

Selections from The One Earth Herbal Sourcebook

**SECTION TWO: The "Best Of The Best" Herbs
Chapters 7-8**

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Chapter 7

Understanding Herbs

"The eye sees only what the mind is prepared to comprehend."
- Henri Bergson -

Congratulations. Now that you've read section one, you have enough contextual background in the history of herbal medicine and the language of herbs to go to the next level of understanding. If you are like most of us, the next thing you want to know is what the "best" herbs are for treating your particular health condition. I have to laugh at myself when I try to define the word "best" for use in this book, as the field of herbal medicine is so vast. At our clinic, my wife Nai-shing and I keep over 1,000 herbs from all parts of the world in stock. This stock includes herbs from the three systems of herbal medicine we have both studied, TAM (Traditional Ayurvedic Medicine) from India and Nepal, TCM (Traditional Chinese Medicine) from China, and Western herbal medicine.

Nonetheless, when you watch doctors from each of these systems at work, as I have, you notice very quickly that they choose certain herbs most frequently, based on their high levels of safety and effectiveness. Many of these herbs are already famous. One cannot imagine TCM without **ginseng root** and **astragalus root**, TAM without **ashwagandha root** and **guggul gum** or Western herbalism without **echinacea** and **dandelion root**. These are the herbs I will discuss. I have chosen more than 80 herbs that Nai-shing and I consider to be among the most useful available to us in effectively treating the common diseases we see every day. About a dozen or so less commonly used herbs have also been put in for illustrative purposes. Remember, different herbalists use different herbs like different artists use different colors.

How do you know which herbs are best?

I draw my knowledge of herbal use from numerous sources:

- Traditional teachings (the wisdom handed down from the past)
- Scientific reports from around the world
- My personal experience
- Clinical experiences of my patients
- Reports from other professional herbalists and their patients
- Intuition

Of these, the traditional teachings of the past and the clinical results experienced by my patients have the greatest influence on my herbal choices. However, scientific finding often bring fascinating new insights into sharp focus, and I rely on them as well.

What are the premier herbs used by Ayurvedic doctors?

In Traditional Ayurvedic Medicine (TAM), the Sanskrit word **rasayana** is assigned to herbs that, although powerful in their results, can be used safely and indefinitely with complete confidence and without side effects. Rasayana describes an herbal preparation that promotes a youthful state of physical and mental health and expands happiness. Rasayana herbs have high levels of both safety and effectiveness. They are given to small children in India as tonics by their parents, and are also taken by the middle-aged

and elderly to increase longevity. Several of these herbs have been administered to animals to determine toxicity, and in some cases no toxicity is seen even when the herb comprises very high percentages of the fortunate mammal's diet. Such herbs do indeed exist. You may have heard of many of them already, as they are quite popular. They are as safe to consume as ordinary vegetables such as carrots and beets. I hope to expand your knowledge of some of these herbs, and introduce you to a few jewels you have not encountered yet.

Are these the herbs used most often by Ayurvedic doctors to treat diseases?

Yes and no. **Rasayana** herbs can be found everywhere in India and Nepal, and can be and are used by people of all ages and states of health. Ayurvedic doctors rely on them heavily in their tonic formulas for longevity and to treat chronic diseases. However, these herbs only form a moderate part of the expert herb doctor's repertoire. A good doctor from any tradition must know how to use many, many other herbs. For example, **niche herbs** are uncommon herbs that only do one thing well, but are essential for treating certain conditions. I have included some of the more important ones, such as **ephedra**. Some herbs, as simple as **black pepper** or **ginger root**, are indispensable for helping to make an herbal formula work properly.

What are the premier herbs used by Western and European herbalists?

The premier herbs used by Western and European herbalists generally fall into a category known as **adaptogens**, herbs that bring balance back to the body no matter what the direction of imbalance. Some adaptogens will bring your blood pressure down if it is

The word adaptogen describes an agent that:

1. Has a normalizing effect on a wide range of body functions
2. Has a non-specific action that helps the body overcome stress regardless of the direction of stress
3. Is non-toxic when used in normal dosage.

high, or bring it up if it is low. Others will regulate your thyroid whether its function is high or low (Rege et al. 1999). Soy products are good examples of these substances because they can be used beneficially whether estrogen levels are high or low. If the body's estrogen levels are low, the mild concentration of plant estrogens in soy will stimulate cell receptor sites (the on/off switches for cellular function). Conversely, if the body's estrogen levels are high, the same mild plant estrogens will block the

more powerful human estrogens from reaching the same sites. Thus, soybeans are hormonal adaptogens.

