the root has been used as a strong laxative or emetic that also acts strongly on the liver and promotes the excretion of excess body fluids. It is also stimulant for the circulatory and lymphatic system. Its detoxifying effect make it useful in the treatment of psoriasis, acne, herpes, arthritis, swollen glands, pelvic inflammatory disease etc.

Externally, it is applied to skin diseases, wounds and rheumatic joints. The roots are harvested in late summer and early autumn and are usually dried for later use. The roots were boiled in water and then mashed to make a poultice which was used to relieve the pain and swelling associated with sores and bruises.

A fine blue infusion is obtained from the flowers and this can be used as a litmus substitute to test for acids and alkalis.

Some native North American Indian tribes used the root as a protection against rattlesnakes. It was believed that, so long as the root was handled occasionally to ensure the scent permeated the person and their clothes, rattlesnakes would not bite them. Some tribes even used to chew the root and then hold rattlesnakes with their teeth and were not bitten so long as the scent persisted.

Known Hazards: Many plants in this genus are thought to be poisonous if ingested, so caution is advised. The roots are especially likely to be toxic. Plants can cause skin irritations and allergies in some people.

Blue-Green Algae, *Spirulina geitler*, *S. maxima*, *S. platenis*

Other Common Names: Blue-Green Algae, *Spirulina geitler*, *S. maxima*, *S. platenis*

Spirulina is one of about 1,500 known species of blue-green algae that grow in brackish ponds and lives in mild and hot climates throughout the world. Pure spirulina is a source of protein and contains a number of vitamins and minerals including beta carotene, vitamin B12, and gamma linolenic acid. The WHO recognizes the nutritional importance of spirulina in parts of the world where there is protein malnutrition. However, in the amounts normally consumed when taken according to label directions, the nutrients derived are insignificant. As a food, spirulina can be legally marketed as long as it is labeled accurately and contains no contaminated or adulterated substances.

Long before spirulina became a favorite of the health food industry, it was eaten by North Africans and Mexicans centuries ago, used for protein food in Lake Chad and by Aztecs before conquistadores. The plant was discovered by the Western world in 1962. Since then, it has been cultivated in several countries, including Thailand, Japan, Taiwan, and the United States. Part of man's fascination with spirulina stems from the fact that the plant is a survivor. It grows almost by itself on lakes and ponds and doesn't need any special care from the farmer.

Blue-green algae products contain all the amino acids and are marketed as body rejuvenators, which improve energy levels, decrease appetite, and increase mental energy. These products are commonly used for weight loss and fasting and are sold in powdered or tablet form.

Excellent protein supplement (72% of dry weight). 10 tons per acre (wheat - 0.16 ton per acre; cattle 0.16 ton per acre. A bit low in S- amino acids but superior to all plant protein sources and equal to meat or dairy products.

Sterols in *Spirulina* lower cholesterol. *Spirulina* extracts inhibit growth of oral cancer cells.

A daily dose of the blue-green algae '*Spirulina*' may help prevent cancer of the mouth, a study shows. The finding could benefit people in developing countries where the algae is cheaper than vitamins. After one year of consuming only one gram of the algae daily, 45 percent of the volunteers had complete regression of the thick, white, pre-cancerous patches in the mouth known as leukoplakia. Adding in those volunteers who showed significant improvement raised the figure to 57 percent who benefitted from '*Spirulina*'. That compared to seven percent of those who got a placebo.

The study--the first human evaluation of the cancer-preventive potential of '*Spirulina*'--was coordinated

by an ARS researcher and conducted in southwestern India where the incidence of leukoplakia is high. The researchers tested 'Spirulina' because it is an inexpensive source of beta carotene and related carotenoids in many developing countries. In other research, the algae has inhibited oral cancer in animal studies, while beta carotene or vitamin A supplements have reversed pre-cancerous conditions in people's mouths. Cancer of the mouth and of the cervix--which has the same kind of mucus membrane--is on the rise worldwide.

Known Hazards: Claims have been made that phenylalanine, an amino acid found in spirulina (and in most other protein sources), "acts on the brain's appetite center to switch off your hunger pangs." However, an FDA advisory panel reviewing data on phenylalanine found no reliable scientific data to demonstrate that it is safe and effective as an appetite suppressant.

Some nutritionists fear that consuming large amounts of spirulina might have an effect similar to that of the liquid protein diets which resulted in heart problems and even death for some dieters. Helene Swenerton, a nutritionist at the University of California's Davis Cooperative Extension, points out that because algae are single-celled organisms, they are rich in nucleic acids providing not only a lot of protein but also large amounts of uric acid, which could result in kidney stones or gout.

Boldo - *Peumus boldus*

Other Common Names: Boldu, Boldus, Boldea fragrans, Boldoa fragrans, Peumus boldus

Range: S. America - Chile; Mexico; Turkey

Habitat: Dry sunny slopes in lightly wooded country.

Boldo is a traditional remedy used by the Araucanian Indians of Chile as a tonic. The plant stimulates liver activity and bile flow and is chiefly valued as a remedy for gallstones and liver or gallbladder pain.

It is normally taken for only a few weeks at a time, either as an infusion or as a tincture. It is often combined with other herbs such as *Berberis vulgaris* or *Chionanthus virginicus* in the treatment of gallstones.

The leaves are analgesic, antiseptic (urinary), bitter, cholagogue, diuretic, stimulant and tonic. They are considered a valuable cure for gonorrhoea in S. America.

The plant is taken internally in the treatment of liver disease (though the bark is more effective here), gallstones, urinary tract infections, intestinal parasites and rheumatism. It has been used in the past as a substitute for quinine in the treatment of malaria.

The leaves are harvested during the growing season and are dried for later use. Some caution is advised, the plant should not be used by pregnant women.

A volatile oil obtained from the plant destroys internal parasites. Alkaloids contained in the bark are a stimulant for the liver.

Fruit - raw or cooked. Sweet and aromatic with an agreeable flavor. The fruit is up to 2cm in diameter. The small fruits are dried and used as beads in necklaces. When warmed by the body or the sun they release the scent of cinnamon.

The leaves and bark are used as a condiment.

The bark is a source of tannin and is also used as a dye.

A deliciously fragrant essential oil is obtained from the leaves. The dried and powdered leaves are scattered amongst clothes to sweeten them and repel insects.

Known Hazards: The leaves contain a toxic alkaloid.

Boneset - *Eupatorium perfoliatum*

Other Common Names: Agueweed, Bonesset, Common Boneset, Eupatoire Perfoliee, Eupatorio, Feverwort, Hempweed, Indian Sage, Sweating Plant, Thoroughwort, Tse Lan, Wasserdost, Waterdost, *Eupatorium perfoliatum*

Range: Eastern N. America - Quebec to Manitoba, south to Florida and Texas; China; France; Germany; Italy; Netherlands.

Habitat: Wet woods, scrub, fens and damp grassland.

Boneset is one of the most popular domestic medicines in North America where it is used in the treatment of influenza, colds, acute bronchitis, catarrh and skin diseases. It has been shown to stimulate resistance to viral and bacterial infections, and reduces fevers by encouraging sweating. The plant, however, should be used with some caution since large doses are laxative and emetic and the plant might contain potentially liver-harming pyrrolizidine alkaloids.

The leaves and flowering stems are antispasmodic, cholagogue, diaphoretic, emetic, febrifuge, laxative, purgative, stimulant, vasodilator. An infusion of the dried leaves and flowers is used to bring relief to symptoms of the common cold, it loosens phlegm and promotes its removal through coughing. It is also used in the treatment of rheumatic illness, skin conditions and worms. The leaves and flowering stems are harvested in the summer before the buds open, and are dried for later use.

A homeopathic remedy is made from the fresh plant, harvested when it first comes into flower. It is used in the treatment of illnesses such as flu and fever.

Borage - *Borago officinalis*

Other Common Names: Beebread, Borraja, Bourrache, Bugloss, Burrage, Common Borage, Fleurs De Bourrache, Hodan, Ruri-Zisa, Star-flower, *Borago officinalis*

Range: Chile; Dominican Republic; France; Haiti; Mexico; Sicily; Spain; Turkey; USA

Habitat: Waste ground near houses

Borage is a fairly common domestic herbal remedy that has been used since ancient times. It has a particularly good reputation for its beneficial affect on the mind, being used to dispel melancholy and induce euphoria. It is a soothing saline, diuretic herb that soothes damaged or irritated tissues.

The leaves, and to a lesser extent the flowers, are demulcent, diaphoretic, depurative, mildly diuretic, emollient, expectorant, febrifuge, lenitive and mildly sedative. An infusion is taken internally in the treatment of a range of ailments including fevers, chest problems and kidney problems, though it should not be prescribed to people with liver problems.

Externally it is used as a poultice for inflammatory swellings. The leaves are harvested in late spring and the summer as the plant comes into flower. They can be used fresh or dried but should not be stored for more than one year because they soon lose their medicinal properties.

Borage oil (also known as starflower oil) is an ancient oil which has been used in the far east for thousands of years. Borage oil has in recent years caused a revolution in nutritional therapeutics. It has been found to be one of the richest sources of essential fatty acids known to humans.

The seeds are a rich source of gamma-linolenic acid, this oil helps to regulate the hormonal systems and lowers blood pressure. It is used both internally and externally, helping to relieve skin complaints and pre-menstrual tension. Borage oil typically contains a GLA content of min. 20%.

Leaves - raw or cooked. They can be used as a pot-herb or be added to salads. They are also added whole as a flavoring to various drinks such as Pimms and wine-based drinks. The leaves are rich in potassium and calcium, they have a salty cucumber flavor. Very hairy, the whole leaves have an unpleasant feeling in the mouth and so they are best chopped up finely and added to other leaves when eaten in a salad. The leaves should always be used fresh, because they lose their flavor and color if dried.

Flowers - raw. They are used as a decorative garnish on salads and summer fruit drinks. The flowers are very nice, both to look at and to taste with a sweet slightly cucumber-like flavor. A refreshing tea is made from the leaves and/or the flowers. The dried stems are used for flavoring beverages.

The seed yields 30% oil, 20% of which is gamma-linolenic acid. Total yields are 0.35 - 0.65 tonnes per hectare. Unfortunately, the seed ripens intermittently over a period of time and falls from the plant when it is ripe, this makes harvesting the seeds in quantity very difficult. An edible blue dye can be obtained from the flowers. It is used to color vinegar.

Known Hazards: The plant, but not the oil obtained from the seeds, contains small amounts of pyrrolizidine alkaloids that can cause liver damage and liver cancer. These alkaloids are present in too small a quantity to be harmful unless you make borage a major part of your diet, though people with liver problems would be wise to avoid using the leaves or flowers of this plant.

See Also: [Evening Primrose Oil](#)

Boswellia - Frankincense

Other Common Names: Olibanum, Frankincense, Salai guggal, Boswellia serrata

Boswellia, from the *Boswellia serrata* tree, is found primarily in India. The *Boswellia* tree is a balsamic tree that secretes aromatic oleoresins which are collected, when they dry, into a gum, after exuding from cuts in the bark. In the ancient [Ayurvedic](#) medical texts of India, the gummy exudate from boswellia is grouped with other gum resins and referred to collectively as [guggals](#).

The gum-resin is reported to possess, sedative and marked analgesic activity. The defatted extract of the gum exudate (oleo-gum-resin) was found to possess marked anti-inflammatory and anti-arthritis activity against adjuvant arthritis in experimental animals and was free from toxicity or any other side effects. It was also shown to possess marked cholesterol and triglyceride lowering activity. Clinical trials on rheumatic patients have shown promising results. Boswellic acids isolated from the gum resin inhibit, in a concentration dependent manner, 5-lipoxygenase product formation with an IC₅₀ of 1.5 μM. Chronic toxicity studies in healthy monkeys revealed that the drug was devoid of bio-chemical, hematological and other toxicities.

The gum is credited with astringent, stimulant, expectorant, diuretic, diaphoretic, antipyretic, stomachic, emmenagogue, ecbolic and antiseptic properties. It is reported to be useful in ulcers, tumours, goitre, cystic breast, diarrhea, dysentery, piles, asthma, bronchitis, chronic laryngitis, jaundice, syphilitic and skin diseases. It is used in the preparation of an ointment for sores and is used with butter in syphilis. The gum-resin is astringent, anti-pyretic, antidysentery, expectorant, diaphoretic, diuretic, stomachic, emmenagogue. It is useful in fevers, diaphoresis, convulsions, dysentery, urethrorrhea, orchiothy, bronchitis, asthma, cough, stomatitis, syphilitic diseases, chronic laryngitis, jaundice and arthritis.

Boswellic acids are effective anti-inflammatory and anti-arthritis agents, for both osteoarthritis and rheumatoid arthritis, soft tissue rheumatism, and low back pain. They also help control excessively high blood lipids and atherosclerosis, and protect the liver against bacterial galactosamine-endotoxins. The non-acid part of the gum has pain-relieving and sedative qualities, and in high doses can lower blood pressure, and reduce heart rate in dogs but increase it in frogs. Observed benefits of *Boswellia* include reduction in joint swelling, increased mobility, steroid sparing action (less steroids required in combined treatment), less morning stiffness, improved grip strength, and general improvement in quality of life, for both osteoarthritis and rheumatoid arthritis.

Horsetail - *Equisetum arvense*

Other Common Names: At Quyroughi, Atkuyrugu, Bottle-brush, Chieh Hsu Ts'Ao, Cola De Caballo, Corn Horsetail, Equiseto Menor, Field Horsetail, Kilkah Asb, Prele, Scouring Rush, Sugina, Thanab Al Khail, Vara De Oro, Wen Ching, *Equisetum arvense*

Range: Britain; Canada; China; Germany; Guatemala; Haiti; Iraq; Kurdistan; Mexico; Panama; Spain; Turkey; USA

Habitat: Open fields, arable land, waste places, hedgerows and roadsides, usually on moist soils.

Horsetails have an unusual chemistry compared to most other plants. They are rich in silica, contain several alkaloids (including nicotine) and various minerals. Horsetail is very astringent and makes an excellent clotting agent, staunching wounds, stopping nosebleeds and reducing the coughing up of blood. It helps speed the repair of damaged connective tissue, improving its strength and elasticity.

The plant is anodyne, antihemorrhagic, antiseptic, astringent, carminative, diaphoretic, diuretic, galactagogue, haemostatic and vulnerary. The green infertile stems are used, they are most active when fresh but can also be harvested in late summer and dried for later use. Sometimes the ashes of the plant are used. The plant is a useful diuretic when taken internally and is used in the treatment of kidney and bladder problems, cystitis, urethritis, prostate disease and internal bleeding, proving especially useful when there is bleeding in the urinary tract. A decoction applied externally will stop the bleeding of wounds and promote healing. It is especially effective on nose bleeds. A decoction of the herb added to a bath benefits slow-healing sprains and fractures, as well as certain irritable skin conditions such as eczema.

The plant contains equisetin acid, which is thought to be identical to aconitic acid. This substance is a potent heart and nerve sedative that is a dangerous poison when taken in high doses.

This plant contains irritant substances and should only be used for short periods of time. It is also best only used under the supervision of a qualified practitioner.

A homeopathic remedy is made from the fresh plant. It is used in the treatment of cystitis and other complaints of the urinary system.

Some native tribes liked to eat the young vegetative shoots, picked before they had branched out, and would often collect them in great quantity then hold a feast to eat them. The leaf sheaths were peeled off and the stems eaten raw - they were said to be 'nothing but juice'.

Roots - raw. The tuberous growths on the rhizomes are used in the spring. The black nodules attached to the roots are edible. It takes considerable effort to collect these nodules so it is normally only done in times of desperation. However, native peoples would sometimes raid the underground caches of roots collected by lemmings and other rodents in order to obtain these nodules.

A further report says that the peeled stems, base of the plant, root and tubers were eaten raw by the N. American Indians, the report went on to say that this may be inadvisable.

The stems contain 10% silica and are used for scouring metal and as a fine sandpaper. They can also be used as a polish for brass, hardwood etc. The infused stem is an effective fungicide against mildew, mint rust and blackspot on roses.

Known Hazards: Large quantities of the plant can be toxic. This is because it contains the enzyme thiaminase, a substance that can rob the body of the vitamin B complex. In small quantities this enzyme will do no harm to people eating an adequate diet that is rich in vitamin B, though large quantities can cause severe health problems. The enzyme is destroyed by heat or thorough drying, so cooking the plant will remove the thiaminase. The plant also contains equisetetic acid - see the notes on medicinal uses for more information.

Pineapple - *Ananas comosus*

Other Common Names: Ananas, Pina, *Ananas comosus*

Range: Native to the American Tropics, southern Brazil and Paraguay, the cultivated pineapples are grown mainly between latitudes 24°N and 25°S, principally at lower altitudes, in many countries where climatic conditions are favorable.

Habitat: They are tolerant of a wide range of soils providing they possess good drainage, soil aeration, and a low percentage of lime. Sandy loam, mildly acid and of medium fertility, is best.

Composition: Per 100 g, the fruit is reported to contain 47–52 calories, 85.3–87.0 g H₂O, 0.4–0.7 g protein, 0.2–0.3 g fat, 11.6–13.7 g total carbohydrate, 0.4–0.5 g fiber, 0.3–0.4 g ash, 17–18 mg Ca, 8–12 mg P, 0.5 mg Fe, 1–2 mg Na, 125–146 mg K, 32–42 mg b-carotene equivalent, 0.06–0.08 mg thiamine, 0.03–0.04 mg riboflavin, 0.2–0.3 mg niacin, and 17–61(-96) mg ascorbic acid. Cultivars may contain 1–5% citric acid (wild forms up to 8.6%), ca 3.5% invert sugars, 7.5% saccharose, approaching 15% at maturity. Also reported are vanillin, methyl-n-propyl ketone, n-valerianic acid, isocaproic acid, acrylic acid, L(-)-malic acid, b-methylthiopropionic acid methyl ester (and ethyl ester), 5-hydroxytryptamine, quinic acid-1,4-di-p-coumarin.

The aromatics from the essential oils of the fruit include methanol, ethanol, n-propanol, isobutanol, n-pentanol, ethyl acetate, ethyl-n-butyrate, methylisovalerianate, methyl-n-capronate, methyl-n-caprylate, n-amyl-n-capronate, ethyl lactate, methyl-b-methylthiolpropionate, ethyl-b-methylthiolpropionate, and diacetyl, acetone, formaldehyde, acetaldehyde, furfural, and 5-hydroxy-2-methylfurfural. Steroid fractions of the lower leaves possess estrogenic activity.

Christopher Columbus and his shipmates saw the pineapple for the first time on the island of Guadeloupe in 1493 and then again in Panama in 1502. Caribbean Indians placed pineapples or pineapple crowns outside the entrances to their dwellings as symbols of friendship and hospitality. Europeans adopted the motif and the fruit was represented in carvings over doorways in Spain, England, and later in New England for many years.

The plant was growing in China in 1594 and in South Africa about 1655. It reached Europe in 1650 and fruits were being produced in Holland in 1686 but trials in England were not successful until 1712.

Pineapple is cultivated for fruit, used fresh, canned, frozen, or made into juices, syrups, or candied. Pineapple bran, the residue after juicing, is high in vitamin A, and is used in livestock feed. From the juice may be extracted citric acid, or on fermentation, alcohol. Commercial bromelain is generally prepared from pineapple wastes. A mixture of several proteases, bromelain is used in meat tenderizers, in

chill-proofing beer, manufacturing precooked cereals, in certain cosmetics, and in preparations to treat edema and inflammation. Bromelain is nematocidal.

The fruit, peel, or juice is used for corns, tumors, and warts. Reported to be abortifacient, cholagogue, depurative, diaphoretic, digestive, discutient, diuretic, ecboic, emmenagogue, estrogenic, hydragogue, intoxicant, laxative, parasiticide, purgative, refrigerant, styptic, and vermifuge, pineapple is a folk remedy for bladder ailments, hypochondria, scarlet fever, scurvy, sores, and sprains. An antiedemic substance has been reported from the rhizome. Many real or imagined pharmacological effects are attributed to bromelain: burn debridement, anti-inflammatory action, smooth muscle relaxation, stimulation of muscle contractions, cancer prevention and remission (not recognized by NCI), ulcer prevention, appetite inhibition, enhanced fat excretion, sinusitis relief. Bromelain is given as an antiinflammatory agent following dental, gynecological, and general surgery, and to treat abscesses, contusions, hematomas, sprains, and ulcerations.

Pineapple juice from unripe fruits acts as a violent purgative, and is also anthelmintic and ecboic. Ripe fruit juice is diuretic, but in large doses may cause uterine contractions. Sweetened leaf decoction drunk for venereal diseases. Juice of the leaves consumed for hiccoughs, vermifuge, and as purgative. Juice of ripe fruit regarded also as antiscorbutic, cholagogic, diaphoretic, refrigerant, and useful in jaundice.

Known hazards: In "therapeutic doses", bromelain may cause nausea, vomiting, diarrhea, skin rash, and menorrhagia.

When unripe, the pineapple is not only inedible but poisonous, irritating the throat and acting as a drastic purgative.

Excessive consumption of pineapple cores has caused the formation of fiber balls (bezoars) in the digestive tract.

Buchu - *Diosma betulina*

Other Common Names: Bookoo, Bucco, Bucku, Short Buchu, Agathosma betulina, Barosma Betulina, Barosma Crenulata, Diosma betulina.

Range: [S.W. Cape](#), South Africa.

Habitat: Grow established plants in a well drained, sunny, hot position. Minimum care is needed. Water on very hot days, or during dry spells.

A SOUTH African herb, first used by the San to make tea, is causing an international stir as a treatment for a wide range of ailments including arthritis and high blood pressure.

It's called buchu - a round, green plant about the size of a hedgehog that belongs to the fynbos plant kingdom and occurs naturally only in mountainous areas of the Western Cape.

Native to the Cape region, Buchu has been used in Europe since the 16th century not only for urinary and prostate problems, but for gout and rheumatism as well. It is still popular in South Africa.

Buchu is a small shrubby plant with round dark-green leaves which grows wild in the remote ravines of the Cedarberg, Piketberg and Du Toit's Kloof. Another species, known colloquially as steenbok buchu, comes from Swellendam; and a third species, river buchu, has oval leaves and grows along watercourses.

The Hottentots use several species, all under the common name of 'Bucku.' The leaves have a rue-like smell, and are used by the natives to perfume their bodies. Its natural oil has a powerful penetrating aroma, akin to peppermint.

The Hottentots would search for the plant, identified in winter by a small white flower, and use it as medicine for a variety of ailments, from rheumatism to bladder complaints, as well as a perfume.

The exporting of buchu leaves to Britain and the US, where it was used as a hangover cure, was a well-developed industry last century.

Buchu leaves are collected while the plant is flowering and fruiting, and are then dried and exported from [Cape Town](#). The bulk of the Buchu exported to London from South Africa eventually finds its way to America, where it is used in certain proprietary medicines. By the '40s, buchu exports to the US were worth more than R200 000 a year and to the UK more than R160 000.

Buchu is a close relative of the orange, and the leaves have a peppermint aroma and a bitter, astringent taste. Branches of the shrub are harvested and left in the shade to dry for two weeks.

The leaves fall off the stalks and may be used to flavor vinegar, a useful balm for bruises and strains, and to brew buchu tea, recommended for kidney and bladder problems.

The principal constituents of Buchu leaves are volatile oil and mucilage, also diosphenol, which has antiseptic properties, and is considered by some to be the most important constituent of Buchu its absence from the variety known as 'Long Buchu' has led to the exclusion of the latter leaves from the British Pharmacopoeia.

The Cape Government exercises strict control over the gathering of Buchu leaves and has lately made the terms and conditions more onerous, in order to prevent the wholesale destruction of the wild plants, no person being permitted to pick or buy Buchu without a licence. Cultivation experiments with Buchu have been made from time to time by private persons, and during the war experiments were conducted at the National Botanic Gardens, Kirstenbosch (near [Cape Town](#)), the result of which (given in the South African Journal of Industries, 1919, 2, 748) indicate that, under suitable conditions, the commercial cultivation of Buchu should prove a success, *B. betulina*, the most valuable kind, being the species alone to be grown. The plant is particularly adapted to dry conditions, and may be cultivated on sunny hillsides where other crops will not succeed.

In gravel, inflammation and catarrh of the bladder it is specially useful.

Buchu has long been known at the Cape as a stimulant tonic and remedy for stomachic troubles, where it is infused in Brandy and known as Buchu Brandy. Its use was learnt from the Hottentots.

It was introduced into official medicine in Great Britain in 1821 as a remedy for cystitis urethritis, nephritis and catarrh of the bladder.

It also has tonic, astringent and antiseptic properties. It is used for genito-urinary inflammations and infections such as cystitis, urethritis and prostatitis.

The most popular form of ingestion cure is buchu brandy, made by steeping a few twigs of the plant in a bottle of brandy or, even better, witblits moonshine. What the botanicals can't cure, the alcohol sorts out.

Known Hazards: Buchu can cause mucosal irritation and is contraindicated where there is acute genito-urinary tract inflammation. This irritation is due to the glycoside diosmin and the essential oil components diosphenol and pulegone.

Contraindicated in kidney inflammation.

Another species, *Barosma crenulata* or "oval buchu" is sometimes substituted for and labeled as buchu.

This spurious plant is contraindicated during pregnancy because it contains a high level of pulegone which is a mucosal irritant and uterine stimulant.

Bugleweed - *Lycopus virginicus*

Other Common Names: Bugle Weed, Gipsyweed, Horehound, Su Ferasyunu, Sweet Bugle, Virginia Water-horehound, Virginia Waterhorehound, Virginian Water Horehound, Water Bugle, Water Horehound, *Lycopus virginicus*

Range: Eastern N. America - New York and Wisconsin south to Georgia and Texas.

Habitat: Low damp shady ground in rich moist soils.

Bugleweed has sedative properties and is used in modern herbalism principally to treat an overactive thyroid gland and the racing heartbeat that often accompanies this condition.

The whole plant is used as an astringent, hypoglycaemic, mild narcotic and mild sedative. It also slows and strengthens heart contractions. The plant has been shown to be of value in the treatment of hyperthyroidism, it is also used in the treatment of coughs, bleeding from the lungs and excessive menstruation etc. It should not be prescribed for pregnant women or patients with hypothyroidism.

The plant is harvested as flowering begins and can be use fresh or dried, in an infusion or as a tincture. The root has been chewed, a portion swallowed and the rest applied externally in the treatment of snakebites.

Burdock - *Arctium lappa*

Other Common Names: Arqityon, Bardana, Beggar's Buttons, Burdock Blood, Clot-Bur, Cockle Buttons, Dulavratotu, Fox's Clote, Gobo, Greater Burdock, Greater Burrdock, Happy Major, Kewe, Kuang Mu Hsiang, Lampazo Mayor, Lappa, Love Leaves, Niu P'Ang Tzu, Niu Ts' Ai, Personata, Philanthropium, Shu Nien, Ta Li Tzu, Takinogawa Gobo, Thorny Burr, Waisar, Wu Shih, *Arctium lappa*

Range: Belgium; Britain; Canada; Chile; China; Europe; India; Iraq; Japan; Kurdistan; Spain; Turkey; USA

Habitat: Waste ground, preferring calcareous soils, it is sometimes also found in meadows and woods

Burdock is one of the foremost detoxifying herbs in both Chinese and Western herbal medicine. The dried root of one year old plants is the official herb, but the leaves and fruits can also be used. It is used to treat conditions caused by an 'overload' of toxins, such as throat and other infections, boils, rashes and other skin problems. It may be most effective for psoriasis if used over a long period of time. The root is thought to be particularly good at helping to eliminate heavy metals from the body. The plant is also part of a North American formula called *essiac* which is a popular treatment for cancer. Its effectiveness has never been reliably proven or disproven since controlled studies have not been carried out. The other herbs included in the formula are *Rumex acetosella*, *Ulmus rubra* and *Rheum palmatum*.

The plant is antibacterial, antifungal, carminative. It has soothing, mucilaginous properties and is said to be one of the most certain cures for many types of skin diseases, burns, bruises etc. It is used in the treatment of herpes, eczema, acne, impetigo, ringworm, boils, bites etc. The plant can be taken internally as an infusion, or used externally as a wash. Use with caution.

The roots of one-year old plants are harvested in mid-summer and dried. They are alterative, aperient, blood purifier, cholagogue, depurative, diaphoretic, diuretic and stomachic.

The seed is alterative, antiphlogistic, depurative, diaphoretic and diuretic. Recent research has shown that seed extracts lower blood sugar levels. The seed is harvested in the summer and dried for later use. The crushed seed is poulticed onto bruises. The leaves are poulticed onto burns, ulcers and sores.

Root - raw or cooked. Very young roots can be eaten raw, but older roots are normally cooked. They can be up to 120cm long and 2.5cm wide at the top, but are best harvested when no more than 60cm long. Old and very long roots are apt to become woody at the core. Although it does not have much flavor the root can absorb other flavors. Young roots have a mild flavor, but this becomes stronger as the root gets older. The root is white but discolors rapidly when exposed to the air. Roots can be dried for later use. They contain about 2.5% protein, 0.14% fat, 14.5% carbohydrate, 1.17% ash. The root contains about

45% inulin. Inulin is a starch that cannot be digested by the human body, and thus passes straight through the digestive system. In some people this starch will cause fermentation in the gut, resulting in wind. Inulin can be converted into a sweetener that is suitable for diabetics to eat.

Young leaves - raw or cooked. A mucilaginous texture. The leaves contain about 3.5% protein, 1.8% fat, 19.4% carbohydrate, 8.8% ash.

Young stalks and branches - raw or cooked. Used like asparagus or spinach. They taste best if the rind is removed. The leaf stalks can be parboiled and used as a substitute for cardoons.

The pith of the flowering stem can be eaten raw in salads, boiled or made into confections. A delicate vegetable, somewhat like asparagus in flavor. The seeds can be sprouted and used like beansprouts.

Known Hazards: Care should be taken if harvesting the seed in any quantity since tiny hairs from the seeds can be inhaled and these are toxic.

Butcher's Broom - *Ruscus aculeatus*

Other Common Names: Brusca, Cobanpuskulu, Jew's Myrtle, Knee Holly, Kneeholm, Kneeholy, Pettigree, Rusco, Sweet Broom, *Ruscus aculeatus*

Range: Egypt; Europe; France; Mediterranean; Spain; Turkey

Habitat: Outskirts of dry woods and in moist uncultivated ground especially on chalk.

Used by ancient Greek physicians as a laxative and a diuretic for flushing excess water from the body, Butcher's Broom fell into disrepute until the 1950s, when a French scientist discovered two chemicals from the plant's underground stem that cause blood vessels to narrow and help reduce inflammation. Butcher's broom is little used in modern herbalism but, in view of its positive effect upon varicose veins and hemorrhoids, it could be due for a revival.

The root is aperient, deobstruent, depurative, diaphoretic, diuretic and vasoconstrictor. It has been taken internally in the past in the treatment of jaundice, gout, and kidney and bladder stones, at the present time it is used to treat venous insufficiency and hemorrhoids. It should not be prescribed for patients with hypertension.

It is also applied externally in the treatment of hemorrhoids. The root is harvested in the autumn and dried for later use. The whole plant is also sometimes used. This remedy should not be given to people with high blood pressure.

The plant contains saponin glycosides, including ruscogenin and neoruscogenin. These substances are anti-inflammatory and cause the contraction of blood vessels, especially veins.

Young shoots - cooked. They are harvested in the spring as they grow through the soil and used as an asparagus substitute. The taste is pungent and rather bitter.

The roasted seed is a coffee substitute.

Known Hazards: The berries are purgative.

Calendula - *Calendula officinalis*

Other Common Names: Aklelmulk, Atunjaq, Chin Chan Hua, China, Kamisha Bahar, Maravilla, Marigold, Mercadela, Oqhuwan, Pot Marigold, Pot-marigold, Qaraqus, Tibbi Nergis, To-Kinsen-Ka, Virreina, *Calendula officinalis*

Range: Argentina; Chile; China; Iraq; Kurdistan; Mexico; Pakistan; Philippines; S. Europe; Spain; Trinidad; Turkey; Uruguay; Yugoslavia

Habitat: The original habitat is obscure but it is found as a garden escape on waste, cultivated and arable land and along roadsides

Pot marigold is one of the best known and versatile herbs in Western herbal medicine and is also a popular domestic remedy. It is, above all, a remedy for skin problems and is applied externally to bites and stings, sprains, wounds, sore eyes, varicose veins etc. It is also a cleansing and detoxifying herb and is taken internally for inflammation, stomach ulcers, menstrual cramps, fever, convulsions, liver disease, toothache, tired limbs, eye inflammations, extreme and persistent constipation, and worm infestation, and has been used as a stimulant for the heart. Only the common deep-orange flowered variety is considered to be of medicinal value.

The whole plant, but especially the flowers and the leaves, is antiphlogistic, antiseptic, antispasmodic, aperient, astringent, cholagogue, diaphoretic, emmenagogue, skin, stimulant and vulnerary. The leaves can be used fresh or dried, they are best harvested in the morning of a fine sunny day just after the dew has dried from them. The flowers are also used fresh or dried, for drying they are harvested when fully open and need to be dried quickly in the shade.

A tea of the petals tones up the circulation and, taken regularly, can ease varicose veins. An application of the crushed stems to corns and warts will soon render them easily removeable.

The leaves, blossoms and buds are used to make a homeopathic remedy. It is used internally in order to speed the healing of wounds.

Leaves - raw. When eaten they first of all impart a viscid sweetness, followed by a strong penetrating taste of a saline nature. They are very rich in vitamins and minerals and are similar to *Taraxacum officinale* (Dandelion) in nutritional value.

Fresh petals are chopped and added to salads. The dried petals have a more concentrated flavor and are used as a seasoning in soups, cakes etc. High in vitamins A and C. An edible yellow dye is obtained from the petals. A saffron substitute, it is used to color and flavor rice, soups etc. It is also used as a hair rinse,

adding golden tints to brown or auburn hair.

A tea is made from the petals and flowers, that made from the petals is less bitter.

There is no record of the seed being edible, but it contains up to 37% protein and 46% oil.

Capsicum - *Capsicum frutescens*

Other Common Names: Aji Dulce, Cayenne, Cayenne Pepper, Chili Pepper, Chabai Achong, Filfil, Hungarian Pepper, Kirmizi Biber, La Chiao, Mexican Chili, Paprika, Peppers, Piment Doux, Pimiento, Red Pepper, Sweet Pepper, *Capsicum frutescens*

Range: Probably native of the Tropics, but the original habitat is obscure. China; Dominican Republic; Europe; Gabon; Haiti; Hawaii; India; Iraq; Malagasy; Malaya; Mexico; Mongolia; Panama; Philippines; Samoa; Spain; Tonga; Trinidad; Turkey; USA

Cayenne or *Capsicum* derives its name from the Greek, 'to bite,' in allusion to the hot pungent properties of the fruits and seeds. Cayenne pepper was introduced into Britain from India in 1548, and Gerard mentioned it as being cultivated in his time. The plant was described by Linnaeus under the name of *C. frutescens* proper. This species appeared in Miller's Garden Dictionary in 1771.

The dried fruit is a powerful local stimulant with no narcotic effect, it is most useful in atony of the intestines and stomach. It has proved efficacious in dilating blood vessels and thus relieving chronic congestion of people addicted to drink. It is sometimes used as a tonic and is said to be unequalled in warding off disease (probably due to the high vitamin C content).

Used externally, it is a strong rubefacient stimulating the circulation, aiding the removal of waste products and increasing the flow of nutrients to the tissues. It is applied as a cataplasm or linament. Cayenne also relieves painful muscle spasms in the shoulder, arm, and spine areas, bursitis, the pain of shingles, and the pain of diabetic neuropathy. It has also been powdered and placed inside socks as a traditional remedy for those prone to cold feet.

The fruit is also antihemorrhoidal, antirheumatic, antiseptic, carminative, diaphoretic, digestive, sialagogue and stomachic. These pungent fruited peppers are important in the tropics as gastrointestinal detoxicants and food preservatives.

The fruits contain 0.1 - 1.5% capsaicin. This substance stimulates the circulation and alters temperature regulation. Applied to the skin it desensitizes nerve endings and so has been used as a local anaesthetic. The seed contains capsidins. These are thought to have antibiotic properties.

Fruit - raw or cooked. Very hot and normally used as a flavoring. The fruit can be dried and ground into a powder for use as a flavouring. The fruit is up to 7.5cm long and 1cm wide.

Seed - dried, ground and used as a pepper.

Leaves - cooked as a potherb.

Known Hazards: Although no reports have been seen for this species, many plants in this family produce toxins in their leaves. The sap of the plant can cause the skin to blister.

Carob - *Ceratonia siliqua*

Other Common Names: Algaroba, Algarrobo, Carob, Carob-Tree, Caroube, John's Bread, Keciboynuzu Agaci, St John's Bread, St John's-bread, *Ceratonia siliqua*

Range: S. Europe; Egypt; Spain; Turkey

Habitat: Rocky places near the sea shore

Carob Tree or *Ceratonia siliqua*, is a small tree of the Mediterranean coasts. It furnishes the St. John's Bread which probably corresponds to the husks of the Prodigal Son parable, and the seed which is said to have been the original jewellers' carat weight. The Spaniards call it Algaroba, and the Arabs Kharoub, hence Carob or Caroub Pods, Beans, or Sugar-pods. It is also called Locust Pods. These pods are much used in the south of Europe for feeding domestic animals and, in times of scarcity, as human food. Being saccharine, they are more heatgiving than nourishing. The seeds or beans were used as fodder for British cavalry horses during the Spanish campaign of 1811-12.

The pulp in the seedpods of carob is very nutritious and, due to its high sugar content, sweet-tasting and mildly laxative. However, the pulp in the pods is also astringent and, used in a decoction, will treat diarrhoea and gently help to cleanse and also relieve irritation within the gut. Whilst these appear to be contradictory effects, carob is an example of how the body responds to herbal medicines in different ways, according to how the herb is prepared and according to the specific medical problem. The seedpods are also used in the treatment of coughs. A flour made from the ripe seedpods is demulcent and emollient. It is used in the treatment of diarrhea.

The seed husks are astringent and purgative. The bark is strongly astringent. A decoction is used in the treatment of diarrhea.

Seedpods - raw or ground into a powder. The seedpods are filled with a saccharine pulp and can be eaten both green or dried. They are very sweet but fibrous, the pulp can be used as a chocolate substitute in cakes, drinks etc. It is rich in sugars and protein. The pods contain about 55% sugars, 10% protein and 6% fat.

Seed - rich in protein. A flour is made from them which is 60% protein, it is free from sugar and starch and is suitable for baking. It can be used as a chocolate substitute. An edible gum is extracted from the seed, a substitute for Gum Tragacanth (*Astragalus* species). A stabilizer and thickening agent, it is also used as an egg substitute. The roasted seed is a coffee substitute.

Cascara - hamnus purshianus

Other Common Names: Bitter Bark, California Buckthorn, Cascara Buckthorn, Cascara Sagrada, Chittem Bark, Dogwood Bark, Purshiana Bark, Pursh's Buckthorn, Sacred Bark, Sagrada Bark, Yellow Bark, Rhamnus purshianus

Range: Western N. America - British Columbia to California.

Habitat: Rich bottom lands and sides of canyons, usually in coniferous forests.

Native to the Pacific Northwest, Cascara probably earned the name "sacred bark" through its ability to relieve constipation so quickly.

Cascara sagrada is widely used as a gentle laxative that restores tone to the bowel muscles and thus makes repeated doses unnecessary. The bark is harvested on a commercial basis from wild trees and plantations in western N. America. It should be harvested in the autumn or spring at least 12 months before it is used medicinally, in order to allow the more violent purgative effect to be mollified with age. Three year old bark is considered to be the best age. It is considered suitable for delicate and elderly persons and is very useful in cases of chronic constipation.

The bark also has tonic properties, promoting gastric digestion and appetite. As well as its uses as a laxative, it is taken internally in the treatment of digestive complaints, haemorrhoids, liver problems and jaundice. This remedy should be used with caution since in excess it causes vomiting and diarrhea. It should not be prescribed for pregnant or lactating women, or patients with intestinal obstruction. An infusion of the bark is sometimes painted over finger nails in the hope that the bitter taste will deter the person from biting their nails.

Fruit - raw or cooked. A thin, rather juicy flesh. It is sometimes eaten. There is some debate as to whether the fruit is edible or slightly toxic. The fruit is about 10mm in diameter and contains 2 - 3 small seeds.

An extract of the bark, with the bitterness removed (by drying?) is a common flavoring for soft drinks, baked goods and ice cream.

Known Hazards: There is the suggestion that this species could be mildly poisonous.

Do not take Cascara if you have an intestinal obstruction, appendicitis, abdominal pain of unknown origin, or an inflammatory intestinal disorder such as ulcerative colitis, irritable bowel syndrome, or Crohn's disease. Not for children under 12.

Avoid the fresh rind of the Cascara plant. Taking it can lead to intestinal spasms and pain, bloody diarrhea, and kidney irritation.

Catnip - *Nepeta cataria*

Other Common Names: Cat-mint, Catmint, Catnep, Inu-Hakka, Nebeda, Nepeta, Yalanci Kediotu, *Nepeta cataria*

Range: Britain; Spain; Turkey; USA

Habitat: Roadsides and near streams. Hedgerows, borders of fields, dry banks and waste ground, especially on calcareous and gravelly soils.

Catnip has a long history of use as a household herbal remedy, being employed especially in treating disorders of the digestive system and, as it stimulates sweating, it is useful in reducing fevers. The herbs pleasant taste and gentle action makes it suitable for treating colds, flu and fevers in children. It is more effective when used in conjunction with elderflower (*Sambucus nigra*).

The leaves and flowering tops are strongly antispasmodic, antitussive, astringent, carminative, diaphoretic, slightly emmenagogue, refrigerant, sedative, slightly stimulant, stomachic and tonic. The flowering stems are harvested in August when the plant is in full flower, they are dried and stored for use as required. An infusion produces free perspiration, it is considered to be beneficial in the treatment of fevers and colds. It is also very useful in the treatment of restlessness and nervousness, being very useful as a mild nervine for children. A tea made from the leaves can also be used. The infusion is also applied externally to bruises, especially black eyes.

Young leaves - raw. A mint-like flavor, they make an aromatic flavoring in salads.

Older leaves are used as a flavoring in cooked foods. They can be used fresh or dried to make an aromatic herb tea. The tea should be infused in a closed container in order to preserve the essential oils, boiling is said to spoil it.

The plant is said to deter insects such as ants and flea beetles as well as rats and mice. (The idea behind it being a rat repellent is probably based on the plants attraction to cats.) A strong infusion can be used to repel fleas from carpets or the fur of animals. An extract from the leaves (called nepetalactone) has herbicidal and insect repellent properties.

The freshly harvested flowering tops contain 0.3 - 1% essential oil by distillation. It is mainly used for medicinal purposes. The dried leaves retain their fragrance and can be used in pot-pourri.

Cat's Claw - *Uncaria tomentosa*

Other Common Names: Uña de gato, *Uncaria tomentosa*

Range: South and Central America, Andes mountains, particularly in Peru.

Habitat: Rain forest.

The Spanish name for it is "Uña de gato". The name comes from the claw like features of the plant vines that resemble cat's claws. The inner bark of the vine is thought to contain the medicinal properties and therefore, is used to treat the following conditions: arthritis, gastritis, asthma, gastric ulcer, diabetes, cancer and tumors, viral infections, menstrual disorders, convalescence, rheumatism, general debility, gonorrhea, stimulate the immune system, and to promote wound healing.

According to Ramon Ferreyra, Ph.D., a Harvard-educated botanist and professor at San Marcos University in Lima, Peru and the President of the Peruvian Botanical Society, states that twelve herbs in Peru are identified as Uña de gato or cat's claw. The herb of primary interest to alternative medicine researchers is *Uncaria tomentosa*, a woody vine that grows 1100 feet or more.

The active constituents of *Uncaria tomentosa* may be a group of alkaloids with immune stimulating activity. Recent reports have demonstrated *Uncaria's* role in improving immunity in cancer patients as well as its anti-mutagenic properties. All the individual alkaloids of *Uncaria tomentosa* with the exception of rynchophylline and mitraphylline have immunostimulant properties and the ability to enhance phagocytosis in vitro.

Cat's claw is available as a tincture, capsules, tablets, elixirs, and as a cream. It may also be used as a tea. It can also be found mixed with other herbal therapies such as aloe.

Known Hazards: This product should not be taken if you have an autoimmune disease, multiple sclerosis, or tuberculosis. In Europe, health care providers avoid combining this herb with hormonal drugs, insulin, or vaccines. Do not take this product if you are pregnant or breast-feeding. Cat's claw may block platelets from forming clots, so you should be cautious if you are already taking a medication, including aspirin, which thins the blood.

A word of caution for the prospective buyers of cat's claw: another plant also known as cat's claw, (botanical name-*Acacia gregii*), grows along the Northern Mexico and Southern Texas border. People are purchasing this plant mistakenly believing it to be the Peruvian medicinal plant. This plant may be poisonous and is thought to contain a cyanide-based chemical compound. The Peruvian cat's claw has a cinnamon colored bark; whereas, the South Texas plant comes from a shrub and so contains little twigs and leaves.

Chamomile - *Matricaria recutita*

Other Common Names: Amerale, Babunnej, Bayboon, Camomile, German Chamomile, Manzanilla, German Chamomile, Kami-Ture, Manzanilla, Manzanilla Dulce, Papatya, *Matricaria recutita*

Range: Belgium; Britain; Chile; China; Dominican Republic; Europe; France; Hungary; Iraq; Kurdistan; Mexico; Peru; Spain; Turkey; Venezuela

Habitat: Sandy or loamy arable soils. Also found on saline steppes in Europe.

Chamomile is one of the oldest favorites amongst garden herbs and its reputation as a medicinal plant shows little signs of abatement. The Egyptians revered it for its virtues, and from their belief in its power to cure ague, dedicated it to their gods.

No plant was better known to the country folk of old, it having been grown for centuries in English gardens for its use as a common domestic medicine to such an extent that the old herbals agree that 'it is but lost time and labour to describe it.'

German chamomile is a well known herbal remedy and is much used in the West. In particular it is an excellent herb for treating various digestive disorders, nervous tension and irritability and is also used externally to treat skin problems.

Chamomile Tea, is an old-fashioned but extremely efficacious remedy for hysterical and nervous affections in women. It has a wonderfully soothing, sedative and absolutely harmless effect. It is considered a preventive and the sole certain remedy for nightmare. It will cut short an attack of delirium tremens in the early stage. It has sometimes been employed in intermittent fevers.

An infusion of the flowers is taken internally as an anodyne, anti-inflammatory, antiseptic, antispasmodic, carminative, cholagogue, diaphoretic, emmenagogue, febrifuge, sedative, stomachic, tonic and vasodilator. An infusion is particularly useful as a stomachic, nervine and sedative for young children, especially when they are teething. It is also used in the treatment of irritable bowel syndrome, Crohn's disease, peptic ulcers and hiatus hernia. In large doses, or when taken regularly for several times each day, the tea can be emetic and can also cause the symptoms it is intended to cure.

The flowers are also used externally to treat wounds, sunburn, burns, hemorrhoids, mastitis and leg ulcers. The flowers are harvested when fully open and are dried for later use. The flowers contain various volatile oils including proazulenes. Upon steam distillation these proazulenes produce chamazulene, this is remarkably anti-allergenic and is useful in the treatment of asthma and hay fever. The flowers are sometimes added to cosmetics as an anti-allergenic agent.

The whole plant, harvested when in flower, is used to make a homeopathic remedy. It is especially suited to teething children and those who have been in a highly emotional state over a long period of time.

Chamomile Tea should in all cases be prepared in a covered vessel, in order to prevent the escape of steam, as the medicinal value of the flowers is to a considerable extent impaired by any evaporation, and the infusion should be allowed to stand on the flowers for 10 minutes at least before straining off.

Chaparral - *Larrea tridentata*

Other Common Names: Gobernadora, Hediondilla, Creosote Bush, Creosote Bush, Creosote-bush, Gebernadora, Gobernadora, Greasewood, Hediondilla, *Larrea tridentata*

Range: Southwestern N. America; Mexico

Habitat: Desert areas

Creosote bush was widely used by various North American Indian tribes. A decoction of the leaves was used to treat diarrhea and stomach troubles whilst the young twigs were used to treat toothache and a poultice of the leaves was used to treat chest complaints and as a wash for skin problems.

It continued to be widely used as a treatment for rheumatic disease, venereal infections, urinary infections and certain types of cancer, especially leukaemia until its sale was banned in North America due to concern over its potential toxic effect upon the liver. There have been a number of cases of acute or sub-acute hepatitis attributed to the use of this herb and so its internal use is not recommended until further research has been carried out.

A number of cases of acute toxic hepatitis have been attributed to ingestion of a nutritional supplement derived from the leaves of the creosote or greasewood bush (*Larrea tridentata*), commonly known as chaparral. Use of the supplement appears to have led to serious liver injury and fulminant hepatic failure requiring orthotopic liver transplantation. Chaparral, which grows wild in arid regions of the Southwestern U.S. and Mexico, has been recommended in nonscientific publications for use as a "free radical scavenger" or "antioxidant" to treat a variety of conditions including hepatitis and alcohol withdrawal. Chaparral tea, made from the leaves is also a traditional American Indian medicine. Although the toxin in chaparral has not been definitively identified, a possible active ingredient is a potent antioxidant, nordihydroguaiaretic acid (NDGA), which can act in low doses as a lipoxygenase pathway inhibitor but at high doses as an inhibitor of cyclooxygenase pathways as well as cytochrome P-450 activity in rats.

Based on the information above, one might conclude that chaparral-induced liver injury is more likely to arise and/or to be more severe in former alcohol abusers or other people with preexisting liver disease. - National Institute of Environmental Health Sciences.

A tea made from the leaves is used as an expectorant and pulmonary antiseptic. Some N. American Indian tribes heated the shoot tips of this plant and dripped the sap (probably the resin) into tooth cavities to treat toothache.

Chickweed - *Stellaria media*

Other Common Names: Adder's Mouth, Alsine, Chick Wittles, Chickenmeat, Clucken Wort, Common Chickweed, Hashishat Al Qazzaz, Passerina, Satinflower, Sercedili, Skirt Buttons, Star Chickweed, Starweed, Starwort, Stitchwort, Tongue Grass, White Bird's Eye, Winterweed, *Stellaria media*

Range: Britain; Iraq; Spain; Turkey; USA

Habitat: It has been said that there is no part of the world where the Chickweed is not to be found. It is a native of all temperate and north Arctic regions, and has naturalized itself wherever man has settled, becoming one of the commonest weeds.

Chickweed has a very long history of herbal use, being particularly beneficial in the external treatment of any kind of itching skin condition. It has been known to soothe severe itchiness even where all other remedies have failed. In excess doses chickweed can cause diarrhea and vomiting. It should not be used medicinally by pregnant women.

The whole plant is astringent, carminative, demulcent, diuretic, expectorant, laxative, refrigerant, vulnerary. Taken internally it is useful in the treatment of chest complaints and in small quantities it also aids digestion. It can be applied as a poultice and will relieve any kind of roseola and is effective wherever there are fragile superficial veins. An infusion of the fresh or dried herb can be added to the bath water and its emollient property will help to reduce inflammation - in rheumatic joints for example - and encourage tissue repair. Chickweed is best harvested between May and July, it can be used fresh or be dried and stored for later use.

A decoction of the whole plant is taken internally as a post-partum depurative, emmenagogue, galactagogue and circulatory tonic. It is also believed to relieve constipation and be beneficial in the treatment of kidney complaints. The decoction is also used externally to treat rheumatic pains, wounds and ulcers. The expressed juice of the plant has been used as an eyewash.

Young leaves - raw or cooked as a potherb. They can be available all year round if the winter is not too severe. Very nutritious, they can be added to salads whilst the cooked leaves can scarcely be distinguished from spring spinach. The leaves contain saponins so some caution is advised. A nutritional analysis is available.

Seed - ground into a powder and used in making bread or to thicken soups. It would be very fiddly to harvest any quantity of this seed since it is produced in small quantities throughout most of the year and is very small. The seed contains 17.8% protein and 5.9% fat.

Known Hazards: The leaves contain saponins. Although toxic, these substances are very poorly absorbed by the body and so tend to pass through without causing harm. They are also broken down by thorough cooking. Saponins are found in many plants, including several that are often used for food, such as certain beans. It is advisable not to eat large quantities of food that contain saponins. Saponins are much more toxic to some creatures, such as fish, and hunting tribes have traditionally put large quantities of them in streams, lakes etc in order to stupefy or kill the fish.

Cinnamon - *Cinnamomum zeylanicum*

Other Common Names: Canela, Sees (Ceylon cinnamon), *Laurus Cinnamomum*, *Cinnamomum zeylanicum*

Range: Native to Sri Lanka and India, has also been cultivated in the Brazils, Mauritius, Jamaica, etc.

Habitat: Grows best in almost pure sand.

It is hardy in the Gulf States of the U.S. Most of the cinnamon of commerce comes from Ceylon. It is the ground bark of the tree. The best quality of bark is from branches at least 2 years old. Cinnamon is widely used in cookery and confections. The flavor is due to a volatile oil contained in the bark. The cinnamon oil of commerce is extracted from inferior bark, not suitable for grinding.

The principal active ingredient in the volatile oil is cinnamaldehyde, which is responsible for the characteristic odor. The quality attributes are measured by volatile oil, aldehyde content of the volatile oil, non-volatile ether extract, total and acid insoluble ash, and moisture.

Carminative, astringent, stimulant, antiseptic; more powerful as a local than as a general stimulant; is prescribed in powder and infusion but usually combined with other medicines. It stops vomiting, relieves flatulence, and given with chalk and astringents is useful for diarrhea and hemorrhage of the womb.

Cinnamon is a very elegant and useful aromatic, more grateful both to the palate and stomach than most other substances of this class. Like other aromatics, the effects of cinnamon are stimulating, heating, stomachic, carminative, and tonic; but it is rather used as an adjunct to other remedies than as a remedy itself. Cinnamon has also been used as a treatment to stimulate the appetites of anorexics.

The oil is one of the most powerful stimulants we possess, and it is sometimes used as a cordial in cramps of the stomach, and in syncope; or as a stimulant in paralysis of the tongue, or to deaden the nerve in toothach. But it is principally employed as an aromatic, to cover the disagreeable taste of other drugs.

Known Hazards: Generally Recognized as Safe.

Consumer exposure to Cinnamaldehyde, used primarily in the flavor and fragrance industries for imparting a cinnamon flavor and/or fragrance to various types of foods, beverages, medical products, and perfumes. This chemical is used in the liquor industry for flavoring liqueurs and cordials.

Cinnamaldehyde has been reported to have anti-platelet aggregating and vasodilatory action in vitro .

Cinnamaldehyde has been found to be cytotoxic to L1210 mouse cells. The degree of cytotoxicity of Cinnamaldehyde was found to be proportional to the amount of the compound added to the cell culture medium.

Cleavers - Galium aparine

Other Common Names: Amor De Hortelano, Barweed, Catchweed, Cleavers Goosegrass, Cleever, Clivers, Eriffe, Everlasting Friendship, Gia Mara, Goosebill, Goosegrass, Grateron, Grip Grass, Hashishat Al Af'A, Hayriff, Hayruff, Hedge Clivers, Hedgeheriff, Kaz Yogurtotu, Loveman, Mutton Chops, Robin-run-in-the-Grass, Scratweed, Sticky-willy, Stickywilly, Zhu Yang Yang, Galium aparine

Range: Australia; Britain; China; Europe; France; Iraq; Kurdistan; Mexico; Spain; Turkey; USA

Habitat: Hedgerows and as a weed of cultivated land. Moist and grassy places on most types of soil.

Goosegrass has a long history of domestic medicinal use and is also used widely by modern herbalists. A valuable diuretic, it is often taken to treat skin problems such as seborrhoea, eczema and psoriasis, and as a general detoxifying agent in serious illnesses such as cancer.

The whole plant, excluding the root, is alterative, antiphlogistic, aperient, astringent, depurative, diaphoretic, diuretic, febrifuge, tonic and vulnerary. It is harvested in May and June as it comes into flower and can be used fresh or dried for later use. It is used both internally and externally in the treatment of a wide range of ailments, including as a poultice for wounds, ulcers and many other skin problems, and as a decoction for insomnia and cases where a strong diuretic is beneficial. It has been shown of benefit in the treatment of glandular fever, ME, tonsilitis, hepatitis, cystitis etc. The plant is often used as part of a spring tonic drink with other herbs.

A tea made from the plant has traditionally been used internally and externally in the treatment of cancer. One report says that it is better to use a juice of the plant rather than a tea. The effectiveness of this treatment has never been proved or disproved.

A number of species in this genus contain asperuloside, a substance that produces coumarin and gives the scent of new-mown hay as the plant dries. Asperuloside can be converted into prostaglandins (hormone-like compounds that stimulate the uterus and affect blood vessels), making the genus of great interest to the pharmaceutical industry.

The tender young shoot tips - raw or cooked as a pot-herb. A rather bitter flavor that some people find unpalatable, they are best used in the spring. They make a useful addition to vegetable soups. It is said that using this plant as a vegetable has a slimming effect on the body.

The roasted seed is a coffee substitute. One of the best substitutes, it merely needs to be dried and lightly roasted and has much the flavor of coffee. A decoction of the whole dried plant gives a drink equal to tea.

Known Hazards: The sap of the plant can cause contact dermatitis in sensitive people.

Red Clover - *Trifolium pratense*

Other Common Names: Bersim Ahmar, Kirmizi Yonca, Meadow Honeysuckle, Meadow Trefoil, Murasaki-Tume-Kusa, Nafal, Purple Clover, Trebol, Trebol Rojo, Trefoil, *Trifolium pratense*

Range: Australia; Britain; Eurasia; Europe; Iraq; Spain; Turkey; USA; Russia

Habitat: Meadows, pastures and other grassy places, especially on calcareous soils. Usually found on circumneutral soils.

Red clover is safe and effective herb with a long history of medicinal usage. It is commonly used to treat skin conditions, normally in combination with other purifying herbs such as *Arctium lappa* and *Rumex crispus*. It is a folk remedy for cancer of the breast, a concentrated decoction being applied to the site of the tumour in order to encourage it to grow outwards and clear the body. Flavonoids in the flowers and leaves are estrogenic and may be of benefit in the treatment of menopausal complaints.

The flowering heads are alterative, anti-scrofulous, anti-spasmodic, aperient, detergent, diuretic, expectorant, sedative and tonic. Red Clover is valued for its ability to loosen phlegm and calm bronchial spasms. It has also shown anti-cancer activity, poultices of the herb have been used as local applications to cancerous growths. Internally, the plant is used in the treatment of skin complaints (especially eczema and psoriasis), cancers of the breast, ovaries and lymphatic system, chronic degenerative diseases, gout, whooping cough and dry coughs. The plant is normally harvested for use as it comes into flower and some reports say that only the flowers are used.

The toxic indolizidine alkaloid 'slafamine' is often found in diseased clover (even if the clover shows no external symptoms of disease). This alkaloid is being studied for its anti-diabetic and anti-AIDS activity.

Leaves and young flowering heads - raw or cooked. The young leaves are harvested before the plant comes into flower, and are used in salads, soups etc. On their own they can be used as a vegetable, cooked like spinach. The leaves are best cooked. They can be dried, powdered and sprinkled on foods such as boiled rice. The leaves contain 81% water, 4% protein, 0.7% fat, 2.6% fiber and 2% ash.

The seed can be sprouted and used in salads. A crisp texture and more robust flavor than alfalfa (*Medicago sativa*). The seeds are reported as containing trypsin inhibitors. These can interfere with certain enzymes that help in the digestion of proteins, but are normally destroyed if the seed is sprouted first.

Flowers and seed pods - dried, ground into a powder and used as a flour. The young flowers can also be eaten raw in salads.

A delicate sweet herb tea is made from the fresh or dried flowers.

The dried leaves impart a vanilla flavor to cakes etc.

Known Hazards: Diseased clover, even if no symptoms of disease are visible, can contain toxic alkaloids.

Coltsfoot - *Tussilago farfara*

Other Common Names: Ass's Foot, Bullsfoot, Clayweed, Cleats, Colt's-foot, Coughwort, Donnhove, Farfara, Fieldhove, Foalswort, Hallfoot, Horsehoof, Huki-Tanpopo, K'Uan Tung, Oksurukotu, Son-before-father, To Wu, Tusilago, *Tussilago farfara*

Range: Chile; China; Eurasia; France; Spain; Turkey

Habitat: Damp habitats, frequently on alkaline clays, in hedgebanks, roadsides, wasteland, often as a pioneer, and on dunes and shingle in coastal zones

An effective demulcent and expectorant herb, coltsfoot is one of the most popular remedies for the treatment of a wide range of chest complaints. It is widely available in health food shops. The leaves are commonly used in Europe, though the flowering stems (which contain higher levels of pyrrolizidine alkaloids) are preferred in China. They are rich in mucilage and are the main parts used, though the root is also sometimes employed. Pyrrolizidine alkaloids have a toxic effect upon the liver, but are largely destroyed when the plant is boiled to make a decoction. Some caution should be employed in the use of this remedy - the flowers should not be used except under professional supervision, the leaves should not be used for more than 4 - 6 weeks at a time, the herb should not be taken whilst pregnant or breast-feeding and it should not be given to children under the age of six.

The botanical name, *Tussilago*, signifies 'cough dispeller,' and Coltsfoot has justly been termed 'nature's best herb for the lungs and her most eminent thoracic.' The smoking of the leaves for a cough has the recommendation of Dioscorides, Galen, Pliny, Boyle, and other great authorities, both ancient and modern, Linnaeus stating that the Swedes of his time smoked it for that purpose. Pliny recommended the use of both roots and leaves. The leaves are the basis of the British Herb Tobacco, in which Coltsfoot predominates, the other ingredients being Buckbean, Eyebright, Betony, Rosemary, Thyme, Lavender, and Chamomile flowers. This relieves asthma and also the difficult breathing of old bronchitis. Those suffering from asthma, catarrh and other lung troubles derive much benefit from smoking this Herbal Tobacco, the use of which does not entail any of the injurious effects of ordinary tobacco.

Modern research has shown that extracts of the whole plant can increase immune resistance. In a Chinese trial 75% of patients suffering from bronchial asthma showed some improvement after treatment with this plant, though the anti-asthmatic effect was short-lived.

The leaves are harvested in June and early July, the flowers are harvested when fully open and the root is harvested in the autumn. All can be dried and used as required.

The plant is antitussive, astringent, demulcent, emollient, expectorant, stimulant and tonic. It is widely

used in the treatment of coughs and respiratory problems and is often candied so that it can be sucked as a candy. The plant is of particular use in the treatment of chronic emphysema and silicosis, helping to relieve the persistent cough associated with these conditions. Coltsfoot is particularly effective when used in combination with liquorice (*Glycyrrhiza* species), thyme (*Thymus vulgaris*) and wild cherry (*Prunus serotina*).

A poultice of the flowers has a soothing effect on a range of skin disorders including eczema, ulcers, sores, bites and inflammations.

A bitter, tonic and diaphoretic preparation can be obtained from the root.

Flower buds and young flowers - raw or cooked. A pleasant aniseed flavor, they add a distinctive aromatic flavor to salads.

Young leaves - raw or cooked. They can be used in salads, added to soups, or cooked as a vegetable. The leaves have a bitter taste unless they are washed after being boiled. An aromatic tea is made from the fresh or dried leaves and flowers. It has a liquorice-like flavor. The dried and burnt leaves are used as a salt substitute. The slender rootstock is candied in sugar syrup.

Known Hazards: The plant contains traces of liver-affecting pyrrolizidine alkaloids and is potentially toxic in large doses. These alkaloids have not proved toxic at low dosages in tests and there is no suggestion that this plant should not be used medicinally.

Comfrey - *Symphytum officinale*

Other Common Names: Ass Ear, Blackwort, Boneset, Borraja, Bourrache, Bruisewort, Buyuk Karakafesotu, Comfry, Common Comfrey, Consolida, Consoude, Consound, Consuelda, Gum Plant, Healing Herb, Hirehari-So, Knitback, Knitbone, Liane Chique, Slippery Root, Yalluc, *Symphytum officinale*.

Range: Britain; China; Dominican Republic; Europe; Haiti; Spain; Turkey; USA

Habitat: Damp, often shady localities, in meadows, woods etc, especially near streams and rivers.

Comfrey is a commonly used herbal medicine with a long and proven history in the treatment of various complaints. The root and the leaves are used, the root being more active, and they can be taken internally or used externally as a poultice. Comfrey is especially useful in the external treatment of cuts, bruises, sprains, sores, eczema, varicose veins, broken bones etc, internally it is used in the treatment of a wide range of pulmonary complaints, internal bleeding etc. The plant contains a substance called 'allantoin', a cell proliferant that speeds up the healing process. This substance is now synthesized in the pharmaceutical industry and used in healing creams.

The root and leaves are anodyne, astringent (mild), demulcent, emollient, expectorant, haemostatic, refrigerant, vulnerary. Some caution is advised, however, especially in the internal use of the herb. External applications and internally taken teas or tinctures of the leaves are considered to be completely safe, but internal applications of tablets or capsules are felt to have too many drawbacks for safe usage.

The leaves are harvested in early summer before the plant flowers, the roots are harvested in the autumn. Both are dried for later use.

A homeopathic remedy is made from the fresh root, harvested before the plant flowers. This has a very limited range of application, but is of great benefit in the treatment of broken bones and eye injuries.

Young leaves - cooked or raw. The leaf is hairy and the texture is mucilaginous. It may be full of minerals but it is not pleasant eating for most tastes. It can be chopped up finely and added to salads, in this way the hairyness is not so obvious.

Young shoots can be used as an asparagus substitute. The blanched stalks are used.

A tea is made from the dried leaves and roots. Older leaves can be dried and used as a tea.

The peeled roots are cut up and added to soups. The roasted roots are used with dandelion and chicory

roots for making coffee.

Known Hazards: This plant contains small quantities of a toxic alkaloid which can have a cumulative effect upon the liver. Largest concentrations are found in the roots, leaves contain higher quantities of the alkaloid as they grow older and young leaves contain almost none. Most people would have to consume very large quantities of the plant in order to do any harm, though anyone with liver problems should obviously be more cautious. In general, the health-promoting properties of the plant probably far outweigh any possible disbenefits, especially if only the younger leaves are used.

Cranberry - *Vaccinium macrocarpon*

Other Common Names: American Cranberry, Large Cranberry, *Vaccinium macrocarpon*

Range: Eastern N. America, Native to North America

Habitat: Acid boggy ground, the plant is cultivated in Cranberry bogs throughout New England and elsewhere.

Cranberry has long been recommended as a preventive measure against repeated urinary tract infections. It is also taken to prevent kidney stones and "bladder gravel." The medicinal part is the ripe fruit.

Cranberry prevents *E. coli*--the most common cause of urinary tract infections--from adhering to the wall of the bladder, making it difficult for infection to take hold. It will not, however, kill the bacteria once they're established.

An infusion of the branches has been used as a treatment for pleurisy.

Cranesbill - *Geranium maculatum*

Other Common Names: Alum Bloom, Alum Root, American Cranesbill Root, Benekli Turnagagasi, Chocolate Flower, Wild Geranium, Crowfoot, Dove's Foot, Geranium, Old Maid's Nightcap, Shameface, Spotted Crane's-bill, Spotted Cranesbill, Spotted Geranium, Storkbill, Wild Cranesbill, Wild Geranium, *Geranium maculatum*

Range: Eastern N. America - Maine to Georgia, west to Arkansas, Kansas and Manitoba.

Habitat: Wet places in woods, wet rocks and in swamps. Woodlands, thickets and meadows.

The whole plant, but especially the root, is antiseptic, highly astringent, diuretic, styptic and tonic. An infusion of the whole plant, or of the roots alone, is used in the treatment of diarrhea (especially in children and the elderly), dysentery, irritable bowel syndrome, cholera, kidney complaints, bleeding and a wide range of other ailments.

It is often used in combination with other herbs. Externally, it is applied to purulent wounds, hemorrhoids, thrush, vaginal discharges and inflammations of the mouth. The plants are rich in tannin, the root containing 10 - 20%.

The roots can be harvested in the autumn then dried and stored. It is best to harvest the roots as the plant comes into flower since it is then at its most active medicinally. The leaves are harvested as the plant comes into flower and are dried for later use.

Soybean - Glycine max

Other Common Names: Chiang, Chiang Yu, Hei Tou, Huang Tou, Jen Shu, Jung Shu, Pai Tou, Shih Tou, Shih Yu, Shu, Soy Bean, Soya Fasulyasi, Soybean, Ta Tou, Ta Tou Huang Chuen, Ta Tou Shih, Tou Fu, Tou Huang, Tou Yu, Wild Soybean, Glycine max

Range: Asia; China; India; Japan; USA

Habitat: Lowland thickets. A subtropical plant, but its cultivation extends from the tropics to 52°N. In the US it has its greatest development in the corn belt. Grows best on fertile, well-drained soils, but does tolerate a wide range of soil conditions.

Composition: Raw seeds of Glycine max have been reported to contain per 100 g, 139 calories, 68.2% moisture, 13.0 g protein, 5.7 g fat, 11.4 g carbohydrate, 1.9 g fiber, 1.7 g ash, 78 mg Ca, 158 mg P, 3.8 mg Fe, 0.40 mg thiamine, 0.17 mg riboflavin, 1.5 mg niacin, and 27 mg ascorbic acid.

Sprouts contain per 100 g (edible portion): 62 calories, 81.5% moisture, 7.7 g protein, 1.8 g fat, 8.0 g total carbohydrate, 0.7 g fiber, 1.0 g ash, 52 mg Ca, 58 mg P, 1.1 mg Fe, 30 mg Na, 279mg K, 25 mg b-carotene equivalent, 180 IU vitamin A, 0.19 mg thiamine, 0.15 mg riboflavin, 0.8 mg niacin, and 10 mg ascorbic acid.

Dried yellow seeds are reported to contain 400 calories, 10.2% moisture, 35.1 g protein, 17.7 g fat, 32.0 g carbohydrate, 4.2 g fiber, 5.0 g ash, 226 mg Ca, 546 mg P, 8.5 mg riboflavin, and 2.2 mg niacin.

Soybean lecithin contains 11.7% palmitic acid, 4.0 stearic, 8.6 palmitic, 9.8% oleic, 55.0 linoleic, 4.0 linolenic, and 5.5% C20 to C22 acids (including arachidonic). Agglobulin, glycinine, accounts for 80–90% of the total nitrogen protein of the seed. Glycinine contains 1.1% cystine, 1.8 methionine, 5.4 lysine, 1.7 tryptophane, 2.1 threonine, 9.2 leucine, 2.4 isoleucine, 4.3 phenylalanine, 3.9 tyrosine, 2.2 histidine, 1.6 valine, 8.3 arginine, 0.7 glycine, 1.7 alanine, 5.7 aspartic acid, 19.0 glutamic acid, and 4.3% proline. Glycine has also been reported to contain betaine, choline, guanidine, hydrocyanic acid, isovaleraldehyde, maltose, oxalic acid, saponin, trigonelline, and tryptophane.

Linguistic, geographical and historical evidence suggest that the soybean emerged as a domesticate around the eleventh century BC in the eastern half of north China. Domestication is a process of trial and error and not an event. In the case of the soybean, this process probably took place during the Shang dynasty (ca. 1700 - 1100 BC) or perhaps earlier. By the first century AD the soybean probably reached central and south China, as well as peninsular Korea. The movement of the soybean within the primary gene center is associated with the development, consolidation of territories, and degeneration of Chinese dynasties.

From about the first century AD to the Age of Discovery (15-16th century), soybeans were introduced into several countries and land races developed in Japan, Indonesia, the Philippines, Vietnam, Thailand, Malaysia, Burma, Nepal and north India. These regions comprise the secondary gene center. The movement of the soybean throughout this period was due to the establishment of sea and land trade routes, for example, the silk road; the migrations of certain tribes from China, for example, the Thais; and the rapid acceptance of the plant as a staple food by other cultures, for example, the Indonesians. The earliest Japanese reference to the soybean is in the classic Kojiki (Records of Ancient Matters) which was completed in 712 AD.

Starting in the late 16th century and throughout the 17th century European visitors to China and Japan noted in their diaries the use of a peculiar bean from which various food products were produced. The Florentine, Francesco Carletti who visited Nagasaki, Japan in 1597 wrote in his memoirs that the Japanese flavor fish dishes with a certain sauce called miso and that it is made from a bean that is grown in various localities. He also noted that the Japanese make a product called shiro (soy sauce), what Europeans would call gravy. In 1665, Friar Domingo Navarrete described tofu as a common and cheap food of China. "They drew the milk out of the Kidney-Beans and fuming it, make great Cakes of it like Cheeses ... All the Mass is as white as the very Snow ... Alone it is insipid, but very good dress'd as I say and excellent fry'd in Butter." Occasionally a European was fooled by soybean products. For example, in 1613, Captain John Saris visited Japan. In his log he wrote the following about the food habits of the Japanese. "Of cheese they have plenty. Butter they make none, neither will they eat any milk..." Most probably he mistook tofu for cheese.

The soybean reached Europe quite late. It must have reached the Netherlands before 1737 as Linnaeus described the soybean in the Hortus Cliffortianus which was based on plants cultivated in the garden at Hartecamp. In 1739, soybean seeds sent by missionaries in China were planted in the jardin des Plantes, Paris, France. In 1790, soybeans were planted at the Royal Botanic Garden at Kew, England and in 1804 they were planted near Dubrovnik, Yugoslavia. In the Netherlands, France and England the soybeans were grown for taxonomic or display purposes. However, the soybeans grown in Yugoslavia were harvested, cooked, mixed with cereal grain and then fed to chickens for increased egg production.

Henry Yonge, the Surveyor General of the Colony of Georgia, planted soybeans on his farm at the request of Samuel Bowen in 1765. Mr. Bowen, a former seaman employed by the East India Company, brought soybeans to Savannah from China via London. From 1766, Mr. Bowen planted soybeans on his plantation "Greenwich" located at Thunderbolt, a few miles east of Savannah. Today the property is used as a city cemetery. The soybeans grown by Bowen were used to manufacture soy sauce and vermicelli (soybean noodles). In addition, he manufactured a sago powder substitute from sweet potatoes. The three products were exported to England. Samuel Bowen received a patent (No. 878) for his manufacturing inventions for producing these products. He was awarded a gold medal from the Society of Arts, Manufacturers and Commerce and received a present of 200 guineas from King George III. In addition, Bowen sent soy sauce and beans to the American Philosophical Society in Philadelphia and was elected to membership of the society. Unfortunately, when Bowen died in London on 30 December 1777 his soybean enterprise in Georgia ended.

Another early introduction of soybeans to North America was by Benjamin Franklin. In 1770, he sent seeds from London to the botanist John Bertram who most probably planted them in his garden which was situated on the west bank of the Schuylkill River below Philadelphia.

Old Chinese herbals suggest that the soybean was a specific remedy for the proper functioning of the bowels, heart, kidney, liver, and stomach. A decoction of the root is said to be astringent. The meal and flour are used to prepare diabetic foods due to the small amount of starch contained therein. Soybean diets are valued for acidosis. Since soybean oil has a high proportion of unsaturated fatty acid, it is recommended, like safflower, poppyseed, etc. to combat hypercholesterolemia. Commercial grades of natural lecithin, often derived from soybean, are reported to contain a potent vasodepressor. Medicinally lecithin is indicated as a lipotropic agent. Soybean is listed as a major starting material for stigmasterol, once known as an antistiffness factor. Sitosterol, also a soy byproduct, has been used to replace diosgenin in some antihypertensive drugs.

Nonsteroidal plant estrogens were first identified in the early 1930s, with the discovery that soybeans, willows, dates, and pomegranates contain compounds with structural similarity to estrogens.

Phytoestrogens are plant chemicals that may act as fungicides, deter herbivores, regulate plant hormones, and protect plants against ultraviolet radiation. Structurally, some phytoestrogens resemble endogenous estrogens of humans and animals, and recent research suggests they may also function as estrogen agonists or antagonists when eaten by humans. Although humans have used phytoestrogens medicinally for thousands of years, only in the last 15 years or so have researchers begun to look beyond the folk remedies to investigate phytoestrogens' possible roles in modern health care. Although the popular media has at times heralded phytoestrogens as panaceas, medical data remain inconclusive. Still, recent epidemiological studies and experiments with animals suggest many varied benefits of phytoestrogens.

Isoflavones are chemically similar to the drug tamoxifen. They reduce the risk of breast cancer by binding to the estrogen receptor sites on the chromosomal material in mammary gland cells and preventing the dangerous C-16 form of estrogen from binding. Soy products (soybeans or tofu) are particularly abundant in isoflavones, and they have been observed to reduce the incidence of experimental tumors in experimental mammals. Asian women usually consume more than 35 grams of soybeans or soy-derived food per day as opposed to the American woman who may only get 1-2 grams per day. One particular isoflavone is called genestein. This substance not only inhibits two enzymes necessary for tumor growth, but there is recently discovered evidence that it will reduce the blood supply to tumors.

The intake, as well as serum and urinary concentrations, of phytoestrogens is high in countries where incidence of prostate cancer is low, suggesting a chemopreventive role for phytoestrogens. Their significance could be explained by the ability to antagonize the action of more potent endogenous estrogens in initiation or promotion of tumor formation.

Scientists have begun to piece together the full picture of phytoestrogens by looking at populations who

consume them the most. Asian populations consume a diet that is very rich in the phytoestrogens genistein and daidzein, which are found in soybeans and soy products. These phytoestrogens occur at levels of 50-300 milligrams per 100 grams in soy beans, and in lower levels in soy products such as miso, soy milk, and tofu.

Asian populations also suffer a significantly lower rate of hormone-dependent cancers compared to westerners. They also have a much lower incidence of other hormonally-associated problems such as osteoporosis and menopausal symptoms. The presence of phytoestrogens in Asian diets and the comparatively low rates of diseases prevalent in western populations--including breast, endometrial, prostate, and colon cancers, as well as coronary heart disease--suggests that phytoestrogens may have protective effects.

The fermented seed is weakly diaphoretic and stomachic. It is used in the treatment of colds, fevers and headaches, insomnia, irritability and a stuffy sensation in the chest.

The bruised leaves are applied to snakebite.

The flowers are used in the treatment of blindness and opacity of the cornea.

The ashes of the stems are applied to granular hemorrhoids or fungus growths on the anus.

The immature seedpods are chewed to a pulp and applied to corneal and smallpox ulcers. The seed is an antidote. It is considered to be specific for the healthy functioning of bowels, heart, kidney, liver and stomach. The seed sprouts are constructive, laxative and resolvent. They are used in the treatment of oedema, dysuria, chest fullness, decreased perspiration, the initial stages of flu and arthralgia.

A decoction of the bark is astringent.

Mature seed. Seeds furnish one of the world's most important sources of oil and protein. Unripe seeds are eaten as vegetable and dried seeds eaten whole, split or sprouted. Processed they give soy milk, a valuable protein supplement in infant feeding which also provides curds and cheese. Soy sauce made from the mature fermented beans, and soy is an ingredient in other sauces. The seeds can be eaten as they are in soups, stews etc, though they are very commonly used in the preparation of various meat substitutes. The dried seed can be ground into a flour and added to cereal flours or used for making noodles etc. The Japanese make a powder from the roasted and ground seed, it is called 'Kinako' and has a nutty flavor and fragrance - it is used in many popular confections.

The sprouted seed is eaten raw or added to cooked dishes. The toasted seeds can be eaten as a peanut-like snack. The seed is also made into numerous fermented foods such as miso and tempeh and is also used to make soya milk, used in place of cow's milk. The seed contains 20% oil and 30 - 45% protein. The immature seed is cooked and used like peas or eaten raw in salads. The strongly roasted and ground seeds are used as a coffee substitute. The young seedpods are cooked and used like french beans.

An edible oil is obtained from the seed. It is cooked or used as a dressing in salads etc.

Known Hazards: The raw mature seed is toxic and must be thoroughly soaked and cooked before being eaten. Although, the sprouted raw seed is sometimes eaten and is considered to be a wholesome food.

Milk and soy allergies are particularly common in infants and young children. These allergies sometimes do not involve hives and asthma, but rather lead to colic, and perhaps blood in the stool or poor growth. Infants and children are thought to be particularly susceptible to this allergic syndrome because of the immaturity of their immune and digestive systems. Milk or soy allergies in infants can develop within days to months of birth. Sometimes there is a family history of allergies or feeding problems. The clinical picture is one of a very unhappy colicky child who may not sleep well at night. The doctor diagnoses food allergy partly by changing the child's diet. Rarely, food challenge is used.

Damiana - *Turnera aphrodisiaca*

Other Common Names: Damiane, Oreganillo, The Bourrique, *Turnera aphrodisiaca*

Range: Southern N. America to Northern S. America.

Habitat: Dry sandy or rocky places.

Damiana was a traditional aphrodisiac of the Maya people in Central America. It continues to be considered valuable as an aphrodisiac and general tonic, and its stimulant tonic action makes it a valuable remedy for those suffering from mild depression.

The whole plant is a bitter, pungent, warming herb with a fig-like flavour. Its use improves the digestion, lifts the spirits, calms the nerves, regulates hormonal activity, stimulates the genito-urinary tract and rejuvenates kidney energy. It is used internally to treat nervous exhaustion, anxiety, depression, debility in convalescence, impotence, premature ejaculation, prostate complaints, urinary infections, frigidity, vaginal discharge, painful menstruation, menopausal problems, poor appetite and digestion, and atonic constipation.

The plants are harvested when in flower and are dried for later use.

The leaves are used as a tea substitute and also as a flavoring in liquers. They have a strongly aromatic slightly bitter taste.

Dandelion - *Taraxacum officinale*

Other Common Names: Chiang Nou Ts' Ao, Chin Tsan Ts' Ao, Common Dandelion, Diente De Leon, Hindiba Berri, Huang Hua Ti Ting, Kara Hindiba, Khas Berri, Kou Ju Ts' Ao, Lion's Tooth, Maitiainen, P'O Kung Ying, P'U Kung Ying, Pissenlit, Priest's Crown, Pu Gong Ying, Seiyo-Tanpopo, Swine's Snout, *Taraxacum officinale*.

Range: Australia; Britain; China; Finland; France; Iraq; Mexico; Nepal; Russia; Spain; Turkey; USA

Habitat: A very common weed of grassland and cultivated ground.

The Dandelion, though not occurring in the Southern Hemisphere, is at home in all parts of the north temperate zone, in pastures, meadows and on waste ground, and is so plentiful that farmers everywhere find it a troublesome weed, for though its flowers are more conspicuous in the earlier months of the summer, it may be found in bloom, and consequently also prolifically dispersing its seeds, almost throughout the year.

The dandelion is a commonly used herbal remedy. It is especially effective and valuable as a diuretic because it contains high levels of potassium salts and therefore can replace the potassium that is lost from the body when diuretics are used.

All parts of the plant, but especially the root, are slightly aperient, cholagogue, depurative, strongly diuretic, hepatic, laxative, stomachic and tonic. The root is also experimentally cholagogue, hypoglycemic and a weak antibiotic against yeast infections. The dried root has a weaker action. The roots can be used fresh or dried and should be harvested in the autumn when 2 years old. The leaves are harvested in the spring when the plant is in flower and can be dried for later use. A tea can be made from the leaves or, more commonly, from the roots.

The plant is used internally in the treatment of gall bladder and urinary disorders, gallstones, jaundice, cirrhosis, dyspepsia with constipation, edema associated with high blood pressure and heart weakness, chronic joint and skin complaints, gout, eczema and acne. The plant has an antibacterial action, inhibiting the growth of *Staphylococcus aureus*, pneumococci, meningococci, *Bacillus dysenteriae*, *B. typhi*, *C. diphtheriae*, proteus etc.

The latex contained in the plant sap can be used to remove corns, warts and verrucae. The latex has a specific action on inflammations of the gall bladder and is also believed to remove stones in the liver.

Leaves - raw or cooked. When used in salads, they are rather bitter, though less so in the winter. Tender young leaves are considerably less bitter than older leaves. The leaves are often blanched (by excluding

light from the growing plant) before use. This will make them less bitter, but they will also contain less vitamins and minerals. A very nutritious food, 100 g of the raw leaves contain about 2.7 g protein, 9.2 g carbohydrate, 187 mg Calcium, 66 mg phosphorus, 3.1 mg iron, 76 mg sodium, 397 mg potassium, 36 mg magnesium, 14000IU vitamin A, 0.19 mg vitamin B1, 0.26 mg vitamin B2, 35 mg vitamin C. A tea made from the leaves is laxative.

Root - raw or cooked. Bitter. A turnip-like flavor.

Flowers - raw or cooked. A rather bitter flavor, the unopened flower buds can be used in fritters and they can also be preserved in vinegar and used like capers.

Both the leaves and the roots are used to flavor herbal beers and soft drinks such as 'Dandelion and Burdock'.

The roots of 2 year old plants are harvested in the autumn, dried and roasted to make a very good coffee substitute. It is caffeine-free.

A pleasant tea is made from the flowers. They are also used to make wine - all green parts should be removed when making wine to prevent a bitter flavor.

The plant releases ethylene gas, this stunts the growth of nearby plants and causes premature ripening of fruits.

Devil's claw - *Harpogophytum procumbens*

Other Common Names: Grapple Plant, *Harpogophytum procumbens*

Range: Southern and Eastern Africa, Namibia, Madagascar

Numerous tribes native to southern Africa have used devil's claw for a wide variety of conditions, ranging from gastrointestinal difficulties to arthritic conditions. Devil's claw has been widely used in Europe as a treatment for arthritis. It is anti-inflammatory, anodyne, hepatic.

From the flowers grow woody, sharply curved, barbed fruits, which give devil's claw its name. Although the name comes from the fruit, the part of the plant used for its medicinal value is the tuber.

The active principle in devil's claw, which is used to standardize products, is a glycoside called harpagoside. Other constituents include beta-sitosterol, harpagide, procumbine, sugars, gum resin and bitter principles.

The analgesic properties can be compared in strength to cortisone or phenylbutazone, both prescription medications used in the treatment of rheumatoid and osteoarthritis and both with serious side effects.

Extracts of the secondary tubers of Devil's Claw (*Harpogophytum procumbens*) are recommended for the supportive treatment of degenerative painful rheumatism. There was observed an improvement of motility and a reduction of pain sensation in several clinical studies. Pharmacological experiments have shown analgesic, antiphlogistic and anti-inflammatory actions.

The Commission E approved the use of devil's claw root for loss of appetite, dyspepsia, and degenerative disorders of the locomotor system. Devil's claw root has been used to treat painful arthroses, tendonitis, indigestion, blood diseases, headache, allergies, rheumatism, arthritis, lumbago, neuralgia, and fever, and externally for sores, ulcer, boils, and skin lesions.

Most important constituents are iridoid glycosides, which are supposed to contribute mainly to the observed effects. However, the entire extract has to be considered as active ingredient.

Devil's claw is also used externally as an ointment to treat skin rashes, wounds, etc.

Known Hazards: Anyone with gastric or duodenal ulcers, heartburn, gastritis, or excessive stomach acid should not use the herb. With gallstones, consult a physician before use.

Elderberry - *Sambucus nigra*

Other Common Names: Black Elder, Bore Tree, Bour Tree, Bourtree, Common Elder, Elder, Elder Rind, Ellhorn, European Black Elder, European Elder, Khaman Kabir, Murver Agaci, Pipe Tree, Pipetree, Sauco, Seiyo-Niwatoko, Zovika, *Sambucus nigra*

Range: Britain; Europe; France; Iraq; Spain; Turkey; Yugoslavia

Habitat: Hedgerows, scrub, woods, roadsides, waste places etc, especially on disturbed base-rich and nitrogen rich soils.

Elder has a very long history of household use as a medicinal herb and is also much used by herbalists. The plant has been called 'the medicine chest of country people'. The flowers are the main part used in modern herbalism, though all parts of the plant have been used at times.

The inner bark is collected from young trees in the autumn and is best sun-dried. It is diuretic, a strong purgative and in large doses emetic. It is used in the treatment of constipation and arthritic conditions. An emollient ointment is made from the green inner bark.

The leaves can be used both fresh or dry. For drying, they are harvested in periods of fine weather during June and July. The leaves are purgative, but are more nauseous than the bark. They are also diaphoretic, diuretic, expectorant and haemostatic. The juice is said to be a good treatment for inflamed eyes. An ointment made from the leaves is emollient and is used in the treatment of bruises, sprains, chillblains, wounds etc.

The fresh flowers are used in the distillation of 'Elder Flower Water'. The flowers can be preserved with salt to make them available for distillation later in the season. The water is mildly astringent and a gentle stimulant. It is mainly used as a vehicle for eye and skin lotions. The dried flowers are diaphoretic, diuretic, expectorant, galactagogue and pectoral. An infusion is very effective in the treatment of chest complaints and is also used to bathe inflamed eyes. The infusion is also a very good spring tonic and blood cleanser. Externally, the flowers are used in fomentations to ease pain and abate inflammation. Used as an ointment, it treats chillblains, burns, wounds, scalds etc.

The fruit is depurative, weakly diaphoretic and gently laxative. A tea made from the dried berries is said to be a good remedy for colic and diarrhea. The fruit is widely used for making wines, preserves etc., and these are said to retain the medicinal properties of the fruit.

The pith of young stems is used in treating burns and scalds.

The root is no longer used in herbal medicine but it formerly had a high reputation as an emetic and purgative that was very effective against dropsy.

A homeopathic remedy is made from the fresh inner bark of young branches. It relieves asthmatic symptoms and spurious croup in children.

Fruit - raw or cooked. The flavor of the raw fruit is not acceptable to many tastes, though when cooked it makes delicious jellies, preserves, pies and so forth. It can be used fresh or dried, the dried fruit being less bitter. The fruit is used to add flavor and color to preserves, jams, pies, sauces, chutneys etc, it is also often used to make wine. The fruit is about 8mm in diameter and is borne in large clusters. Some caution is advised, see the notes on toxicity.

Flowers - raw or cooked. They can also be dried for later use. The flowers are crisp and somewhat juicy, they have an aromatic smell and flavor and are delicious raw as a refreshing snack on a summers day, though look out for the insects. The flowers are used to add a muscatel flavor to stewed fruits, jellies and jams (especially gooseberry jam). They are often used to make a sparkling wine A sweet tea is made from the dried flowers.

The leaves are used to impart a green coloring to oils and fats.

The leaves are used as an insect repellent, very effective when rubbed on the skin though they do impart their own unique fragrance. They can be powdered and placed amongst plants to act as a deterrent, or made into a spray when they act as an insecticide. This is prepared by boiling 3 - 4 handfuls of leaves in a litre of water, then straining and allowing to cool before applying. Effective against many insects, it also treats various fungal infections such as leaf rot and powdery mildew. The dried flowering shoots are used to repel insects, rodents etc.

Known Hazards: The leaves and stems are poisonous. The fruit of many species (although no records have been seen for this species) has been known to cause stomach upsets to some people. Any toxin the fruit might contain is liable to be of very low toxicity and is destroyed when the fruit is cooked.