What are the best Chinese herbs?

You must remember that even the best Chinese herbs, such as **ginseng root** and **dang gui root**, cannot be used without some basic diagnostic information. Herbal choices must be made based upon individual needs. Following the Taoist philosophy of Yin and Yang--the balance and union of opposites--health is a means by which we balance and harmonize the conflicts we hold within ourselves.

Over a thousand years ago, the ancient Shennong Bencao Jing (pharmacopoeia of herbs) included a category of herbs suggested for use every day to strengthen vitality, increase energy and lengthen lifespan (reported in Dharmananda, 1988). Traditionally, such herbs are established tonics that are safe to use over a long period of time because

they are balanced in terms of Yin and Yang. Many of them improve digestive function. Such herbs are commonly used for fu zheng (immune tonification) therapy, discussed in chapter 19.

You've said that some herbs are very safe for long-term use, but what about all the others?

Truthfully, few herbs can meet the highest standard of an adaptogen or a rasayana herb, scoring high on scales of both safety and effectiveness for general daily use. In this book I will classify such herbs as **Gold Standard**.

There are many other herbs that are of great importance but must be used with a certain level of knowledge and caution. These herbs, which have excellent results with no side effects when used properly, still harbor a slight potential for misuse. Some are very safe, but are not particularly powerful or broad in effect. Some herbs are very useful and very safe, but should not be used all the time. Throughout the book, I will classify such herbs as **Silver standard**.

There are other herbs that, although extremely beneficial and important in the treatment of certain conditions, have a limited range of action or must be used with caution. Mild or moderate diuretics, for example, may be very useful for a few weeks or months, but I do not see the sense in taking them for long periods of time. I will classify these herbs as **Yellow standard**.

The final group of herbs will be classified as **Red standard**. These Red standard herbs have certain essential properties that make them beneficial to many patients in states of poor health, but they also pose clearly defined dangers which must be known. Such herbs should be used only under the guidance of a trained professional.

There's one more thing. I'm not sure any particular herb should be used continuously without a break, unless dictated by medical necessity. The constant intake of the same foods is, I believe, a major cause of food allergy and other problems such as nutrient overload or deficiency. TAM doctors place strong emphasis on eating foods during the correct season, which causes a natural change in dietary items during the year. By the same token, I think it makes more sense to rotate even the best tonic herbs. Don't get stuck in the philosophy of using one herb for everything or using one herb forever.

Chapter 8

Important Herbs from around the World

"Knowledge is one. Its division into subjects is a concession to human weakness.

- Halford John Mackinder -

I have more than 900 books in my herbal library, and I've learned that any fact you find about an herb may be somehow useful. However, the way a writer selects, filters and presents information sometimes reveals more about the writer than the herb. As a clinician, there are certain books that I have always found myself going back to again and again. It took me a while to figure out why they stood out from the rest. The best ones are not all the same, because describing herbs is an art, unique to each plant and its characteristics. In many ways an herb is like a person. Descriptions are useful, but you have to get more intimate to really know the deeper truth. With people this means meeting them to see if your personalities are compatible, and with herbs it means taking them to see if they "work for you." I am going to offer the herbs from a variety of angles here, while at the same time trying to present the essence of each herb's usefulness in clinical situations.

Let's take a look at the layout I have chosen for the herbal descriptions that follow.

COMMON NAME

Latin: *Genus species*

WHAT IT DOES: Here I will give the broad properties of the herb including its taste, its heating and cooling properties, and specifically what it does to the body.

RATING: Here you will find the "color" categories explained on page ___.

SAFETY ISSUES: Any warnings about contraindications; possible adverse effects caused by misuse, overuse or use by persons with certain medical conditions, etc.

STARTING DOSAGE: Recommended starting adult dosage and preferred form.

DISCUSSION: (One or more paragraphs)

As discussed in chapter 6, **Latin names** are the most exact identification method, pretty much assuring that we know which herb we are talking about. For our purposes, however, I will provide the **common name** first, in **CAPITALIZED BOLD LETTERS**. This will be followed by the Latin name, and subsequently the name of herb as it is known in Chinese, Sanskrit or another foreign language, indicating that the herb is used by those cultures. This is important to avoid misidentification.