Elecampane - *Inula helenium*

Other Common Names: Chin Ch'Ien Chu, Chin Ch'Ien Hua, Elecampagne, Elecampane Inula, Elf Dock, Enula, Helenio, Helenium, Horseheal, Hsuan Fu Hua, Induzotu, Mu Xiang, O-Oguruma, Scabwort, Velvet Dock, Wild Sunflower, *Inula helenium*

Range: Argentina; Britain; China; India; S.E. Europe; Spain; Turkey

Habitat: Fields, waysides, waste places, copses etc, often on moist soils in shade.

It is found wild throughout continental Europe, from Gothland southwards, and extends eastwards in temperate Asia as far as Southern Siberia and North-West India. As a plant of cultivation, it has wandered to North America, where it has become thoroughly naturalized in the eastern United States, being found from Nova Scotia to Northern Carolina, and westward as far as Missouri, growing abundantly in pastures and along roadsides, preferring wet, rocky ground at or near the base of eastern and southern slopes.

Elecampane was known to the ancient writers on agriculture and natural history, and even the Roman poets were acquainted with it, and mention *Inula* as affording a root used both as a medicine and a condiment. Horace, in the Eighth Satire, relates how Fundanius first taught the making of a delicate sauce by boiling in it the bitter *Inula*, and how the Romans, after dining too richly, pined for turnips and the appetizing *Enulas acidas*.

Elecampane has a long history of use as a medicinal herb. A gently warming and tonic herb, it is especially effective in treating coughs, consumption, bronchitis and many other complaints of the chest as well as disorders of the digestive system. A very safe herb to use, it is suitable for the old and the young and especially useful when the patient is debilitated. It cleanses toxins from the body, stimulating the immune and digestive systems and treating bacterial and fungal infections.

The root is alterative, anthelmintic, antiseptic, astringent, bitter, cholagogue, demulcent, diaphoretic, diuretic, mildly expectorant, gently stimulant, stomachic, tonic. It is best harvested in the autumn from plants that are two years old, and it can be dried for later use. The roots should be at least 3 years old according to another report. This remedy should not be prescribed for pregnant women.

An extract of the plant is a powerful antiseptic and bactericide, particularly effective against the organism that causes TB.

The root contains alantolactone, which is strongly anthelmintic. In a 1:1000 dilution it kills *Ascaris* in 16 hours. Alantolactone has an anti-inflammatory action, it also reduces mucous secretions and stimulates

the immune system.

The plant is sometimes recommended as an external wash for skin inflammations and varicose ulcers, but has been known to cause allergic reactions.

Leaves - cooked. Rather bitter and aromatic, they were used as a potherb by the ancient Romans but are rarely used at present.

Root - candied and eaten as a sweetmeat. It contains up to 44% inulin. Inulin is a starch that cannot be digested by humans. It usually passes straight through the digestive system, though it can ferment and cause wind problems for some people. Inulin can be converted into a sugar that is suitable for diabetics to eat.

Siberian Ginseng - *Eleutherococcus senticosus*

Other Common Names: Siberian Ginseng, *Eleutherococcus senticosus*

Range: E. Asia - China, Japan, Siberia.

Habitat: Mixed and coniferous mountain forests, forming small undergrowth or groups in thickets and edges. Sometimes found in oak groves at the foot of cliffs, very rarely in high forest riparian woodland.

Siberian Ginseng is a relatively new addition to Western natural medicine, but has quickly gained a reputation similar to that of the better known and more expensive [Chinese Ginseng](#). Though the chemical make-up of the two herbs differs, their effects seem to be similar.

Siberian ginseng is a powerful tonic herb with an impressive range of health benefits. Unlike many herbs with a medicinal use, it is more useful for maintaining good health rather than treating ill health. Research has shown that it stimulates resistance to stress and so it is now widely used as a tonic in times of stress and pressure. In an alarming situation, the adrenal glands release corticosteroids and adrenaline which prepare the organism for the fight or flight reaction. When these hormones are depleted, the organism reaches an exhaustive phase. *Eleutherococcus* delays the exhaustive phase and allows a more economical and efficient release of these hormones.

This plant is a very commonly used folk treatment in China and Russia where it is used as a ginseng substitute. It is a pungent bitter-sweet warming herb that is said to be stronger in its action than ginseng. Regular use is said to restore vigour, improve the memory and increase longevity.

The root and the root bark are adaptogen, anti-inflammatory, hypoglycemic, tonic and vasodilator. It is taken internally during convalescence and in the treatment of menopausal problems, geriatric debility, physical and mental stress etc. It works by strengthening the bodies natural immune system. It has also been used to combat radiation sickness and exposure to toxic chemicals. This herb is not prescribed for children, and should not be used for more than 3 weeks at one time. Caffeine should not be taken when using this herb.

Eleutherococcus has immunoprotective effects against breast (mammary gland) carcinoma, stomach carcinoma, oral cavity carcinoma, skin melanoma and ovarian carcinoma. It was found to have a pronounced effect on T lymphocytes, predominantly of the helper/inducer type, but also on cytotoxic and natural killer cells.

The roots are harvested in the autumn and dried for later use.

Known Hazards: Don't take Siberian Ginseng if you have high blood pressure.

Note: It can be distinguished from Chinese ginseng because it is not as warming; can be distinguished from American ginseng because it is not a Yin tonic; Siberian ginseng is a Qi tonic which is fairly neutral; Chinese ginseng is a Yang Qi tonic and American ginseng is a Yin Qi tonic; Chinese and American ginseng share the same genus (Panax) and, therefore, are more similar to each other than they are to Eleutherococcus.

See also [American Ginseng](#) and [Asian Ginseng](#).

Ephedra - Ephedra sinica

Other Common Names: Chinese Ephedra, Ma Huang, Sima-Mao, Ephedra sinica

Range: E. Asia - N. China.

Habitat: Deserty areas. Sandy seashores and in temperate climates.

Ma Huang is a strongly stimulant acrid-tasting herb that is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs.

Most members of this genus contain various medicinely active alkaloids (but notably ephedrine) and they are widely used in preparations for the treatment of asthma and catarrh. Ephedrine has a similar effect to adrenalin in the body. It acts promptly to reduce swellings of the mucous membranes and has antispasmodic properties, thus making it valuable in the treatment of asthma. The whole plant can be used at much lower concentrations than the isolated constituents - unlike using the isolated ephedrine, using the whole plant rarely gives rise to side-effects.

The stems are a pungent, bitter, warm herb that dilates the bronchial vessels whilst stimulating the heart and central nervous system. The stems are also antidote, diaphoretic, diuretic, pectoral, vasoconstrictor and vasodilator. They are used internally in the treatment of asthma, hay fever and allergic complaints. The plant also has antiviral effects, particularly against influenza. Ephedra is often combined with a number of other herbs and used in treating a wide range of complaints. This herb should be used with great caution, preferably under the supervision of a qualified practitioner. It should not be prescribed to patients who are taking monoamine oxidase inhibitors, or suffering from high blood pressure, hyperthyroidism or glaucoma. Ephedrine is seen as a performance-boosting herb and, as such, is a forbidden substance in many sporting events such as athletics.

The stems can be harvested at any time of the year and are dried for later use.

The root is antihydrotic, it lowers blood pressure and dilates the peripheral blood vessels. It is used in the treatment of night sweating and spontaneous sweating. The root is believed to have the opposite action to the stem, but is only prescribed in cases of profuse sweating.

Known Hazards: Do not take Ephedra if you have high blood pressure, high pressure in the eyes (glaucoma), weakened blood vessels in the brain, prostate cancer, an overactive adrenal gland, or a thyroid disorder. In general, avoid Ephedra if you have any condition that makes you anxious or restless.

Combining Ephedra with a variety of other medications can lead to potentially serious problems. For

example, when taken in combination with heart drugs such as digitalis or digoxin (Lanoxin), Ephedra is more likely to disturb the rhythm of the heart. Combining Ephedra with the blood pressure medication guanethidine (Ismelin) can dangerously exaggerate the herb's stimulative effects. A similar problem is possible when Ephedra is combined with drugs classified as MAO inhibitors, such as the antidepressants Nardil and Parnate and the Parkinson's disease medication Eldepryl. The combination of Ephedra and ergot-based drugs such as migraine remedies Ergomar and Wigraine can result in high blood pressure.

Eucalyptus - Eucalyptus globulus

Other Common Names: Blue Gum Tree, Compact Blue Gum Eucalypt, Eucalipto, Eucalypt, Okaliptus, Stringy Bark Tree, Tasmanian Blue Gum, Tasmanian Bluegum, Eucalyptus globulus.

Range: Australia - Tasmania, Victoria; Now North and South Africa, India, and Southern Europe.

Habitat: Damp marshy areas on moist loams and clays. Found in hilly country or moist valleys in deep rich soils.

The tree is indigenous with a few exceptions to Australia and Tasmania. The genus contains about 300 species and is one of the most characteristic genera of the Australian flora.

It was Baron Ferdinand von Müller, the German botanist and explorer (from 1857 to 1873 Director of the Botanical Gardens in Melbourne), who made the qualities of this Eucalyptus known all over the world, and so led to its introduction into Europe, North and South Africa, California and the non-tropical districts of South America. He was the first to suggest that the perfume of the leaves resembling that of Cajaput oil, might be of use as a disinfectant in fever districts, a suggestion which has been justified by the results of the careful examination to which the Eucalyptus has been subjected since its employment in medicine. Some seeds, having been sent to France in 1857, were planted in Algiers and thrived exceedingly well. Trottoir, the botanical superintendent, found that the value of the fragrant antiseptic exhalations of the leaves in fever or marshy districts was far exceeded by the amazingly powerful drying action of the roots on the soil. Five years after planting the Eucalyptus, one of the most marshy and unhealthy districts of Algiers was converted into one of the healthiest and driest. As a result, the rapidly growing Eucalyptus trees are now largely cultivated in many temperate regions with the view of preventing malarial fevers. A noteworthy instance of this is the monastery of St. Paolo à la tre Fontana, situated in one of the most fever-stricken districts of the Roman Campagna. Since about 1870, when the tree was planted in its cloisters, it has become habitable throughout the year. To the remarkable drainage afforded by its roots is also ascribed the gradual disappearance of mosquitoes in the neighbourhood of plantations of this tree, as at Lake Fezara in Algeria.

Eucalyptus leaves are a traditional Aboriginal herbal remedy. The essential oil found in the leaves is a powerful antiseptic and is used all over the world for relieving coughs and colds, sore throats and other infections. The essential oil is a common ingredient in many over-the-counter cold remedies.

The adult leaves, without their petioles, are antiperiodic, antiseptic, aromatic, deodorant, expectorant, febrifuge, hypoglycaemic and stimulant. The leaves, and the essential oil they contain, are antiseptic, antispasmodic, expectorant, febrifuge and stimulant. Extracts of the leaves have antibacterial activity. The essential oil obtained from various species of eucalyptus is a very powerful antiseptic, especially

when it is old, because ozone is formed in it on exposure to air. It has a decided disinfectant action, destroying the lower forms of life. The oil can be used externally, applied to cuts, skin infections etc, it can also be inhaled for treating blocked nasal passages, it can be gargled for sore throat and can also be taken internally for a wide range of complaints. Some caution is advised, however, because like all essential oils, it can have a deleterious effect on the body in larger doses. The oil from this species has a somewhat disagreeable odour and so it is no longer used so frequently for medicinal purposes, other members of the genus being used instead.

An oleo- resin is exuded from the tree. It can also be obtained from the tree by making incisions in the trunk. This resin contains tannin and is powerfully astringent, it is used internally in the treatment of diarrhea and bladder inflammation, externally it is applied to cuts etc.

The essential oil is used in aromatherapy. Its keyword is 'Respiratory system'.

The leaves and the essential oil in them are used as an insect repellent.

In veterinary practice, Eucalyptus Oil is administered to horses in influenza, to dogs in distemper, to all animals in septicaemia. It is also used for parasitic skin affections.

Evening Primrose Oil - *Oenothera biennis*

Other Common Names: Fever Plant, King's Cureall, Night Willow-herb, Scabish, Scurvish, Sun Drop, *Oenothera biennis*

Range: Eastern N. America - Labrador, south to Florida and Texas.

Habitat: Dunes, roadsides, railway banks and waste places, often in sandy soils.

The Evening or Tree Primrose, though originally a native of North America, was imported first into Italy and has been carried all over Europe, being often naturalized on river-banks and other sandy places in Western Europe.

The bark and the leaves are astringent and sedative. They have a proved use in the treatment of gastrointestinal disorders of a functional origin, whooping cough and asthma. A syrup made from the flowers is also an effective treatment for whooping cough. The bark is stripped from the flowering stem and dried for later use, the leaves are also harvested and dried at this time.

Evening primrose oil has become a well-known food supplement since the 1980's. Research suggests that the oil is potentially very valuable in the treatment of multiple sclerosis, pre-menstrual tension, hyperactivity etc. It is also taken internally in the treatment of eczema, acne, brittle nails, rheumatoid arthritis and alcohol-related liver damage. Regular consumption of the oil helps to reduce blood cholesterol levels and lower the blood pressure. The seed is a good source of gamma-linolenic acid, an unsaturated fatty acid which assists the production of hormone-like substances. This process is commonly blocked in the body, causing disorders that affect the uterine muscles, nervous system and metabolism.

The poulticed root is applied to piles and bruises.

A tea made from the roots is used in the treatment of obesity and bowel pains.

The seed contains 28% of a drying oil. It is edible and a very good source of gamma-linolenic acid, an essential fatty acid that is not found in many plant sources and has numerous vital functions in the body. The seed, however, is very small and difficult to harvest, it has to be done by hand. Overall yields are low, making the oil very expensive to produce.

Eyebright - *Euphrasia officinalis*

Other Common Names: Common Eyebright, Drug Eyebright, Eufragia, Eufrasia, Euphrasia, Glossy Eyebright, Gozhlukotu, *Euphrasia officinalis*

Range: Europe, Northern and Western Asia and North America.

Habitat: Moist grassland and chalky pastures, semi-parasitic on grass.

The name Euphrasia is of Greek origin, derived from Euphrosyne (gladness), the name of one of the three graces who was distinguished for her joy and mirth, and it is thought to have been given the plant from the valuable properties attributed to it as an eye medicine preserving eyesight and so bringing gladness into the life of the sufferer. The same Greek word is also given to the linnet, whence another old tradition says that it was the linnet who first made use of the leaf for clearing the sight of its young and who then passed on the knowledge to mankind, who named the plant in its honour.

In the fourteenth century, however, it was supposed to cure 'all evils of the eye' and is described as the source of 'a precious water to clear a man's sight.' Matthaeus Sylvaticus, a physician of Mantua, who lived about the year 1329, recommended this plant in disorders of the eyes and Arnoldus Villanovanus, who died in 1313, was the author of a treatise on its virtues, *Vini Euphrasiati tantopere celebrati*. How long before Euphrasia was in repute for eye diseases it is impossible to say, but in Gordon's *Litium Medicina*, 1305, among the medicines for the eyes, Euphrasia is named 'and is recommended both outwardly in a compound distilled water and inwardly as a syrup.

Eyebright has a long history of herbal use in the treatment of eye problems and is still in current herbal use. It tightens the mucous membranes of the eye and appears to relieve the inflammation of conjunctivitis and blepharitis. Its ability to counter catarrh means that it is often used for infectious and allergic conditions affecting the eyes, middle ear, sinuses and nasal passages.

The whole plant is anti-inflammatory, astringent, digestive, ophthalmic and slightly tonic. It is taken internally in the treatment of catarrh, sinusitis, hayfever, upper respiratory tract infections etc. As an ophthalmic, an infusion of the plant can be taken internally or used as an eye wash. Alternatively, the diluted juice can be dropped into the eyes. Some caution should be exercised, experimentally it can induce side effects including dim vision. The plant's astringency makes it inappropriate for treating dry or stuffy congestion. The plants are harvested when in flower and are dried for later use.

The dried herb is an ingredient of herbal smoking mixtures, used in the treatment of chronic bronchial colds.

A homeopathic remedy is made from the expressed juice of the plant. It is used particularly in the treatment of eye inflammations and colds, the herb is also recommended for inflamed prostate.

False Unicorn - *Chamaelirion luteum*

Other Common Names: Blazing star, Fairywand, False Unicorn Root, Fausse Unicorne, Helonias, Starwort, *Chamaelirion luteum*

Range: Eastern N. America - New York to Florida, west to Arkansas, Illinois and Michigan.

Habitat: Low moist ground in meadows, thickets and rich woods.

Blazing star is a traditional remedy of the North American Indians where it was used mainly as a woman's herb. It is widely used in Western herbal medicine where it is seen as a balancing herb for the female reproductive system and has proved to be a beneficial remedy for menstrual problems and ovarian cysts - it can also be of help in the menopause.

It is useful in impotence, as a tonic in genito-urinary weakness or irritability, for liver and kidney diseases. Especially in diseases due to poor action of the liver and not to weakness of the heart or circulation. It is a good remedy in albuminaria.

The root is adaptogen, diuretic, emetic, uterine tonic and vermifuge. Small doses of the dried and powdered root are used. It is employed in the treatment of amenorrhea, dysmenorrhea and leukorrhea and also for a variety of ailments associated with the male and female reproductive organs. It should be used with caution since an excess causes vomiting. The root is harvested in the autumn and dried for later use.

Known Hazards: This plant is a cardiac toxin in large quantities.

Fennel - *Foeniculum vulgare*

Other Common Names: Adas Landi, Adas Londa, Adas Pedas, Anis, Anis Vert, Comino, Fenkel, Finocchio Forte, Hinojo, Hsiao Hui Hsiang, Hui Hsiang Chiu, Kaneer Razbana, L'Anis, La Nuit, Raziyan, Rezene, Shamar, Shbint, Shih Lo, Sweet Fennel, Tzu Mo, Tzu Mu Lo, Uiky, Wild Fennel, *Foeniculum vulgare*

Range: Britain; China; Dominican Republic; Ethiopia; Europe; France; Haiti; Iraq; Italy; Japan; Kurdistan; Malaya; Mexico; Spain; Turkey; Venezuela

Habitat: Found most often in dry stony calcareous soils near the sea.

For the medicinal use of its fruits, commonly called seeds, Fennel is largely cultivated in the south of France, Saxony, Galicia, and Russia, as well as in India and Persia.

This plant was attached by Linnaeus to the genus *Anethum*, but was separated from it by De Candolle and placed with three or four others in a new genus styled *Foeniculum*, which has been generally adopted by botanists. (*Foeniculum* was the name given to this plant by the Romans, and is derived from the Latin word, *foenum* = hay).

This was corrupted in the Middle Ages into *Fanculum*, and this gave birth to its alternative popular name, 'fenkel.'

Fennel was well known to the Ancients and was cultivated by the ancient Romans for its aromatic fruits and succulent, edible shoots. Pliny had much faith in its medicinal properties, according no less than twenty-two remedies to it, observing also that serpents eat it 'when they cast their old skins, and they sharpen their sight with the juice by rubbing against the plant.'

In mediaeval times, Fennel was employed, together with St. John's Wort and other herbs, as a preventative of witchcraft and other evil influences, being hung over doors on Midsummer's Eve to warn off evil spirits. It was likewise eaten as a condiment to the salt fish so much consumed by our forefathers during Lent. Like several other umbelliferae, it is carminative.

Fennel has a long history of herbal use and is a commonly used household remedy, being useful in the treatment of a variety of complaints, especially those of the digestive system. The seeds, leaves and roots can be used, but the seeds are most active medicinally and are the part normally used. An essential oil is often extracted from the fully ripened and dried seed for medicinal use, though it should not be given to pregnant women.

The plant is analgesic, anti-inflammatory, antispasmodic, aromatic, carminative, diuretic, emmenagogue, expectorant, galactagogue, hallucinogenic, laxative, stimulant and stomachic. An infusion is used in the treatment of indigestion, abdominal distension, stomach pains etc. It helps in the treatment of kidney stones and, when combined with a urinary disinfectant like *Arctostaphylos uva-ursi*, makes an effective treatment for cystitis. It can also be used as a gargle for sore throats and as an eyewash for sore eyes and conjunctivitis. Fennel is often added to purgatives in order to allay their tendency to cause indigestion, and also to improve the flavor. An infusion of the seeds is a safe and effective cure for wind in babies.

An infusion of the root is used to treat urinary disorders.

An essential oil obtained from the seed is used in aromatherapy. Its keyword is 'Normalising'. The essential oil is bactericidal, carminative and stimulant. Some caution is advised, see notes on toxicity.

Leaves - raw or cooked. A delicious aniseed flavor, the young leaves are best since older ones soon become tough. They are often used as a garnish on raw or cooked dishes and make a very pleasant addition to salads. They help to improve digestion and so are particularly useful with oily foods. The leaves are difficult to store dried, though this does not really matter since they can often be harvested all year round, especially if the plants are in a warm, sheltered position.

Leaf stalks and flower heads - raw or cooked. A similar aniseed flavor to the leaves.

The aromatic seeds are used as a flavoring in cakes, bread, stuffings etc. They have a similar flavor to the leaves and also improve the digestion. The sprouted seeds can be added to salads.

An essential oil from the fully ripened and dried seed is used as a food flavoring in similar ways to the whole seed.

Root - cooked. Somewhat parsnip-like.

The leaves or the seeds can be used to make a pleasant-tasting herbal tea.

The seed yields up to 5% of an essential oil. This is used medicinally, as a food flavoring, in toothpastes, soaps, perfumery, air fresheners etc. The flavor of fennel oil depends upon its two main constituents. 'Fenchone' is a bitter tasting element whilst 'anethole' has a sweet anise-like flavor. The proportions of these two ingredients varies according to strain and region. Plants growing in the Mediterranean and southern Europe usually have a sweet oil whilst plants growing in central and northern Europe usually produce a more bitter oil. The quality of the oil also depends upon how well the seed has been dried - the oil from fully ripened and dried seeds being much sweeter and more fragrant.

The dried plant is an insect repellent, the crushed leaves are effective for keeping dogs free of fleas.

Known Hazards: Skin contact with the sap or essential oil is said to cause photo-sensitivity and/or dermatitis in some people. Ingestion of the oil can cause vomiting, seizures and pulmonary oedema.

Fenugreek - *Trigonella foenum-graecum*

Other Common Names: Alholva, Bird's Foot, Boyotu, Chinagreya, Foenum Graecum, Greek Hay-seed, Halva, Helba, Hu Lu Pa, K'U Tou, Kelabat, Koroha, Methi, Shimli, Sickle-fruit Fenugreek, Sicklefruit Fenugreek, *Trigonella foenum-graecum*

Range: Europe - Austria; Belgium; Chile; China; Egypt; S. France; Hungary; India; Iraq; Java; Malaya; Mediterranean; Spain; Sudan; Turkey

Habitat: Field verges, uncultivated ground, dry grasslands and hillsides

The name comes from *Foenum-graecum*, meaning Greek Hay, the plant being used to scent inferior hay. The name of the genus, *Trigonella*, is derived from the old Greek name, denoting 'three-angled,' from the form of its corolla. The seeds of Fenugreek have been used medicinally all through the ages and were held in high repute among the Egyptians, Greeks and Romans for medicinal and culinary purposes.

Fenugreek is much used in herbal medicine, especially in North Africa, the Middle East and India. It has a wide range of medicinal applications. The seeds are very nourishing and are given to convalescents and to encourage weight gain, especially in anorexia nervosa. The seeds should not be prescribed medicinally for pregnant women since they can induce uterine contractions. Research has shown that the seeds can inhibit cancer of the liver, lower blood cholesterol levels and also have an antidiabetic effect.

The seed and leaves are anticholesterolemic, anti-inflammatory, antitumor, carminative, demulcent, deobstruent, emollient, expectorant, febrifuge, galactagogue, hypoglycemic, laxative, parasiticide, restorative and uterine tonic. The seed yields a strong mucilage and is therefore useful in the treatment of inflammation and ulcers of the stomach and intestines. Taken internally, a decoction of the ground seeds serves to drain off the sweat ducts.

The seed is very nourishing and body-building and is one of the most efficacious tonics in cases of physical debility caused by anemia or by infectious diseases, especially where a nervous factor is involved. It is also used in the treatment of adult-onset diabetes, poor digestion (especially in convalescence), insufficient lactation, painful menstruation, labour pains etc. The seeds freshen bad breath and restore a dulled sense of taste.

Externally, the seeds can be ground into a powder and used as a poultice for abscesses, boils, ulcers, burns etc, or they can be used as a douche for excessive vaginal discharge.

The leaves are harvested in the growing season and can be used fresh or dried. The seeds are harvested when fully ripe and dried for later use. Compounds extracted from the plant have shown cardiotonic,

hypoglycemic, diuretic, antiphlogistic and hypotensive activity. One of its constituent alkaloids, called 'trigonelline', has shown potential for use in cancer therapy. The seed contains the saponin diosgenin, an important substance in the synthesis of oral contraceptives and sex hormones, whilst saponins in the plant have been extracted for use in various other pharmaceutical products.

An essential oil is obtained from the seed - used as a food flavoring and medicinally. The dried plant has a strong aroma of hay.

The crushed seed, mixed with oil and massaged into the scalp, is recommended for glossy hair. An infusion of the seed, used as a skin lotion, is said to be good for the complexion.

Known Hazards: The seed contains 1% saponins. Although poisonous, saponins are poorly absorbed by the human body and so most pass through without harm. Saponins are quite bitter and can be found in many common foods such as some beans. They can be removed by carefully leaching the seed or flour in running water. Thorough cooking, and perhaps changing the cooking water once, will also remove most of them. However, it is not advisable to eat large quantities of food that contain saponins. Saponins are much more toxic to some creatures, such as fish, and hunting tribes have traditionally put large quantities of them in streams, lakes etc in order to stupefy or kill the fish.

Feverfew - *Tanacetum parthenium*

Other Common Names: Altamisa De Castilla, Amargosa, Featherfoil, Midsummer Daisy, Manzanilla, Matricaria, Varadika, *Tanacetum parthenium*

Range: Colombia; Dominican Republic; Mexico; S.E. Europe to Asia; Spain; Turkey; USA; Venezuela

Habitat: Mountain scrub, rocky slopes, walls, waste places and a weed of gardens, avoiding acid soils.

Feverfew (a corruption of Febrifuge, from its tonic and fever-dispelling properties) is a composite plant growing in every hedgerow, with numerous, small, daisy-like heads of yellow flowers with outer white rays, the central yellow florets being arranged on a nearly flat receptacle, not conical as in the chamomiles. The whole plant has a strong and bitter smell, and is particularly disliked by bees.

Feverfew has gained a good reputation as a medicinal herb and extensive research since 1970 has proved it to be of special benefit in the treatment of certain types of migraine headaches and rheumatism. It is also thought of as a herb for treating arthritis and rheumatism.

The leaves and flowering heads are anti-inflammatory, antispasmodic, aperient, bitter, carminative, emmenagogue, sedative, stimulant, stings, stomachic, vasodilator and vermifuge. The plant is gathered as it comes into flower and can be dried for later use. Use with caution, the fresh leaves can cause dermatitis and mouth ulcers if consumed. This remedy should not be prescribed for pregnant women.

A tea made from the whole plant is used in the treatment of arthritis, colds, fevers etc. It is said to be sedative and to regulate menses. An infusion is used to bathe swollen feet.

Applied externally as a tincture, the plant is used in the treatment of bruises etc.

Chewing 1 - 4 leaves per day has proven to be effective in the treatment of some migraine headaches.

The dried flower buds are a source of an insecticide. They are said to have the same properties as pyrethrum (obtained mainly from *T. cinerariifolia*). Steep 1 cupful of the dried flowers in one litre of hot soapy water for an hour. Strain, then allow to cool slightly before use.

Flax seed - *Linum usitatissimum*

Other Common Names: Ama, Annual Flax, Chih Ma, Common Flax, Cultivated Flax, Hu Ma, Kahtan, Keten, Kettan, Kittan, Lin, Linaza, Lino, Linseed, Linseed Flax, Linum usitatissimum

Range: Possibly native to Europe. Belgium; Britain; China; Egypt; Germany; India; Iraq; Kurdistan; Mexico; Peru; Spain; Turkey; USA; Venezuela

Habitat: Prefers a light well-drained moderately fertile humus-rich soil in a sunny sheltered position. Prefers a cool moist climate.

Composition: The envelope or testa of the seed contains about 15 per cent of mucilage. The seeds themselves contain in the cotyledons and endosperm from 30 to 40 per cent of a fixed oil, of a light yellow colour, and about 25 per cent proteids, together with wax, resin, sugar, phosphates, acetic acid, and a small quantity of the glucoside Linamarin.

Seed (Fresh weight) - Water: 6.5 Calories: 498 Protein: 19 Fat: 35.5 Carbohydrate: 35.4 Fiber: 6.8 Ash: 3.5 Calcium: 220 Phosphorus: 415 Iron: 23 Vitamin A: 0.02999 Thiamine: 0.17 Riboflavin: 0.15999 Niacin: 1.4

Notes: The figures given here are the median of a range given in the report. Iron had an especially large range, from 2.7 - 43.8.

Its cultivation reaches back to the remotest periods of history, Flax seeds as well as the woven cloth having been found in Egyptian tombs. It has been cultivated in all temperate and tropical regions for so many centuries that its geographical origin cannot be identified, for it readily escapes from cultivation and is found in a semi-wild condition in all the countries where it is grown.

Many traditions are associated with this useful plant. Flax flowers were believed in the Middle Ages to be a protection against sorcery. The Bohemians have a belief that if seven-year-old children dance among Flax, they will become beautiful, and the whole plant was supposed to be under the protection of the goddess Hulda, who, in Teuton mythology, was held to have first taught mortals the art of growing Flax, of spinning, and of weaving it.

Flax seed has a long history of medicinal use, its main effects being as a laxative and expectorant that soothes irritated tissues, controls coughing and relieves pain. The seed, or the oil from the seed are normally used.

The seed is analgesic, demulcent, emollient, laxative, pectoral and resolvent. The crushed seed makes a very useful poultice in the treatment of ulceration, abscesses and deep-seated inflammations. An infusion of the seed contains a good deal of mucilage and is a valuable domestic remedy for coughs, colds and

inflammation of the urinary organs. If the seed is bruised and then eaten straight away, it will swell considerably in the digestive tract and stimulate peristalsis and so is used in the treatment of chronic constipation.

Flaxseed is by far the richest source of alpha-linolenic acid (ALA), the parent compound of the omega-3 fatty acids. In comparison, fish contain only trace amounts of ALA and fish oil can adversely affect the taste and odor of food products.

Omega-3 is an essential fatty acid because it cannot be synthesized by the body. Research indicates that ALA improves immunity, the body's ability to defend itself against foreign substances. Studies have also shown that alpha-linolenic acid may lower the risk of stroke and other cardiovascular diseases. Both the Food and Agriculture Organization and the World Health Organization recommend an increased daily intake of omega-3 fatty acids.

The oil in the seed contains 4% L-glutamic acid, which is used to treat mental deficiencies in adults. It also has soothing and lubricating properties, and is used in medicines to soothe tonsillitis, sore throats, coughs, colds, constipation, gravel and stones. Flaxseed is largely employed as an addition to cough medicines. As a domestic remedy for colds, coughs and irritation of the urinary organs, Flaxseed tea is most valuable. A little honey and lemon juice makes it very agreeable and more efficacious. This demulcent infusion contains a large quantity of mucilage, and is made from 1 ounce of the ground or entire seeds to 1 pint of boiling water. It is taken in wineglassful doses, which may be repeated ad libitum.

Flaxseed oil, mixed with an equal quantity of lime water, known then as Carron Oil, is an excellent application for burns and scalds.

The bark and the leaves are used in the treatment of gonorrhoea. The flowers are cardiogenic and nervine. The plant has a long history of folk use in the treatment of cancer. It has been found to contain various anticancer agents.

Along with carotenes, flavonoids, and other valuable phytochemicals, lignans are shown to play an ever increasing role in numerous aspects of human health. Lignans are phytochemicals that protect against certain cancers, particularly those that are hormone sensitive. Lignans in flaxseeds are 200 to 800 times more concentrated than any other lignan source.

Seed - raw or cooked. The seed contains 30 - 40% oil, which comprises mainly linoleic and linolenic acids. The seed also contains cyanogenic glycosides (prussic acid). In small quantities these glycosides stimulate respiration and improve digestion, but in excess can cause respiratory failure and death. Cultivars low in these glycosides have been developed and large quantities of the seed would need to be eaten to achieve a harmful dose. The seed is used in breads and cereals, it can also be sprouted and used in salads. The seed is hard to digest and provokes flatulence. A nutritional analysis is available.

The roasted seed is said to be a coffee substitute. A herbal tea can be brewed from the seed. An edible oil is obtained from the seed, though it needs to be properly refined before it can be eaten. Some caution is advised in the use of the seeds for food since some varieties of this plant contain toxins.

A fiber is obtained from the stem. It is of very high quality and is used in making cloth, sails, nets, paper, insulating material etc. The plant is harvested just after it flowers. The yield is 0.5 to 0.9 tonnes of fiber per hectare.

Known Hazards: The seed of some strains contain cyanogenic glycosides in the seed though the toxicity is low, especially if the seed is eaten slowly. It becomes more toxic if water is drunk at the same time. The cyanogenic glycosides are also present in other parts of the plant and have caused poisoning to livestock.

Flea Seed - Plantago psyllia

Other Common Names: Fleawort, Psyllion, Psyllios, Psyllium Plantain, Psyllium Seeds, Plantago psyllia

Range: Europe - Mediterranean to E. Asia - India

Habitat: Dry places in S. Europe. Found wild on most well-drained soils.

Psyllium has been used as a safe and effective laxative for thousands of years in Western herbal medicine.

Both the dried seeds and the seed husks are demulcent, emollient, laxative and may be used internally and externally in the same manner as flaxseed, which they closely resemble in medicinal properties.

The seeds have a mucilaginous coat and swell to several times their volume when in water. The seeds and the husks contain high levels of fiber, they expand and become highly gelatinous when soaked in water. By maintaining a high water content within the large bowel they increase the bulk of the stool, easing its passage. They are used as a demulcent and as a bulk laxative in the treatment of constipation, dysentery and other intestinal complaints, having a soothing and regulatory effect upon the system. Their regulatory effect on the digestive system means that they can also be used in the treatment of diarrhea and by helping to soften the stool they reduce the irritation of hemorrhoids.

The jelly-like mucilage produced when psyllium is soaked in water has the ability to absorb toxins within the large bowel. Thus it helps to remove toxins from the body and can be used to reduce auto-toxicity.

The macerated and decocted seeds yield a rich mucilage that is used in relieving skin irritations and reddened eyelids.

The seeds are used in face-masks in order to soften the skin.

Fo Ti, Solomon's Seal - *Polygonatum multiflorum*

Other Common Names: Common Solomon's Seal, Eurasian Solomon's Seal, He-shou-wu, *Polygonatum*, Lady's Seals, St. Mary's Seal, *Sigillum Sanctae Mariae*, Solomon's Seal, *Polygonatum multiflorum*

Range: Europe, a native of Northern Europe and Siberia

Habitat: Woodland, usually on limestone. A very hardy plant. It prefers a light soil and a shady situation, being a native of woods.

Solomon's seal has been used for thousands of years in herbal medicine. It is used mainly in the form of a poultice and is believed to prevent excessive bruising and to stimulate tissue repair. The bruised roots were much used as a popular cure for black eyes, mixed with cream.

The root is astringent, demulcent, emetic and tonic. An infusion is healing and restorative, it is good in the treatment of stomach inflammations, piles and chronic dysentery. It is stated that a decoction will afford not only relief but ultimate cure in skin troubles caused by the poison vine, or poisonous exhalations of other plants. It is used with other herbs in the treatment of pulmonary problems, including tuberculosis, and women's complaints. The powdered roots make an excellent poultice for bruises, piles, inflammation etc. The root is harvested in the autumn and dried for later use. The plant should not be used internally except under professional supervision.

A distilled water made from the whole plant has been used as a skin tonic and is an ingredient of expensive cosmetics.

The dried powdered roots and flowers have been used as a snuff to promote sneezing and thus clear the bronchial passages.

Root - cooked. Rich in starch. The root should be macerated for some time in water in order to remove bitter substances. Normally only used in times of famine, the root was powdered and then made into a bread by the North American Indians.

Known Hazards: Large quantities of the fruits are poisonous.

Maitake - *Grifola Frondosa*

Other Common Names: Dancing Mushroom, Hen of the woods, *Grifola Frondosa*

Range: Maitake grows in the northern part of the Temperate Zone in the Northern Hemisphere and is found throughout Japan, Europe, and North America.

Habitat: Grows wild in temperate climates. At the base of old hardwood, especially *Quercus mongolica* var. *grosseserrata* in woods, also *Castanopsis cuspidata* var. *Sieboldii* in the parks, as well as on the trunks and roots.

There are three homologs of Maitake, *Grifola frondosa*: Shiromaitake, *Grifola albicans*; choreimaitake, *Grifola umbellata*; and Tonbimaitake, *Grifola gigantea*.

The scientific name of Maitake, "*Grifola frondosa*" comes from the common name of a fungus found in Italy. This name refers to a mythical beast which is half-lion and half-eagle. The Japanese name "Maitake" is associated with its shape, which some believe resembles a dancing nymph. It is also said that this name comes from "Dancing fungus", because the person who finds it dances with joy. Maitake is used as a Chinese medicine called "Keisho". "Shen Nong Ben Cao jing" (Shen Nong's scripture of herbal medicine) states that it has been frequently used for improving spleen and stomach ailments, calming nerves and mind, and treating hemorrhoids.

Japan is the major producer and consumer of *G. frondosa* (Maitake). Commercial production of maitake in Japan began in 1981. By 1986, production was 2,203 t and, by 1991, production reached 7,950 t (a 261% increase). Japanese production of maitake reached 9,617 t in 1993 and was produced primarily in the provinces of Niigata, Nagano, Gunma, and Shizuoka.

Most Maitake is marketed as food. However, Maitake has been shown to have both anti-tumor and anti-viral properties. Powdered fruitbodies are used in the production of many health foods such as Maitake tea, whole powder, granules, drinks, and tablets. The medicinal properties of the maitake mushroom has been studied since the mid 1980's.

Anti-viral, anti-tumor, anti-diabetic and also the subject of research against HIV, this mushroom is a delicious, soft-fleshed polypore with excellent nutritional properties. Of all the polypores currently being studied, *Grifola frondosa* is attracting considerable attention from the pharmaceutical industry, especially in Korea and Japan.

Immunoceuticals can be considered as substances having immunotherapeutic efficacy when taken orally. More than 50 mushroom species have yielded potential immunoceuticals that exhibit anticancer activity

in vitro or in animal models and of these, six have been investigated in human cancers. Their extremely high tolerability, proven benefits to survival and quality of life, and compatibility with chemotherapy and radiation therapy makes them well suited for cancer management regimens.

Edible mushrooms such as shiitake may have important salutary effects on health or even in treating disease. A mushroom characteristically contains many different bioactive compounds with diverse biological activity, and the content and bioactivity of these compounds depend on how the mushroom is prepared and consumed. It is estimated that approximately 50% of the annual 5 million metric tons of cultivated edible mushrooms contain functional "nutraceutical" or medicinal properties. In order of decreasing cultivated tonnage, [Lentinus \(shiitake\)](#), Pleurotus (oyster), Auricularia (mu-er), Flammulina (enokitake), Tremella (yin-er), Hericium, and Grifola (maitake) mushrooms have various degrees of immunomodulatory, lipid-lowering, antitumor, and other beneficial or therapeutic health effects without any significant toxicity. Although the data for this functional food class are not as strong as those for other functional foods such as cruciferous vegetables, because of their potential usefulness in preventing or treating serious health conditions such as cancer, acquired immune deficiency syndrome (AIDS), and hypercholesterolemia, functional mushrooms deserve further serious investigation.

The fruit body of Grifola frondosa, Basidiomycetes was confirmed to contain substances with anti-diabetic activity. Moreover, levels of insulin and triglyceride in plasma demonstrated a change similar to blood glucose with feeding of maitake.

Frondosa's antiviral activity was confirmed by both National Cancer Institute and the Japan Institute of Health in early 1992.

Reishi - Ganoderma Lucidum

Other Common Names: Ling chih, Ling zhi, Mannentake, Ganoderma Lucidum

Western culture has often frowned on mushrooms, even fearing the small innocuous forest growth. The French prize their truffles, but even truffles and other edible fungi and mushrooms are not as highly valued or show as much potential as a species of mushrooms called Ling Zhi or Reishi.

Reishi mushrooms are polypore mushrooms. Mushrooms are the fruiting body and reproductive structure of a higher order fungus organism, much like an apple is the fruit of an apple tree. The actual mushroom "tree" is a fine thread-like network called mycelium. This mycelium is for the most part subterranean, living in soil, logs and other organic litter.

Unlike green plants, which produce many of their own nutrients by photosynthesis, mushrooms primarily get their nutrients from dead organic matter or soil. Mushrooms and their mycelium are nature's original recyclers. Without them, the planet surface would be piled high with dead, decaying material.

Mushrooms rise out of the mycelium when the right nutrients are amassed and the right environmental conditions are present. Mushrooms release spores at maturity. The wind spreads them and when they land on the right spot, the cycle starts over again.

Known as reishi or mannentake to the Japanese and Ling Zhi to the Chinese, *G. lucidum* is renowned for its medicinal properties. Reishi often is associated with health and recuperation, longevity, wisdom, and happiness. It is believed that certain triterpenes and polysaccharides may account for the multiple activities of Reishi. Thus, considerable time and effort has gone into the isolation and characterization of these compounds.

Reishi is a basidiomycete, lamellaless fungus belonging to the family of polyporaceae. In nature, it grows in densely wooded mountains of high humidity and dim lighting. It is rarely found since it flourishes mainly on the dried trunks of dead plum, guercus serrata or pasonia trees. Out of 10,000 such aged trees, perhaps 2 or 3 will have reishi growth, therefore it is very scarce indeed.

Relatively rare and undiscovered in the West, Reishi and other mushrooms have been revered as herbal medicines for thousands of years in Japan and China. Emperors of the great Chinese dynasties and Japanese royalty drank teas and concoctions of the mushroom for vitality and long life. The ancient Taoists were constantly searching for the elixir of eternal youth, and Reishi was believed to be among the ingredients.

In ancient time, reishi in medicine was considered so auspicious that its medical efficacy has been

attested to in the oldest Chinese medical text (presumed to be over 2,000 years old). The book, which is known in Japan as "Shinnoh Honsokyo", is now accepted as being the original textbook of Oriental medical science. In it, 365 kinds of medicines are classified and explained. The medicines are basically classified into 3 categories: 120 of them are declared to be "superior" medicines, another 120 are classified as "average" medicines, and the remaining 125 are placed in the "fair" category. The "superior" medicines are called "God's Herbs" and they are for perpetual youth and longevity - the medicines of the legendary wizards. The "average" category medicines are those which can be taken as a tonic, and those in the "fair" category are taken to remedy specific ailments. One must be careful about the volume taken of the "average" and "fair" category medicines, and should never take them continuously. However, the book states that for "superior" medicines, any amount can be taken as desired on a continuous basis with no unfavorable effects. Of the superior medicines listed in the text, reishi was rated number one.

Although Ganoderma and its derivatives are not pharmaceuticals and have not undergone rigorous clinical trials to be tested against cancer, there is abundant in vitro, animal and indirect clinical evidence to support its supplemental use in cancer. Standardization in bioactive polysaccharide content and dosages will be necessary to assure its rational use, and clinical trials in select cancers with defined endpoints will confirm its efficacy.

Former heart surgeon Dr. Fukumi Morishige, a leading authority on vitamin C in Japan, reports that when Reishi and vitamin C are combined the results against cancer and other diseases are far better than when Reishi is ingested. This is because the vitamin makes the polysaccharides more accessible to the immune system.

Reishi has long been known to extend life span, increase youthful vigor and vitality. It also promotes good blood circulation by eliminating thrombi in the blood streams. As a result, the person feels renewed vitality. Deterioration of mind and body is arrested. Reishi is indeed a herb with multiple applications.

Chemopreventive effects of plant polysaccharides [*Aloe barbadensis* Miller (APS), [Lentinus edodes](#) (LPS), *Ganoderma lucidum* (GPS) and *Coriolus versicolor* (CPS)] were compared using in vitro short-term screening methods associated with both initiation and promotion processes in carcinogenesis. In induction of glutathione S-transferase activity, GPS was found to be the most effective among plant polysaccharides. These results suggest that some plant polysaccharides produced both anti-genotoxic and anti-tumor promoting activities in in vitro models and, therefore, might be considered as potential agents for cancer chemoprevention.

Conclusively, clinical observations have indisputable proof of reishi's efficacy against cholesterosis, arteriosclerosis, hypertension, fatty liver, hemorrhoid, tooth-infections, obesity and various problems that arise from high serum cholesterol level compounded by a lack of blood circulation. Reishi is also recognized to have some effect in cases of stroke, cerebrovascular accident, coronary insufficiency, myocardial infarction, phlebitis etc. - problems that arise directly from arterial blockage. Furthermore, it is found to be effective in treatment of typical dermatitis, bronchitis asthma, allergy rhinitis, chronic hepatitis etc. - problems related to allergic reactions. Reishi inhibits thrombi to facilitate medication

absorption; it also has an additive effect that strengthens the prostate gland situated between the bladder and the urinary tract. It has the same effect on the early stage of diabetes mellitus. Bladder infection is accompanied by the usual thrombi formation. Treatments with reishi arrest the latter thus eliminating complications within a short period. Other clinical tests showed that administering reishi instead of insulin can reverse blood sugar level back to normal after one year.

The fruit bodies of *Ganoderma lucidum* have been used for the prevention and treatment of various diseases in the Orient. Its antitumor and immune enhancing properties, along with no cytotoxicity, raise the possibility that it could be effective in preventing oxidative damage and resulting disease. Using agarose gel electrophoresis, the potential of *Ganoderma lucidum* extract as a radioprotector and antioxidant defense against oxygen radical-mediated damage was evaluated. The results clearly demonstrate that the hot-water extract of *Ganoderma lucidum* shows good radioprotective ability, as well as protection against DNA damage induced by metal-catalyzed Fenton reactions and UV irradiation. The data suggest that *Ganoderma* mushroom merits investigation as a potential preventive agent in humans.

Administration of hot water soluble extracts of *Ganoderma lucidum* (36 to 72 g dry weight/day) decreased pain dramatically in two patients with postherpetic neuralgia recalcitrant to standard therapy and two other patients with severe pain due to herpes zoster infection.

This review highlights some of the recently isolated and identified substances of higher Basidiomycetes mushrooms origin that express promising antitumor, immune modulating, cardiovascular and hypercholesterolemia, antiviral, antibacterial, and antiparasitic effects.

Medicinal mushrooms have a long history of use in folk medicine. In particular, mushrooms useful against cancers of the stomach, esophagus, lungs, etc. are known in China, Russia, Japan, Korea, as well as the U.S.A. and Canada. There are about 200 species of mushrooms that have been found to markedly inhibit the growth of different kinds of tumors. Searching for new antitumor and other medicinal substances from mushrooms and to study the medicinal value of these mushrooms have become a matter of great significance. However, most of the mushroom origin antitumor substances have not been clearly defined. Several antitumor polysaccharides such as hetero-beta-glucans and their protein complexes (e.g., xyloglucans and acidic beta-glucan-containing uronic acid), as well as dietary fibers, lectins, and terpenoids have been isolated from medicinal mushrooms. In Japan, Russia, China, and the U.S.A. several different polysaccharide antitumor agents have been developed from the fruiting body, mycelia, and culture medium of various medicinal mushrooms ([Lentinus edodes](#), *Ganoderma lucidum*, *Schizophyllum commune*, *Trametes versicolor*, *Inonotus obliquus*, and *Flammulina velutipes*). Both cellular components and secondary metabolites of a large number of mushrooms have been shown to effect the immune system of the host and therefore could be used to treat a variety of disease states.

As recorded in the oldest Chinese medical text, reishi is the "king of herbs", the superior herb for perpetual youth and longevity. Continuous intake will achieve the best results.

- Linda McGlasson, Assistant Editor. Health Foods Business/January 1992 Consumer Education Series. Reishi: Ancient Medicine Is Modern Hope
- Kim HS, Kacew S, Lee BM. Carcinogenesis 1999 Aug;20(8):1637-40. In vitro chemopreventive effects of plant polysaccharides (Aloe barbadensis miller, Lentinus edodes, Ganoderma lucidum and Coriolus versicolor).
- Kim KC, Kim IG. Int J Mol Med 1999 Sep;4(3):273-7. Ganoderma lucidum extract protects DNA from strand breakage caused by hydroxyl radical and UV irradiation.
- Hijikata Y, Yamada S. Am J Chin Med 1998;26(3-4):375-81 Effect of Ganoderma lucidum on postherpetic neuralgia.
- Wasser SP, Weis AL. Crit Rev Immunol 1999;19(1):65-96. Therapeutic effects of substances occurring in higher Basidiomycetes mushrooms: a modern perspective. International Centre for Cryptogamic Plants and Fungi, Institute of Evolution, University of Haifa, Israel.

Shiitake, Hua gu, Lentinan edodes

Other Common Names: Hua gu, Lentinan edodes

The cultivation of *L. edodes* (shiitake) first began in China about AD 1100. It is believed that shiitake cultivation techniques developed in China were introduced to the Japanese by Chinese growers.

Various species of trees have been used for the cultivation of shiitake. One of the primary species used in one area of Japan in past years was the shii tree--thus the derivation of the name shii-take. Most production today, however, is on various species of oak.

Medicinal properties have been attributed to mushrooms for thousands of years. Mushroom extracts are widely sold as nutritional supplements and touted as beneficial for health.

Shiitake is one of the best known and best characterized mushrooms used for medicinal purposes. Several medicinal properties have been attributed to shiitake in recent years. These properties include antitumor polysaccharides activity and glycoproteins, antiviral nucleic acids, platelet agglutination inhibitive substances, and anti-cholesterol active substances.

Lentinan, which is the name given a highly purified polysaccharide fraction extracted from Shiitake mushrooms, is an approved drug in Japan. It is generally administered by injection and has been used as an agent to prolong survival of patients in conventional cancer therapy as well as in AIDS research. Lentinan is commercially available for clinical use. Lentinan is not only useful for cancer treatment, but may also prevent the increase of chromosomal damage induced by anti-cancer drugs. Additionally, Shiitake contains all eight essential amino acids in better proportions than soy beans, meat, milk, or eggs as well as a good blend of vitamins and minerals including vitamins A, B, B12, C, D and Niacin.

In the last three decades, numerous polysaccharides and polysaccharide-protein complexes have been isolated from mushrooms and used as a source of therapeutic agents. The most promising biopharmacological activities of these biopolymers are their immunomodulation and anti-cancer effects. Three antitumor mushroom polysaccharides, have become large market items in Japan.

Although the mechanism of their antitumor action is still not completely clear, these polysaccharides and polysaccharide-protein complexes are suggested to enhance cell-mediated immune responses in vivo and in vitro and act as biological response modifiers. Potentiation of the host defense system may result in the activation of many kinds of immune cells that are vitally important for the maintenance of homeostasis. Polysaccharides or polysaccharide-protein complexes are considered as multi-cytokine inducers that are able to induce gene expression of various immunomodulatory cytokines and cytokine receptors. Some interesting studies focus on investigation of the relationship between their structure and antitumor

activity, elucidation of their antitumor mechanism at the molecular level, and improvement of their various biological activities by chemical modifications.

Garcinia cambogia

Other Common Names: Various forms of the family - Guttiferae. Garcinia kola, bitter kola, Malabar tamarind, Garcinia cambogia

Range: SE Asia, West and Central Africa

Habitat: Moist forest

Garcinia has been used historically in India for treatment of edema, delayed menstruation, constipation and intestinal parasites. This herb is currently used in the United States as a component of weight loss formulas. Various species of South Asian plants of the genus Garcinia (particularly Garcinia cambogia) have high contents of hydroxycitrate (HCA), which is the active ingredient in this and many other currently marketed weight loss products. However, it has not yet been shown, in controlled studies published in the scientific literature, to be effective in weight loss in humans.

A decoction of the fruit rind is given in rheumatism and bowel complaints. The organic acid known as (-)HCA is the primary acid found in the fruit and rind of garcinia. The fruit rind and extracts of G. cambogia are used in many traditional recipes. In the Ayurvedic system of medicine, some flavors are said to activate digestion and are used as purgatives, in the treatment of worms and parasites, tumours and dysentery. Neither acute nor chronic toxicity is reported with regular consumption of Garcinia products as either food or tonics. These products have been used routinely in the coastal areas of South Asia for centuries and they continue to be consumed in large amounts.

Garcinia cambogia fruit have been reported to have around 20-30% of hydroxy citric acid lactone along with tracer amount of citric acid.

HCA inhibits lipogenesis, lowers the production of cholesterol and fatty acids, increases the production of glycogen in the liver, suppresses appetite, increases the body's production of heat by activating the process of thermogenesis. Potential dietary supplement for weight loss and appetite control.

"A plant has been found to halt the deadly Ebola virus in its tracks in laboratory tests", scientists have said.

They used a compound from Garcinia kola, a plant commonly eaten in West Africa. Compounds from the plant have also proved effective against some strains of flu.

If the anti-Ebola compound proves successful in animal and human trials, it will be the first medicine to successfully treat the virus that causes Ebola haemorrhagic fever - an often-fatal condition.

The discovery was announced at the 16th International Botanical Congress in St Louis in the US.

The active compound is what is known as a dimeric flavonoid, which is two flavonoid molecules fused together.

Flavonoids are non-toxic and can be found in orange and lemon rinds as well as the colorings of other plants.

Garcinia kola, is found in moist forest and grows as a medium size tree, up to 12 m high. It is cultivated and distributed throughout west and central Africa. Medicinal uses include, purgative, antiparasitic, antimicrobial. The seeds are used in the treatment of bronchitis and throat infections. They are also used to prevent and relieve colic, cure head or chest colds and relieve cough. Also the plant is used for the treatment of liver disorders and as a chewing stick.

The constituents include—biflavonoids, xanthenes and benzophenones. The antimicrobial properties of this plant are attributed to the benzophenone, flavanones. This plant has shown both anti-inflammatory, antimicrobial and antiviral properties. Studies show very good antimicrobial and antiviral properties. In addition, the plant possesses anti-diabetic, and antihepatotoxic activities.

Garlic - *Allium sativum*

Other Common Names: Ail, Ail De Cuisine, Ajo, Bawang Poetih, Bawang Puteh, Cropleek, Cultivated Garlic, Hsiao Suan, Lai, Lasan, Poor Man's Treacle, Rosina, Samersaq, Sarimsak, Sir, Suan, Thum, *Allium sativum*

Range: Original habitat is obscure. Austria; Britain; Bulgaria; Canada; China; Cuba; Dominican Republic; Egypt; France; Haiti; India; Iraq; Kurdistan; Malaya; Mexico; Pakistan; Panama; Paraguay; Puerto Rico; Russia; South Africa; Spain; Trinidad; Turkey; USA; Venezuela

Habitat: Not known in a truly wild situation. The soil may be sandy, loam or clay, though Garlic flourishes best in a rich, moist, sandy soil. Garlic beds should be in a sunny spot.

Composition: Root (Dry weight)- Water: 0 Calories: 360 Protein: 13.5 Fat: 0.7 Carbohydrate: 82 Fibre: 3 Ash: 3.5 Calcium: 65 Phosphorus: 400 Iron: 4.3 Sodium: 53 Potassium: 1250 Thiamine: 0.7 Riboflavin: 0.2 Niacin: 1.25 Vitamin C: 35

The Common Garlic a member of the same group of plants as the Onion, is of such antiquity as a cultivated plant, that it is difficult with any certainty to trace the country of its origin. De Candolle, in his treatise on the Origin of Cultivated Plants, considered that it was apparently indigenous to the southwest of Siberia, whence it spread to southern Europe, where it has become naturalized, and is said to be found wild in Sicily. It is widely cultivated in the Latin countries bordering on the Mediterranean. Dumas has described the air of Provence as being 'particularly perfumed by the refined essence of this mystically attractive bulb.'

Garlic has been used as a medicine and a food since the time of the Egyptian Pharaohs and the earliest Chinese dynasties. When Garlic cells are crushed, they release allicin, the active ingredient responsible for Garlic's characteristic odor. To be effective, Garlic preparations must smell of allicin. It is a sulphide of the radical Allyl, present in all the onion family. This oil is rich in sulphur, but contains no oxygen. The peculiar penetrating odour of Garlic is due to this intensely smelling sulphuret of allyl, and is so diffusive that even when the bulb is applied to the soles of the feet, its odour is exhaled by the lungs.

It was largely consumed by the ancient Greeks and Romans, as we may read in Virgil's Eclogues. Horace, however, records his detestation of Garlic, the smell of which, even in his days (as much later in Shakespeare's time), was accounted a sign of vulgarity. He calls it 'more poisonous than hemlock,' and relates how he was made ill by eating it at the table of Maecenas. Among the ancient Greeks, persons who partook of it were not allowed to enter the temples of Cybele. Homer, however, tells us that it was to the virtues of the 'Yellow Garlic' that Ulysses owed his escape from being changed by Circe into a pig, like each of his companions.

Garlic is mentioned in several Old English vocabularies of plants from the tenth to the fifteenth centuries, and is described by the herbalists of the sixteenth century from Turner (1548) onwards. It is stated to have been grown in England before the year 1540. In Cole's Art of Simpling we are told that cocks which have been fed on Garlic are 'most stout to fight, and 50 are Horses': and that if a garden is infested with moles, Garlic or leeks will make them 'leap out of the ground presently.'

The name is of Anglo-Saxon origin, being derived from gar (a spear) and lac (a plant), in reference to the shape of its leaves.

Garlic has a very long folk history of use in a wide range of ailments, particularly ailments such as ringworm, candida and vaginitis where its fungicidal, antiseptic, tonic and parasiticidal properties have proved of benefit.

The plant produces inhibitory effects on gram-negative germs of the typhoid-paratyphoid-enteritis group, indeed it possesses outstanding germicidal properties and can keep amoebic dysentery at bay. It is also said to have anticancer activity. It has also been shown that garlic aids detoxification of chronic lead poisoning. Daily use of garlic in the diet has been shown to have a very beneficial effect on the body, especially the blood system and the heart. For example, demographic studies suggest that garlic is responsible for the low incidence of arteriosclerosis in areas of Italy and Spain where consumption of the bulb is heavy. Recent research has also indicated that garlic reduces glucose metabolism in diabetics, slows the development of arteriosclerosis and lowers the risk of further heart attacks in myocardial infarct patients. Externally, the expressed juice is an excellent antiseptic for treating wounds.

As an antiseptic, its use has long been recognized. In the late war it was widely employed in the control of suppuration in wounds. The raw juice is expressed, diluted with water, and put on swabs of sterilized Sphagnum moss, which are applied to the wound. Where this treatment has been given, it has been proved that there have been no septic results, and the lives of thousands of men have been saved by its use.

The fresh bulb is much more effective medicinally than stored bulbs, extended storage greatly reduces the anti-bacterial action.

The bulb is said to be anthelmintic, antiasthmatic, anticholesterolemic, antiseptic, antispasmodic, cholagogue, diaphoretic, diuretic, expectorant, febrifuge, stimulant, stings, stomachic, tonic, vasodilator.

Bulb - raw or cooked. Widely used, especially in southern Europe, as a flavoring in a wide range of foods, both raw and cooked. Garlic is a wonderfully nutritious and health giving addition to the diet, but it has a very strong flavor and so is mainly used in very small quantities as a flavouring in salads and cooked foods.

Leaves - raw or cooked. Chopped and used in salads, they are rather milder than the bulbs. The Chinese often cultivate garlic especially for the leaves, these can be produced in the middle of winter in mild

winters.

The juice from the bulb is used as an insect repellent. An extract of the plant can be used as a fungicide. It is used in the treatment of blight and mould or fungal diseases of tomatoes and potatoes. If a few cloves of garlic are spread amongst stored fruit, they will act to delay the fruit from rotting. The growing plant is said to repel insects, rabbits and moles.

Known Hazards: There have been cases of poisoning caused by the consumption, in large quantities and by some mammals. Dogs seem to be particularly susceptible.

Taking large quantities of Garlic may cause stomach problems, and will lead to bad breath and body odor. Although the problem is rare, frequent hand contact may cause eczema (itching and weeping rash).

Kudzu - *Pueraria lobata*, *Pueraria thunbergiana*

Other Common Names: Geh Gen, Ko Fen, Ko Pu, Kudzu Vine, Kung Pu, Kuzu, *Pueraria lobata*, *Pueraria thunbergiana*

Range: E. Asia - Japan.

Habitat: Thickets and thin woods all over Japan.

Kudzu was introduced into the United States at the Philadelphia Centennial Exposition in 1876 and into the South at the New Orleans Exposition during 1884-1886. Some folks began using the plant as a shade vine for their porches and arbors. Cows thought it tasty as a hay and forage, but its stems made it difficult to harvest. The big break for kudzu came during the Great Depression of the 1930's when the US Government paid farmers \$8.00 an acre to plant the stuff on fallow fields and bare banks as a means of controlling erosion. It's been growing like a weed ever since. Today, the primary value of kudzu is as a source of amusement and ridicule. And, of course, the plant is a valuable source of medication for alcoholic hamsters!

The vines grow as much as a foot per day during summer months, climbing trees, power poles, and anything else they contact. Under ideal conditions kudzu vines can grow sixty feet each year. While they help prevent erosion, the vines can also destroy valuable forests by preventing trees from getting sunlight. The USDA declared kudzu to be a weed in 1972!

The kudzu vine, known as Ge Gen in China, is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs. Recent research has shown that compounds called 'daidzin' and 'daidzein', which are contained in the roots and the flowers, are a safe and effective method for treating alcohol abuse. They work by suppressing the appetite for alcohol, whereas existing treatments interfere with the way the alcohol is metabolised and can cause a build-up of toxins. The plant is often used in combination with *Chrysanthemum x morifolium* in treating alcohol abuse.

Current research may lead to new medicines made from kudzu, but for now only hamsters and mice can benefit from these drugs. Research with laboratory animals at Harvard Medical School has revealed that a drug extracted from kudzu root may help in the treatment of alcoholism. The drug is based on a 2,000 year old Chinese herbal medicine. Several years of testing may be required before the drug can be made available for human consumption.

The flowers and the roots are antidote, antiemetic, antipyretic, antispasmodic, demulcent, diaphoretic, digestive, febrifuge, hypoglycaemic and hypotensive. A concoction of the flowers and tubers is used to treat alcoholism, fever, colds, diarrhoea, dysentery and acute intestinal obstruction. It is useful in the

treatment of angina pectoris and migraine. The root is frequently used as a remedy for measles, often in combination with *Cimicifuga foetida*.

The root contains puerarin. This increases the blood flow to the coronary artery and protects against acute myocardial ischemia caused by the injection of pituitrin. The root can be harvested from the autumn to the spring and is used fresh or dried.

The flowers are harvested just before they are fully open and are dried for later use. The stems are galactagogue and are also applied as a poultice to incipient boils, swellings and sore mouths.

Root - cooked. Starchy. The root can be up to 1.8 metres long. The root contains about 10% starch, this can be extracted and used as a crispy coating in deep fried foods, or for thickening soups etc. It can also be made into noodles, or like agar or gelatine is used as a jelling agent for salads.

Stems and young leaves - raw or cooked. The fresh young shoots taste like a cross between a bean and a pea.

In Japan, a kind of kudzu tofu is highly prized.

Known Hazards: Although no specific mention has been found for this species, the leaves of the closely related *P. hirsuta* (which might be no more than a synonym for this species) have barbed hairs and these can cause severe irritation.

Gentian - *Gentiana lutea*

Other Common Names: Bitter Root, Bitterwort, Centiyane, Genciana, Yellow Gentian, *Gentiana lutea*

Range: C. and S. Europe

Habitat: Grassy alpine and sub-alpine pastures, usually on calcareous soils.

All the known species are remarkable for the intensely bitter properties residing in the root and every part of the herbage, hence they are valuable tonic medicines. That most commonly used is *Gentiana lutea*, the Yellow Gentian. The root of this species is the principal vegetable bitter employed in medicine, though the roots of several other species are said to be equally efficacious. Before the introduction of hops, Gentian, with many other bitterherbs, was used occasionally in brewing.

The medicinal parts are the dried, underground parts of the plant and the fresh, above-ground parts. Its name derives from Gentius, King of Illyria (180-167 BC) who discovered the plant's healing value. It was used in the Middle Ages as an antidote to certain poisons.

Gentian root has a long history of use as a herbal bitter in the treatment of digestive disorders and is an ingredient of many proprietary medicines. It contains some of the most bitter compounds known and is used as a scientific basis for measuring bitterness.

It is especially useful in states of exhaustion from chronic disease and in all cases of debility, weakness of the digestive system and lack of appetite. It is one of the best strengtheners of the human system, stimulating the liver, gall bladder and digestive system, and is an excellent tonic to combine with a purgative in order to prevent its debilitating effects.

The root is anthelmintic, anti-inflammatory, antiseptic, bitter tonic, cholagogue, emmenagogue, febrifuge, refrigerant and stomachic. It is taken internally in the treatment of liver complaints, indigestion, gastric infections and anorexia. It should not be prescribed for patients with gastric or duodenal ulcers. The root, which can be as thick as a person's arm and has few branches, is harvested in the autumn and dried for later use. It is quite likely that the roots of plants that have not flowered are the richest in medicinal properties.

Ginger - Zingiber officinale

Other Common Names: Zingiber officinale

Range: Said to be a native of Asia. Cultivated in West Indies, Jamaica, Africa.

Valued primarily for the distinctive tang it lends to cuisine, Ginger Root also has proven medicinal effects. Ginger is a classic tonic for the digestive tract. Classified as an aromatic bitter, it stimulates digestion. Its ability to prevent vomiting has been verified by clinical trial, and it has been shown to stimulate the intestines and promote production of saliva, digestive juices, and bile. It also tends to boost the pumping action of the heart. Ginger may be used as a stimulant of the peripheral circulation in cases of bad circulation, chilblains and cramps. Ginger may protect the stomach from the damaging effects of alcohol and nonsteroidal anti-inflammatory drugs (such as ibuprofen) and may help prevent ulcers. In feverish conditions, Ginger acts as a useful diaphoretic, promoting perspiration. As a gargle it may be effective in the relief of sore throats

Ginger's beneficial effect on motion sickness appears to be related to its action on the gastrointestinal tract rather than the central nervous system.

Stimulant, carminative, given in dyspepsia and flatulent colic excellent to add to bitter infusions; specially valuable in alcoholic gastritis; of use for diarrhea from relaxed bowel where there is no inflammation. Ginger Tea is a hot infusion very useful for stoppage of the menses due to cold, externally it is a rubefacient.

The root must be kept in a dry place, or it will start growing and is then spoilt. The odour of Ginger is penetrating and aromatic, its taste spicy, hot and biting; these properties are lost by exposure.

Essence of Ginger should be avoided, as it is often adulterated with harmful ingredients. The most common adulterants are flour, curcuma, linseed, rapeseed, the hulls of cayenne pepper and waste ginger.

Golden Seal - *Hydrastis canadensis*

Other Common Names: Eye Balm, Eye Root, Ground Raspberry, Hidrastis, Hydrastis, Indian Dye, Indian Paint, Jaundice Root, Orange Root, Turmeric Root, Warnera, Wild Curcuma, Yellow Puccoon, Yellow Root, *Hydrastis canadensis*

Range: Eastern N. America - Connecticut to Minnesota, Missouri and Kansas

Habitat: Rich shady woods and moist areas on woodland edges.

The North American plant Golden Seal produces a drug which is considered of great value in modern medicine. The generic name of the plant, *Hydrastis*, is derived from two Greek words, signifying water and to accomplish, probably given it from its effect on the mucous membrane.

It is official in most Pharmacopoeias, several of which refer to its yellowing the saliva when masticated.

Goldenseal is a traditional medicine of the North American Indians and is still widely used in Western herbal medicine. In the Nineteenth century it acquired a reputation as a heal-all and was grossly over-collected from the wild and has become rare in the east of its range. It is now being cultivated on a small scale. It is especially valued in treating disorders of the digestive system and mucous membranes and is also extremely useful in the treatment of habitual constipation.

The root is the active part of the plant, it is harvested in the autumn after the plant has died down and is dried for later use. It is said to be antiperiodic, antiseptic, astringent, cholagogue, diuretic, laxative, stomachic, tonic. It is used mainly in the treatment of disorders affecting the ears, eyes, throat, nose, stomach, intestines and vagina.

The root contains the alkaloids hydrastine, berberine and canadine. Berberine is antibacterial (effective against broad-spectrum bacteria and protozoa, it increases bile secretions, acts as an anticonvulsant, a mild sedative and lowers blood pressure. Use of this plant destroys beneficial intestinal organisms as well as pathogens, so it should only be prescribed for limited periods (a maximum of three months). The plant should be used with caution, and not at all during pregnancy or by people with high blood pressure.

Goldenseal products are produced from the dried rhizome and root of the plant. Berberine can be produced from cultures of *Coptis japonica* and *Thalictrum rugosum* cells. Hydrastine can be produced from berberine.

Goldenseal tea is commercially available in health food stores. Goldenseal is also an ingredient in some over-the-counter (OTC) herbal dietary supplements, eardrops, feminine cleansing products, cold/flu

remedies, allergy relief products, laxative products, and digestive support products. Berberine chloride and berberine sulfate are ingredients in some commercial eyewash products. Hydrastine is an ingredient in some decongestant nose sprays and feminine cleansing products.

Goldenseal has been used to treat digestive and hemorrhagic disorders, disorders of the genitourinary tract, upper respiratory inflammation and congestion, mucous membrane inflammation, eczema, pruritus, otorrhea, tinnitus, congestion/inflammation of the ear, and conjunctivitis. It is claimed to be effective in treating cancers, particularly of the ovary, uterus, and stomach. Goldenseal is stated also to possess antiseptic, astringent, and hemostatic qualities when applied topically. It has been used as a tonic, antiperiodic, diuretic, and as a vaginal douche. OTC products containing goldenseal are sold under the claim that they are effective in treating menstrual disorders, minor sciatica, rheumatic and muscular pain, motion sickness and nausea, and chronic diarrhea from protozoal, fungal, and bacterial infections. Goldenseal is sometimes used to treat AIDS symptoms and claims have been made that it is able to prevent the detection of illicit drugs in urine.

Berberine has been used as a bitter tonic, diaphoretic, and antipyretic, and for the treatment of skin diseases, eye infections, liver diseases, and diarrhea. Studies have identified antiplatelet, anticerebral ischemic, vasodilatory, and antirhythmic pharmacologic properties. It is believed to be the active ingredient in *Coptis rhizoma* (used to treat amnesia). Berberine has been used to treat bacterial and parasitical infections and may be effective in improving cardiac performance in patients with heart failure. It is also used as a fluorescent stain in medical research.

Hydrastine is claimed to be an abortifacient, antibiotic, antitussive, antiuterotic, antivaginitic, bactericide, central nervous system depressant, choleric, convulsant, hemostat, hypertensive, hypotensive, pesticide, sedative, uterotonic, and vasoconstrictor. In the treatment of diarrhea, it has been found to have antimicrobial, antimotility, and antisecretory properties.

Exposure to goldenseal occurs orally as a tea or capsule, or it can be applied dermally as a skin lotion or to the eye as an eyewash. It is also applied as a vaginal douche and as eardrops. Berberine and hydrastine are also applied to the eyes as an eyewash. Hydrastine exposure occurs also from the use of hydrastine-containing decongestant nose sprays and feminine hygiene products.

Known Hazards: The whole plant is poisonous.

In humans, goldenseal may cause convulsions and irritation of the mouth, throat, and stomach when taken orally in toxic doses. Paresthesia, paralysis, respiratory failure, and death may follow. Chronic use may inhibit vitamin B absorption, and sublethal doses may induce labor if taken during pregnancy. While markedly improving cardiac performance in patients with heart conditions, berberine also induces ventricular tachycardia in some subjects. Berberine had an anesthetic effect when injected subcutaneously (s.c.). Both berberine and hydrastine produced parasympatholytic and anesthetic effects when applied to the eyes. Hydrastine induced labor when taken orally by pregnant women.

Gotu kola - Centella asiatica

Other Common Names: Daun Kaki Kuda, Gagan-gagan, Hydrocotyle, Indian Pennywort, Marsh Penny, Pegaga, Pegaga Tekukur, Pegaga Ular, Pegagan, Penggaga, Thick-leaved Pennywort, White Rot, Centella asiatica

Range: E. Asia - India, China and Japan. Australia

Habitat: Old stone walls and rocky sunny places in lowland hills and especially by the coast in central and southern Japan. Shady, damp and wet places such as paddy fields, and in grass thickets.

Gotu kola is an outstandingly important medicinal herb that is widely used in the Orient and is becoming increasingly popular in the West. Its Indian name is 'Brahmi' which means 'bringing knowledge of the Supreme Reality' and it has long been used there medicinally and as an aid to meditation. It is a useful tonic and cleansing herb for skin problems and digestive disorders. In India it is chiefly valued as a revitalizing herb that strengthens nervous function and memory.

The whole plant is alterative, cardio-depressant, hypotensive, weakly sedative and tonic. It is a rejuvenating diuretic herb that clears toxins, reduces inflammations and fevers, improves healing and immunity, improves the memory and has a balancing effect on the nervous system. It has been suggested that regular use of the herb can rejuvenate the nervous system and it therefore deserves attention as a possible cure for a wide range of nervous disorders including multiple sclerosis. Recent research has shown that gotu kola reduces scarring, improves circulatory problems in the lower limbs and speeds the healing process.

It is used internally in the treatment of wounds, chronic skin conditions (including leprosy), venereal diseases, malaria, varicose veins, ulcers, nervous disorders and senility. Caution should be observed since excess doses cause headaches and transient unconsciousness. Externally, the herb is applied to wounds, hemorrhoids and rheumatic joints.

The plant can be harvested at any time of the year and is used fresh or dried. Another report says that the dried herb quickly loses its medicinal properties and so is best used fresh.

Known Hazards: There is a warning that the plant can irritate the skin, though it is widely used to treat skin complaints.

Oligomeric Proanthocyanidins (OPCs),

Other Common Names: Grape seed extract, Oligomeric Proanthocyanidins (OPCs), Procyanidolic Oligomers (PCOs), Pycnogenol, Procyanidins

During the winter of 1534, the French explorer Jacques Cartier and his crew avoided scurvy by using Anneda, an Indian medicine probably containing ascorbic acid and procyanidins. Four centuries later, Szent-Gyorgyi was misguided in proposing citrin [lemon flavonoid compound] as a second antiscorbutic factor, for flavonoids are devoid of true vitamin-like behavior. On the other hand, pycnogenols, widely found in old empirical antiscorbutic remedies, seem more appropriate in this respect, since they are active per os, bioavailable, linked to various living tissues, and concerned with essential metabolic pathways. As histidine decarboxylase inhibitors, pycnogenols lower the histamine level in the aortic endothelium and are believed to protect it against the vascular permeability alterations occurring early in the atherogenic process.

In 1947, a student at the biological and medical faculty of the University of Bordeaux, France named Jack Masquelier was assigned the task of determining whether or not the red inner skin of peanuts was toxic. For his doctoral dissertation, Masquelier undertook a series of experiments to answer this question. Fairly early in his investigations, Masquelier was able to determine that in fact peanut skins were not toxic. In the course of his research, however, he came upon a colorless substance in peanut skin which called for further examination. By 1948, he had succeeded in isolating that substance, OPC, from peanut skin, and had identified that it possessed vasoprotective (protective of blood vessels) potential. After casting about among many possible sources, he found what he was searching for in the bark of Landes pine trees, a waste product of the lumber industry typically used as a mulch for gardens. This new source yielded sufficient quantities of OPC to be useful for manufacturing purposes.

Subsequent studies by Masquelier eventually revealed another source of OPC besides the bark of the Landes pine. Grape seeds, which are the waste product of the winemaking industry and are used to make grape seed oil for cooking, were found to contain even greater amounts of the same beneficial antioxidant. Though grape seeds did not supplant pine bark completely, they came to be the primary source of OPC for extraction. Today in France, Flavan, from Landes pine bark, and Resivit from grape seeds, are both registered OFC medicines for vascular protection.

Mainstream medical science now regards oxidation as a primary cause of degeneration and ageing. Oxidation, the slow deterioration of matter as a result of chemical reactions involving oxygen, is a familiar phenomenon found throughout nature. The rusting of metals, the spoilage of foods, the rancidification of oils and the crumbling of rubber are examples of the common process of oxidation. In the body oxidative reactions of many kinds occur due to exposure to environmental toxins. In the air we breathe and the water we drink, we are exposed to as many as 60,000 chemical toxins of different kinds, including cigarette smoke, car exhaust vapors from cleaning fluids and solvents. Some chemical agents,

such as the trihalomethanes, are toxic in quantities almost too small to be detected. In addition, we are subjected to a variety of chemical food additives such as preservatives, artificial colors, flavors emulsifiers, lubricants, bleaching agents, flavor enhancers and synthetic sweeteners. Many of these agents contribute to oxidative reactions in the body.

Fortunately, there are nutritional agents that help to prevent against oxidative damage in the body and fight free radicals, and further help to repair damage that has already occurred. Antioxidant dietary factors include nutrients such as tocopherol (vitamin E) and ascorbate (vitamin C), as well as numerous carotenoids and a number of phenols and flavonoids found in common foods. Dietary fruits and vegetables are the primary sources of antioxidant dietary factors, though some antioxidants occur in grains, beans, meats, seafood's and dairy products. But while antioxidants are available in a healthy diet it is difficult to get enough of them to fend off the damage caused by free radicals resulting from air and water pollution and other environmental factors.

In terms of protective value, Dr Masquelier's OPC is a superior antioxidant. OPC is very rapidly absorbed, and is quickly distributed throughout the body as a free radical fighter, OPC comes to the aid of the body more quickly than other antioxidants, thereby reducing the potential for free radical damage and the ravages of aging. OPC also possesses more reactive sites for neutralising free radicals than other known antioxidants. Furthermore, OPC possesses nucleophilic as well as electrophilic reactive centers, permitting reactivity with both positively charged and negatively charged free radical species. what this means is that OPC can "scavenge" or "quench" (neutralize) a broad variety of types of free radicals.

Considerable recent research has explored therapeutic applications of oligomeric proanthocyanidin complexes (OPCs), naturally occurring plant metabolites widely available in fruits, vegetables, nuts, seeds, flowers, and bark. OPCs are primarily known for their antioxidant activity. However, these compounds have also been reported to demonstrate antibacterial, antiviral, anticarcinogenic, anti-inflammatory, anti-allergic, and vasodilatory actions. In addition, they have been found to inhibit lipid peroxidation, platelet aggregation, capillary permeability and fragility, and to affect enzyme systems including phospholipase A2, cyclooxygenase, and lipoxygenase. Based on these reported findings, OPCs may be a useful component in the treatment of a number of conditions including venous insufficiency, varicose veins, capillary fragility and diabetic retinopathy. Experimental studies suggest potential benefit in arteriosclerosis, heart disease and stroke.

Proanthocyanidins (Procyanidins) is an important therapeutic class of flavonoids extracted from grape seeds and maritime (Landes) pine. When individual molecules bind together, the result is collectively called procyanidolic oligomers (PCO). They have a broad range of pharmacologic activity through increasing vitamin C levels, decreasing capillary permeability and fragility, scavenging free radicals and inhibiting destruction of collagen. The latter occurs through ability to cross-link collagen fibers, preventing free-radical damage, inhibiting enzymatic cleavage of collagen, and preventing the synthesis and release of inflammatory mediators. PCO has approximately 50 times the anti-oxidant activity of vitamin C or vitamin E. These influences, along with other mechanisms, explain their benefit in venous and capillary disorders, including venous insufficiency, capillary fragility, diabetic retinopathy and macular degeneration. Studies show that PCO also lowers cholesterol levels and can shrink arterial choles

terol deposits.

Grape seed proanthocyanidins are natural antioxidants which possess a broad spectrum of chemoprotective properties against free radicals and oxidative stress.

There is increasing evidence to indicate cardioprotective effects of red wine consumption. Such cardioprotective properties of wine have been attributed to certain polyphenolic constituents of grapes. The purpose of this investigation was to examine whether proanthocyanidins derived from grape seeds possess cardioprotective properties. The results of our study demonstrated that proanthocyanidin-fed animals were resistant to myocardial ischemia reperfusion injury as evidenced by improved recovery of post-ischemic contractile functions. The proanthocyanidin-fed group revealed reduced extent of myocardial infarction compared to the control group. Fluorimetric study demonstrated the antioxidant property of proanthocyanidin as judged by its ability to directly scavenge peroxy radicals. Taken together, the results of this study showed that grape seed-proanthocyanidins possess a cardioprotective effect against ischemia reperfusion injury. Such cardioprotective property, at least in part, may be attributed to its ability to directly scavenge peroxy and hydroxyl radicals and to reduce oxidative stress developed during ischemia and reperfusion.

Reactivities of several proanthocyanidins (monomers of condensed tannins) and gallate esters (representing hydrolyzable tannins) with hydroxyl radicals, azide radicals, and superoxide anions were investigated using pulse radiolysis combined with kinetic spectroscopy. We determined the scavenging rate constants and the decay kinetics of the aroxyl radicals both at the wavelength of the semiquinone absorption (275 nm) and the absorption band of the gallate ester ketyl radical (400-420 nm). For most compounds second-order decay kinetics were observed, which reflect disproportionation of the semiquinones. In the case of the oligomeric hydrolysable tannins, pentagalloyl glucose and tannic acid, the decay kinetics were more complex involving sequential first-order and second-order reactions, which could only be resolved by kinetic modeling. A correlation of the reaction rates with hydroxyl radicals (k^*OH) with the number of adjacent aromatic hydroxyl groups (i.e., representing catechol and/or pyrogallol structures) was obtained for both condensed and hydrolyzable tannins. Similar correlation for the reactions with azide radicals and superoxide anions are less obvious, but exist as well. We consider proanthocyanidins superior radical scavenging agents as compared with the monomeric flavonols and flavones and propose that these substances rather than the flavonoids proper represent the antioxidative principle in red wine and green tea.

The pharmacological treatment of non-complicated chronic venous insufficiency is a current and well-debated topic. The introduction of new products with action on the venous system, improved knowledge on the physiopathology of venous insufficiency and the possibility provided by new analytical instruments, have given new impulse to the consolidation of the clinical value of phlebotonics in this indication.

Methods: In light of this, 24 patients with non-complicated chronic venous insufficiency were treated with oral administration of Oligomeric Proanthocyanidins (Pycnogenols-OPC) 100 mg/day. To evaluate the therapeutic efficacy of the treatment, an instrumental evaluation by optical probe capillaroscope was

employed in addition to the traditional subjective clinical parameters: swelling, itching, heaviness and pain. The videocapillaroscope examination was performed at the lower third of the leg and the first toe. Edema in the capillaroscopic field, the number of observable capillaries and the capillary dilatation were the parameter chosen to evaluate the efficacy of treatment. All patients completed the study with no reports of adverse events during the period of observation.

Results: The results obtained show a positive clinical response (improved or absent symptoms) in over 80% of patients, with significant improvement of symptoms already evident after the first 10 days of treatment. The mechanism of action of the OPCs explains the rapid reduction of the swelling of the lower limbs and correlated with this are the other evaluable symptoms: heaviness and itching. Particularly striking results were observed for itching and pain which completely disappeared during the course of therapy in 80% and 53% of the patients respectively. Noteworthy is the good correlation between the clinical and instrumental data, with improvement in a total of 70% of patients.

Conclusions: The results obtained in the course of this clinical experience, with evident improvement already during the first weeks of treatment, the absence of adverse events added to the benefit of a once-a-day administration, justify the use of OPC in the treatment of non-complicated chronic venous insufficiency.

-
- Altern Med Rev 2000;5(2):144-151
 - Chris Kilham. OPC: The Miracle Antioxidant
 - Masquelier J. Natural products as medicinal agents. *Planta Med* 242S-256S; 1980.
 - Henriot JP, Veno-lymphatic insufficiency: 4,729 patients undergoing hormonal and pro-cyanidol oligomer therapy. *Phlebologie* 46, 313-325,1993
 - Gomez Trillo JT, Varicose veins of the lower extremities: Symptomatic treatment with a new vasculotropic agent. *Prensa Med Mex* 38, 293-296, 1973
 - Lagrue G, Oliver-Martin F, and Grillot A, A study of the effects of procyanidol oligomers on capillary resistance in hypertension and in certain nephropathies. *Sem Hosp Paris* 57, 1399-1401, 1981
 - Soyeux A, et al., Endotelon: Diabetic retinopathy and hemorrhheology (preliminary study). *Bull Soc Ophtalmol Fr* 87, 1441-1444, 1987
 - Sato M, Maulik G, Ray PS, Bagchi D, Das DK. Cardioprotective effects of grape seed proanthocyanidin against ischemic reperfusion injury. *J Mol Cell Cardiol* 1999 Jun;31(6) :1289-97
 - Bors W, Michel C. Antioxidant capacity of flavanols and gallate esters: pulse radiolysis studies. *Free Radic Biol Med* 1999 Dec;27(11-12):1413-26
 - Costantini A, De Bernardi T, Gotti A. Clinical and capillaroscopic evaluation of chronic uncomplicated venous insufficiency with procyanidins extracted from *vitis vinifera*. *Minerva Cardioangiol* 1999 Jan-Feb;47(1-2):39-46

Green tea - *Thea sinensis*, *Camellia sinensis*

Other Common Names: An Hua Ch'A, Assam Tea, Cay, Ch'A, Green Tea, Hsueh Ch'A, Lo Chieh Ch'A, Ming, P'U Erh Ch'A, P'U T'O Ch'A, Shui Sha Lien Ch'A, Tea, Wu I Ch'A, *Thea sinensis*, *Camellia sinensis*

Range: E. Asia - China? Exact origin is uncertain.

Habitat: Shaded areas at an elevation of 2100 - 2700 metres in Yunnan. Prefers a woodland soil but thrives in a warm open well-drained loam if leafmould is added.

Composition: Leaves (Dry weight) - Water: 0 Protein: 25.7 Fat: 6.5 Carbohydrate: 40.8 Ash: 5 caffeine: 3.3% tannin: 13%

It was formerly supposed that black and green tea were the produce of distinct plants, but they are both prepared from the same plant. Green tea is prepared by exposing the gathered leaves to the air until superfluous moisture is eliminated, when they are roasted over a brisk wood fire and continually stirred until they become moist and flaccid; after this they pass to the rolling table, and are rolled into balls and subjected to pressure which twists them and gets rid of the moisture; they are then shaken out on flat trays, again roasted over a slow and steady charcoal fire, and kept in rapid motion for an hour to an hour and a half, till they assume a dullish green color. After this they are winnowed, screened, and graded into different varieties.

The tea plant is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs. Modern research has shown that there are many health benefits to drinking tea, including its ability to protect the drinker from certain heart diseases. It has also been shown that drinking tea can protect the teeth from decay, because of the fluoride naturally occurring in the tea.

The leaves are cardiogenic, diuretic, stimulant and stringent. They exert a decided influence over the nervous system, giving a feeling of comfort and exhilaration, but also producing an unnatural wakefulness when taken in large doses. They are used internally in the treatment of diarrhea, dysentery, hepatitis and gastroenteritis. Excessive use can lead to dizziness, constipation, indigestion, palpitations and insomnia.

Externally, they are used as a poultice or wash to treat cuts, burns, bruises, insect bites, ophthalmia, swellings etc. Only the very young leaves and leaf buds are used, these can be harvested throughout the growing season from plants over three years old and are dried for later use.

The leaves are infused in hot water and used as the drink that is commonly known as tea. It is widely

drunk in many areas of the world. Green tea is made from the steamed and dried leaves, whilst black tea (the form most commonly drunk in the west) is made from leaves that have been fermented and then dried. Tea contains polyphenols, these are antioxidants that help to protect the body against heart diseases, stroke and cancer. However, tea is also rich in tannin and is a possible cause of oesophageal cancer. Cold tea is sometimes used as a soaking liquid to flavor dried fruit.

Catechins differ slightly in chemical structure from other flavonoids, but share their chemoprotective properties. The most common catechins are gallic esters, named epicatechin (EC), epicatechin gallate (ECG), and epigallocatechin gallate (EGCG). All are found in green tea, and are thought to be responsible for the protective benefits of this beverage.

An edible oil is obtained from the seed. The oil needs to be refined before it is eaten. The flowers are made into 'tempura' using the edible oil that is obtained from the seed. An essential oil distilled from the fermented dried leaves is used as a commercial food flavoring.

Known Hazards: Taken moderately by healthy individuals it is harmless, but in excessive quantities it will produce unpleasant nervous and dyspeptic symptoms, the green variety being decidedly the more injurious.

Guarana - Paullinia Cupana

Other Common Names: Paullinia, Guarana Bread, Brazilian Cocoa, Uabano, Uaranzeiro, Paullinia Sorbilis, Paullinia Cupana

Range: Brazil, The genus Paullinia is predominantly neotropical, extending from Mexico and the southern United States to Argentina.

This climbing shrub took the name of its genus from C. F. Paullini, a German medical botanist who died 1712. The seeds of Paullinia Sorbilis are often used or mixed with those of P. Cupana. Guarana is only made by the Guaranis, a tribe of South American Indians.

Guarana is undoubtedly among the stimulants that are attracting most attention from the developed countries nowadays. All kinds of qualities are being attributed to it, from that of being a simple stimulant to an aphrodisiac, and it is now a must in the herbalist's shop. It was already cultivated at the time of the discovery and, from the seventeenth century, its seed occupied a prominent place among the products used for local consumption and export in the region of Manaus in Amazonia.

The use of guarana in Europe was documented in 1775, but information on its production up to the beginning of this century is very uncertain. The only information available for last century relates to the export of 262 arrobas (1 arroba = 11.5 kg) to Europe in 1852.

The guarana carbonated drinks industry began in 1907 and the product became Brazil's national drink during the 1940s. In 1973, the Law on Juices laid down regulations for the use of guarana, defining the maximum and minimum concentrations for carbonated drinks, syrups and other products. In 1981, EMBRAPA's Agricultural Research Centre of the Semi-Humid Tropics (CPATU) developed soluble guarana. Nowadays, guarana is marketed as sticks and soluble or insoluble powder and is used industrially for the production of carbonated drinks, syrups and herbalists' products.

After the seeds are shelled and washed they are roasted for six hours, then put into sacks and shaken till their outside shell comes off, they are then pounded into a fine powder and made into a dough with water, and rolled into cylindrical pieces; these are then dried in the sun or over a slow fire, till they become very hard and are then a rough and reddish-brown color, marbled with the seeds. They break with an irregular fracture, have little smell, taste astringent, and bitter like chocolate without its oiliness, and in color like chocolate powder; it swells up and partially dissolves in water.

A crystallizable principle, called guaranine, identical with caffeine, which exists in the seeds, united with tannic acid, catechutannic acid starch, and a greenish fixed oil.

Nervine, tonic, slightly narcotic stimulant, aphrodisiac febrifuge. A beverage is made from the guaran sticks, by grating half a tablespoonful into sugar and water and drinking it like tea. The Brazilian miners drink this constantly and believe it to be a preventive of many diseases, as well as a most refreshing beverage. Their habit in travelling is to carry the stick or a lump of it in their pockets, with a palate bone or scale of a large fish with which to grate it. P. Cupana is also a favorite national diet drink, the seeds are mixed with Cassava and water, and left to ferment until almost putrid, and in this state it is the favorite drink of the Orinoco Indians. From the tannin it contains it is useful for mild forms of leucorrhoea, diarrhea, etc., but its chief use in Europe and America is for headache, especially if of a rheumatic nature. It is a gentle excitant and serviceable where the brain is irritated or depressed by mental exertion, or where there is fatigue or exhaustion from hot weather. It has the same chemical composition as caffeine, theine and cocaine, and the same physiological action. Its benefit is for nervous headache or the distress that accompanies menstruation, or exhaustion following dissipation. It is not recommended for chronic headache or in cases where it is not desirable to increase the temperature, or excite the heart or increase arterial tension. Dysuria often follows its administration. It is used by the Indians for bowel complaints, but is not indicated in cases of constipation or blood pressure.

Known Hazards: As with any caffeinated product, guarana may cause insomnia, trembling, anxiety, palpitations, urinary frequency, and hyperactivity. Guarana should be avoided during pregnancy and lactation.

Guggul - Commiphora mukul

Other Common Names: Bdellium Gum, Guggulipid, Gum Gugal, Salaitree Guggulipid, gum guggulu, Commiphora mukul

Range: Northeast Africa, Afghanistan, India

Guggul is a tree which exudes a resinous sap out of incisions that are made in its bark. This resin has been used for centuries as part of India's traditional medicine called [Ayurveda](#).

The Ayurvedic system of herbalism traces its roots to over five thousand years ago to the Himalayan Mountains of India. According to Ayurvedic philosophy, health is dependent upon one's ability to live in harmony with one's self and with the external universe. Ayurvedic herbal formulations, like those of the Chinese, are combinations of many different herbs that work synergistically. Single herbs are rarely if ever employed.

Guggul an extract of the exudate (gum guggul) of Mukul myrrh tree, contains phytosterols named guggulsterones, organic acids, aromatic acids, diterpenes, lignans, sterols, steroids, esters and fatty acid alcohols. Guggul is preferred to crude gum guggul because it is safer and more effective.

It is alterative, antiatherogenic, antihypercholesterolemic, anti-inflammatory (powerful), antipyretic, antiseptic, antispasmodic, antisuppurative, aperient, aphrodisiac, astringent, bitter, carminative, demulcent, diaphoretic, disinfectant, diuretic, emmenagogue, enhances phagocytosis, immunostimulant (increases leukocytes), stimulating expectorant, stomachic, thyroid stimulant, uterine stimulant.

Its active components, Z-guggulsterone and E-guggulsterone, have an ability to lower both cholesterol and triglyceride levels. Specifically, guggulipid lowers VLDL and LDL cholesterol and triglycerides while simultaneously raising HDL cholesterol. This indicates Guggul's primary use for providing a protective effective against atherosclerosis. These effects are due to guggul's action on the liver and thyroid. The thyroid is stimulated to increase the body's metabolic rate, and the liver is stimulated to metabolize LDL cholesterol, effectively lowering the amount in the bloodstream.

Inula racemosa, also known as Pushkarmoola, is another traditional Ayurvedic botanical that has potential cardioprotective benefit. In human trials, a combination of Inula racemosa and Commiphora mukul was shown to be superior to nitroglycerin in reducing the chest pain and dyspnea associated with angina.

Known Hazards: Although the use of guggul in therapeutic doses appears to be safe and non-toxic, the following precautions are advised. Guggul is considered an emenagogue (an agent that promotes the

menstrual discharge) and a uterine stimulant, and should not be used during pregnancy. Possible diarrhea, hiccups, restlessness, apprehension.

In addition, caution is recommended with patients currently on prescribed medications for cardiovascular disease. Due to the diuretic action of this herb the following drug interactions are possible: increased risk of toxicity with anti-inflammatory analgesics; if hypokalemia occurs possible antagonism with antiarrhythmics and potentiation of muscle relaxants; antagonizes antidiabetic (hypoglycemic) drugs; may potentiate and/or interfere with antihypertensives; may potentiate lithium therapy; when taken with corticosteroids there is a risk for hypokalemia; may potentiate other diuretics and increase the risk of hypokalemia.

Gymnema Sylvestre

Other Common Names: Gurmarbooti, gurmar, Gymnema Sylvestre

Range: Deccan peninsula, Assam, and some parts of Africa.

Gymnema sylvestre (GS) is a woody climbing plant that grows in the tropical forests of central and southern India. The leaves are used in herbal medicine preparations. G. sylvestre is known as "periploca of the woods" in English and mesbasingi (meaning "ram's horn") in Sanskrit. The leaves, when chewed, interfere with the ability to taste sweetness, which explains the Hindi name gurmar - "destroyer of sugar."

Plant constituents include two resins (one soluble in alcohol), gymnemic acids, saponins, stigmasterol, quercitol, and the amino acid derivatives betaine, choline and trimethylamine.

Gymnema sylvestre is a stomachic, diuretic, refrigerant, astringent, and tonic. It has been found to increase urine output and reduce hyperglycemia in both animal and human studies.

Gymnema has been used in India for the treatment of diabetes for over 2,000 years. The primary application was for adult-onset diabetes, a condition for which it continues to be recommended today in India. The leaves were also used for stomach ailments, constipation, water retention, and liver disease.

Extracts of G. sylvestre given to patients with type I diabetes on insulin therapy reduces insulin requirements and fasting blood sugar levels, and improves blood sugar control. In a study of type II diabetics, gymnema extract given along with oral hypoglycemic drugs was shown to improve blood sugar control and to either lead to discontinuation of the medicine or a significantly reduced dosage. It is interesting to note that gymnema extract given to healthy volunteers does not produce any blood sugar-lowering, or hypoglycemic, effects.

Gymnema sylvestre is one of the Asclepiad strains that grows in South-east Asia. Their therapeutic effects for treating diabetes mellitus, rheumatic arthritis and gout have been well known for a long time. However, the problem is that GS suppresses sweetness and tastes bitter. For this study, we chose Gymnema inodorum (GI) instead of GS, since it has an advantage that it does not suppress sweetness nor is it bitter in taste. Our studies suggest that the component of GI inhibits the increase in the blood glucose level by interfering with the intestinal glucose absorption process.

The effectiveness of GS4, an extract from the leaves of Gymnema sylvestre, in controlling hyperglycemia was investigated in 22 Type 2 diabetic patients on conventional oral anti-hyperglycemic agents. GS4 (400 mg/day) was administered for 18-20 months as a supplement to the conventional oral drugs. During GS4 supplementation, the patients showed a significant reduction in blood glucose,

glycosylated haemoglobin and glycosylated plasma proteins, and conventional drug dosage could be decreased. Five of the 22 diabetic patients were able to discontinue their conventional drug and maintain their blood glucose homeostasis with GS4 alone. These data suggest that the beta cells may be regenerated/repared in Type 2 diabetic patients on GS4 supplementation. This is supported by the appearance of raised insulin levels in the serum of patients after GS4 supplementation.

No side effects have been reported from using this Ayurvedic botanical. Safety in pregnancy has not been established.

Hawthorn - *Crataegus monogyna*, *C. oxyacantha*

Other Common Names: Common Hawthorn, Espino Albar, Haw, One-seed Hawthorn, Whitethorn, *Crataegus monogyna*, *C. oxyacantha*

Range: Europe, North Africa, Western Asia.

Habitat: Woods, hedges, thickets etc, on most soils except wet peat and poor acid sands.

Hawthorn is an extremely valuable medicinal herb. It is used mainly for treating disorders of the heart and circulation system, especially angina. Western herbalists consider it a 'food for the heart', it increases the blood flow to the heart muscles and restores normal heart beat. This effect is brought about by the presence of bioflavonoids in the fruit, these bioflavonoids are also strongly antioxidant, helping to prevent or reduce degeneration of the blood vessels.

The fruit is antispasmodic, cardiac, diuretic, sedative, tonic and vasodilator. Both the fruits and flowers of hawthorns are well-known in herbal folk medicine as a heart tonic and modern research has borne out this use. The fruits and flowers have a hypotensive effect as well as acting as a direct and mild heart tonic. They are especially indicated in the treatment of weak heart combined with high blood pressure, they are also used to treat a heart muscle weakened by age, for inflammation of the heart muscle, arteriosclerosis and for nervous heart problems. Prolonged use is necessary for the treatment to be efficacious.

Both flowers and berries are astringent and useful in decoction to cure sore throats. A useful diuretic in dropsy and kidney troubles.

Hawthorn is combined with [ginkgo](#) (*Ginkgo biloba*) to enhance poor memory, working by improving the blood supply to the brain.

The bark is astringent and has been used in the treatment of malaria and other fevers.

The leaves have been used as an adulterant for tea. An excellent liqueur is made from Hawthorn berries with brandy.

Hops - Humulus Lupulus

Other Common Names: Hop; Common Hop, European Hops, Hoppu, Lupulin, Lupulo, Omerotu, Oubion, Serbetciotu, Humulus Lupulus

Range: Belgium; Britain; China; Germany; Nepal; Russia; Spain; Turkey; USA;

Habitat: Hedgerows, woodlands and sunny waste ground.

The origin of the name of the Hop genus, *Humulus*, is considered doubtful, though it has been assumed by some writers that it is derived from humus, the rich moist ground in which the plant grows. The specific name *Lupulus*, is derived from the Latin, *lupus* (a wolf), because, as Pliny explains, when produced among osiers, it strangles them by its light, climbing embraces, as the wolf does a sheep. The English name Hop comes from the Anglo-Saxon *hoppan* (to climb).

Hops appear to have been used in the breweries of the Netherlands in the beginning of the fourteenth century. In England they were not used in the composition of beer till nearly two centuries afterwards. The liquor prepared from fermented malt formed the favorite drink of our Saxon and Danish forefathers. The beverage went by the name of Ale (the word derived from the Scandinavian *öl* - the Viking's drink) and was brewed either from malt alone, or from a mixture of the latter with Honey and flavored with Heath tops, Ground Ivy, and various other bitter and aromatic herbs, such as Marjoram, Buckbean, Wormwood, Yarrow, Woodsage or Germander and Broom. They knew not, however, the ale to which Hops give both flavor and preservation. For long after the introduction of Hops, the liquor flavored in the old manner retained the name of Ale, while the word of German and Dutch origin, Bier or Beer, was given only to that made with the newly-introduced bitter catkins.

'Hops,' says John Evelyn, in his *Pomona* (1670), 'transmuted our wholesome ale into beer, which doubtless much alters its constitution. This one ingredient, by some suspected not unworthily, preserves the drink indeed, but repays the pleasure in tormenting diseases and a shorter life.'

Hops have a long and proven history of herbal use, where they are employed mainly for their soothing, sedative, tonic and calming effect on the body and the mind. Their strongly bitter flavor largely accounts for their ability to strengthen and stimulate the digestion, increasing gastric and other secretions.

The female fruiting body is anodyne, antiseptic, antispasmodic, diuretic, febrifuge, hypnotic, nervine, sedative, stomachic and tonic. The hairs on the fruits contain lupulin, a sedative and hypnotic drug. When given to nursing mothers, lupulin increases the flow of milk - recent research has shown that it contains a related hormone that could account for this effect.

Hop flowers are much used as an infusion or can also be used to stuff pillows where the weight of the head will release the volatile oils. The fruit is also applied externally as a poultice to ulcers, boils, painful swellings etc. The female flowering heads are harvested in the autumn and can be used fresh or dried. The female fruiting body contains humulone and lupulone, these are highly bacteriostatic against gram-positive and acid-fast bacteria.

Young leaves and young shoots - cooked. The flavor is unique and, to many tastes, delicious. Young leaves can be eaten in salads. The leaves contain rutin. The fleshy rhizomes are sometimes eaten. A tea is made from the leaves and cones. It has a gentle calming effect.

The dried flowering heads of female plants are used as a flavoring and preservative in beer. The flowering heads are sprinkled with yellow translucent glands, which appear as a granular substance. Much of the hop's use as a flavoring and medicinal plant depends on the abundance of this powdery substance.

The seeds contain gamma-linolenic acid, an essential fatty acid that is said to have many important functions in the human body and is rarely found in plant sources.

Known Hazards: Skin contact with the plant causes dermatitis in sensitive people. Dislodged hairs from the plant can irritate the eye.

Horehound - *Marrubium vulgare*

Other Common Names: Common Horehound, Hashishat Al Kalib, Hoarhound, Houndsbane, Itsinegiotu, Marrubio, Niga-Hakka, Qutainah, White Horehound, Wild Horehound, Woolly Horehound, *Marrubium vulgare*

Range: Britain; Europe; Iraq; Kurdistan; Mexico; Sicily; Spain; Turkey; USA

Habitat: Downs, waste places and roadsides. White Horehound is a hardy plant, easily grown, and flourishes best in a dry, poor soil.

The Romans esteemed Horehound for its medicinal properties, and its Latin name of *Marrubium* is said to be derived from *Maria urbs*, an ancient town of Italy. Other authors derive its name from the Hebrew *marrob* (a bitter juice), and state that it was one of the bitter herbs which the Jews were ordered to take for the Feast of Passover.

The Egyptian Priests called this plant the 'Seed of Horus,' or the 'Bull's Blood,' and the 'Eye of the Star.' It was a principal ingredient in the negro Caesar's antidote for vegetable poisons.

Gerard recommends it, in addition to its uses in coughs and colds, to 'those that have drunk poyson or have been bitten of serpents,' and it was also administered for 'mad dogge's biting.'

White horehound is a well-known and popular herbal medicine that is often used as a domestic remedy for coughs, colds, wheeziness etc. The herb apparently causes the secretion of a more fluid mucous, readily cleared by coughing.

The leaves and young flowering stems are antiseptic, antispasmodic, cholagogue, diaphoretic, digestive, diuretic, emmenagogue, strongly expectorant, hepatic, stimulant and tonic.

Horehound is a very valuable pectoral, expectorant and tonic that can be safely used by children as well as adults. It is often made into a syrup or candy in order to disguise its very bitter flavor, though it can also be taken as a tea. As a bitter tonic, it increases the appetite and supports the function of the stomach. It can also act to normalize heart rhythm.

Horehound is sometimes combined with Hyssop, Rue, [Liquorice root](#) and [Marshmallow root](#), 1/2 oz. of each boiled in 2 pints of water, to 1 1/2 pint, strained and given in 1/2 tea-cupful doses, every two to three hours.

For children's coughs and croup, it is given to advantage in the form of syrup, and is a most useful

medicine for children, not only for the complaints mentioned, but as a tonic and a corrective of the stomach. It has quite a pleasant taste.

The plant is harvested as it comes into flower and can be used fresh or dried.

The root is a remedy for the bite of rattlesnakes, it is used in equal portions with *Plantago lanceolata* or *P. major*.

A mild pleasantly flavored tea is made from the fresh or dried leaves, it is a favorite cough remedy.

Horse Chestnut - *Aesculus hippocastanum*

Other Common Names: Atkestanesi, Buckeye, Castagno D'India, Castanheiro Da India, Castano De India, Castano De Indias, Castogno D'India, Chataigne De Cheval, Common Horse Chestnut, Eschilo, Horse Chestnut, Ippocastano, Marronnier D'Inde, Paarde Kastanje, Rosskastanie, Seiyo-Toti-No-Ki, Spanish Chestnut, Wilde Kastanje, *Aesculus hippocastanum*

Range: It is a native of northern and central parts of Asia. Britain; France; Germany; Italy; Mexico; Netherlands; Portugal; Spain; Turkey; USA

Habitat: Mountain woods.

It is an entirely different tree from the Sweet Chestnut, to which it is not even distantly related. The name *Aesculus* (from *esca*, food) was applied originally to a species of oak, which according to Pliny, was highly prized for its acorns, but how it came to be transferred to the Horse Chestnut is very uncertain; perhaps, as Loudon suggests, it was given ironically, because its nuts bear a great resemblance, externally, to those of the Sweet Chestnut, but are unfit for food. *Hippocastanum* (the specific name of the common sort) is a translation of the common name, which was given - Evelyn tells us - 'from its curing horses brokenwinded and other cattle of coughs.' Some writers think that the prefix 'horse' is a corruption of the Welsh *gwres*, meaning hot, fierce, or pungent, e.g. 'Horse-chestnut' = the bitter chestnut, in opposition to the mild, sweet one.

The tree is chiefly grown for ornamental purposes, in towns and private gardens and in parks, and forms fine avenues, which in the spring, when the trees are in full bloom, present a beautiful sight.

Aescin, is the active ingredient in Horse Chestnut seed. Horse chestnut is an astringent, anti-inflammatory herb that helps to tone the vein walls which, when slack or distended, may become varicose, hemorrhoidal or otherwise problematic. The plant also reduces fluid retention by increasing the permeability of the capillaries and allowing the reabsorption of excess fluid back into the circulatory system. This plant is potentially toxic if ingested and should not be used internally without professional supervision. Alterative, analgesic, haemostatic and vulnerary.

The bark is anti-inflammatory, astringent, diuretic, febrifuge, narcotic, tonic and vasoconstrictive. It is harvested in the spring and dried for later use.

The plant is taken in small doses internally for the treatment of a wide range of venous diseases, including hardening of the arteries, varicose veins, phlebitis, leg ulcers, hemorrhoids and frostbite. It is also made into a lotion or gel for external application.

A tea made from the bark is used in the treatment of malaria and dysentery, externally in the treatment of lupus and skin ulcers.

A tea made from the leaves is tonic and is used in the treatment of fevers and whooping cough.

The seeds are decongestant, expectorant and tonic. They have been used in the treatment of rheumatism, neuralgia and hemorrhoids. They are said to be narcotic and that 10 grains of the nut are equal to 3 grains of opium.

An oil extracted from the seeds has been used externally as a treatment for rheumatism. A compound of the powdered roots is analgesic and has been used to treat chest pains.

The buds are used in Bach flower remedies - the keywords for prescribing it are 'Failure to learn by experience', 'Lack of observation in the lessons of life' and hence 'The need of repetition'.

The flowers are used in Bach flower remedies - the keywords for prescribing it are 'Persistent unwanted thoughts' and 'Mental arguments and conversations'.

Unfortunately the seed is also rich in saponins, these must be removed before it can be used as a food and this process also removes many of the minerals and vitamins, leaving behind mainly starch. See also the notes on toxicity. The seed contains up to 40% water, 8 - 11% protein and 8 - 26% toxic saponins. The seed needs to be leached of toxins before it becomes safe to eat - the Indians would do this by slow-roasting the nuts (which would have rendered the saponins harmless) and then cutting them into thin slices, putting them into a cloth bag and rinsing them in a stream for 2 - 5 days.

Known Hazards: Although poisonous, saponins are poorly absorbed by the human body and so most pass through without harm. Saponins are quite bitter and can be found in many common foods such as some beans. They can be removed by carefully leaching the seed or flour in running water. Thorough cooking, and perhaps changing the cooking water once, will also normally remove most of them. However, it is not advisable to eat large quantities of food that contain saponins. Saponins are much more toxic to some creatures, such as fish, and hunting tribes have traditionally put large quantities of them in streams, lakes etc in order to stupefy or kill the fish.

With some people, Horse Chestnut seed causes side effects such as irritation of the digestive tract, reduced kidney function, and itching of the skin.

St. John's wort - *Hypericum perforatum*

Other Common Names: Binbirdelikotu, Common St Johnswort, Hiperico, Hypericum, Klamath Weed, Perforate St John's-wort, Klamath Weed, *Hypericum perforatum*

Range: Britain; and throughout Europe and Asia; USA.

Habitat: Open woods, hedgebanks and grassland, in dry sunny places, usually on calcareous soils.

There are many ancient superstitions regarding this herb. Its name *Hypericum* is derived from the Greek and means 'over an apparition,' a reference to the belief that the herb was so obnoxious to evil spirits that a whiff of it would cause them to fly.

There is considerable public interest in the United States in claims that extracts of the herb St. John's wort may be an effective treatment for depression. In Europe - where the herb is now widely prescribed - a number of studies have been conducted that support the treatment efficacy of certain St. John's wort extracts. In the United States, St. John's wort is not a prescription medication, but is sold in health food stores and pharmacies as an herbal tea or nutritional supplement, which the U.S. Food & Drug Administration (FDA) does not regulate.

St. John's wort has a long history of herbal use. It fell out of favor in the nineteenth century but recent research has brought it back to prominence as an extremely valuable remedy for nervous problems. An overview of 23 clinical studies in Europe, published in the *British Medical Journal* (Vol. 313, August 3, 1996), found that the herb might be useful in cases of mild to moderate depression. The studies, which included 1,757 outpatients, reported that St. John's wort was superior to placebo and appeared to produce fewer side effects than standard antidepressants.

Depression, at least in its milder forms, is a condition that seems to afflict many Americans. In this country, the disease is the fourth most likely reason for one to consult a family physician and costs our economy more than chronic respiratory illness, diabetes, arthritis, or hypertension. The treatment and rehabilitation expenses in the United States exceed \$12 billion annually.

More than a dozen prescription drugs are routinely used to treat America's depression. All of them are synthetic, and they all produce more or less unpleasant side effects ranging from skin rashes to overtly violent behavior. Meanwhile, in Germany the most popular prescription drug of any type, natural or synthetic, for the treatment of depression is a concentrated extract of the flowers and leaves of St. John's wort, often simply called hypericum. More than 200,000 prescriptions per month are filled for a single brand (Jarsin) there compared to about 30,000 per month for fluoxetine (Prozac). This figure does not include sales of other hypericum products, whether prescribed or self-selected. Actually, 80-90% of the

sales in Germany are prescriptions, which allows their cost to be reimbursed by the health insurance system.

The plant contains many biologically active compounds including rutin, pectin, choline, sitosterol, hypericin and pseudohypericin. These last two compounds have been shown to have potent anti-retroviral activity without serious side effects and they are being researched in the treatment of AIDS.

The herb's multiple constituents apparently function in several different ways. Initially, St. John's wort was thought to act as a monoamine oxidase (MAO) inhibitor. This effect has now been shown to be insignificant. Some evidence supports its effect as a selective serotonin reuptake inhibitor (SSRI).

Although St. John's wort is marketed as a drug in Germany and has been approved there by the German equivalent of our Food and Drug Administration for the treatment of depression, anxiety, and nervous unrest, it is sold in the United States only as a dietary supplement. The most effective preparations are capsules containing an extract of the herb standardized on the basis of 0.3% hypericin. Dosage is 300-900 mg daily. Improvement of mild to moderate depression should result after 2 to 6 weeks of treatment

The flowers and leaves are analgesic, antiseptic, antispasmodic, aromatic, astringent, cholagogue, digestive, diuretic, expectorant, nervine, resolvent, sedative, stimulant, vermifuge and vulnerary. The herb is used in treating a wide range of disorders, including pulmonary complaints, bladder problems, diarrhoea and nervous depression. It is also very effectual in treating overnight incontinence of urine in children. Externally, it is used in fomentations to dispel herd tumours, caked breasts and bruising. The flowering shoots are harvested in early summer and dried for later use. Use the plant with caution and do not prescribe it for patients with chronic depression. The plant was used to procure an abortion by some native North Americans, so it is best not used by pregnant women. See also the notes on toxicity.

A tea or tincture of the fresh flowers is a popular treatment for external ulcers, burns, wounds (especially those with severed nerve tissue), sores, bruises and cramps. An infusion of the flowers in olive oil is applied externally to wounds, sores, ulcers, swellings and rheumatism. It is also valued in the treatment of sunburn and as a cosmetic preparation to the skin.

A homeopathic remedy is made from the fresh whole flowering plant. It is used in the treatment of injuries, bites, stings etc and is said to be the first remedy to consider when nerve-rich areas such as the spine, eyes, fingers etc are injured

Known Hazards: Skin contact with the sap, or ingestion of the plant, can cause photosensitivity in some people. The European studies reported that some patients have complained of mild problems with dry mouth, dizziness, gastrointestinal symptoms, increased sensitivity to sunlight, fatigue, and/or confusion.

Many "natural" substances can have harmful effects, especially if taken in large quantities or with other medications. Even too much vitamin A, for example, can be damaging. St. John's wort, like certain other herbal treatments, is now known to adversely interact with or change blood levels of particular

prescription drugs, such as indinavir and cyclosporine, as discussed below.

Further, NIH findings on indinavir that were reported in the Lancet article, as well as other information in the medical literature, suggest that St. John's wort may be an inducer of the metabolic pathway cytochrome P450. Consequently, the combined use of St. John's wort and other drugs metabolized via this route could result in harmful effects. These may include oral contraceptives; medications to treat heart disease, depression, seizures, and certain cancers; and those to prevent organ transplant rejection.

[The Food and Drug Administration](#) would like to inform you about results from a study conducted by The National Institutes of Health (NIH) that showed a significant drug interaction between St John's wort (hypericum perforatum), an herbal product sold as a dietary supplement, and indinavir, a protease inhibitor used to treat HIV infection. In this study, concomitant administration of St. John's wort and indinavir substantially decreased indinavir plasma concentrations, potentially due to induction of the cytochrome P450 metabolic pathway. For additional information on this study please refer to the February 12, 2000 Lancet publication (Piscitelli, et al).

Given the research to date, it is evident that "natural" does not always mean "safe." Alternative medical treatments require more research, and people are well advised to seek competent medical supervision before trying them. The National Institute of Mental Health (NIMH) also urges individuals who are already taking St. John's wort with any of the above types of medications to contact their doctors immediately for medical direction. Health care providers are strongly advised to alert patients to these potential drug interactions, until additional research is done.

Another caution against using St. John's wort for the treatment of depression is that the herb is not a proven therapy for the disorder. If major depression is not adequately treated, it can become debilitating and, in some cases, lead to suicide. Proven treatments most commonly used are prescription antidepressants, specific psychotherapies (such as cognitive-behavioral therapy and interpersonal therapy), or a combination of both. Also, because other medical conditions, such as thyroid disorders, can mimic depression, anyone with symptoms of depression should receive a thorough medical examination before beginning any treatment, in order to rule out other possible causes.

Indian Tobacco - *Lobelia inflata*

Other Common Names: Asthma Weed, Gagroot, Pulseweed, Emetic Herb, Frengiotu, Lobelia, Wild Tobacco, Vomitroot, *Lobelia inflata*

Range: Northern N. America - Labrador to Saskatchewan, Georgia, Kansas and Arkansas.

Habitat: Meadows, fields, roadsides, waste places and open woods. Usually in dry soils.

Indian Tobacco was a traditional North American Indian remedy for a wide range of conditions. Nowadays it is used mainly as a powerful antispasmodic herb in the treatment of respiratory and muscle disorders. Acting also as a respiratory stimulant, Indian Tobacco is a valuable remedy for conditions such as bronchial asthma and chronic bronchitis. In addition, the plant or its extracts have served to induce vomiting, to encourage and to stimulate respiration in cases of general and pelvic-musculature muscle relaxation during childbirth, narcotic overdose and newborn infants.

The dried flowering herb and the seed are antiasthmatic, antispasmodic, diaphoretic, diuretic, emetic, expectorant and nervine. The plant is taken internally in the treatment of asthma, bronchitis, whooping cough and pleurisy. This remedy should be used with great caution and only under the supervision of a qualified practitioner. Excess doses cause nausea, vomiting, drowsiness and respiratory failure. See also the notes on toxicity.

The plant contains the alkaline 'lobeline' which has proved to be of value in helping people to give up smoking tobacco. It is contained in many proprietary anti-smoking mixtures where it mimics the effects of nicotine. Lobelia, after it has been chewed, tastes similar to tobacco and produces effects like those of nicotine.

The alkaloids present in the leaves are used to stimulate the removal of phlegm from the respiratory tract. When chewed, the leaves induce vomiting, headache and nausea - in larger doses it has caused death. The alkaloids first act as a stimulant and then as a depressive to the autonomic nervous system and in high doses paralyzes muscular action in the same way as curare.

Externally, the plant is used in treating pleurisy, rheumatism, tennis elbow, whiplash injuries, boils and ulcers.

The whole plant is harvested when the lower fruits are ripe and it is used fresh or dried.

Known Hazards: Some reports say that the plant is poisonous. Toxicological properties of lobelia include dizziness, nausea, hypotension, vomiting, stupor, tremors, paralysis, convulsions, coma, and death.

Juniper - Juniperus communis

Other Common Names: Ardiş Aghaji, Common Juniper, Enebro, Havrest, Sabino Macho, Yoshu-Nezu, Juniperus communis

Range: Britain; Canada; Europe; Kurdistan; Malaya; North Africa; North Asia; USA

Habitat: Chalk downs, but only where there is least sunshine and most rain, heaths, moors, pine and birch woods, on acid peat, often dominant on chalk, limestone and slate.

Juniper fruits are commonly used in herbal medicine, as a household remedy, and also in some commercial preparations. They are especially useful in the treatment of digestive disorders plus kidney and bladder problems.

The fully ripe fruits are strongly antiseptic, aromatic, carminative, diaphoretic, strongly diuretic, rubefacient, stomachic and tonic. They are used in the treatment of cystitis, digestive problems, chronic arthritis, gout and rheumatic conditions. They can be eaten raw or used in a tea, but some caution is advised since large doses can irritate the urinary passage. Externally, it is applied as a diluted essential oil, having a slightly warming effect upon the skin and is thought to promote the removal of waste products from underlying tissues. It is, therefore, helpful when applied to arthritic joints. The fruits should not be used internally by pregnant women since this can cause an abortion. The fruits also increase menstrual bleeding so should not be used by women with heavy periods. When made into an ointment, they are applied to exposed wounds and prevent irritation by flies.

The essential oil is used in aromatherapy. Its keyword is 'Toxin elimination'.

The fruit is readily eaten by most animals, especially sheep, and is said to prevent and cure dropsy in the latter.

Fruit - raw or cooked. It is usually harvested in the autumn when fully ripe and then dried for later use. A soft, mealy, sweet, resinous flesh. The fruit is often used as a flavoring in sauerkraut, stuffings, vegetable pates etc, and is an essential ingredient of gin. An essential oil is sometimes distilled from the fruit to be used as a flavoring. Average yields are around 1%. The cones are about 4 - 8mm in diameter and take 2 - 3 years to mature. Some caution is advised when using the fruit, see the notes on toxicity.

The roasted seed is a coffee substitute. A tea is made by boiling the leaves and stems. A tea made from the berries has a spicy gin-like flavor.

A decoction of the branches is used as an anti-dandruff shampoo. The essential oil distilled from the

fruits is used in perfumes with spicy fragrance.

Known Hazards: Although the fruit of this plant is quite often used medicinally and as a flavoring in various foods and drinks, large doses of the fruit can cause renal damage. Juniper should not be used internally in any quantities by pregnant women.

Kava - Piper methysticum

Other Common Names: Ava Intoxicating Pepper, Ava Pepper, Kava Kava, Yagona, Piper methysticum

Range: Polynesia, Sandwich Islands, South Sea Islands. Official in the Australian Colonies.

The first Europeans to observe the kava plant and its ritualistic consumption by natives of Oceania were Dutch explorers Jacob Le Maire and William Schouten. In 1616, they encountered the plant in the Hoorn Islands, now a part of the French territory Wallis and Fatuna. Later travelers in the Pacific region provided a wealth of detail regarding this highly valued and widely used pepper plant.

Long cultivated and known by a number of common names, the plant is now classified by botanists as *Piper methysticum*, meaning "intoxicating pepper." In religious and social rituals that naturally vary somewhat from island to island, the rhizome of the plant is grated (originally chewed by young people with sound teeth), mixed with water in a bowl, strained, and the resulting beverage drunk to produce a feeling of well-being.

Observers and even scientists long disagreed on the effects of kava. Captain James Cook, who observed its use during his world voyage of 1768–1771, thought the symptoms resembled those of opium. Lewis Lewin, a pioneer pharmacologist in the field of mind-altering drugs, referred to it in the 1880s as a narcotic and sedative, but noted these effects followed a period of quiet euphoria. Modern authorities call kava a psychoactive agent; it reduces anxiety much like the potent, synthetic benzodiazapines (e.g., Valium) and is a potent muscle relaxant. Kava does promote relaxation and sociability, but its effects are very different from those produced by either alcohol or synthetic tranquilizers. It does not produce a hangover, and, even more significant, it does not cause dependency or addiction.

In the 1950s and 60s, two teams of German scientists headed by H.J. Meyer in Freiburg and R. Hänsel in Berlin found that the various activities of the kava plant were due to some 15 different chemical compounds known as pyrones. Collectively named kavapyrones or kavalactones, the compounds were found to increase the sedative action of barbiturates, to have both analgesic and local anesthetic effects, to cause muscles to relax, and to have antifungal properties.

Kava root has been found valuable in the treatment of Neuralgia, particularly of the trifacial nerve, toothache, earache, ocular pain, reflex neuralgia, anorexia, gonorrhoea both acute and chronic, vaginitis, leucorrhoea, nocturnal incontinence and other ailments of the genitourinary tract. Being a local anaesthetic it relieves pain and has an aphrodisiac effect; it has also an antiseptic effect on the urine. The capsules usually contain 0.3 gram; two to four can be given several times per day. As Kava is a strong diuretic it is useful for gout, rheumatism, bronchial and other ailments, resulting from heart trouble.

Shortly after these findings, preparations of kava extract began to appear on the European market, usually standardized to provide a daily dosage in the range of 60–120 mg of kavapyrones. German Commission E, the group responsible for evaluating the safety and efficacy of botanical medicines, reviewed the data on kava and, in 1990, approved its use for conditions such as nervous anxiety, stress, and restlessness. It is frequently marketed as an anxiolytic.

Kava products have been steady but unspectacular sellers in Europe for several decades. Until recently, no one in the United States seemed much interested in them. Ironically, when the Food and Drug Administration began to express concern over the safety of [ephedra](#), a stimulant herbal product, herb marketers became enthusiastic about kava, a depressant. Both herbs have psychoactive properties, but the effects are almost exactly opposite.

Kava and its contained pyrones are, without question, effective medications. They are also subject to abuse. The kava scenario in this country is just beginning. It is too early to predict whether it will continue to be marketed freely or will eventually be subjected to rigid controls.

Known Hazards: Use of kava is contraindicated during pregnancy, nursing, and in cases of depression caused by internal factors. Its continued use in large doses causes inflammation of the body and eyes, resulting in leprous ulcers; the skin becomes parched and peels off in scales.

Long-term consumption of very large quantities of kava may result in a yellow coloration of the skin, nails, and hair, allergic skin reactions, visual and oculomotor equilibrium disturbances. For this reason, Commission E recommends that kava not be consumed for longer than 3 months without medical advice. Driving and operating machinery during consumption should be avoided.

Kelp - *Macrocystis pyrifera*

Other Common Names: Bladderwrack, Seawrack, Common Seawrack, Laminaria, Fucus, Sargassum, Alaria esculenta, Nereocystis luetkeana, *Macrocystis pyrifera*

Kelp forests occur in cold, nutrient-rich water and are among the most beautiful and biologically productive habitats in the marine environment. They are found throughout the world in shallow open coastal waters, and the larger forests are restricted to temperatures less than 20°C, extending to both the Arctic and Antarctic Circles. A dependence upon light for photosynthesis restricts them to clear shallow water and they are rarely much deeper than 15-40m. The kelps have in common a capacity for some of the most remarkable growth rates in the plant kingdom. In southern California, the *Macrocystis* can grow 30 cm per day.

The large fronds spread along the surface, gathering light energy for photosynthesis, and are held afloat by the bulbous float, seen at the base of the fronds. Owing to the combination of a float and a flimsy holdfast, a strong storm can rather easily uproot such a kelp, and shorelines are often lined with stranded plants. This plant is usually an annual!

Kelp was the original source of iodine, being discovered as such by Courtois in 1812, when investigating the products obtained from the mother-liquors prepared by lixiviating burnt seaweed. Iodine does not occur in nature in the uncombined condition, but is widely, though sparingly, distributed in the form of iodides and iodates, chiefly of sodium and potassium, in sea-water, some seaweeds, and various mineral and medicinal springs.

It is a very rich single source of natural vitamins and minerals, including essential trace minerals. It contains iodine, iron, sodium, phosphorus and calcium, as well as magnesium and potassium. Kelp has a reputation for being an especially good source of iodine and potassium.

Kelp is a source of vitamins A, B1, B2, C, D and E, plus amino acids. Kelp also makes a popular salt substitute. Because the plant's nutrients come in a natural form, they are easily assimilated by the body.

Kelp is especially high in iodine, which must be present for proper glandular function and metabolism. Iodine feeds the thyroid which controls metabolism. Iodine is important for thyroid disorders (both overactive and underactive) and obesity.

Kelp is used for weight loss. Kelp contains a viscous fiber called algin. Algin absorbs most nutrients as well as toxins from the digestive tract. This reduces both caloric intake and toxins entering the circulatory system. Alginic acid binds and removes radioactive strontium 90 from the body.

The charcoal derived from Kelp has been used in the treatment of goitre and scrofulous swellings under the name of *Aethiops vegetabilis* or vegetable ethiops, introduced by Dr. Russell in 1750, who also used a jelly for similar purposes, both internally and externally. He was also successful in dispersing scrofulous rumours by rubbing in the mucus of the vesicles of Bladderwrack, afterwards washing the parts with sea-water. The charcoal was also helpful in goitre. The iodine from other sources led to the neglect of kelp products.

In 1862 Dr. Duchesne-Duparc found, while experimenting in cases of chronic psoriasis, that weight was reduced without injuring health, and used the drug with success for the latter purpose. Dr. Godfroy experimented on himself, losing five and a quarter pounds in a week after taking before three meals a day an extract made into pills. The bromine and iodine stimulated the absorbent glands to increased activity, without causing an atrophied wasting of the glands. Later experiments of Hunt and Seidell indicated that the result is brought about by stimulation of the thyroid gland.

For external application to enlarged or hardened glands, the bruised weed may be applied as a cold poultice.

Known Hazards: Don't use if you are allergic to iodine in any form, particularly if you have had an allergic reaction to injected dye used for X-ray studies of the kidney or other organs.

Doses of iodine in excess of 150 micrograms a day can induce or worsen an overactive thyroid gland.

Pau d'arco, Lapacho - *Tabebuia impestiginosa*

Other Common Names: Ipe Roxo, Lapacho, Tahuari, Pau d'arco, Pink Trumpet Tree, *Tabebuia impestiginosa*

Range: Central and South America and the West Indies

Various related species of pau d'arco trees grow in rain forests throughout Latin America.

While there are numerous varieties of Lapacho trees in South America, only the inner lining of the tree has known medical value. It is this inner lining (or phloem) which carries nutrients made by the leaves to other parts of the tree and is, with the cambium layer (where all the new cells are produced) the "life" of the tree.

Pau D'Arco has a long and well documented history of use by the indigenous people of the rainforest who use several species of *Tabebuia* which include *T. heptaphylla*, *T. impestiginosa*, *T. rosea*, and *T. serratifolia*. There are even indications that its use may actually antedate the Incas. In fact, throughout South America, tribes living thousands of miles apart have employed it for the same medicinal purposes for centuries. Several Indian tribes of the rainforest have used Pau D'Arco wood for centuries to make their hunting bows and their common names for the tree when translated, means bow stick and bow stem. The Guarani and Tupi Indians call the tree tajy, which means "to have strength and vigor" and use the bark to treat many different conditions. The indigenous uses of Pau D'Arco include malaria, anemia, colitis, respiratory problems, colds, cough, flu, fungal infections, fever, arthritis and rheumatism, snakebite, poor circulation, boils, syphilis, and cancer.

South American medical doctors who discovered Lapacho in the pharmacopoeia of the natives were the first to experiment with it as a treatment for cancer.

Lapachol is just one of a number of plant substances known as naphthaquinones (N-factors) that occur in lapacho. Anthraquinones, or A-factors, comprise another important class of compounds. The N-factors are not common except in herbal tonics. Seldom do both N- and A-factors occur in the same species. Several of the remarkable properties of lapacho may be due to a probable synergy between A- and N-factors.

Quercetin, xloidone and other flavonoids are also present in lapacho; these undoubtedly contribute to the plant's effectiveness in the treatment of tumors and infections.

A common thread that runs throughout early and current empirical and clinical reports of lapacho treatment is the consistent observation that the herb eliminates many of the common side effects of the

orthodox medications. There is no explanation of this action, but it is so often seen that one cannot easily doubt its validity. Pain, hair loss and immune dysfunction are among the symptoms most commonly eliminated.

Known Hazards: While there can be no doubt that lapacho is very toxic to many kinds of cancer cells, viruses, bacteria, fungi, parasites and other kinds of microorganisms, the substance appears to be without any kind of significant toxicity to healthy human cells. The side-effects mainly encountered, and usually with isolated lapacho constituents, are limited to nausea and anticoagulant effects in very high doses, a tendency to loosen the bowels, and diarrhea in very high doses. As indicated earlier, some nausea should be expected as a natural consequence of the detoxification process. The FDA gave lapacho a clean bill of health in 1981.

Lavender - *Lavandula angustifolia*, *L. officinalis*

Other Common Names: English Lavender, Lavanta, Lavender Vera, *Lavandula angustifolia*, *L. officinalis*

Range: Europe - Mediterranean.

Habitat: Dry grassy slopes amongst rocks, in exposed, usually parched, hot rocky situations often on calcareous soils. Succeeds in almost any soil so long as it is well-drained and not too acid.

Lavender was familiar to Shakespeare, but was probably not a common plant in his time, for though it is mentioned by Spencer as 'The Lavender still gray' and by Gerard as growing in his garden, it is not mentioned by Bacon in his list of sweet-smelling plants. It is now found in every garden, but we first hear of it being cultivated in England about 1568. It must soon have become a favorite, however, for among the long familiar gardenplants which the Pilgrim Fathers took with them to their new home in America, we find the names of Lavender, Rosemary and Southernwood, though John Josselyn, in his Herbal, says that 'Lavender Cotton groweth pretty well,' but that 'Lavender is not for the Climate.'

Parkinson has much to say about Lavender:

'This is usually put among other hot herbs, either into bathes, ointment or other things that are used for cold causes. The seed also is much used for worms.'

Lavender is of 'especiall good use for all griefes and paines of the head and brain'. It is now almost solely grown for the extraction of its essential oil, which is largely employed in perfumery.

Lavender is a commonly used household herb, though it is better known for its sweet-scented aroma than for its medicinal qualities. However, it is an important relaxing herb, having a soothing and relaxing affect upon the nervous system. The flowering spikes can be dried and used internally in a tincture, though the extracted essential oil is more commonly used. The essential oil is much more gentle in its action than most other essential oils and can be safely applied direct to the skin as an antiseptic to help heal wounds, burns etc.

An essential oil obtained from the flowers is antihalitosis, powerfully antiseptic, antispasmodic, aromatic, carminative, cholagogue, diuretic, nervine, sedative, stimulant, stomachic and tonic. It is not often used internally, though it is a useful carminative and nervine. It is mainly used externally where it is an excellent restorative and tonic - when rubbed into the temples, for example, it can cure a nervous headache, and it is a delightful addition to the bathwater. Its powerful antiseptic properties are able to kill many of the common bacteria such as typhoid, diphtheria, streptococcus and pneumococcus, as well as being a powerful antidote to some snake venoms. It is very useful in the treatment of burns, sunburn,

scalds, bites, vaginal discharge, anal fissure etc, where it also soothes the affected part of the body and can prevent the formation of permanent scar tissue. A few drops of the essence of Lavender in a hot footbath has a marked influence in relieving fatigue.

The essential oil is used in aromatherapy. Its keyword is 'Immune system'.

Leaves, petals and flowering tips - raw. Used as a condiment in salads, soups, stews etc They provide a very aromatic flavor and are too strong to be used in any quantity.

The essential oil that is obtained from the flowers is exquisitely scented and has a very wide range of applications, both in the home and commercially. It is commonly used in soap making, in making high quality perfumes (it is also used in 'Eau de Cologne'), it is also used as a detergent and cleaning agent, a food flavoring etc and as an insect repellent. When growing the plant for its essential oil content, it is best to harvest the flowering stems as soon as the flowers have faded. Yields of 0.8 - 1% of the oil are obtained.

All the forms of Lavender are much visited by bees and prove a good source of honey.

Lemon balm - *Melissa officinalis*

Other Common Names: Balm, Common Balm, Cytria, Hashishat Al Nahil, Kovanutu, Ogulotu, Seiyoyama-Hakka, Sweet Balm, Toronjil, Tronjan, *Melissa officinalis*

Range: C. and S. Europe, W. Asia and N. Africa, Panama, USA

Habitat: Waste places and derelict land near human habitations. A very easily grown plant, it succeeds in any well-drained soil in a sunny sheltered position.

The name is from the Greek word signifying 'bee,' indicative of the attraction the flowers have for those insects, on account of the honey they produce. It was formerly esteemed of great use in all complaints supposed to proceed from a disordered state of the nervous system. The London Dispensary (1696) says: 'An essence of Balm, given in Canary wine, every morning will renew youth, strengthen the brain, relieve languishing nature and prevent baldness.' John Evelyn wrote: 'Balm is sovereign for the brain, strengthening the memory and powerfully chasing away melancholy.' Balm steeped in wine we are told again, 'comforts the heart and driveth away melancholy and sadness.' Formerly a spirit of Balm, combined with lemon-peel, nutmeg and angelica root, enjoyed a great reputation under the name of Carmelite water, being deemed highly useful against nervous headache and neuralgic affections.

Many virtues were formerly ascribed to this plant. Gerard says: 'It is profitably planted where bees are kept. The hives of bees being rubbed with the leaves of bawme, causeth the bees to keep together, and causeth others to come with them.' And again quoting Pliny, 'When they are strayed away, they do find their way home by it.' Pliny says: 'It is of so great virtue that though it be but tied to his sword that hath given the wound it stauncheth the blood.' Gerard also tells us: 'The juice of Balm glueth together greene wounds,' and gives the opinion of Pliny and Dioscorides that 'Balm, being leaves steeped in wine, and the wine drunk, and the leaves applied externally, were considered to be a certain cure for the bites of venomous beasts and the stings of scorpions. It is now recognized as a scientific fact that the balsamic oils of aromatic plants make excellent surgical dressings: they give off ozone and thus exercise anti-putrescent effects. Being chemical hydrocarbons, they contain so little oxygen that in wounds dressed with the fixed balsamic herbal oils, the atomic germs of disease are starved out, and the resinous parts of these balsamic oils, as they dry upon the sore or wound, seal it up and effectually exclude all noxious air.

Lemon balm is a commonly grown household remedy with a long tradition as a tonic remedy that raises the spirits and lifts the heart. Modern research has shown that it can help significantly in the treatment of cold sores.

The leaves and young flowering shoots are antibacterial, antispasmodic, antiviral, carminative, diaphoretic, digestive, emmenagogue, febrifuge, sedative, and tonic. It also acts to inhibit thyroid

activity. An infusion of the leaves is used in the treatment of fevers and colds, indigestion associated with nervous tension, excitability and digestive upsets in children, hyperthyroidism, depression, mild insomnia and headaches. Externally, it is used to treat herpes, sores, gout, insect bites and as an insect repellent. The plant can be used fresh or dried, for drying it is harvested just before or just after flowering.

The essential oil contains citral and citronella, which act to calm the central nervous system and are strongly antispasmodic. The plant also contains polyphenols, in particular these combat the herpes simplex virus which produces cold sores.

The essential oil is used in aromatherapy. Its keyword is 'Female aspects'. It is used to relax and rejuvenate, especially in cases of depression and nervous tension.

Leaves - raw or cooked. A pleasant lemon-like aroma and flavor, they are used mainly as a flavoring in salads and cooked foods.

A lemon-flavored tea can be made from the fresh or dried leaves. A bunch of the leaves can be added to china tea, much improving the flavor, the leaves are also added to fruit cups etc. They are used as a flavoring in various alcoholic beverages including Chartreuse and Benedictine.

The growing plant is said to repel flies and ants. It is also rubbed on the skin as a repellent, though the essential oil would be more effective here.

Licorice - *Glycyrrhiza glabra*

Other Common Names: Cultivated Licorice, Gan Cao, Iriqsus, Kan T'Sao, Kan Ts'Ao, Liquirita, Liquorice, Madhuka, Meyankoku, Mi Ts'Ao, Regaliz, Russian Liquorice, Sus Maikik, Sweetwood, True Licorice, *Glycyrrhiza glabra*

Range: Europe - Mediterranean, natives of South-east Europe and South-west Asia.

Habitat: Dry open places, especially in sandy places near the sea.

The Licorice of medicine and commerce is derived from the sweet root of various species of *Glycyrrhiza*, a genus which contains about fourteen species, natives of warmer temperate countries in both the New and Old Worlds, ten of them having roots more or less sweet, but most of them not sufficiently so to be of use.

Dioscorides, who names the plant *Glyrrhiza* (Greek glukos, sweet, and riza, a root), from his description of the plant possibly had in view *G. echinata*, as well as *G. glabra*.

The plant is often found under the name *Liquiritia officinalis*. The Latin name *Liquiritia*, whence is derived the English name Liquorice (*Lycorys* in the thirteenth century), is a corruption of *Glycyrrhiza*, as shown in the transitional form *Gliquiricia*. The Italian *Regolizia*, the German *Lacrisse* or *Lakriz*, the Welsh *Lacris* and the French *Reglisse* have the same origin.

Licorice has a long and honorable history in the service of mankind. The earliest usage of Licorice was back in the first syllables of recorded time. Licorice freaks throughout history have included Pharoahs and Prophets. Generous supplies were discovered in King Tut's tomb, while Egyptian hieroglyphics record the use of Licorice in a popular beverage by men in the days when the Bible was still being written!

Alexander the Great, the Scythian armies, Roman Emperor Ceaser, and even India's great prophet, Brahma, are on record endorsing the beneficial properties contained in Licorice. Warriors used it for its ability to quench thirst while on the march, while others (including Brahma and venerable Chinese Buddhist sages), recognized Licorice's valuable healing properties.

Natural licorice can be effective medicine. For over 3000 years, licorice root has been used as a remedy for peptic ulcers, sore throats and coughs in eastern and western medicine. Licorice root has been used since the third century BC to help dissipate coughs. Licorice is the most widely used "drug" in the world due to its volume of consumption in China.

Licorice is official in all pharmacopoeias, which differ as to the variety or varieties recognized, as to the botanical name employed and as to the drug being peeled or unpeeled, dried Licorice root being supplied in commerce either with or without the thin brown coat. In the latter state it is known as peeled or decorticated.

Licorice is one of the most commonly used herbs in Western herbal medicine and has a very long history of use, both as a medicine and also as a flavoring to disguise the unpleasant flavor of other medications. It is a very sweet, moist, soothing herb that detoxifies and protects the liver and is also powerfully anti-inflammatory, being used in conditions as varied as arthritis and mouth ulcers.

The root is alterative, antispasmodic, demulcent, diuretic, emollient, expectorant, laxative, moderately pectoral and tonic. The root has also been shown to have a hormonal effect similar to the ovarian hormone. Licorice root is much used in cough medicines and also in the treatment of catarrhal infections of the urinary tract. It is taken internally in the treatment of Addison's disease, asthma, bronchitis, coughs, peptic ulcer, arthritis, allergic complaints and following steroidal therapy. It should be used in moderation and should not be prescribed for pregnant women or people with high blood pressure, kidney disease or taking digoxin-based medication. Prolonged usage raises the blood pressure and causes water retention. (See also the notes on toxicity).

Externally, the root is used in the treatment of herpes, eczema and shingles. The root is harvested in the autumn when 3 - 4 years old and is dried for later use.

Root - raw or used as a flavoring. The source of licorice powder that is extracted and used in sweets (candies), baked goods, ice cream, soft drinks etc, it is also used medicinally. A sweet and delicious flavor, but the root is very fibrous. The root contains glycyrrhizin, a substance that is 50 times sweeter than sucrose. The dried root is often used for chewing, it is excellent for teething children and also as a tooth cleaner.

A tea made from the roots is an excellent thirst quencher. The powdered root is also used as a sweetener in other herb teas. The leaves are used as a tea substitute in Mongolia.

Extracts from the root are used as a foaming agent in beers and fire extinguishers.

Known Hazards: A gross overdose of the root can cause oedema, high blood pressure and congestive heart failure.

Ligustrum lucidum - Chinese Privet

Other Common Names: Chinese Privet, Glossy Privet, Nepal Privet, Nu Chen, Nu Chen P'I Chiu, Nu-zhen-zi, To-Nezumi-Moti, Ligustrum lucidum

Range: E. Asia - China.

Habitat: Roadsides and in river valleys.

Chinese privet has been used in traditional Chinese medicine for over 1,000 years. The fruit is antibacterial, antiseptic, antitumour, cardiogenic, diuretic and tonic. It is taken internally in the treatment of complaints associated with weak kidney and liver energy such as menopausal problems (especially premature menopause), blurred vision, cataracts, tinnitus, rheumatic pains, palpitations, backache and insomnia. Modern research has shown that the plant increases the white blood cell count and is of value when used to prevent bone marrow loss in cancer chemotherapy patients, it also has potential in the treatment of AIDS. Extracts of the plant show antitumour activity. Good results have also been achieved when the fruit has been used in treating respiratory tract infections, hypertension, Parkinson's disease and hepatitis.

The fruit is harvested when fully ripe and is dried for later use. It is often decocted with other herbs in the treatment of a wide variety of ailments and also as a general tonic. Some caution is advised in their use, since the fruits are toxic when eaten in quantity.

The leaves are anodyne, diaphoretic, febrifuge, pectoral and vulnerary. The bark of the stems is diaphoretic.

Young shoots - cooked. A famine food, used when all else fails. The shoots contain a glucoside and are probably toxic.

Known Hazards: The fruit is mildly toxic. Although no other reports of toxicity have been seen for this species, it is quite probable that other parts of the plant also contain toxins.

Lomatium dissectum

Other Common Names: Carrotleaf Biscuitroot, Chocolate-tips, Cough Root, Fernleaf Biscuitroot, Fernleaf Lomatium, Lepotaenia, Leptotaenia, Lomatium dissectum

Range: Western N. America - southwards from Alberta and British Columbia.

Habitat: Open, often rocky slopes and dry meadows, often on talus.

Fernleaf biscuitroot was widely employed medicinally by many native North American Indian tribes who considered it to be a universal panacea and used it especially in treating chest problems and skin complaints. This is an important native American Pacific Northwest anti-viral herb. Works where other anti-virals fall short. Fresh root (alcoholic) extract is best mode of administration. Lomatium was used, particularly in the southwestern United States, during the influenza pandemic of 1917 with reportedly good results. Although it is little, if at all, used in modern herbalism, but probably warrants investigation.

The whole plant, but especially the root, is disinfectant, pectoral, salve, stomachic and tonic.

The dried root was used in the treatment of rheumatism, stomach complaints, coughs, colds, hayfever, bronchitis, influenza, pneumonia and tuberculosis. The root was burnt and the smoke inhaled in the treatment of asthma and other chest complaints, it was also used as a herbal steam bath for treating chest complaints. The root was used to make a drink that was taken as a tonic to help people in a weakened condition gain weight. A poultice of the peeled and crushed roots has been applied to open cuts, sores, boils, bruises and rheumatic joints. The root has been soaked in water and then used as an antidandruff wash for the hair.

An infusion of the leaves and stems has been used as a tonic.

The root oil has been applied as a salve to sores and also used as an eye wash in the treatment of trachoma.

Root - cooked. Resinous and balsamic. The root can be dried and ground into a powder and then be mixed with cereal flours or added as a flavoring to soups etc. The roots have been boiled to make a refreshing and nutritious drink.

The pulverized root has been burnt as an incense.

Tea Tree - *Melaleuca Alternifolia*

Other Common Names: Manuka, *Melaleuca alternifolia*

Range: Australia - New South Wales, Queensland; East Indies.

Habitat: Swamps by the coast. Requires a fertile, well-drained moisture retentive lime-free soil in full sun.

In 1770, on an expedition to Australia, the renowned world explorer Captain James Cook of the British Royal Navy wrote in his ship's log how the local tribes brewed a spicy tea from the leaves of a unique "paper-barked" tree. He gave the tree the name "Tea Tree". The aborigines used the leaves extensively. Stories are told of animals seeking out, and rolling and soaking in the oil-containing amber waters underneath the trees. The aborigines would crush the leaves for application to the skin and cover the concoction with a mud pack. They also brewed the leaves into a beneficial spicy tea. In 1920 Dr. A. R. Penfold, a government chemist in Sydney, Australia, was credited for beginning the human clinical research and documentation of the many benefits associated with Tea Tree Oil. His results were far beyond expectations. Tea Tree Oil became so valued by the Australian government that, during World War II, those who worked in the processing of this oil were granted exemption from military service to ensure sufficient supply of this precious oil, which was provided to both Australian and British soldiers.

Although there are over 300 species of trees in the *Melaleuca* family, only *Melaleuca Alternifolia* produces the quality of Tea Tree Oil suitable for therapeutic use. Because of the difficulty of eradicating Tea Trees for farming, farmers once believed the valuable trees to be a nuisance. However in the past decade, the precious oil of this tree has gained international respect as people have realized it's broad range of uses. Today, several commercial plantations, with trees numbering into the millions, have quite literally taken root. They anticipate tremendous demand for this precious oil in the years ahead, as more and more people find out about the unprecedented power of this essential oil.

Tea tree, and in particular its essential oil, is one of the most important natural antiseptics and it merits a place in every medicine chest. It is useful for treating stings, burns, wounds and skin infections of all kinds.

An essential oil obtained from the leaves and twigs is strongly antiseptic, diaphoretic and expectorant. It stimulates the immune system and is effective against a broad range of bacterial and fungal infections. Internally, it is used in the treatment of chronic and some acute infections, notably cystitis, glandular fever and chronic fatigue syndrome. It is used externally in the treatment of thrush, vaginal infections, acne, athlete's foot, verrucas, warts, insect bites, cold sores and nits. It is applied neat to verrucas, warts and nits, but is diluted with a carrier oil such as almond for other uses.

The oil is non-irritant. A report says that high quality oils contain about 40% terpinen-4-ol, which is well tolerated by the skin and 5% cineol which is irritant. However, in poor quality oils the levels of cineol can exceed 10% and in some cases up to 65%.

The essential oil is used in aromatherapy. Its keyword is 'Antiseptic'.

An essential oil is obtained from the leaves. It is strongly germicidal and is also used in dentistry, deodorants, soaps, mouthwashes etc.

Marshmallow - *Althaea officinalis*

Other Common Names: Altea, Common Marshmallow, Ghasul, Hatmi, Iviscus, Khatmah, Khitmi, Mallow, Malvavisco, Usubeni-Tati-Aoi, White Mallow, *Althaea officinalis*

Range: Marsh Mallow is a native of most countries of Europe, from Denmark southward.

Habitat: The upper margins of salt and brackish marshes, sides of ditches and grassy banks near the sea.

The whole plant, particularly the root, abounds with a mild mucilage, which is emollient to a much greater degree than the common Mallow. The generic name, *Althaea*, is derived from the Greek, altho (to cure), from its healing properties. The name of the order, Malvaceae, is derived from the Greek, malake (soft), from the special qualities of the Mallows in softening and healing.

Most of the Mallows have been used as food, and are mentioned by early classic writers in this connexion. Mallow was an esculent vegetable among the Romans, a dish of Marsh Mallow was one of their delicacies.

The Chinese use some sort of Mallow in their food, and Prosper Alpinus stated (in 1592) that a plant of the Mallow kind was eaten by the Egyptians. Many of the poorer inhabitants of Syria, especially the Fellahs, Greeks and Armenians, subsist for weeks on herbs, of which Marsh Mallow is one of the most common. When boiled first and fried with onions and butter, the roots are said to form a palatable dish, and in times of scarcity consequent upon the failure of the crops, this plant, which fortunately grows there in great abundance, is much collected for food.

Horace and Martial mention the laxative properties of the Marsh Mallow leaves and root, and Virgil tells us of the fondness of goats for the foliage of the Mallow.

Dioscorides extols it as a remedy, and in ancient days it was not only valued as a medicine, but was used, especially the Musk Mallow, to decorate the graves of friends.

Pliny said: 'Whosoever shall take a spoonful of the Mallows shall that day be free from all diseases that may come to him.' All Mallows contain abundant mucilage, and the Arab physicians in early times used the leaves as a poultice to suppress inflammation.

Marsh mallow is a very useful household medicinal herb. Its soothing demulcent properties make it very effective in treating inflammations and irritations of the mucous membranes such as the alimentary canal, the urinary and the respiratory organs. The root counters excess stomach acid, peptic ulceration and gastritis. It is also applied externally to bruises, sprains, aching muscles, insect bites, skin inflammations

and splinters.

The whole plant, but especially the root, is antitussive, demulcent, diuretic, highly emollient, slightly laxative and odontalgic. An infusion of the leaves is used to treat cystitis and frequent urination. The leaves are harvested in August when the plant is just coming into flower and can be dried for later use. The root can be used in an ointment for treating boils and abscesses. The root is best harvested in the autumn, preferably from 2 year old plants, and is dried for later use.

Leaves - raw or cooked. They are used as a potherb or to thicken soups. When used as a small proportion with other leaves, the taste and texture is acceptable, but if a lot of the leaves are cooked together their mucilaginous texture makes them unpalatable. The leaves can be eaten raw but are rather fibrous and somewhat hairy, though the taste is mild and pleasant. We have found them to be quite acceptable in salads when chopped up finely.

Root - raw or cooked. When boiled and then fried with onions it is said to make a palatable dish that is often used in times of shortage. The root is used as a vegetable. The root contains about 37% starch, 11% mucilage, 11% pectin. The water left over from cooking any part of the plant can be used as an egg-white substitute in making meringues etc. The water from the root is the most effective, it is concentrated by boiling until it has a similar consistency to egg white.

A tea is made from the flowers. A tea can also be made from the root.

The dried root is used as a toothbrush or is chewed by teething children. It has a mechanical affect on the gums whilst also helping to ease the pain. The root is also used as a cosmetic, helping to soften the skin.

Meadowsweet - *Spirea ulmaria*

Other Common Names: Bridewort, Ergesakali, European Meadowsweet, Queen Of The Meadow, Ulmaria, Filipendula ulmaria, Spirea ulmaria

Range: throughout Europe, North America, and northern Asia.

Habitat: Wet ground in swamps, marshes, fens, wet woods and meadows, wet rock ledges and by rivers, but not on acid peats.

The name Ulmaria is given in allusion to the resemblance of its leaves to those of the Elm (*Ulmus*), being much wrinkled on the upper side.

Gerard says:

'It is reported that the floures boiled in wine and drunke do take away the fits of a quartaine ague and make the heart merrie. The distilled water of the floures dropped into the eies taketh away the burning and itching thereof and cleareth the sight.'

Meadowsweet has a very long history of herbal use, it was one of the three most sacred herbs of the Druids. The leaves and flowering stems are alterative, anti-inflammatory, antiseptic, aromatic, astringent, diaphoretic, diuretic, stomachic and tonic. The plant is harvested in July when it is in flower and can be dried for later use. The flower head contains salicylic acid, from which the drug aspirin can be synthesised. Unlike the extracted aspirin, which can cause gastric ulceration at high doses, the combination of constituents in meadowsweet act to protect the inner lining of the stomach and intestines whilst still providing the anti-inflammatory benefits of aspirin. The herb is a valuable medicine in the treatment of diarrhea, indeed it is considered almost specific in the treatment of children's diarrhea. It is also considered to be a useful stomachic, being used to treat hyperacidity, heartburn, gastritis and peptic ulcers, for which it is one of the most effective plant remedies. It is also frequently used in the treatment of afflictions of the blood. Meadowsweet is also effective against the organisms causing diphtheria, dysentery and pneumonia. This remedy should not be given to people who are hypersensitive to aspirin.

A strong decoction of the boiled root is said to be effective, when used externally, in the treatment of sores and ulcers.

A homeopathic remedy is made from the fresh root.

Known Hazards: Do not take Meadowsweet if you are sensitive to aspirin (salicylate).

Milk Thistle - *Silybum marianum*

Other Common Names: Blessed Milk-thistle, Cardo Mariano, Holy Thistle, Kanger, Kenger, Ku'Ub, Lady's Thistle, Maria-Azami, Meryemanadikeni, St Mary's Milk Thistle, Thistle, Variegated Thistle, *Silybum marianum*

Range: S. Europe, N. Africa and W. Asia.

Habitat: Waste places, usually close to the sea, especially if the ground is dry and rocky.

The Marian, or Milk Thistle, is perhaps the most important medicinally among the members of this genus, to which all botanists do not, however, assign it, naming it *Silybum Marianum*.

Westmacott, writing in 1694, says of this Thistle:

'It is a Friend to the Liver and Blood: the prickles cut off, they were formerly used to be boiled in the Spring and eaten with other herbs; but as the World decays, so doth the Use of good old things and others more delicate and less virtuous brought in.'

There is a tradition that the milk-white veins of the leaves originated in the milk of the Virgin which once fell upon a plant of Thistle, hence it was called Our Lady's Thistle, and the Latin name of the species has the same derivation.

Milk thistle has a long history of use in the West as a remedy for depression and liver problems. Recent research has confirmed that it has a remarkable ability to protect the liver from damage resulting from alcoholic and other types of poisoning. The whole plant is astringent, bitter, cholagogue, diaphoretic, diuretic, emetic, emmenagogue, hepatic, stimulant, stomachic and tonic. It is used internally in the treatment of liver and gall bladder diseases, jaundice, cirrhosis, hepatitis and poisoning. The plant is harvested when in flower and dried for later use.

Silymarin, an extract from the seed, acts on the membranes of the liver cells preventing the entry of virus toxins and other toxic compounds and thus preventing damage to the cells. It also dramatically improves liver regeneration in hepatitis, cirrhosis, mushroom poisoning and other diseases of the liver. German research suggests that silybin (a flavonoid component of the seed) is clinically useful in the treatment of severe poisoning by *Amanita* mushrooms. Seed extracts are produced commercially in Europe. Regeneration of the liver is particularly important in the treatment of cancer since this disease is always characterized by a severely compromised and often partially destroyed liver.

The therapeutic effect of silymarin in all of these disorders has been confirmed by histological (biopsy), clinical and laboratory data. Silymarin is especially effective in the treatment and prevention of toxic

chemical or alcohol induced liver damage.

The protective effect of silymarin against liver damage has been demonstrated in a number of experimental and clinical studies.

A homeopathic remedy is obtained from equal parts of the root and the seed with its hulls still attached. It is used in the treatment of liver and abdominal disorders.

The heads of this Thistle formerly were eaten, boiled, treated like those of the Artichoke.

Known Hazards: When grown on nitrogen rich soils, especially those that have been fed with chemical fertilizers, this plant can concentrate nitrates in the leaves. Nitrates are implicated in stomach cancers.

Common Mullein - *Verbascum thapsus*

Other Common Names: Adam's Flannel, Beggar's Blanket, Bullock's Lungwort, Bonhomme, Borraja, Common Mullein, Flannel Mullein, Flannel Plant, Feltwort, Fluffweed, Hare's Beard Gordolobo, Great Mullein, Jupiter's Staff, Molene, Pano, Sigirkuyrugu, Velvet Dock, Velvet Plant, *Verbascum thapsus*

Range: Chile; Dominican Republic; Eurasia; Europe; Haiti; India; Spain; Turkey; USA (is exceedingly abundant as a naturalized weed in the eastern States).

Habitat: Sunny positions in uncultivated fields and waste ground, especially on dry soils.

The down on the leaves and stem makes excellent tinder when quite dry, readily igniting on the slightest spark, and was, before the introduction of cotton, used for lamp wicks, hence another of the old names: 'Candlewick Plant.' An old superstition existed that witches in their incantations used lamps and candles provided with wicks of this sort, and another of the plant's many names, 'Hag's Taper', refers to this, though the word 'hag' is said to be derived from the Anglo-Saxon word Haege or Hage (a hedge) - the name 'Hedge Taper' also exists - and may imply that the sturdy spikes of this tall hedge plant, studded with pale yellow blossoms, suggested a tall candle growing in the hedge, another of its countryside names being, indeed, 'Our Lady's Candle.' Lyte (*The Niewe Herball*, 1578) tells us 'that the whole toppe, with its pleasant yellow floures sheweth like to a wax candle or taper cunningly wrought.' Great mullein is a commonly used domestic herbal remedy, valued for its efficacy in the treatment of pectoral complaints. It acts by reducing the formation of mucus and stimulating the coughing up of phlegm, and is a specific treatment for tracheitis and bronchitis.

The Latin name *Verbascum* is considered to be a corruption of *barbascum*, from the Latin *barba* (a beard), in allusion to the shaggy foliage, and was bestowed on the genus by Linnaeus.

Both in Europe and Asia the power of driving away evil spirits was ascribed to the Mullein. In India it has the reputation among the natives that the [St. John's Wort](#) once had here, being considered a sure safeguard against evil spirits and magic, and from the ancient classics we learn that it was this plant which Ulysses took to protect himself against the wiles of Circe.

For medicinal purposes it is generally collected from wild specimens, but is worthy of cultivation, not merely from its beauty as an ornamental plant, but also for its medicinal value, which is undoubted. In many places, besides growing wild, it is carefully cultivated in gardens, because of a steady demand for the plant by sufferers from pulmonary consumption.

The leaves and the flowers are anodyne, anti-inflammatory, antiseptic, antispasmodic, astringent, demulcent, diuretic, emollient, expectorant and vulnerary. An infusion is taken internally in the treatment

of a wide range of chest complaints and also to treat diarrhea. The plant combines well with other expectorants such as [coltsfoot](#) (*Tussilago farfara*) and [Thyme](#) (*Thymus vulgaris*).

The dried leaves are sometimes smoked in an ordinary tobacco pipe to relieve the irritation of the respiratory mucus membranes, and will completely control, it is said, the hacking cough of consumption. They can be employed with equal benefit when made into cigarettes, for asthma and spasmodic coughs in general.

Externally, a poultice of the leaves is a good healer of wounds and is also applied to ulcers, tumors and piles. Any preparation made from the leaves needs to be carefully strained in order to remove the small hairs which can be an irritant. The plant is harvested when in flower and is dried for later use.

An infusion of the flowers in olive oil is used as earache drops, or as a local application in the treatment of piles and other mucous membrane inflammations. This infusion is also strongly bactericidal.

A decoction of the roots is said to alleviate toothache and also relieve cramps and convulsions.

The juice of the plant and powder made from the dried roots is said to quickly remove rough warts when rubbed on them. It is not thought to be so useful for smooth warts.

The seeds are slightly narcotic and also contain saponins. A poultice made from the seeds and leaves is used to draw out splinters. A decoction of the seeds is used to soothe chillblains and chapped skin.

A homeopathic remedy is made from the fresh leaves. It is used in the treatment of long-standing headaches accompanied with oppression of the ear. From 8 to 10 drops of the tincture are given as a dose, with cold water, repeated frequently.

Known Hazards: The leaves contain rotenone and coumarin. Rotenone is used as an insecticide and coumarin can prevent the blood from clotting. Hairs on the leaves can act as an irritant.

Myrrh - Balsamodendron Myrrha, Commiphora Myrrha

Other Common Names: Balsamodendron Myrrha, Commiphora Myrrha

Range: northeastern Africa and the Middle East.

It has been used from remote ages as an ingredient in incense, perfumes, etc., in the holy oil of the Jews and the Kyphi of the Egyptians for embalming and fumigations.

Little appears to be definitely known about the collection of myrrh. It seems probable that the best drug comes from Somalia, is bought at the fairs of Berbera by the Banians of India, shipped to Bombay, and there sorted, the best coming to Europe and the worst being sent to China. The true myrrh is known in the markets as karam, formerly called Turkey myrrh, and the opaque bdellium (occurs in Gen. 2:12, where it designates a product of the land of Havilah; and in Num. 11:7, where the manna is likened to it in color) as meena harma.

Astringent, healing. Tonic and stimulant. A direct emmenagogue, a tonic in dyspepsia, an expectorant in the absence of feverish symptoms, a stimulant to the mucous tissues, a stomachic carminative, exciting appetite and the flow of gastric juice, and an astringent wash.

It is used in chronic catarrh, phthisis pulmonalis, chlorosis, and in amenorrhoea is often combined with aloes and iron. As a mouthwash it is good for spongy gums, ulcerated throat and aphthous stomatitis, it is effective for mouth infections such as gingivitis, and the tincture is also applied to foul and indolent ulcers. It has been found helpful in bronchorrhoea and leucorrhoea. It has also been used as a vermifuge.

Myrrh is a common ingredient of toothpowders, and is used with borax in tincture, with other ingredients, as a mouth-wash.

Myrrh is considered a substitute for [Goldenseal](#) for hypoglycemics who shouldn't risk goldenseal's tendency to reduce blood sugar levels. Myrrh is about half as potent as Goldenseal as an anti-microbial.

The Compound Tincture, or Horse Tincture, is used in veterinary practice for healing wounds.

Known Hazards: Not for use during pregnancy unless otherwise directed by a qualified practitioner. Contraindicated in excessive uterine bleeding.

Nettle - *Urtica dioica*

Other Common Names: Bigstring Nettle, Common Nettle, Common Stinging Nettle, Gerrais, Greater Nettle, Isirgan, Kazink, Nabat Al Nar, Ortiga Mayor, Stinging Nettle, *Urtica dioica*

Range: Australia; Britain; Canada; Czech Republic; Asia; Europe; India; Iraq; Kurdistan; South Africa; Spain; Turkey; USA

Habitat: Waste ground, hedgerows, woods etc, preferring a rich soil and avoiding acid soils.

Nettles have a long history of use in the home as a herbal remedy and nutritious addition to the diet. A tea made from the leaves has traditionally been used as a cleansing tonic and blood purifier so the plant is often used in the treatment of hay fever, arthritis, and anemia.

The whole plant is antiasthmatic, antidandruff, astringent, depurative, diuretic, galactagogue, haemostatic, hypoglycaemic and a stimulating tonic.

An infusion of the plant is very valuable in stemming internal bleeding, it is also used to treat anaemia, excessive menstruation, hemorrhoids, arthritis, rheumatism and skin complaints, especially eczema. Externally, the plant is used to treat skin complaints, arthritic pain, gout, sciatica, neuralgia, hemorrhoids and hair problems.

The fresh leaves of nettles have been rubbed or beaten onto the skin in the treatment of rheumatism. This practice, called urtification, causes intense irritation to the skin as it is stung by the nettles. It is believed that this treatment works in two ways. Firstly, it acts as a counter-irritant, bringing more blood to the area to help remove the toxins that cause rheumatism. Secondly, the formic acid from the nettles is believed to have a beneficial effect upon the rheumatic joints.

For medicinal purposes, the plant is best harvested in May or June as it is coming into flower and dried for later use.

This species merits further study for possible uses against kidney and urinary system ailments.

The juice of the nettle can be used as an antidote to stings from the leaves and an infusion of the fresh leaves is healing and soothing as a lotion for burns.

The root has been shown to have a beneficial effect upon enlarged prostate glands.

A homeopathic remedy is made from the leaves. It is used in the treatment of rheumatic gout, nettle rash

and chickenpox, externally is applied to bruises.

Young leaves - cooked as a potherb and added to soups etc. They can also be dried for winter use. Nettles are a very valuable addition to the diet, they are a very nutritious food that is easily digested and is high in minerals (especially iron) and vitamins (especially A and C).

The plants are harvested commercially for extraction of the chlorophyll, which is used as a green colouring agent (E140) in foods and medicines.

A tea is made from the dried leaves, it is warming on a winters day. A bland flavor, it can be added as a tonic to China tea.

The juice of the leaves, or a decoction of the herb, can be used as a rennet substitute in curdling plant milks.

Known Hazards: The leaves of the plants have stinging hairs, causing irritation to the skin. This action is neutralized by heat or by thorough drying, so the cooked leaves are perfectly safe and nutritious. However, only young leaves should be used because older leaves develop gritty particles called cystoliths which act as an irritant to the kidneys.

Oak - *Quercus robur*

Other Common Names: Common Oak, Cervalho, Chene, Encina, English Oak, Mese, Oak, Pedunculate Oak, Rovere, *Quercus robur*

Range: Widely distributed over Europe; Asia; Britain; Chile; USA.

Habitat: Often the dominant woodland tree, especially on clay soils but avoiding acid peat and shallow limestone soils.

The Greeks held the Oak sacred, the Romans dedicated it to Jupiter, and the Druids venerated it.

The genus *Quercus* comprises numerous species, distributed widely over the Northern Hemisphere, and found also in Java, and the Mountains of Mexico and South America.

The oak tree has a long history of medicinal use. It is antiinflammatory, antiseptic, astringent, decongestant, haemostatic and tonic. The bark is the part of the plant that is most commonly used, though other parts such as the galls, seeds and seed cups are also sometimes used. A decoction of the bark is useful in the treatment of chronic diarrhea, dysentery, intermittant fevers, hemorrhages etc.

Externally, it is used to bathe wounds, skin eruptions, sweaty feet, piles etc. It is also used as a vaginal douche for genital inflammations and discharge, and also as a wash for throat and mouth infections. The bark is harvested from branches 5 - 12 years old, and is dried for later use.

Any galls produced on the tree are strongly astringent and can be used in the treatment of hemorrhages, chronic diarrhea, dysentery etc.

Galls are excrescences produced in plants by the presence of the larvae of different insects. The forms that they assume are many, and the changes produced in the tissues various. They occur in all parts of the plant and sometimes in great quantities.

If collected after the insects have escaped, galls are of a pale, yellowish-brown hue, spongy and lighter in weight, perforated near the centre with a small hole. These are known in commerce as white galls.

The chief constituents of Aleppo or Turkey Galls are 50 to 70 per cent of gallotannic acid, 2 to 4 per cent of gallic acid, mucilage, sugar, resin and an insoluble matter, chiefly lignin.

The plant is used in Bach flower remedies - the keywords for prescribing it are 'Despondency', 'Despair, but never ceasing effort'.

A homeopathic remedy is made from the bark. It is used in the treatment of disorders of the spleen and gall bladder.

Seed - cooked. Nourishing but indigestible. Chopped and roasted, the seed is used as an almond substitute. It can be dried, ground into a powder and used as a thickening in stews etc or mixed with cereals for making bread. The seed contains bitter tannins, these can be leached out by thoroughly washing the seed in running water though many minerals will also be lost. Either the whole seed can be used or the seed can be dried and ground into a powder. It can take several days or even weeks to properly leach whole seeds, one method was to wrap them in a cloth bag and place them in a stream. Leaching the powder is quicker. A simple taste test can tell when the tannin has been leached. The traditional method of preparing the seed was to bury it in boggy ground overwinter. The germinating seed was dug up in the spring when it would have lost most of its astringency.

Tannin is extracted commercially from the bark and is also found in the leaves.

Oak trees are more persistently attacked by insects than any other trees.

Old Mans Beard - *Usnea barbata*

Other Common Names: *Usnea barbata*

Range: North American, Asia and Europe

Habitat: Hanging from trees in forests.

Usnea is not a plant but a lichen—a symbiotic relationship (a combination of two organisms which live together intimately) between an algae and a fungus. Because of its bitter taste and ability to stimulate digestion, *usnea* was historically used to treat indigestion.

Many species of *usnea* are used medicinally, including *U. hirta*, *U. barbata*, *U. florida*, *U. longissima* and *U. dasypoga*. The herb's use dates back to ancient Egypt, Greece and China where it was called Sun-lo and was used to cool an overheated system and treat surface infections. The Formulary of Al-kindī, circa A.D. 850, even documents the use of *usnea*.

Usnic acid gives *usnea* its bitter taste and also acts as an antibiotic. It is used in treating colds, flu, and bronchitis. *Usnea* is good for respiratory, urinary tract, sinus, and lung infections including staphylococcus and streptococcus and pneumonococcus. It is an anti-fungal useful in treating athlete's foot, vaginal infections and candida.

Herbal antimicrobials work in much the same way as their drug counterparts do--by destroying or preventing the growth of microorganisms. Even so, other herbs are usually prescribed in conjunction to perform a variety of functions, including strengthening mucous membranes where infections tend to enter the body; improving the condition and quantity of mucus produced; encouraging a mildly elevated temperature to fight the microbes; enhancing immune function; and increasing expectoration--all of which amplify the healing process.

Traditional uses of *usnea* include dusting the powdered herb directly onto open or infected wounds, making strong decoctions, and tincturing the herb in alcohol. The salve form is also effective. Usnic acid is poorly water soluble, so ethyl alcohol is used to produce a tincture. A 1:3 dilution in 70 percent alcohol is standard, and the adult dose is 3 ml three times daily, or more in acute cases.

Oregon grape - *Berberis aquifolium*

Other Common Names: Agrecillo, Berberi, Epine Vinette, Holly-Leaved Barberry, Holly-leaf Oregon-grape, Mahonia, Mountain Grape, Yerba De Sangre, Mahonia aquifolium, Berberis aquifolium

Range: Western N. America, also grows in Europe.

Habitat: Mixed coniferous woods to 2000 metres. A very easy plant to grow, thriving in any good garden soil and tolerating dense shade under trees.

Oregon grape is a close relative of [barberry \(*Berberis vulgaris*\)](#). It was often used by several native North American Indian tribes to treat loss of appetite and debility. Its current herbal use is mainly in the treatment of gastritis and general digestive weakness, to stimulate the kidney and gallbladder function and to reduce catarrhal problems.

The root and root bark is alterative, blood tonic, cholagogue, diuretic, laxative and tonic. It improves the digestion and absorption and is taken internally in the treatment of psoriasis, syphilis, hemorrhages, stomach complaints and impure blood conditions. Externally, it has been used as a gargle for sore throats and as a wash for blurry or bloodshot eyes. The roots are harvested in late autumn or early spring and dried for later use.

The fruit is an excellent gentle and safe laxative.

Berberine, universally present in rhizomes of Mahonia species, has marked antibacterial effects and is used as a bitter tonic. Since it is not appreciably absorbed by the body, it is used orally in the treatment of various enteric infections, especially bacillary dysentery. It should not be used with *Glycyrrhiza* species (Licuorice) because this nullifies the effects of the berberine. Berberine has also shown antitumour activity.

The root and rootbark are best harvested in the autumn.

Fruit - raw or cooked. The fruit is almost as large as a blackcurrant and is produced in large bunches so it is easy to harvest. It has an acid flavor, but it is rather nice raw and is especially good when added to a porridge or muesli. Unfortunately, there is relatively little flesh and a lot of seeds, though some plants have larger and juicier fruits. The cooked fruit tastes somewhat like blackcurrants. The fruit can also be dried and stored for later use.

Papain

Papain is a protein-cleaving enzyme derived from papaya and certain other plants. Enzymes are complex molecules produced in living organisms to catalyze (speed up) chemical reactions within the cell. A number of digestive enzyme supplements are available. The simple ones are extracted from tropical fruits: bromelain from pineapple and papain from papayas. Papain has a mild, soothing effect on the stomach and aids in protein digestion. It is most often used as a meat tenderizer.

Though the exact area of origin is unknown, the papaya is believed native to tropical America, perhaps in southern Mexico and neighboring Central America. It is recorded that seeds were taken to Panama and then the Dominican Republic before 1525 and cultivation spread to warm elevations throughout South and Central America, southern Mexico, the West Indies and Bahamas, and to Bermuda in 1616. Spaniards carried seeds to the Philippines about 1550 and the papaya traveled from there to Malacca and India. Seeds were sent from India to Naples in 1626. Now the papaya is familiar in nearly all tropical regions of the Old World and the Pacific Islands and has become naturalized in many areas. Seeds were probably brought to Florida from the Bahamas. Up to about 1959, the papaya was commonly grown in southern and central Florida in home gardens and on a small commercial scale. Thereafter, natural enemies seriously reduced the plantings.

The latex of the papaya plant and its green fruits contains two proteolytic enzymes, papain and chymopapain. The latter is most abundant but papain is twice as potent. In 1933, Ceylon (Sri Lanka) was the leading commercial source of papain but it has been surpassed by East Africa where large-scale production began in 1937.

The presence and effects of proteinases (now termed proteases) in papaya fruit (*Carica papaya*) latex have been well known since the 1750s (Brocklehurst et al. 1983). But it was not until the 1870's that the importance of papaya latex as a source of enzymes was recognized.

Papain by far is the most widely studied of the cysteine enzymes because of its commercial value. Besides being used as a meat tenderizer other uses of papain include:

- defibrinating wounds in hospitals
- clotting milk
- shrink proofing of wool
- used in pet food to reduce viscosity and increase palatability
- prevents cornea scar deformation
- used in treatments of jellyfish and insect stings
- used to treat edemas, inflammatory processes, and in the acceleration of wound healing
- it is used as an ingredient in cleaning solutions for soft contact lenses

- in low doses it can be used to as an indigestion medicine.

As we can see the uses for papain are diverse and thus it makes it an extremely valuable enzyme.

Papain has been employed to treat ulcers, dissolve membranes in diphtheria, and reduce swelling, fever and adhesions after surgery. With considerable risk, it has been applied on meat impacted in the gullet. Chemopapain is sometimes injected in cases of slipped spinal discs or pinched nerves. Precautions should be taken because some individuals are allergic to papain in any form and even to meat tenderized with papain.

In tropical folk medicine, the fresh latex is smeared on boils, warts and freckles and given as a vermifuge. In India, it is applied on the uterus as an irritant to cause abortion. The unripe fruit is sometimes hazardedly ingested to achieve abortion. Seeds, too, may bring on abortion. They are often taken as an emmenagogue and given as a vermifuge. The root is ground to a paste with salt, diluted with water and given as an enema to induce abortion. A root decoction is claimed to expel roundworms. Roots are also used to make salt.

Crushed leaves wrapped around tough meat will tenderize it overnight. The leaf also functions as a vermifuge and as a primitive soap substitute in laundering. Dried leaves have been smoked to relieve asthma or as a tobacco substitute. Packages of dried, pulverized leaves are sold by "health food" stores for making tea, despite the fact that the leaf decoction is administered as a purgative for horses in Ghana and in the Ivory Coast it is a treatment for genito-urinary ailments. The dried leaf infusion is taken for stomach troubles in Ghana and they say it is purgative and may cause abortion.

Studies at the University of Nigeria have revealed that extracts of ripe and unripe papaya fruits and of the seeds are active against gram-positive bacteria. Strong doses are effective against gram-negative bacteria. The substance has protein-like properties. The fresh crushed seeds yield the aglycone of glucotropaeolin benzyl isothiocyanate (BITC) which is bacteriostatic, bactericidal and fungicidal. A single effective dose is 4-5 g seeds (25-30 mg BITC).

In a London hospital in 1977, a post-operative infection in a kidney-transplant patient was cured by strips of papaya which were laid on the wound and left for 48 hours, after all modern medications had failed.

Plant extracts with a high content of proteolytic enzymes have been used for a long time in traditional medicine. Besides proteolytic enzymes from plants, 'modern' enzyme therapy additionally includes pancreatic enzymes. The therapeutic use of proteolytic enzymes is partly based on scientific studies and is partly empirical. The aim of the current review is to provide an overview of clinical trials of systemic enzyme therapy in oncology, and to discuss the evidence for their possible mechanisms of action. Clinical studies of the use of proteolytic enzymes in oncology have mostly been carried out on an enzyme preparation consisting of a combination of papain, trypsin and chymotrypsin. This review of these studies showed that enzyme therapy can reduce the adverse effects caused by radiotherapy and chemotherapy. There is also evidence that, in some types of tumours, survival may be prolonged. The

beneficial effect of systemic enzyme therapy seems to be based on its anti-inflammatory potential. However, the precise mechanism of action of systemic enzyme therapy remains unsolved. The ratio of proteinases to antiproteinases, which is increasingly being used as a prognostic marker in oncology, appears to be influenced by the oral administration of proteolytic enzymes, probably via an induction of the synthesis of antiproteinases. Furthermore, there are numerous alterations of cytokine composition during therapy with orally administered enzymes, which might be an indication of the efficacy of enzyme therapy.

Passiflora incarnata

Other Common Names: Carkifelek, Charkhi Felek, Granadilla, Maypop, Maypop Passionflower, Purple Passion-flower, Saa'T Gulu, Ward Assa'Ah, Zahril Aalaam, Passiflora incarnata

Range: Eastern N. America - Virginia and Kentucky, south to Florida and Texas.

Habitat: Sandy thickets and open soils. Fields, roadsides, fence rows and thickets.

The Passion Flowers are so named from the supposed resemblance of the finely-cut corona in the centre of the blossoms to the Crown of Thorns and of the other parts of the flower to the instruments of the Passion of Our Lord. *Passiflora incarnata* has a perennial root, and the herbaceous shoots bear three-lobed, finelyserrated leaves and flesh-colored or yellowish, sweet-scented flowers, tinged with purple. The ripe, orange-colored, ovoid, many-seeded berry is about the size of a small apple; when dried, it is shrivelled and greenish-yellow. The yellow pulp is sweet and edible.

Many species yield edible fruits or are cultivated for their beauty and fragrance. There appears to be no detailed analysis of this species, but its active principle, which has been called Passiflorine, would appear to be somewhat similar to morphine.

P. quadrangularis, the Common Granadilla, a native of Jamaica and South America grown for its large edible fruit, the purple, succulent pulp of which is eaten with wine and sugar, has a root said to be very poisonous and a powerful narcotic; in small doses it is anthelmintic. It is used in Mauritius as a diuretic and emetic.

Passion flower is a valuable sedative and tranquilizing herb with a long history of use in North America. It is frequently used in the treatment of insomnia, epilepsy, hysteria etc.

The leaves and stems are antispasmodic, astringent, diaphoretic, hypnotic, narcotic, sedative, vasodilator and are also used in the treatment of women's complaints. The plant is harvested after some of the berries have matured and is then dried for later use. It is used in the treatment of insomnia, nervous tension, irritability, neuralgia, irritable bowel syndrome, premenstrual tension and vaginal discharges. An extract of the plant depresses the motor nerves of the spinal cord, it is also slightly sedative, slightly reduces blood pressure and increases respiratory rate. The plant contains alkaloids and flavonoids that are an effective non-addictive sedative that does not cause drowsiness. The plant is not recommended for use during pregnancy.

A poultice of the roots is applied to boils, cuts, earaches, inflammation etc.

The dried plant is exported from America to Europe for medicinal usage.

A homeopathic remedy is made from the plant.

Fruit - raw or cooked in jellies, jams etc. A sweet flavor, it is best when used as a jelly. High in niacin. Fairly large, the fruit is up to 5cm in diameter though it contains relatively little edible pulp and a lot of seeds.

Peppermint - *Mentha x piperita vulgaris*

Other Common Names: Candy mint, Mentha Piperita, Mentha x piperita vulgaris

Range: throughout Europe, USA, almost everywhere.

Habitat: A natural hybrid, found in moist soils in ditches, waste places etc. In America it is probably even more common as an escape than Spearmint, having long been known and grown in gardens.

Pliny tells us that the Greeks and Romans crowned themselves with Peppermint at their feasts and adorned their tables with its sprays, and that their cooks flavored both their sauces and their wines with its essence. Two species of mint were used by the ancient Greek physicians, but some writers doubt whether either was the modern Peppermint, though there is evidence that *M. piperita* was cultivated by the Egyptians. It is mentioned in the Icelandic Pharmacopoeias of the thirteenth century, but only came into general use in the medicine of Western Europe about the middle of the eighteenth century, and then was first used in England.

It was only recognized as a distinct species late in the seventeenth century, when the great botanist, Ray, published it in the second edition of his *Synopsis stirpium britannicorum*, 1696. Its medicinal properties were speedily recognized, and it was admitted into the London Pharmacopoeia in 1721, under *M. piperitis* sapore. The oldest existing Peppermint district is in the neighbourhood of Mitcham, in Surrey, where its cultivation from a commercial point of view dates from about 1750, at which period only a few acres of ground there were devoted to medicinal plants. At the end of the eighteenth century, above 100 acres were cropped with Peppermint, but so late as 1805 there were no stills at Mitcham, and the herb had to be carried to London for the extraction of the oil.

Peppermint oil distilled in 1914 from Mitcham plants grown at Molo, in the highlands of British East Africa, possesses a most excellent aroma, quite free of bitterness, and a very high figure indeed for the menthol contained, and there is no question that this source of supply should be an important one in the future.

The United States, however, are now the most important producers of Peppermint oil, producing - mostly in Michigan, where its cultivation was introduced in 1855, Indiana, the western districts of New York State, and to a smaller extent in Ohio - rather under half of the world's total output of the oil. The whole of the Peppermint cultivation is confined to the north-east portion of the United States, and the extreme south of Canada, where some is grown in the province of Ontario. The first small distillery was erected in Wayne County, New York State, in the early part of last century, and at the present day the industry has increased to such an extent, that there are portions of Michigan where thousands of acres are planted with nothing else but Peppermint.

English oil is incomparably the best, but it fetches a very high price, and the French oil, though much inferior, is of finer quality than the American.

There are several varieties of Peppermint. The two chief, the so-called 'Black' and 'White' mints are the ones extensively cultivated. Botanically there is little difference between them, but the stems and leaves of the 'Black' mint are tinged purplish-brown, while the stems of the 'White' variety are green, and the leaves are more coarsely serrated in the White. The oil furnished by the Black is of inferior quality, but more abundant than that obtained from the White, the yield of oil from which is generally only about four-fifths of that from an equal area of the Black, but it has a more delicate odour and obtains a higher price. The plant is also more delicate, being easily destroyed by frost or drought; it is principally grown for drying in bundles - technically termed 'bunching,' and is the kind chiefly dried for herbalists, the Black variety being more generally grown for the oil on account of its greater productivity and hardiness.

Black peppermint is a very important and commonly used herbal remedy, being employed by allopathic doctors as well as herbalists. It is also widely used as a domestic remedy. This cultivar is considered to be stronger acting than white peppermint (*Mentha x piperita officinalis*). A tea made from the leaves has traditionally been used in the treatment of fevers, headaches, digestive disorders (especially flatulence) and various minor ailments.

Peppermint leaves contain about 0.5-4% volatile oil that is composed of 50-78% free menthol and 5-20% menthol combined with other constituents.

The herb is abortifacient, anodyne, antiseptic, antispasmodic, carminative, cholagogue, diaphoretic, refrigerant, stomachic, tonic and vasodilator. An infusion is used in the treatment of irritable bowel syndrome, digestive problems, spastic colon etc. Externally a lotion is applied to the skin to relieve pain and reduce sensitivity. The leaves and stems can be used fresh or dried, they are harvested for drying in August as the flowers start to open.

The essential oil in the leaves is antiseptic and strongly antibacterial, though it is toxic in large doses. When diluted it can be used as an inhalant and chest rub for respiratory infections.

The essential oil is used in aromatherapy. Its keyword is 'Cooling'.

Leaves - raw or cooked. A strong peppermint flavor, they are used as a flavoring in salads or cooked foods. This plant should not be used by pregnant women, see the notes on toxicity.

An essential oil from the leaves and flowers is used as a flavoring in sweets/candies, chewing gum, ice cream etc.

A herb tea is made from the fresh or dried leaves.

An essential oil is obtained from the whole plant. It is used medicinally and as a food flavoring. It is also an ingredient of oral hygiene preparations, toiletries etc.

Rats and mice intensely dislike the smell of mint. The plant was therefore used in homes as a strewing herb and has also been spread in granaries to keep the rodents off the grain.

The flowers are very attractive to bees and butterflies. A good companion for growing near cabbages and tomatoes, helping to keep them free of other insect pests.

Known Hazards:: In large quantities this plant, especially in the form of the extracted essential oil, can cause abortions so should not be used by pregnant women. It should be avoided by persons with chronic heartburn. Peppermint tea should be used with caution in infants and young children as they may choke in reaction to the strong menthol.

Psyllium, Plantago ovata, Plantago ispaghula

Other Common Names: Isphagula, Psyllium, Plantago ovata, Plantago ispaghula

Range: Europe - S. Mediterranean to E. Asia - India, Iraq.

Habitat: Dry open places.

Psyllium has been used as a safe and effective laxative for thousands of years in Western herbal medicine.

Both the dried seeds and the seed husks are demulcent, emollient and laxative. They are used in the treatment of dysentery, catarrhal conditions of the genito-urinary tract, inflamed membranes of the intestinal canal etc.

The seeds have a mucilaginous coat and swell to several times their volume when in water. The seeds and the husks contain high levels of fiber, they expand and become highly gelatinous when soaked in water. By maintaining a high water content within the large bowel they increase the bulk of the stool, easing its passage. They are used as a demulcent and as a bulk laxative in the treatment of constipation, dysentery and other intestinal complaints, having a soothing and regulatory effect upon the system. Their regulatory effect on the digestive system means that they can also be used in the treatment of diarrhea and by helping to soften the stool they reduce the irritation of hemorrhoids.

The jelly-like mucilage produced when psyllium is soaked in water has the ability to absorb toxins within the large bowel. Thus it helps to remove toxins from the body and can be used to reduce auto-toxicity.

The oil in the seed embryo contains 50% linoleic acid and has been used as a preventative of atherosclerosis. It is also effective in reducing cholesterol levels in the blood.

The mucilage contained in the seedcoat is used as a stabilizer in ice cream, chocolate etc.

African Prune, *Pygeum africanum*

Other Common Names: African Prune, *Pygeum africanum*

Pygeum is an evergreen tree found in the higher elevations of central and southern Africa. Its bark, once used as a tea for relief of urinary disorders, has been found to contain not one, but three types of compounds that relieve the symptoms of prostate enlargement BPH (benign prostatic hyperplasia).

Beta-sitosterol, the most important of the three, interferes with the formation of prostaglandins that cause inflammation and swelling in the prostate. Pentacyclic terpenes also reduce swelling. And ferulic esters combat enlargement by reducing levels of prolactin, a hormone which promotes uptake of growth-promoting testosterone in the prostate.

European scientists were so impressed with reports of *pygeum*'s actions that they began laboratory investigations into the active constituents in the bark. This led to the development of the modern lipophilic (fat soluble) extract used today.

Pygeum africanum extract is available as Tadenan in many countries, including those in central and eastern Europe, for the treatment of mild to moderate BPH. Its efficacy and acceptability have been demonstrated in numerous open and placebo-controlled studies in large populations. The present open three-centre efficacy and safety study was conducted according to common protocol at urology clinics in the Czech and Slovak Republics and in Poland, in order to confirm the therapeutic profile of *Pygeum africanum* in conditions of daily practice, using International Prostate Symptom Score (IPSS) and flowmetry assessments. The changes in subjective scores, IPSS and QoL (quality of life) after the two-month treatment period were highly statistically significant with mean improvements of 40% and 31%, respectively. Nocturnal frequency was reduced by 32% and the mean reduction was again highly statistically significant. Mean maximum urinary flow, average urinary flow and urine volume were also statistically significantly improved, but the modest improvement in post-voiding volume did not reach statistical significance. The improvements, which exceeded those observed with placebo in earlier studies, were maintained after one month without treatment indicating an interesting persistence of clinically useful activity. Prostatic volume and quality of sexual life remained unchanged throughout. No treatment-related adverse effects were observed. In conclusion, under conditions of daily practice, *Pygeum africanum* extract induces significant improvement in IPSS and uroflowmetry parameters. These positive effects are accompanied by a very satisfactory safety profile with the overall result of a substantial improvement in QoL.

acceptability of tadenan (Pygeum africanum extract) in the treatment of benign prostatic hyperplasia (BPH): a multicentre trial in central Europe. Department of Urology, University Hospital, Bratislava, Slovak Republic.

Sweet Annie - Wormwood, *Artemisia annua*

Other Common Names: Annual Wormwood, Ch'Ou Hao, Huang Hua Hao, Kuso-Ninjin, Qing-guo, Qing Hao, Sweet Sagewort, Sweet Wormwood, Ts'Ao Hao, Wormwood, *Artemisia annua*

Range: S. E. Europe to W. Asia. E. North America

Habitat: A naturalized weed of waste places, roadsides, fallow fields and neglected gardens in eastern N. America. Plants are longer lived, more hardy and more aromatic when they are grown in a poor dry soil.

Qing Ho, better known in the West as sweet wormwood, is a traditional Chinese herbal medicine. An aromatic anti-bacterial plant, recent research has shown that it destroys malarial parasites, lowers fevers and checks bleeding. It is often used in the Tropics as an affordable and effective anti-malarial.

The leaves are antiperiodic, antiseptic, digestive, febrifuge. An infusion of the leaves is used internally to treat fevers, colds, diarrhea etc. Externally, the leaves are poulticed onto nose bleeds, boils and abscesses. The leaves are harvested in the summer, before the plant comes into flower, and are dried for later use.

The plant contains artemisinin, this substance has proved to be a dramatically effective anti-malarial. Artemisinin is the antimalarial substance isolated in China in 1972 from a shrub (*Artemisia annua*) used in traditional Chinese medicine from which qinghaosu is derived. Clinical trials have shown it to be 90% effective and more successful than standard drugs. In a trial of 2000 patients, all were cured of the disease.

Artemisinin and its derivatives are a group of fast acting and life-saving drugs, produced mainly in China and Viet Nam. Their widespread and irrational use, especially underdosing and poor quality formulations, accelerates parasite resistance. These drugs should be reserved for treating multidrug-resistant malaria. However, unregulated commercial vendors sell these drugs in Cambodia and neighbouring countries.

Artemisinin and its derivatives have an essential role to play in the treatment of multidrug-resistant falciparum malaria. The remarkable properties of these drugs are particularly valuable in the treatment of severe and complicated malaria caused by multidrug-resistant *P. falciparum*. These drugs have been widely used in China and Viet Nam and have been recently registered in many other countries outside the Western Pacific Region. Malaria mortality in Viet Nam dropped by 92% when these drugs were used on a nationwide basis from 1992 to 1996.

From the early 1990s, economic recovery made it possible to increase allocations to malaria control. Collaboration between industry and researchers led to the local production of artemisinin and related

drugs for treatment of severe and multidrug-resistant malaria. The artemisinin drugs (used for centuries in traditional Chinese and Vietnamese medicine) had been rediscovered by Chinese scientists in the 1970s. In Viet Nam, the introduction of these rapidly acting antimalarial drugs in the general health services has helped to reduce the number of severe cases and malaria mortality.

The seeds are used in the treatment of flatulence, indigestion and night sweats.

The plant is used in China as a medium for growing *Aspergillus* which is used in brewing wine.

Common Red Raspberry - *Rubus idaeus*

Other Common Names: Ahududu, American Red Raspberry, Common Red Raspberry, European Red Raspberry, Framboises, Frambosia, Frambueso, Wild Raspberry, *Rubus idaeus*

Range: Europe; France; Haiti; Spain; Turkey; USA

Habitat: Moist neglected land, hedgerows and woodland edges. Prefers a good deep well-drained loamy soil on the acid side.

The Raspberry grows wild as far north as lat. 70 degrees, and southward it appears to have been abundant on Mount Ida, in Asia Minor, lat. 39 degrees 40'. It was known to the Ancients, and Linnaeus retained the classic name of Ida, with which it was associated by Dioscorides. It was called in Greek Batos Idaia, and in Latin *Rubus Idaea*, the Bramble of Mount Ida. Gerard calls it Raspis or Hindberry, and Hindberry is a derivation of the Saxon name Hindbeer.

The Raspberry contains a crystallizable fruit-sugar, a fragrant volatile oil, pectin, citric and malic acids, mineral salts, colouring matter and water. The ripe fruit is fragrant, subacid and cooling: it allays heat and thirst, and is not liable to acetous fermentation in the stomach.

Antiemetic. The leaves and roots are anti-inflammatory, astringent, decongestant, ophthalmic, oxytotoxic and stimulant. A tea made from them is used in the treatment of diarrhea, as a tonic for the uterus to strengthen pregnant women, and as an aid in childbirth. The tea has also been shown as effective in relieving painful menstrual cramps. The active ingredients both stimulate and relax the uterus. They can be used during the last three months of pregnancy and during childbirth, but should not be used earlier.

Externally, the leaves and roots are used as a gargle to treat tonsillitis and mouth inflammations, as a poultice and wash to treat sores, conjunctivitis, minor wounds, burns and varicose ulcers. The leaves are harvested in the summer and dried for later use.

The fruit is antiscorbutic and diuretic. Fresh raspberry juice, mixed with a little honey, makes an excellent refrigerant beverage to be taken in the heat of a fever. Made into a syrup, it is said to have a beneficial effect on the heart.

A home-made wine, brewed from the fermented juice of ripe Raspberries, is antiscrofulous, and Raspberry syrup dissolves the tartar of the teeth.

Fruit - raw or cooked. Delicious when eaten out of hand, the fruit is also used in pies, preserves etc. A decongestant face-mask made from the fruit is used cosmetically to soothe reddened skin.

Rosemary - Rosmarinus officinalis

Other Common Names: Anthos, Biberiye, Compass-weed, Dew Of The Sea, Mannen-Ro, Polar Plant, Romarin, Romero, Romero Comun, Rosmarinus officinalis

Range: S. Europe to W. Asia.

Habitat: Dry scrub and rocky places, especially near the sea. Prefers a hot sunny position and a slightly alkaline light dry soil.

The Ancients were well acquainted with the shrub, which had a reputation for strengthening the memory. On this account it became the emblem of fidelity for lovers. It holds a special position among herbs from the symbolism attached to it. Not only was it used at weddings, but also at funerals, for decking churches and banqueting halls at festivals, as incense in religious ceremonies, and in magical spells.

The Spaniards revere it as one of the bushes that gave shelter to the Virgin Mary in the flight into Egypt and call it Romero, the Pilgrim's Flower. Both in Spain and Italy, it has been considered a safeguard from witches and evil influences generally. The Sicilians believe that young fairies, taking the form of snakes, lie amongst the branches.

It was an old custom to burn Rosemary in sick chambers, and in French hospitals it is customary to burn Rosemary with Juniper berries to purify the air and prevent infection. Like Rue, it was placed in the dock of courts of justice, as a preventative from the contagion of gaol-fever.

From the Grete Herbal:

'ROSEMARY. - For weyknesse of ye brayne. Against weyknesse of the brayne and coldenesse thereof, sethe rosemaria in wyne and lete the pacyent receye the smoke at his nose and keep his heed warme.'

Rosemary is commonly grown in the herb garden as a domestic remedy, used especially as a tonic and pick-me-up when feeling depressed, mentally tired, nervous etc. Research has shown that the plant is rich in volatile oils, flavanoids and phenolic acids, which are strongly antiseptic and anti-inflammatory. Rosmarinic acid has potential in the treatment of toxic shock syndrome, whilst the flavanoid diosmin is reputedly more effective than rutin in reducing capillary fragility.

Rosmarol, an extract from the leaves, has shown remarkably high antioxidant activity. The whole plant is antiseptic, antispasmodic, aromatic, astringent, cardiac, carminative, cholagogue, diaphoretic, emmenagogue, nervine, stimulant, stomachic and tonic. An infusion of the flowering stems made in a closed container to prevent the steam from escaping is effective in treating headaches, colic, colds and nervous diseases. A distilled water from the flowers is used as an eyewash. The leaves can be harvested

in the spring or summer and used fresh, they can also be dried for later use. This remedy should not be prescribed for pregnant women since in excess it can cause an abortion.

Rosemary Wine when taken in small quantities acts as a quieting cordial to a weak heart subject to palpitation, and relieves accompanying dropsy by stimulating the kidneys. It is made by chopping up sprigs of green Rosemary and pouring on them white wine, which is strained off after a few days and is then ready for use. By stimulating the brain and nervous system, it is a good remedy for headaches caused by feeble circulation.

An essential oil distilled from the stems and leaves is often used medicinally, that distilled from the flowering tops is superior but not often available. The oil is applied externally as a rubefacient, added to liniments, rubbed into the temples to treat headaches and used internally as a stomachic and nervine.

The essential oil is used in aromatherapy. Its keyword is 'Stimulant'

Young shoots, leaves and flowers - raw or cooked. The leaves have a very strong flavor that is bitter and somewhat resinous, the flowers are somewhat milder. They are used in small quantities as a flavoring in soups and stews, with vegetables such as peas and spinach, and with sweet dishes such as biscuits cakes, jams and jellies. They can be used fresh or dried. The leaves have a tough texture and so should either be used very finely chopped, or in sprigs that can be removed after cooking.

The growing plant is said to repel insects from neighbouring plants. Branches or sachets of the leaves are often placed in clothes cupboards to keep moths away.

An infusion of the dried plant (both leaves and flowers) is used in shampoos. When combined with borax and used cold, it is one of the best hair washes known and is effective against dandruff and effect in stimulating the hair-bulbs to renewed activity and preventing premature baldness.

Rosemary is also one of the ingredients used in the preparation of Eau-de-Cologne.

The leaves are burnt as an incense, fumigant and disinfectant.

Yellow dock - *Rumex crispus*

Other Common Names: Chin Ch'Iao Mai, Curled Dock, Curly Dock, Hualtata, Hummaidh, Kivircik Labada, Niu She T'Ou, Oseille Marron, Oseille Sauvage, Surale Di Bierdji, *Rumex crispus*

Range: Belgium; Brazil; Chile; China; Europe; Haiti; Iraq; Turkey; USA

Habitat: Growing almost anywhere, it is found especially in grassy places, waste ground, roadsides and near sand dunes and is a serious weed of agriculture. Succeeds in most soils, preferring a moist moderately fertile well-drained soil in a sunny position.

Composition: Leaves (Fresh weight) - Water: 92.6 Calories: 21 Protein: 1.5 Fat: 0.3 Carbohydrate: 4.1 Fiber: 0.9 Ash: 1.5 Calcium: 74 Phosphorus: 56 Iron: 5.6 Vitamin A: 1.38 Thiamine: 0.06 Riboflavin: 0.08 Niacin: 0.4 Vitamin C: 30

Note: The figure for vitamin A is in milligrammes.

The name Dock is applied to a widespread tribe of broad-leaved wayside weeds, having roots possessing astringent qualities united in some with a cathartic principle, rendering them valuable as substitutes for Rhubarb, a plant of the same family.

Although now, in common with the Sorrels, assigned to the genus *Rumex*, the Docks were formerly ranked as members of the genus *Lapathum*, this name being derived from the Greek word, lapazein (to cleanse), an allusion to the medicinal virtues of these plants as purgatives, the word still surviving in the name of one of the species, *Rumex Hydrolapathum*.

Yellow dock has a long history of domestic herbal use. It is a gentle and safe laxative, less powerful than rhubarb in its action so it is particularly useful in the treatment of mild constipation. The plant has valuable cleansing properties and is useful for treating a wide range of skin problems. All parts of the plant can be used, though the root is most active medicinally.

The root is alterative, antiscorbutic, astringent, cholagogue, depurative, laxative and mildly tonic. It used to be sold as a tonic and laxative. It can cause or relieve diarrhea according to the dose, harvest time and relative concentrations of tannin (astringent) and anthraquinones (laxative) that are present. It is used internally in the treatment of constipation, diarrhea, piles, bleeding of the lungs, various blood complaints and also chronic skin diseases. Externally, the root can be mashed and used as a poultice and salve, or dried and used as a dusting powder, on sores, ulcers, wounds and various other skin problems.

The root has been used with positive effect to restrain the inroads made by cancer, being used as an

alterative and tonic. The root is harvested in early spring and dried for later use. Some caution is advised in its use since excess doses can cause gastric disturbance, nausea and dermatitis.

The seed is used in the treatment of diarrhea.

A homeopathic remedy is made from the fresh root, harvested in the autumn before frost has touched the plant. It is only used in the treatment of a specific type of cough.

Leaves - raw or cooked. They can also be dried for later use. The leaves can be added to salads, cooked as a potherb or added to soups. Only the very young leaves should be used, preferably before the stems have developed, and even these are likely to be bitter. If used in early spring and in the autumn they can often be fairly pleasant tasting. The leaves are very rich in vitamins and minerals, especially iron and the vitamins A and C. A nutritional analysis is available.

Known Hazards: Plants can contain quite high levels of oxalic acid, which is what gives the leaves of many members of this genus an acid-lemon flavor. Perfectly alright in small quantities, the leaves should not be eaten in large amounts since the oxalic acid can lock-up other nutrients in the food, especially calcium, thus causing mineral deficiencies. The oxalic acid content will be reduced if the plant is cooked. People with a tendency to rheumatism, arthritis, gout, kidney stones or hyperacidity should take special caution if including this plant in their diet since it can aggravate their condition.

Saw palmetto - *Sabal serrulata*

Other Common Names: Sabal, *Serenoa repens*, *Sabal serrulata*

Range: Southeastern N. America - South Carolina to Florida, west to Arkansas.

Habitat: Low pine woods, savannas and thickets, where it often forms substantial thickets. Also found on coastal sand dunes.

Saw palmetto, a member of the palm family *Arecaceae*, is native to the West Indies and the Atlantic Coast of North America, from South Carolina to Florida. Saw palmetto berries contain sterols and lipids, including relatively high concentrations of free and bound sitosterols. The following chemicals have been identified in the berries: anthranilic acid, capric acid, caproic acid, caprylic acid, -carotene, ferulic acid, mannitol, beta-sitosterol, beta-sitosterol-D-glucoside, linoleic acid, myristic acid, oleic acid, palmitic acid, 1-monolaurin and 1-monomyrustin. A number of other common plants (e.g., basil, corn, soybean) also contain beta-sitosterol. Saw palmetto extract has become the sixth best-selling herbal dietary supplement in the United States. In Europe, several pharmaceutical companies sell saw palmetto-based over-the-counter (OTC) drugs for treating benign prostatic hyperplasia (BPH). Additional pharmaceutical preparations that contain saw palmetto extract as an ingredient have been patented as hair lotions for the treatment of seborrhea and hair loss, capsules for the treatment of hair loss, and lotions/ointments for the treatment of acne. Beta-sitosterol is available as a cholesterol-lowering drug, and is an ingredient in some contraceptive drugs.

Plantation Medicinals (the largest U.S. producer) harvests about 5,000 tons of saw palmetto berries per year in Hendry County, Florida. The second largest producer of the berries is Wilcox Natural Products in Boone, North Carolina. The export of saw palmetto berries from Florida has become a \$50 million dollar a year industry, with about 2,000 tons of the berries exported to Europe each year. No production and import volumes were found for sitosterol.

Historically, American Indians used the berries for food. Since 1994 when federal dietary supplement laws were relaxed, the most common use of the berries by Americans is as an herbal health remedy. The berries have been used for treating stomach ache, bronchitis, diabetes, cancer, and cystitis; they have also been used as a diuretic, aphrodisiac, and for breast enlargement. Saw palmetto berries are claimed to relieve irritated throat and symptoms of the common cold. The dried berries have been used as a menstrual drug product. Saw palmetto berry extracts have been reported to be effective in the treatment of BPH. However, significant inhibition of prostate growth has not been demonstrated, and a critical analysis of data on the effects of phytotherapy (including saw palmetto berry extracts) in BPH treatment suggested that the effects were no better than placebo treatment.

Saw palmetto extract is not recognized as safe and effective by the U.S. Food and Drug Administration

(FDA) and is misbranded when labeled as an OTC drug for use as an orally administered menstrual drug product. In the U.S., saw palmetto extract may not be sold or labeled as therapeutic support for the prostate gland or reproductive organs.

Saw palmetto berries are a tonic herb that is used in the treatment of debility, urinary tract problems and for reducing enlarged prostate glands.

The partially dried ripe fruit is aphrodisiac, urinary antiseptic, diuretic, expectorant, sedative and tonic. It is taken internally in the treatment of impotence, debility in elderly men, prostate enlargement and inflammation, bronchial complaints associated with coldness, and wasting diseases. Saw palmetto is one of the few Western herbs that are considered to be anabolic (strengthening and building body tissue and encouraging weight gain). The fruit pulp, or a tincture, is given to those suffering from wasting disease, general debility and failure to thrive. The fruit also has a beneficial effect on the urinary system, helping to reduce the size of an enlarged prostate gland and strengthening the neck of the bladder. The fruit has a probable oestrogenic action, it is prescribed in the treatment of impotence, reduced or absent sex drive and testicular atrophy in men and to stimulate breast enlargement in women. The fruit is also used in the treatment of colds, coughs, irritated mucous membranes, asthma etc.

A suppository of the powdered fruits, in cocoa butter, has been used as a uterine and vaginal tonic.

Fruit - raw or cooked. A sweet flavour but with a soapy taste and a strong vanilla-like aroma. Regular consumption of the fruit is supposed to be very beneficial to the health, improving the digestion and helping to increase weight and strength.

Known Hazards: In rare cases, the consumption of saw palmetto berries may cause stomach problems, while large amounts might cause diarrhea. Only minor side effects were reported in studies of BPH patients ingesting saw palmetto extract: half of the side-effect symptoms were gastrointestinal. When phytosterols (including beta-sitosterol) were taken orally to lower plasma cholesterol levels, no obvious side effects were noted.

Acute toxicity data for saw palmetto extract were not found; the acute toxicity for beta-sitosterol administered intraperitoneal (i.p.) to mice is >3000 mg/kg (>7.23 mmol/kg).

Sage - *Salvia officinalis*

Other Common Names: Broadleaf Sage, Common Sage, Dalmatian Sage, Garden Sage, Kitchen Sage, Salvia, Sarubia, Tibbi Adacayi, *Salvia officinalis*

Range: Britain; Europe; Spain; Turkey; USA

Habitat: Dry banks and stony places, usually in limestone areas and often where there is very little soil. Requires a very well-drained light sandy soil in a sunny position.

The name of the genus, *Salvia*, is derived from the Latin *salvere*, to be saved, in reference to the curative properties of the plant, which was in olden times celebrated as a medicinal herb. This name was corrupted popularly to *Sauja* and *Sauge* (the French form), in Old English, 'Sawge,' which has become our present-day name of Sage.

In the United States Pharmacopoeia, the leaves are still officially prescribed, as they were formerly in the London Pharmacopoeia, but in Europe generally, Sage is now neglected by the regular medical practitioner, though is still used in domestic medicine. Among the Ancients and throughout the Middle Ages it was in high repute.

Many kinds of Sage have been used as substitutes for tea, the Chinese having been said to prefer Sage Tea to their own native product, at one time bartering for it with the Dutch and giving thrice the quantity of their choicest tea in exchange. It is recorded that George Whitfield, when at Oxford in 1733, lived wholesomely, if sparingly, on a diet of Sage Tea, sugar and coarse bread. Balsamic Sage, *S. grandiflora*, a broad-leaved Sage with many-flowered whorls of blossoms, used to be preferred to all others for making tea.

Sage has a very long history of effective medicinal use and is an important domestic herbal remedy for disorders of the digestive system. Its antiseptic qualities make it an effective gargle for the mouth where it can heal sore throats, ulcers etc. The leaves applied to an aching tooth will often relieve the pain.

The whole herb is antihydrotic, antiseptic, antispasmodic, astringent, carminative, cholagogue, galactofuge, stimulant, tonic and vasodilator. Sage is also used internally in the treatment of excessive lactation, night sweats, excessive salivation (as in Parkinson's disease), profuse perspiration (as in TB), anxiety, depression, female sterility and menopausal problems. Many herbalists believe that the purple-leaved forms of this species are more potent medicinally. This remedy should not be prescribed to pregnant women or to people who have epileptic fits. The plant is toxic in excess or when taken for extended periods - though the toxic dose is very large. Externally, it is used to treat insect bites, skin, throat, mouth and gum infections and vaginal discharge. The leaves are best harvested before the plant

comes into flower and are dried for later use.

Sage Tea or infusion of Sage is a valuable agent in the delirium of fevers and in the nervous excitement frequently accompanying brain and nervous diseases and has considerable reputation as a remedy, given in small and often-repeated doses. It is highly serviceable as a stimulant tonic in debility of the stomach and nervous system and weakness of digestion generally. It was for this reason that the Chinese valued it, giving it the preference to their own tea. It is considered a useful medicine in typhoid fever and beneficial in biliousness and liver complaints, kidney troubles, hemorrhage from the lungs or stomach, for colds in the head as well as sore throat and quinsy and measles, for pains in the joints, lethargy and palsy. It will check excessive perspiration in phthisis cases, and is useful as an emmenagogue. A cup of the strong infusion will be found good to relieve nervous headache.

The infusion made strong, without the lemons and sugar, is an excellent lotion for ulcers and to heal raw abrasions of the skin. It has also been popularly used as an application to the scalp, to darken the hair.

The essential oil from the plant is used in small doses to remove heavy collections of mucous from the respiratory organs and mixed in embrocations for treating rheumatism. In larger doses, however, it can cause epileptic fits, giddiness etc.

The essential oil is used in aromatherapy. Its keyword is 'Tonic'.

Leaves and flowers - raw or cooked. A very common herb, the strongly aromatic leaves are used as a flavoring in cooked foods. They are an aid to digestion and so are often used with heavy, oily foods. They impart a sausage-like flavor to savoury dishes. The young leaves and flowers can be eaten raw, boiled, pickled or used in sandwiches. The flowers can also be sprinkled on salads to add color and fragrance.

The leaves make excellent tooth cleaners, simply rub the top side of the leaf over the teeth and gums. The purple-leaved form of sage has tougher leaves and is better for cleaning the teeth. The leaves have antiseptic properties and can heal diseased gums.

Sandalwood - Santalum album

Other Common Names: Chandana (Oriya), Santalum album

Range: South-east Asia, India, Indonesia

Constituents: Sesquiterpenes; Sesquiterpenols: a and b-santalols (67%), Sesquiterpenals.

Sandalwood has long been used by man and it plays an important role as a ceremonial burning material during religious rites of Hindus, Buddhists, Parsis and Moslems in South-east Asia. The high value of the wood and the oil has led to a steady decline of native sandalwood trees and increasing efforts to establish plantations. Work is being undertaken in the Ord River Irrigation Area (ORIA) to grow sandalwood under irrigated plantation conditions.

Santalum album, a native of Indonesia, is the most valuable species, with the wood containing about 7% oil. It is currently being harvested from natural stands in Indonesia. Unfortunately, the resource is being rapidly depleted due to unsustainable harvesting.

Sandalwood oil was used traditionally to treat skin diseases, acne, dysentery, gonorrhea, and a number of other conditions. In traditional Chinese medicine, sandalwood oil is considered an excellent sedating agent.

Antiseptic, astringent, anti-inflammatory, mildly pain-relieving, stimulates cellular regeneration and assists in the healing of wounds and scars. Used to treat acne and wrinkles. Moisturizing, perfect for dry skin (but can be used for all skin types).

Similar to frankincense, this oil is supporting to the lymphatic, nervous and cardiovascular systems and relieves the symptoms of sciatica and lumbago.

The wood ground up with water into paste is commonly applied to local inflammations, to the temples in fevers, and in skin diseases, to allay heat and pruritus. It also acts as a diaphoretic. In case of morbid thirst the powder of the wood is recommended to be drunk in coconut water. It is popularly used to treat urethral hemorrhage and kidney afflictions. Externally the oil is an excellent application in scabies.

Used internally in chronic bronchitis, a few drops on sugar giving relief; also in gonorrhoea and gleet; in chronic cystitis, with benzoic and boric acids. Much used as a perfume for different purposes.

The wood is used for making fancy articles and is much carved.

As the world's native sandalwood resources decline, prices can be expected to rise substantially over time. While the commercial prospects appear very encouraging at this stage, much more research is required to establish viable production systems.

Sarsaparilla - *Smilax rotundifolia*, *Smilax ornata*

Other Common Names: Greenbriar, Round-leaf, Horsebrier, Mexican Sarsaparilla, Round-Leaf Sarsaparilla, *Smilax rotundifolia*, *Smilax ornata*

Range: Eastern N. America - Nova Scotia to Florida, west to Texas and Illinois, Central America, principally Costa Rica.

Habitat: Moist to dryish thickets and woods. Considered to be an obnoxious pest in America.

There are various species, all the Sarsaparillas have medicinal properties and can be used in the same way.

The Jamaica Sarsaparilla derived its name from being exported to Europe through Jamaica. The word Sarsaparilla comes from the Spanish Sarza, meaning a bramble, and parilla, a vine, in allusion to the thorny stems of the plant.

The name Smilax was used by the Greeks to denote a poisonous tree - others derive the name from Smile, i.e. a cutting or scratching implement, in allusion to the rough prickles on the stem.

In commerce the varieties of Sarsaparillas are grouped as mealy and non-mealy, according to the starch they contain. The farinaceous matter is found under the rind.

The mealy group include *Smilax officinalis*, Honduras, Caracas, Brazilian, Syphilitica and Papyraceae.

The non-mealy species are Jamaica Sarsaparilla, Mexican, Media and Lima.

The most esteemed varieties are Jamaica and Lima on account of their acrid taste.

The stem prickles have been rubbed on the skin as a counter-irritant to relieve localised pains, muscle cramps and twitching.

A tea made from the leaves and stems has been used in the treatment of rheumatism and stomach problems.

The parched and powdered leaves have been used as a dressing on burns and scalds. The wilted leaves have been used as a poultice on boils.

A tea made from the roots is used to help the expelling of afterbirth. Reports that the roots contain the hormone testosterone have not been confirmed, they might contain steroid precursors, however.

Jamaica Sarsaparilla was introduced in the middle of the sixteenth century as a remedy for syphilis, and later came to be used for other chronic diseases, specially rheumatism. It is a mild gastric irritant due to its saponin content. The smoke of Sarsaparilla was recommended for asthma. It is also very useful as a tonic, alterative, diaphoretic and diuretic. Its active principle is a crystalline body, Parillin or Smilacin.

Root - cooked. Rich in starch. The root can be dried and ground into a powder that is used in making cakes, puddings, sweet drinks etc, it can also be made into a jelly or eaten in soups.

A beer resembling root beer is made from the roots.

Schisandra chinensis

Other Common Names: Wu-wei-zi, Schisandra chinensis

Range: E. Asia - China, Japan, Korea.

Habitat: Mixed forests, especially on the margins, also by streams and brooks, usually on sandy soils.

Wu Wei Zi is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs. It is an excellent tonic and restorative, helping in stressful times and increasing zest for life. It is considered to be a substitute for ginseng and is said to be a tonic for both the male and the female sex organs.

The fruit is antitussive, aphrodisiac, hepatic, astringent, cardiogenic, cholagogue, expectorant, hypotensive, lenitive, nervine, pectoral, sedative, stimulant and tonic. Low doses of the fruit are said to stimulate the central nervous system whilst large doses depress it. The fruit also regulates the cardiovascular system. It is taken internally in the treatment of dry coughs, asthma, night sweats, urinary disorders, involuntary ejaculation, chronic diarrhea, palpitations, insomnia, poor memory, hyperacidity, hepatitis and diabetes. Externally, it is used to treat irritating and allergic skin conditions. The fruit is harvested after the first frosts and sun-dried for later use.

The fruit contains lignans. These have a pronounced protective action on the liver. In one clinical trial there was a 76% success rate in treating patients with hepatitis, no side effects were noticed.

The seed is used in the treatment of cancer.

The plant is antirheumatic. A mucilaginous decoction obtained from the branches is useful in the treatment of coughs, dysentery and gonorrhoea.

Fruit - raw or cooked. Usually dried and used on journeys, it is very sustaining. Rich in sugars, it has a sweet/sour flavor. In Russia a paste made from the fruit is mixed with *Actinidia arguta* in order to counteract the insufficient acidity of that species. The fruit is about 6mm in diameter and is borne in a grape-like bunch about 10cm long.

Young leaves - cooked and used as a vegetable.

Scullcap - *Scutellaria lateriflora*

Other Common Names: Blue Skullcap, Mad Dog Skullcap, Madweed, Virginian Skullcap, *Scutellaria lateriflora*

Range: N. America - Newfoundland to British Columbia, south to Florida and Ontario.

Habitat: Alluvial thickets, meadows and swampy woods.

The American species, Virginian Skullcap, flowering in July, with inconspicuous blue flowers in one-sided racemes, is one of the finest nervines ever discovered.

Popularly this plant is known in America as Mad-dog Skullcap or Madweed, having the reputation of being a certain cure for hydrophobia.

A commonly used herbal medicine, virginian skullcap is a very effective nervine that has traditionally been used in the treatment of a wide range of nervous conditions. Its tonic and restorative properties help to support and nourish the nervous system, calming and relieving stress and anxiety. Very little research has been carried out on this species, despite its long use in American and British herbal medicine. Research is sorely needed, and may reveal more uses for this valuable herb.

It is considered a specific for the convulsive twitchings of St. Vitus's dance, soothing the nervous excitement and inducing sleep when necessary, without any unpleasant symptoms following.

The leaves are antispasmodic, slightly astringent, diuretic, nervine, sedative and strongly tonic. They are harvested in early summer and dried for later use. It is used in the treatment of various problems of the nervous system including epilepsy, insomnia, anxiety, delerium tremens, withdrawal from barbiturates and tranquilisers, and neuralgia. An infusion of the plant has been used to promote suppressed menstruation, relieve breast pain and encourage expulsion of the placenta, it should not be given to pregnant women since it can induce a miscarriage. This plant should be used with some caution since in excess it causes giddiness, stupor, confusion and twitching.

The plant was once believed to be of use in the treatment of rabies, though there is no evidence to support this.

Senna, *Cassia angustifolia*, *Cassia Acutifolia*

Other Common Names: Alexandrian Senna, Nubian Senna, Cassia Senna, Cassia lenitiva, Cassia Lanceolata, Cassia officinalis, Cassia aethiopica, Senna acutifolia, Egyptian Senna, Sene de la palthe, Tinnevelly Senna, East Indian Senna, Cassia angustifolia, Cassia Acutifolia

Range: Egypt, Nubia, Arabia, Sennar

Several species of Cassia contribute to the drug of commerce, and were comprised in a single species by Linnaeus under the name of Cassia Senna. Since his day, the subject has been more fully investigated, and it is known that several countries utilize the leaves of their own indigenous varieties in the same way. The two most widely exported and officially recognized are *C. acutifolia* and *C. angustifolia* (India or Tinnevelly Senna).

Senna is an Arabian name, and the drug was first brought into use by the Arabian physicians Serapion and Mesue, and Achiarius was the first of the Greeks to notice it. He recommends not the leaves but the fruit, and Mesue also prefers the pods to the leaves, thinking them more powerful, though they are actually less so, but they do not cause griping.

The purgative constituents are closely allied to those of [Aloes](#) and Rhubarb, the activities of the drug being largely due to anthraquinone derivatives and their glucosides. It contains rhein, aloe-emedin, kaempferol, isormamnetin, both free and as glucosides together with myricyl alcohol, etc. The ash amounts to about 8 per cent, consisting chiefly of earthy and ashy carbonates.

The active purgative principle was discovered in 1866. It is a glucoside of weak acid character, and was named Cathartic Acid. By boiling its alcoholic solution with acids it yields Cathartogenic Acid and sugar. There were also found Chrysophanic Acid, Sennacrol and Sennapicrin, and a peculiar non-fermentable saccharine principle which was named Cathartomannite or Sennit.

Purgative. Its action being chiefly on the lower bowel, it is especially suitable in habitual costiveness. It increases the peristaltic movements of the colon by its local action upon the intestinal wall. Its active principle must pass out of the system in the secretions unaltered, for when Senna is taken by nurses, the suckling infant becomes purged. It acts neither as a sedative nor as a refrigerant, but has a slight, stimulating influence. In addition to the nauseating taste, it is apt to cause sickness, and griping pains, so that few can take it alone; but these characteristics can be overcome or removed, when it is well adapted for children, elderly persons, and delicate women. The coloring matter is absorbable, and twenty or thirty minutes after the ingestion of the drug it appears in the urine, and may be recognized by a red color on the addition of ammonia.

The addition of cloves, ginger, cinnamon, or other aromatics are excellent correctives of the nauseous effects. A teaspoonful of cream of tartar to a teacupful of the decoction of infusion of Senna, is a mild and pleasant cathartic, well suited for women if required soon after delivery. Some practitioners add neutral laxative salts, or saccharine and aromatic substances. The purgative effect is increased by the addition of pure bitters; the decoction of guaiacum is said to answer a similar purpose. Senna is contraindicated in an inflammatory condition of the alimentary canal, hemorrhoids, prolapsus, ani, etc. The well-known 'black draught' is a combination of Senna and [Gentian](#), with any aromatic, as cardamom or coriander seeds, or the rind of the Seville orange. The term 'black draught,' it is stated, should never be used, as mistakes have been made in reading the prescriptions, and 'black drop' or vinegar of opium has been given instead, several deaths having been caused in this way.

Senna pods, or the dried, ripe fruits, are official in the British Pharmacopoeia, though the quantity is restricted, as an adulterant, in the United States Pharmacopoeia.

They are milder in their effects than the leaflets, as the griping is largely due to the resin, and the pods contain none, but have about 25 per cent more cathartic acid and emodin than the leaves, without volatile oil. From 6 to 12 pods for the adult, or from 3 to 6 for the young or very aged, infused in a claret-glass of cold water, act mildly but thoroughly upon the whole intestine.

Owing to the high price, what is known as 'broken Senna' is found on the market and sold for the genuine article with government sanction in the United States of America. Also, 'Senna siftings,' containing sand and other foreign matter have been offered for sale, causing trouble to government inspectors.

Slippery elm - *Ulmus rubra*, *Ulmus fulva*

Other Common Names: Amerikan Karaagaci, Indian Elm, Moose Elm, Red Elm, Sweet Elm, *Ulmus rubra*, *Ulmus fulva*

Range: Central and Southern N. America - Maine to Florida, west to Texas and North Dakota.

Habitat: Rich deep soils, often calcareous, on the banks of streams and low rocky hillsides.

The inner bark has important medicinal value and is an official drug of the United States Pharmacopoeia.

The bark, which is the only part used, is collected in spring from the bole and larger branches and dried. Large quantities are collected, especially in the lower part of the state of Michigan. As the wood has no commercial value, the tree is fully stripped and consequently dies.

Slippery elm bark is a widely used herbal remedy and is considered to be one of the most valuable of remedies in herbal practice. In particular, it is a gentle and effective remedy for irritated states of the mucous membranes of the chest, urinary tubules, stomach and intestines. The inner bark contains large quantities of a sticky slime that can be dried to a powder or made into a liquid. The inner bark is harvested in the spring from the main trunk and from larger branches, it is then dried and powdered for use as required. Ten year old bark is said to be best. Fine grades of the powder are best for internal use, coarse grades are better suited to poultices. The plant is also part of a North American formula called *essiac* which is a popular treatment for cancer. Its effectiveness has never been reliably proven or disproven since controlled studies have not been carried out. The other herbs included in the formula are *Arctium lappa*, *Rumex acetosella* and *Rheum palmatum*.

The inner bark is demulcent, diuretic, emollient, expectorant, nutritive. It has a soothing and healing effect on all parts of the body that it comes into contact with and is used in the treatment of sore throats, indigestion, digestive irritation, stomach ulcers etc. It used to be frequently used as a food that was a nutritive tonic for the old, young and convalescents. It was also applied externally to fresh wounds, burns and scalds.

The bark has been used as an antioxidant to prevent fats going rancid. The whole bark, including the outer bark, has been used as a mechanical irritant to abort fetuses. Its use became so widespread that it is now banned in several countries.

Slippery Elm Food is generally made by mixing a teaspoonful of the powder into a thin and perfectly smooth paste with cold water and then pouring on a pint of boiling water, steadily stirring meanwhile. It can, if desired, be flavored with cinnamon, nutmeg or lemon rind.

This makes an excellent drink in cases of irritation of the mucous membrane of the stomach and intestines, and taken at night will induce sleep.

Taken unsweetened, three times a day, Elm Food gives excellent results in gastritis, gastric catarrh, mucous colitis and enteritis, being tolerated by the stomach when all other foods fail, and is of great value in bronchitis, bleeding from the lungs and consumption (being most healing to the lungs), soothing a cough and building up and preventing wasting.

Leaves - raw or cooked.

Inner bark - raw or cooked. It can be dried, ground into a powder and then used as a thickener in soups or added to cereal flours when making bread etc. It can also be chewed as a thirst quencher.

Immature fruit - raw or cooked. The fruit is about 20mm in diameter.

A tea-like beverage can be brewed from the inner bark.

Fremontia Californica, or Californian Slippery Elm, has bark with similar properties, and is used in the same way, but is not botanically related.

Sweetleaf - *Stevia rebaudiana*

Other Common Names: Candyleaf, Sugar Plant Of South America, Sweet Herb, Sweetleaf, *Stevia rebaudiana*

Range: S. America - Brazil, Paraguay

Habitat: Prefers a sandy soil, requiring a warm sunny position.

Stevia, a member of the *Chrysanthemum* family, is a plant native to Paraguay. It has been used by the Guarani Indians since ancient times. As a sugar substitute, it is available as a concentrated liquid, crushed leaf or concentrated white powder. The liquid and leaf forms have a slight herbal overtone, which reminds some of anise (licorice).

Dried leaves from this small shrub from the south of Brazil, have been used as a local sweetener and cure-all for generations. Used for centuries in parts of South America, *stevia* has been discovered in recent years by much of the calorie-conscious modern world. It is now widely-and legally-consumed by millions of people, from the plant's native Paraguay and Brazil to South Korea, Israel, and the People's Republic of China.

Stevia is a non-caloric natural-source alternative to artificially produced sugar substitutes. The sweet compounds pass through the digestive process without chemically breaking down, making *stevia* safe for those who need to control their blood sugar level. It is used in Japan as a noncaloric sweetener, but has not been approved for this use in the United States by the FDA. It has been approved by the FDA as a dietary supplement for nutritional benefits.

Stevia also has many therapeutic uses in other countries. In Brazil, it has been found to lower sugar levels in diabetics. In China, it is used to aid digestion, lose weight and even to stimulate the appetite.

Leaves - raw or cooked. A very sweet liquorice-like flavor. The leaves contain 'stevioside', a substance that is 300 times sweeter than sucrose. Other reports say that they contain 'estevin' a substance that, weight for weight, is 150 times sweeter than sugar. The dried leaves can be ground and used as a sweetener or soaked in water and the liquid used in making preserves. The powdered leaves are also added to herb teas. The leaves are sometimes chewed by those wishing to reduce their sugar intake. The leaves can also be cooked and eaten as a vegetable.

Known Hazards: The extract, stevioside, has reportedly been approved for use in foods in Brazil and Japan.

With regard to its use in foods, stevia is not an approved food additive nor affirmed as GRAS in the United States. Available toxicological information on stevia is inadequate to demonstrate its safety as a food additive or to affirm its status as GRAS. However, with regard to its use in dietary supplements, dietary ingredients, including stevia, are not subject to food additive regulations.

Sundew - *Drosera rotundifolia*

Other Common Names: Degirmi Sebnem, Drosera, Herba rosellae, Kimaheina, Mosen-Goke, Ringormgras, Ros Solis, Roundleaf Sundew, Red Rot, Sonnentheu rosollis, Rosée du Soleil, *Drosera rotundifolia*

Range: Britain, and in many parts of Europe, India, China, Cape of Good Hope, New Holland, North and South America, Russian Asia.

Habitat: Wet and moist places in poor peaty soils, occasionally forming a floating fringe on small ponds.

Insectivorous plant. After an insect has been caught, the glandular heads secrete a digestive fluid which dissolves all that can be absorbed from the insect. It has been noted that secretion does not take place when inorganic substances are imprisoned. The plant has become quite rare and so it should not be harvested from the wild.

The sundew has a long history of herbal use, having been popular for its fortifying and aphrodisiac effects. It relaxes the muscles of the respiratory tract, easing breathing and relieving wheezing and so is of great value in the treatment of various chest complaints. In America it has been advocated as a cure for old age; a vegetable extract is used together with colloidal silicates in cases of arteriosclerosis.

The flowering plant is antibacterial, antibiotic, antispasmodic, antitussive, demulcent, expectorant and hypoglycaemic. The plant is used with advantage in the treatment of whooping cough, exerting a peculiar action on the respiratory organs. It is also used in the treatment of incipient phthisis, chronic bronchitis and asthma. Externally, it has been used to treat corns, warts and bunions. The plant is harvested in the summer and can be dried for later use. Use with caution. Internal use of this herb causes a harmless coloring of the urine.

An extract of the plant contains plumbagin, which is antibiotic against a wide range of pathogens. Because of their protein digesting enzymes, the leaf juice has been used in the treatment of warts and corns.

The entire fresh plant, harvested when it is starting to flower, is used to make a homeopathic remedy. It is used mainly in the treatment of coughs and is specific for whooping cough.

The juice of the plant is used to curdle plant milks. You heat the milk and the leaves together in order to make the milk curdle.

Thyme - *Thymus vulgaris*

Other Common Names: Common Thyme, Du Thym, English Thyme, French Thyme, Garden Thyme, Kekik, Pile, Summer Thyme, Tati-Zyako-So, Thym Grandes Feuilles, Tomillo, Winter Thyme, Zombi Nan Bois, *Thymus vulgaris*

Range: S. Europe

Habitat: Dry slopes, rocks and maquis. Always found on clay or limestone soils.

Composition: Leaves (Dry weight) - Water: 7.8 Calories: 276 Protein: 9.1 Fat: 7.4 Carbohydrate: 63.9 Fiber: 18.6 Ash: 11.7 Calcium: 1890 Phosphorus: 201 Iron: 123.6 Magnesium: 220 Sodium: 55 Potassium: 814 Zinc: 6.2 Vitamin A: 3800 Thiamine: 0.51 Riboflavin: 0.4 Niacin: 4.94

The Garden Thyme is an 'improved' cultivated form of the Wild Thyme of the mountains of Spain and other European countries bordering on the Mediterranean, flourishing also in Asia Minor, Algeria and Tunis.

The name Thyme, in its Greek form, was first given to the plant by the Greeks as a derivative of a word which meant 'to fumigate,' either because they used it as incense, for its balsamic odour, or because it was taken as a type of all sweet-smelling herbs. Others derive the name from the Greek word thumus, signifying courage, the plant being held in ancient and mediaeval days to be a great source of invigoration, its cordial qualities inspiring courage. The antiseptic properties of Thyme were fully recognized in classic times, there being a reference in Virgil's Georgics to its use as a fumigator, and Pliny tells us that, when burnt, it puts to flight all venomous creatures. Lady Northcote (in *The Herb Garden*) says that among the Greeks, Thyme denoted graceful elegance; 'to smell of Thyme' was an expression of praise, applied to those whose style was admirable. It was an emblem of activity, bravery and energy, and in the days of chivalry it was the custom for ladies to embroider a bee hovering over a sprig of Thyme on the scarves they presented to their knights. In the south of France, Wild Thyme is a symbol of extreme Republicanism, tufts of it being sent with the summons to a Republican meeting.

Common thyme has a very long history of folk use for a wide range of ailments. It is very rich in essential oils and these are the active ingredients responsible for most of the medicinal properties. In particular, thyme is valued for its antiseptic and antioxidant properties, it is an excellent tonic and is used in treating respiratory diseases and a variety of other ailments.

Thymol is a powerful antiseptic for both internal and external use; it is also employed as a deodorant and local anaesthetic. It is extensively used to medicate gauze and wool for surgical dressings. It resembles carbolic acid in its action, but is less irritant to wounds, while its germicidal action is greater. It is

therefore preferable as a dressing and during recent years has been one of the most extensively used antiseptics. The American Horsemint (*M. punctata*), native to the United States and Canada, seems likely to prove a more valuable source of Thymol than *T. vulgaris*.

The flowering tops are anthelmintic, strongly antiseptic, antispasmodic, carminative, deodorant, diaphoretic, disinfectant, expectorant, sedative and tonic. The plant is used internally in the treatment of dry coughs, whooping cough, bronchitis, bronchial catarrh, asthma, laryngitis, indigestion, gastritis and diarrhoea and enuresis in children. It should not be prescribed for pregnant women. Externally, it is used in the treatment of tonsillitis, gum diseases, rheumatism, arthritis and fungal infections. The plant can be used fresh at any time of the year, or it can be harvested as it comes into flower and either be distilled for the oil or dried for later use.

Thyme has an antioxidant effect, thus regular use of this herb improves the health and longevity of individual body cells and therefore prolongs the life of the body. The essential oil is strongly antiseptic. The whole herb is used in the treatment of digestive disorders, sore throats, fevers etc.

The essential oil is one of the most important oils used in aromatherapy. Its keyword is 'Bacterial'. It is used especially in cases of exhaustion, depression, upper respiratory tract infections, skin and scalp complaints etc. The oil can cause allergic reactions and irritation to the skin and mucous membranes.

Leaves and flowering tops - raw in salads, used as a garnish or added as a flavoring to cooked foods, going especially well with mushrooms and courgettes. It is an essential ingredient of the herb mix 'bouquet garni'. It retains its flavor well in long slow cooking. The leaves can be used either fresh or dried. If the leaves are to be dried, the plants should be harvested in early and late summer just before the flowers open and the leaves should be dried quickly. A nutritional analysis is available.

An aromatic tea is made from the fresh or dried leaves. Pungent and spicy. Thyme tea will arrest gastric fermentation. It is useful in cases of wind spasms and colic, and will assist in promoting perspiration at the commencement of a cold, and in fever and febrile complaints generally.

An essential oil from the leaves is frequently used in perfumery, soaps, toothpastes, mouthwashes, medicinally etc. It has fungicidal properties and is also used to prevent mildew. The dried flowers are used to repel moths from clothing whilst the growing plant is said to repel cabbage root fly.

Known Hazards: A comment has been made in one report on medicinal uses that the plant should be used with caution. No explanation was given. It quite possibly refers to overuse of the essential oil. All essential oils, since they are so concentrated, can be harmful in large doses.

Turmeric - *Curcuma longa*

Other Common Names: Curcumin, Curcuma, *Curcuma longa*

Range: Southern Asia. Cultivated in China, Bengal and Java.

The plant is a large-leaved herb, closely related to ginger. It is cultivated in tropical countries for the thick, rounded, underground stems or rhizomes, which constitute the spice, turmeric. Turmeric contains an oil, which consists in part of curcumin, which on oxidation is changed into vanillin, the active principle in vanilla. Curcumin is the yellow pigment of turmeric. Curcumin is the ingredient which gives curry its yellow color.

Turmeric is the key spice in curry. Curcumin has been used in both the [Indian \(Ayurvedic\)](#) and Chinese Medicine systems for thousands of years. Curcumin studies have shown it to possess the following properties: antioxidant, anti-inflammatory, anti-platelet, cholesterol - lowering antibacterial and anti-fungal effects. It contains a mixture of powerful antioxidant phytonutrients known as curcuminoids.

Turmeric is a mild spice. When curry is hot, that is due to other spices.

A recent paper listed the curcumin content of turmeric powder as about 0.6 percent.

Turmeric is a mild aromatic stimulant seldom used in medicine except as a coloring. It was once a cure for jaundice. It is also used as an adulterant of mustard (Commercial mustard usually combines white mustard for pungency with black mustard for aroma, and the yellow color is due to the addition of turmeric) and a substitute for it and forms one of the ingredients of many cattle condiments. Tincture of Turmeric is used as a coloring agent, but the odour is fugitive. It dyes a rich yellow.

Curcumin shares some of the same effects on the liver as silymarin and cynarin. It has demonstrated similar liver protection activity to silymarin. Curcumin is believed to also be converted to a choleric compound, perhaps even caffeic acid. Curcumin's documented choleric effects support its historical use in treating liver and gallbladder disorders. Like cynara extracts, curcumin has also been shown to lower cholesterol levels.

Studies have shown that curcumin inhibits cancer at initiation, promotion and progression stages of tumor development. Research in Germany and India shows that curcumin can also help prevent gallbladder disease. Bromelain is also recommended to aid absorption.

In March 1993, researchers at Harvard Medical School published results of laboratory tests of a new method of screening for potential AIDS drugs. They used genetically engineered cells to test for

inhibitors of the "LTR" (long terminal repeat) sequence in HIV; the LTR is important for viral activation. The new test found three inhibitors; one of them is curcumin, a chemical found in the food spice turmeric. It was effective against HIV in both acutely and chronically infected cells.

In Trinidad, about 40 percent of the population is of Indian descent, and uses curry extensively in their diet. Another 40 percent of the population is of African descent, and seldom uses curry. Several years ago, studies of AIDS in Trinidad found that persons of African descent were more than 10 times as likely to have the disease as persons of Indian descent.

One reader of AIDS TREATMENT NEWS started using a turmeric extract with a very high concentration of curcumin -- about 100 times the concentration in ordinary turmeric -- which he obtained from a San Francisco health-food store. A week after he started using it his regularly scheduled blood tests showed a substantial drop in p24 antigen (a measure of viral activity). This unexpected change impressed his physician, a leading AIDS specialist in San Francisco.

The product he used was supplied in capsules, each containing "300 mg. turmeric extract concentrated and standardized for a minimum of preferred 95% curcumin" in a base of whole turmeric, according to the label on the bottle. He took three capsules three times a day -- about 2.5 grams of curcumin per day, for a person who weighs about 100 kg. This dose was chosen arbitrarily; it is considerably greater than the amount of curcumin one would ordinarily get by eating curry, and we do not know whether or not it is safe. Even for this large dose the cost was low, about \$2 per day retail in the U. S.

We mention this single case because it may be the first time that anyone has taken curcumin as a potential treatment for HIV, and compared viral-activity measurements before and after starting.

Curcumin is not soluble in water, and animal tests have found very little of it in the bloodstream after it is eaten. Therefore, it would seem that this chemical could not work as an oral drug. But other researchers have reported much higher absorption -- as much as 60 percent or more. And in laboratory studies curcumin is often given to animals in the diet, and various effects are noted.

This apparent contradiction is resolved by results of animal tests, some with radioactive curcumin. Much of the radioactivity does reach the blood and organs, even though the curcumin doesn't -- meaning that the curcumin must have been changed into something else and absorbed in a different form. The same team had earlier reported that about 60 percent of the curcumin was absorbed, since only about 40 percent of the quantity administered was found remaining in the gut -- although only traces were found in the blood. Another paper by the same group concluded that "curcumin undergoes transformation during absorption from the intestine," and noted an unidentified compound that it was changed into. So the fact that chemists do not find curcumin in the blood when they look for it does not rule out the possibility that oral use could have biological effects.

Curcumin is being studied as an anti-inflammatory, as a possible cancer inhibitor, and for other potential medical uses. It is a strong anti-oxidant. A recent search of the Excerpta Medica database found citations

to 149 papers, abstracts, etc. which mention curcumin; the word "curcumin" appears in the title of 74 of these. A review of some possible medicinal uses of curcumin was published in 1991.

Curcumin and turmeric have long been in daily human use, and are believed to have little toxicity in moderate doses. However, one group found that large doses caused stomach ulcers in rats. A thorough literature review is needed before large doses are used.

The information above is only suggestive, and does not show that curcumin will have any use in treating AIDS. Most new drug or treatment ideas fail, after later information shows that they are not useful. For curcumin as for any new treatment, the odds are that it, too, will be one of the failures.

But the possibility that curcumin or turmeric might be useful in treating HIV or AIDS is so important that it must be studied further without delay. Curcumin is known to be safe, at least in low and moderate doses, and could be available to everyone. Also, in the laboratory tests it was active against HIV not only in acutely infected but also in chronically infected cells -- where the currently approved drugs such as AZT are ineffective.

The next step in research should be to give a high but safe dose to 10 to 20 people for several weeks, and measure changes in viral activity, either with the readily available p24 test, or with sophisticated research tests such as quantitative PCR, or the branched DNA assay. Both natural turmeric and concentrated curcumin should be tested. If there is a dramatic decrease in viral activity in people (like that seen in the single case so far), then this potential treatment will receive plenty of attention. If there is little or no decrease, then we can forget about curcumin (except as a possible lead compound for drug development) and move on.

We do not know of anybody anywhere in the world doing such a study, or making plans to do so, or otherwise following up on curcumin as a possible AIDS treatment. This is not unusual; there has never been a serious institutional effort to test such treatment leads in early human trials. Medical research is expensive, and requires considerable effort and resources to make anything happen. Those with the resources -- mainly large pharmaceutical companies -- have little commercial or professional incentive to test low-cost, non-proprietary treatments. And government and non-profit research organizations have usually failed to focus on the critical need for getting safe, inexpensive treatment possibilities into small but credible tests for biological activity in humans.

Turmeric paper is prepared by soaking unglazed white paper in the tincture and then drying. Used as a test for alkaloids and boric acid.

See also [Goldenseal](#) (Turmeric root).

World" spring 1987

- John S. James. Curcumin Update: Could Food Spice Be Low-Cost Antiviral? - AIDS Treatment News
- Li CJ, Zhang LJ, Dezube BJ, Crumpacker CS, and Pardee AB. Three inhibitors of type 1 human immunodeficiency virus long terminal repeat-directed gene expression and virus replication.

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA. March 1993; volume 90, pages 1839-1842.

- Cleghorn F, Battoo K, Diaz C, Balbosa S, Jack N, Blattner W, and Bartholomew C. Update on the epidemiology of AIDS in Trinidad. International Conference on AIDS, San Francisco, June 20-23, 1990

- Satoskar RR, Shah SJ, and Shenoy SG. Evaluation of anti-inflammatory property of curcumin (diferuloyl methane) in patients with postoperative inflammation. INT. J. CLIN. PHARMACOL. THER. TOXICOL. 1986; volume 24, number 12, pages 651- 654.

- Nagabhushan M and Bhide SV. Curcumin as an Inhibitor of Cancer. JOURNAL OF THE AMERICAN COLLEGE OF NUTRITION. 1992; volume 11, number 2, pages 192-198.

- Ammon HPT, and Wahl MA. Pharmacology of Curcuma longa. PLANTA MEDICA. February 1991; volume 57, pages 1-7.

Valeriana officinalis

Other Common Names: Amantilla, All-heal, Common Valerian, European Valerian, Garden Heliotrope, Garden Valerian, Kediotu, Phu, Seiyo-Kanoko-So, Setwall, Valeriana, Valeriana officinalis

Range: China; Europe; Germany; North Asia; Spain; Turkey

Habitat: Grassland, scrub, woods etc, on dry or damp soils. Avoids acid soils.

In medicine, the root of *V. officinalis* is intended when Valerian is mentioned. It is supposed to be the Phu (an expression of aversion from its offensive odour) of Dioscorides and Galen, by whom it is extolled as an aromatic and diuretic.

It was afterwards found to be useful in certain kinds of epilepsy. Valerian was first brought to notice as a specific for epilepsy by Fabius Calumna in 1592, he having cured himself of the disease with it. The plant was in such esteem in mediaeval times as a remedy, that it received the name of All Heal, which is still given it in some parts of the country.

It is said by some authors to have been named after Valerius, who first used it in medicine; while others derive the name from the Latin word *valere* (to be in health), on account of its medicinal qualities. The word *Valeriana* is not found in the classical authors; we first meet with it in the ninth or tenth century, at which period and for long afterwards it was used as synonymous with Phu or Fu; Fu, id est valeriana, we find it described in ancient medical works of that period. The word Valerian occurs in the recipes of the Anglo Saxon leeches (eleventh century). *Valeriana*, *Amantilla* and *Fu* are used as synonymous in the *Alphita*, a mediaeval vocabulary of the important medical school of Salernum. Saladinus of Ascoli (about 1450) directs the collection in the month of August of *radices fu, id est Valerianae*. Referring to the name *Amantilla*, by which it was known in the fourteenth century, Professor Henslow quotes a curious recipe of that period, a translation of which runs as follows: 'Men who begin to fight and when you wish to stop them, give to them the juice of *Amantilla id est Valeriana* and peace will be made immediately.' *Theriacara*, *Marinella*, *Genicularis* and *Terdina* are other old names by which Valerian has been known in former days. Another old name met with in Chaucer and other old writers is 'Setwall' or 'Setewale,' the derivation of which is uncertain. Mediaeval herbalists also called the plant 'Capon's Tail,' which has rather fantastically been explained as a reference to its spreading head of whitish flowers.

Valerian is a well-known and frequently used medicinal herb that has a long and proven history of efficacy. It has a remarkable influence on the cerebro-spinal system, and is used as a sedative to the higher nerve centres in conditions of nervous unrest, St. Vitus's dance, hypochondriasis, neuralgic pains and the like. It is noted especially for its effect as a tranquilizer and nervine, particularly for those people suffering from nervous overstrain. Valerian has been shown to encourage sleep, improve sleep quality and reduce blood pressure. It is also used internally in the treatment of painful menstruation, cramps,

hypertension, irritable bowel syndrome etc. It should not be prescribed for patients with liver problems. Externally, it is used to treat eczema, ulcers and minor injuries.

The root is antispasmodic, carminative, diuretic, hypnotic, powerfully nervine, sedative and stimulant. The active ingredients are called valepotriates, research has confirmed that these have a calming effect on agitated people, but are also a stimulant in cases of fatigue. The roots of 2 year old plants are harvested in the autumn once the leaves have died down and are used fresh or dried. The fresh root is about 3 times as effective as roots dried at 40° (the report does not specify if this is centigrade or fahrenheit), whilst temperatures above 82° destroy the active principle in the root. Use with caution, see the notes on toxicity.

An essential oil from the leaves and root is used as a flavoring in ice cream, baked goods, condiments etc. It is especially important in apple flavors.

Valerian has an effect on the nervous system of many animals, especially cats, which seem to be thrown into a kind of intoxication by its scent. It is scarcely possible to keep a plant of Valerian in a garden after the leaves or root have been bruised or disturbed in any way, for cats are at once attracted and roll on the unfortunate plant.

Known Hazards: It is said that prolonged medicinal use of this plant can lead to addiction. A course of treatment should not exceed 3 months. Valerian should not be taken with alcohol.

White Willow - *Salix alba*

Other Common Names: Ak Sogut, Safsaf Abyadh, Sauce Blanco, Sugut Aghaji, *Salix alba*

Range: Europe; Iraq; Spain; Turkey; USA; Yugoslavia

Habitat: By streams and rivers, marshes, woods and wet fens on richer soils.

The generic name of the willows, *Salix*, comes from the Celtic *sal*, meaning "near," and *lis*, meaning "water." Most species grow near water or in moist ground in cold and temperate regions throughout the world, but a few are dry-soil plants.

Justly famous as the original source of salicylic acid (the precursor of aspirin), white willow and several closely related species have been used for thousands of years to relieve joint pain and manage fevers.

The bark is anodyne, antiinflammatory, antiperiodic, antiseptic, astringent, diaphoretic, diuretic, febrifuge, hypnotic, sedative and tonic. It has been used internally in the treatment of dyspepsia connected with debility of the digestive organs, rheumatism, arthritis, gout, inflammatory stages of autoimmune diseases, feverish illnesses, neuralgia and headache. Its tonic and astringent properties render it useful in convalescence from acute diseases, in treating worms, chronic dysentery and diarrhoea. The fresh bark is very bitter and astringent. It contains salicin, which probably decomposes into salicylic acid (closely related to aspirin) in the human body. This is used as an anodyne and febrifuge. The bark is harvested in the spring or early autumn from 3 - 6 year old branches and is dried for later use.

The leaves are used internally in the treatment of minor feverish illnesses and colic. An infusion of the leaves has a calming effect and is helpful in the treatment of nervous insomnia. When added to the bath water, the infusion is of real benefit in relieving widespread rheumatism. The leaves can be harvested throughout the growing season and are used fresh or dried.

The wood of willows is white, soft, and light, but it is tough and elastic and not given to splintering when subjected to strain. It is thus used for making tool handles, baseball and cricket bats, shipping containers, and, because it is relatively nonflammable, for the brake blocks of railway stock.

Wild Cherry - *Prunus serotina*

Other Common Names: Black Cherry, Choke, Choke Cherry, Rum Cherry, Virginian Prune, Virginia Kirazi, Wild Black Cherry, *Prunus serotina*

Range: N. America - Nova Scotia to Minnesota, south to Florida and Texas. Also in Arizona and Mexico.

Habitat: Found in a variety of soils, preferring moist fertile conditions on north or east facing slopes or protected coves. Dry woods.

Rum cherry was widely employed medicinally by various native North American Indian tribes who used it to treat a variety of complaints. It is little, if at all, used in modern herbalism.

The bark of the root, trunk and branches is antitussive, astringent, pectoral, sedative, stomachic, tonic. The medicinal properties of this plant are destroyed by boiling, so the plant should only be allowed to steep in warm water.

The root bark and the aromatic inner bark have expectorant and mild sedative properties and a tea made from either of them has been used to ease pain in the early stages of labour. The tea is also used in the treatment of fevers, colds, sore throats, diarrhea etc. The bark is harvested in the autumn and should not be stored for longer than one year since it quickly loses its medicinal properties. Young thin bark is preferred.

A decoction of the inner bark has been used in the treatment of laryngitis.

The root bark has been used as a wash on old sores and ulcers.

The bark contains the glycoside prunasin, which is converted in the digestive tract to the highly toxic hydrocyanic acid. Prunasin is at its highest level in the bark in the autumn so the bark is harvested at this time and can be dried for later use. In small amounts this exceedingly poisonous compound stimulates respiration, improves digestion and gives a sense of well-being.

The fruit is astringent and has been used in the treatment of dysentery.

Fruit - raw or cooked in pies, jellies, stews etc. It must be fully ripe or else it will have a bitter flavor. The fruit can taste sweet or bitter. The better fruits have a thin skin and a juicy flesh with a pleasant vinous flavor. The fruit can also be used as a flavoring. The taste is best when the plant is grown in a sunny position. The fruit is about 9mm in diameter and contains one large seed.

Seed - raw or cooked. Do not eat the seed if it is too bitter - see the notes on toxicity.

An infusion of the twigs is used as a beverage. An extract from the bark is used commercially as a flavoring in soft drinks, candies, syrups and baked goods.

Known Hazards: The seeds and leaves of this species contain high quantities of hydrogen cyanide, a poison that gives almonds their characteristic flavor. This toxin is readily detected by its bitter taste. Usually present in too small a quantity to do any harm, any very bitter seed or fruit should not be eaten. In small quantities, hydrogen cyanide has been shown to stimulate respiration and improve digestion, it is also claimed to be of benefit in the treatment of cancer. In excess, however, it can cause respiratory failure and even death.

Wild indigo - Baptisia tinctoria

Other Common Names: Baptasie Sauvage, Baptisia, False Indigo, Baptisia, Horseflyweed, Indigotier Sauvage, Indigoweed, Baptisia tinctoria

Range: Eastern N. America - Virginia to Florida.

Habitat: Dry soils in open woods and clearings.

Wild indigo was a favorite medicine of the N. American Indians, a decoction of the roots being used as an antiseptic wash for wounds and skin complaints. Modern research has shown that this acrid bitter herb stimulates the immune system and is particularly effective against bacterial infections. Caution is advised in the internal use of this plant, large or frequent doses are potentially harmful.

A tea made from the roots is cholagogue, emetic, febrifuge and purgative. The fresh root is also considered to be antiseptic, astringent and laxative. The infusion is used in the treatment of upper respiratory infections such as tonsillitis and pharyngitis, and is also valuable in treating infections of the chest, gastro-intestinal tract and skin. The plants antimicrobial and immune-stimulant properties combat lymphatic problems, when used with detoxifying herbs such as *Arctium lappa* it helps to reduce enlarged lymph nodes.

Wild indigo is frequently prescribed, along with [Echinacea](#), in the treatment of chronic viral infections or chronic fatigue syndrome. A decoction of the root soothes sore or infected nipples and infected skin conditions. When used as a mouth wash or gargle the decoction treats mouth ulcers, gum infections and sore throats.

The fresh root, including the bark, is used to make a homeopathic medicine. This has a limited range of action, but is used especially in the treatment of certain types of flu.

Known Hazards: The plant is poisonous in large quantities.

Wild Oats - *Avena fatua*

Other Common Names: Ch'Iao Mai, Oats, Yen Mai, *Avena fatua*

Range: Europe to Asia, Canada and USA.

Habitat: A common weed of arable land and waste ground.

The wild oat is considered a pest to agriculture more than anything else.

The seeds are diuretic, emollient and refrigerant.

Seed - cooked. The seed ripens in the latter half of summer and, when harvested and dried, can store for several years. It has a flouy texture and a mild, somewhat creamy flavor. It can be used as a staple food crop in either savoury or sweet dishes. The seed can be cooked whole, though it is more commonly ground into a flour and used as a cereal in all the ways that oats are used, especially as a porridge but also to make biscuits (cookies), sourdough bread etc. The seed can also be sprouted and eaten raw or cooked in salads, stews etc.

The straw has a wide range of uses such as for bio-mass, fiber, mulch, paper-making and thatching. Some caution is advised in its use as a mulch since oat straw can infest strawberries with stem and bulb eelworm.

See also: [Common Oats](#) - *Avena Sativa*

Wild yam - *Dioscorea villosa*

Other Common Names: Colic-root, Wild Yam, Yabani Hindelmasi, *Dioscorea villosa*

Range: Eastern N. America - New England to Minnesota and Ontario, south to Virginia and Texas.

Habitat: Wet woods and swamps, thickets and hedges.

There are upwards of 150 varieties of *Dioscorea*, many, like the potato, being edible. Much saponin has been found in the roots, and a substance improperly called dioscorein, obtained by precipitating the tincture with water.

Wild yam roots, and the roots of many other members of the genus, contains diosgenin a procurer of progesterone, which makes it a popular choice for treating PMS.

This is widely used in modern medicine in order to manufacture progesterone and other steroid drugs. These are used as contraceptives and in the treatment of various disorders of the genitary organs as well as in a host of other diseases such as asthma and arthritis.

The roots are anti-inflammatory, antispasmodic, cholagogue, diaphoretic and vasodilator. They are also a visceral relaxant. This plant affords one of the best and fastest cures for bilious colic, it is especially helpful in treating the nausea of pregnant women and has been used to ease the pain of childbirth. It is also taken internally in the treatment of arthritis, irritable bowel syndrome, gastritis, gall bladder complaints, painful menstruation etc. The root is harvested in the autumn and dried for later use. The root should not be stored for longer than 1 year, since it is likely to lose its medicinal virtues. Caution is advised in the use of the this plant, when taken fresh it can cause vomiting and other side effects.

The root, harvested in September, is used to make a homeopathic remedy. Its main use is in the treatment of infant colic.

Known Hazards: Edible species of *Dioscorea* have opposite leaves whilst poisonous species have alternate leaves. Use of the fresh plant can cause vomiting and other side effects.

Witch Hazel - *Hamamelis virginiana*

Other Common Names: American Witchhazel, Amerika-Mansaku, Carpe, Chin Lu Mei, Hamamelis, Pistachier Noir, Spotted Alder, Snapping Hazelnut, Trilopo, Winterbloom, Virginische Toverhazelaar, Virginischer Zauberstrauch, *Hamamelis virginiana*

Range: Britain; China; Denmark; France; Germany; Italy; Netherlands; Spain; Eastern N. America - Nova Scotia to Wisconsin and south to Texas and N. Florida.

Habitat: Edges of dry or moist woods, in rich soil and on the rocky banks of streams. The best specimens are found in deep rich soils.

The name *Hamamelis* was adopted from a Greek word to indicate its resemblance to an apple-tree.

Witch hazel bark is a traditional herb of the North American Indians who used it to heal wounds, treat tumors, eye problems etc. A very astringent herb, it is commonly used in the West and is widely available from both herbalists and chemists. It is an important ingredient of proprietary eye drops, skin creams, ointments and skin tonics. It is widely used as an external application to bruises, sore muscles, varicose veins, hemorrhoids, sore nipples, inflammations etc.

The bark is astringent, haemostatic, sedative and tonic. Tannins in the bark are believed to be responsible for its astringent and haemostatic properties. Bottled witch hazel water is a steam distillate that does not contain the tannins from the shrub, this is less effective in its action than a tincture. The bark is used internally in the treatment of diarrhea, colitis, dysentery, hemorrhoids, vaginal discharge, excessive menstruation, internal bleeding and prolapsed organs. Branches and twigs are harvested for the bark in the spring.

An infusion of the leaves is used to reduce inflammations, treat piles, internal hemorrhages and eye inflammations. The leaves are harvested in the summer and can be dried for later use.

A homeopathic remedy is made from fresh bark. It is used in the treatment of nosebleeds, piles and varicose veins.

A refreshing tea is made from the leaves and twigs.

The plant is very rich in tannin. It is used cosmetically as an ingredient in almost any preparation made to relieve capillary weaknesses.

Seed - raw or cooked. An oily texture. The seeds are about the size of a barley grain and have a thick

bony coat. The reports of edibility must be treated with some suspicion, they all seem to stem from one questionable report in the 'Medical Flora' of Refinesque.

Wormwood - *Artemisia absinthum*

Other Common Names: Absinth Sagewort, Absinth Wormwood, Absinthe, Ajenjo, Ajenjo Oficial, Common Wormwood, Feuilles Ameres, Niga-Yomogi, Old Woman, Oldman, Pelin, Wormswood, *Artemisia absinthum*

Range: Britain, Europe, North Africa, and western Asia. Now also in N. America.

Habitat: Waste land, rocks and screes. Plants are longer lived, more hardy and more aromatic when they are grown in a poor dry soil.

The genus is named *Artemisia* from Artemis, the Greek name for Diana. In an early translation of the Herbarium of Apuleius we find:

'Of these worts that we name *Artemisia*, it is said that Diana did find them and delivered their powers and leechdom to Chiron the Centaur, who first from these Worts set forth a leechdom, and he named these worts from the name of Diana, Artemis, that is *Artemisias*.'

The Common Wormwood held a high reputation in medicine among the Ancients. According to the Ancients, Wormwood counteracted the effects of poisoning by hemlock, toadstools and the biting of the seadragon. The plant was of some importance among the Mexicans, who celebrated their great festival of the Goddess of Salt by a ceremonial dance of women, who wore on their heads garlands of Wormwood.

With the exception of Rue, Wormwood is the bitterest herb known, but it is very wholesome and used to be in much request by brewers for use instead of hops. The leaves resist putrefaction, and have been on that account a principal ingredient in antiseptic fomentations.

The intensely bitter, tonic and stimulant qualities have caused Wormwood not only to be an ingredient in medicinal preparations, but also to be used in various liqueurs, of which absinthe is the chief, the basis of absinthe being absinthol, extracted from Wormwood. Wormwood, as employed in making this liqueur, bears also the name 'Wermuth' - preserver of the mind - from its medicinal virtues as a nervine and mental restorative. If not taken habitually, it soothes spinal irritability and gives tone to persons of a highly nervous temperament. Suitable allowances of the diluted liqueur will promote salutary perspiration and may be given as a vermifuge. Inferior absinthe is generally adulterated with copper, which produces the characteristic green color.

The drug, absinthium, is rarely employed, but it might be of value in nervous diseases such as neurasthenia, as it stimulates the cerebral hemispheres, and is a direct stimulant of the cortex cerebri. When taken to excess it produces giddiness and attacks of epileptiform convulsions. Absinthium occurs in

the British Pharmacopoeia in the form of extract, infusion and tincture, and is directed to be extracted also from *A. maritima*, the Sea Wormwood, which possesses the same virtues in a less degree, and is often more used as a stomachic than the Common Wormwood. Commercially this often goes under the name of Roman Wormwood, though that name really belongs to *A. Pontica*.

Wormwood is a very bitter plant with a long history of use as a medicinal herb. It is valued especially for its tonic effect on the liver, gallbladder and digestive system, and for its vermifugal activity. It is an extremely useful medicine for those with weak and underactive digestion. It increases stomach acid and bile production, improving digestion and the absorption of nutrients. It also eases wind and bloating and, if taken regularly, helps the body return to full vitality after a prolonged illness.

The leaves and flowering shoots are anthelmintic, anti-inflammatory, antiseptic, antispasmodic, antitumor, carminative, cholagogue, emmenagogue, febrifuge, hypnotic, stimulant, stomachic, tonic and vermifuge. The plant is harvested as it is coming into flower and then dried for later use. Use with caution, the plant should be taken internally in small doses for short-term treatment only, preferably under the supervision of a qualified practitioner. It should not be prescribed for children or pregnant women. See also the notes on toxicity.

The extremely bitter leaves are chewed to stimulate the appetite. The bitter taste on the tongue sets off a reflex action, stimulating stomach and other digestive secretions. The leaves have been used with some success in the treatment of anorexia nervosa.

The plant is applied externally to bruises and bites. A warm compress has been used to ease sprains and strained muscles.

A homeopathic remedy is made from the leaves. It is used to stimulate bile and gastric juice production and to treat disorders of the liver and gall bladder.

The fresh or dried shoots are said to repel insects and mice, they have been laid amongst clothing to repel moths and have also been used as a strewing herb. An infusion of the plant is said to discourage slugs and insects. The plant contains substances called sesquiterpene lactones, these are strongly insecticidal.

Known Hazards: The plant is poisonous if used in large quantities. Even small quantities have been known to cause nervous disorders, convulsions, insomnia etc. Just the scent of the plant has been known to cause headaches and nervousness in some people. The plant contains thujone. In small quantities this acts as a brain stimulant but is toxic in excess. Absinthe, popular in the nineteenth century in Europe, caused several cases of brain damage and even death and was banned in most places in the early twentieth century.

(See also [Sweet Wormwood, *Artemisia annua*](#)).

Yarrow - *Achillea millefolium*

Other Common Names: Biranjasif, Bloodwort, Carpenter's Weed, Cickafarkkoro, Civanpercemi, Common Yarrow, Devil's Nettle, Devil's Plaything, Bad Man's Plaything, Duizendblad, Milefolio, Milenrama, Milfoil, Millefeuille, Millefoglio, Millefolium, Nose Bleed, Plumajillo, Rojmari, Rolleka, Rollike, Schafgarbe, Soldiers Woundwort, Staunchweed, Thousand Seal, Tlalquequetzal, Western Yarrow, Woundwort, Plumajillo, Yarroway, *Achillea millefolium*

Range: Asia; Britain; Canada; China; Denmark; Europe; France; Germany; Hungary; India; Italy; Mexico; Netherlands; Portugal; Spain; Sweden; Turkey; USA

Habitat: Meadows, pastures, lawns etc. on all but the poorest soils, it becomes a troublesome weed in gardens.

The name Yarrow is a corruption of the Anglo-Saxon name for the plant - gearwe; the Dutch, yerw.

Yarrow was formerly much esteemed as a vulnerary, and its old names of Soldier's Wound Wort and Knight's Milfoil testify to this. The Highlanders still make an ointment from it, which they apply to wounds, and Milfoil tea is held in much repute in the Orkneys for dispelling melancholy. Gerard tells us it is the same plant with which Achilles stanching the bleeding wounds of his soldiers, hence the name of the genus, *Achillea*. Others say that it was discovered by a certain Achilles, Chiron's disciple. It was called by the Ancients, the *Herba Militaris*, the military herb.

Its specific name, *millefolium*, is derived from the many segments of its foliage, hence also its popular name, Milfoil and Thousand Weed. Another popular name for it is Nosebleed, from its property of stanching (stopping) bleeding of the nose, though another reason given for this name is that the leaf, being rolled up and applied to the nostrils, causes a bleeding from the nose, more or less copious, which will thus afford relief to headache. Parkinson tells us that 'if it be put into the nose, assuredly it will stay the bleeding of it' - so it seems to act either way.

It was one of the herbs dedicated to the Evil One, in earlier days, being sometimes known as Devil's Nettle, Devil's Plaything, Bad Man's Plaything, and was used for divination in spells.

Yarrow has a high reputation and is widely employed in herbal medicine, administered both internally and externally. It is used in the treatment of a very wide range of disorders but is particularly valuable for treating wounds, stopping the flow of blood, treating colds, fevers, kidney diseases, menstrual pain etc. The whole plant is used, both fresh and dried, and is best harvested when in flower. Some caution should be exercised in the use of this herb since large or frequent doses taken over a long period may be potentially harmful, causing allergic rashes and making the skin more sensitive to sunlight.

The herb is antiseptic, antispasmodic, mildly aromatic, astringent, carminative, cholagogue, diaphoretic, digestive, emmenagogue, odontalgic, stimulant, bitter tonic, vasodilator and vulnerary. It also contains the antiinflammatory agent azulene, though the content of this varies even between plants in the same habitat. The herb is harvested in the summer when in flower and can be dried for later use.

Leaves - raw or cooked. A rather bitter flavor, they make an acceptable addition to mixed salads (In the seventeenth century it was an ingredient of salads.) and are best used when young. The leaves are also used as a flavoring and preservative for beer etc. Although in general yarrow is a very nutritious and beneficial plant to add to the diet, some caution should be exercised. See the notes on possible toxicity.

An aromatic tea is made from the flowers and leaves.

An essential oil from the flowering heads is used as a flavoring for soft drinks.

The growing plant repels beetles, ants and flies. The plant has been burnt in order to ward off mosquitoes.

Yarrow is an excellent plant for growing in lawns, meadows, orchards etc., it is tolerant of repeated close cutting and of being walked on. It works to improve the soil fertility. A very good companion plant, it improves the health of plants growing nearby and enhances their essential oil content thus making them more resistant to insect predations.

A good bee plant, it is an important nectar source for many insects.

Known Hazards: Extended use of this plant, either medicinally or in the diet, can cause allergic skin rashes or lead to photosensitivity in some people.

Pausinystalia yohimbe, Corynanthe yohimbe

Other Common Names: Pausinystalia yohimbe, Corynanthe yohimbe

Range: Nigeria, Cameroon and the Congo

Habitat: Prefers rich soils in a protected part sun to shady position.

An evergreen tree, native of the rainforests of Nigeria, Cameroon and the Congo. This species is the only commercial source for the drug yohimbine. European and American pharmaceutical companies are purchasing hundreds of tonnes of bark every year, which comes from tens of thousands of mature trees. This is a rainforest tree of a population density of about 5 trees per hectare and it is almost at the verge of extinction in the wild due to poor government controls and lack of restraint by the pharmaceutical companies. The raw bark costs less than one US dollar per kilo from the harvesters and is resold in the west for the incredible profit of several thousand percent. Only one government has started to establish plantations, but they are still many years from producing the needed quantities. In the meantime the destruction goes on which will see this species virtually eliminated from its native habitat. We urge that anyone contemplating the purchase of any yohimbe product should make enquiries as to whether it is plantation grown. The environmentally responsible facade of the pharma companies is not to be trusted unless they clearly state that it is plantation sourced rather than the so called "responsibly and sustainably harvested" material.

Yohimbe is the only medically recognised natural aphrodisiac and the only Food and Drug Administration (FDA)-approved medicine for impotence. Its use as an aphrodisiac in its native area has been well documented and its unique effects were soon valued in many parts of the world, especially in Europe. Less well documented is the use of yohimbe as a visionary plant in ceremonies like the iboga rituals. In modern times yohimbe products have found a wide market, ranging from medically treated impotence and self administered sexual enhancement to 'smart products' and other herbal ecstasy formulations. It appears to have a very popular synergy with ephedrine containing herbs such as *Ephedra sinica* and *Ephedra gerardiana*.

There are several alkaloids in *Pausinystalia yohimbe*, but it is the yohimbine which is responsible for most of the recognised effects. Yohimbine is an indole alkaloid somewhat similar and related to ibogaine and mitragynine and is present in the bark of this species. In small doses of less than 10mg yohimbine it is used medically as a therapy for impotence and frigidity. Recent research has also shown a lot of promise in the treatment of fatigue in HIV patients without any noticeable side effects. Larger doses of 10-50 mg are used as an aid in tantric sexual rituals (especially with dita) and in combination with ephedrine as a party smart-drug. Yohimbine causes the dilation of bloodvessels in the lower abdomen which can cause long and very hard erections in men and genital stimulation in women. Dosages of 50-100 mg are

hallucinogenic and highly stimulating. Dosages in excess of 50 mg, and especially in excess of 100mg can be very unpleasant and even dangerous. Yohimbine has also been used to treat hypertension, and this effect may have serious consequences for people with already low bloodpressure, as fainting is common. On the other hand it can be used as a stimulant by people who cannot usually take most stimulants due to high bloodpressure.

The active alkaloid, yohimbine bitartrate, is the component of the only allopathic medicines known to cause erection in impotent males and approaches the concept of an aphrodisiac. Yohimbine bitartrate particularly affects nerves and changes blood flow regulators in the genital area. The medical texts never mention that it does the same thing to women, showing a typical disregard for female erection.

For more than 70 years yohimbine has been used as a treatment for male and female sexual difficulties. It has enjoyed a reputation as an aphrodisiac although no effect on sexual drive in humans has been adequately demonstrated. Yohimbine has been evaluated in the management of erectile disorder by means of placebo-controlled but often poorly designed trials. It does appear to have a modest therapeutic benefit over placebo, particularly in essentially psychogenic erectile disorder, and is generally well tolerated.

Impotence (erectile dysfunction) affects an estimated 20 million men in North America and is usually defined as the inability to have penile erections sufficient for intercourse. It affects at least 25% of all men over the age of 50. A loss of libido and subsequent impotence has an organic etiology in over 85% of cases while the remainder are related to psychological problems.

Known Hazards: It shouldn't be taken with MAO inhibitors or by persons with high blood pressure, diabetes, glaucoma, or a history of mental disturbance, especially including bipolar disorder. (The alkaloid yohimbine is NOT an MAO inhibitor. The herb yohimbe IS.)

Side effects can include anxiety, panic attacks, hallucinations, elevated blood pressure and heart rate and dizziness.

Yucca schidigera

Other Common Names: Mojave Yucca, Spanish Dagger, Yucca aloifolia, Yucca schidigera

Range: Southwestern N. America - California, Arizona and Nevada.

Habitat: Rocky desert slopes and Creosote desert flats below 7,000 feet.

About 30 species in the genus Yucca are found in North America, which includes the Joshua Tree.

Native Americans and Mexicans have used it for centuries to treat a wide variety of maladies, especially headaches, gonorrhea, arthritis and rheumatism. Indians used the yucca plant for many products. The strong fibers from the plant made cord, cloth, baskets and sandals. Raw flowers were eaten in salads, or boiled as vegetables. The immature pods were roasted and peeled before eating. Dried pods and seeds were ground into flour. The roots form a frothy soap that was both a cleansing agent and a skin cream used for treating rashes.

The properties of Yucca which help in arthritis and rheumatism are due to the plants' high content of steroid saponins, which are precursors to cortisone.

Diuretics and emetics are commonly made from both the root and leaves of the Yucca.

Ground blossoms mixed with yucca suds and used to wash newborn infants and make their hair grow. There is said to be no better tonic or stimulant for the hair than a free application of a solution of this juice in alcohol, water, or glycerine. Besides the Saponin, it contains a large number of raphides, which probably add mechanically to the stimulation.

The rotten root can be crushed and boiled to make suds. Drinking these suds is said to induce the menopause in women, thereby rendering them infertile.

Flowers boiled and eaten as a vegetable.

The fruits are highly palatable to a number of small birds and mammals.

Known Hazards: The roots contain saponins. Whilst saponins are quite toxic to people, they are poorly absorbed by the body and so tend to pass straight through. They are also destroyed by prolonged heat, such as slow baking in an oven. Saponins are found in many common foods such as beans. Saponins are much more toxic to some creatures, such as fish, and hunting tribes have traditionally put large quantities of them in streams, lakes etc in order to stupefy or kill the fish.