In the section called "**WHAT IT DOES**," I will explain my understanding of the essence of the herb's action. Here I rely on traditional energetic descriptions that, in my opinion, are essential to realistic understanding. Years ago, I received quite a shock when reading

an early British author's writings about Ayurvedic herbs. This chap decided to leave out all references to **Vata, Pitta and Kapha**, which he decided had nothing to do with the "scientific" actions of the herbs. I'm here to tell you that nothing could be further from the truth. The **energetic** attributes of each herb are time-tested global descriptions that are among the most important tools we have in herbal medicine. **It is these descriptions, more than anything else, that allow herbalists to select appropriate treatments in clinical situations.**

Each herb's "**RATING**" provides a designated color value for each herb, determined according to values of safety and usefulness, as discussed on page __. This results in a color value for each herb—**gold, silver, yellow or red.**

Following the safety rating you will find "**SAFETY ISSUES,**" highlighting any warnings, contraindications or special precautions. Contraindications are specific cautions that provide reasons why certain people, such as pregnant women or persons taking certain drugs, should not use the herb. **Note that it is possible to have a gold standard herb which, while safe for use by most people, may still be contraindicated for some, such as pregnant women or people taking certain drugs.**

I have also provided a "**STARTING DOSAGE**" for each herb. This offers the suggested starting dosage for an adult, as well as different available forms of preparation for the herb. Some herbs can be used in several different forms, while some work only as tinctures or in dry form or after undergoing special preparation. **Remember that the dosages listed are the approximate starting dosage when using the herb by itself. When the herbs is used as part of a combination, the dosage will always be reduced.** In formulas, a single herb typically represents from about 5 percent up to as much as 50 percent or more of a formula.

Children's dosages can be calculated using **Clark's Rule**. Divide the child's weight in pounds by 150 to give the approximate fraction of the adult dose to be used by that child. For example, for a 75-pound child, use 75/150 or one half of the adult dosage to start.

My final section in each herbal description is the "**DISCUSSION,**" consisting of one or more paragraphs intended to provide you with additional details, research findings, and any other information which can round out your understanding of the herb. **For more information about any of the products, manufacturers or distributors mentioned in this section, refer to the resource guide .**

AGASTACHE

Latin: *Agastache rugosa*
Pogstemon cablin
Chinese: Huo xiang
English: Patchouli

WHAT IT DOES: **Agastache** is aromatic, pungent in taste, and slightly warming in action. It stops nausea and vomiting by dissolving mucus in the stomach.

RATING: Yellow, due to limitations in use

SAFETY ISSUES: Avoid contact with eyes due to volatile oil content.

STARTING DOSAGE:

- Dried powder: four and-a-half to nine grams per day
- Concentrated powder: one to three grams per day

Agastache is the botanical source of patchouli oil, used as an aromatic perfume ingredient because it is said to give lasting qualities to other agents (Felter and Lloyd, 1898). It is used in India as a diuretic, and to keep insects away from clothing (Nadkarni, 1954). TCM doctors discovered that the real medicinal value of **agastache** is its ability to stop nausea and vomiting. This anti-emetic activity of **agastache** was demonstrated in a recent experiment on young chicks (Yang et al., 1999).

We use it in our clinic to treat cases of nausea that do not respond to the milder **ginger root**. In addition, this herb inhibits the actions of common fungi and bacteria that cause nausea and intestinal problems. You can find it in Chinese grocery stores as a major ingredient in various anti-nausea medicines, available in both pill and liquid forms. It is very valuable for treating the nausea of pregnancy or chemotherapy.

Research highlights

- *Bacteroides* is a strain of bacteria that ferments carbohydrates in the intestinal, respiratory and uro-genital tracts and oral cavity linings, causing toxic gas formation. In a study of several pathogenic bacteria, terpenoids isolated from **agastache** exhibited marked antibacterial activity. This activity proved strongest against *Bacteroides* (Osawa et al., 1990).

AGURU WOOD

Latin: *Aquilaria agallocha*

Sanskrit: Aguru / Agaru

English: Aloewood

Eaglewood

WHAT IT DOES: **Aguru wood** is bitter in taste and hot in action. It increases blood circulation to the lungs and head area, and tonifies and warms the entire body.

RATING: Silver, due to minor limitations in usage

SAFETY ISSUES: None known

STARTING DOSAGE:

- Crude powder: two grams two times per day

Aguru is a large tropical and sub-tropical, fragrant evergreen tree. The resinous wood strongly catalyzes circulation in the cranial organs and chest. This makes it a very effective treatment for bronchial asthma. It warms the lungs, causing a reduction in the spasms and mucus exudation (**Vata** and **Kapha**). It also relaxes tension in the muscles surrounding the lungs, so it is indicated specifically for spasmodic asthma. **Aguru wood**

is also used as a tonic for improving mental function. It is often prescribed for this purpose in the form of incense, or as an herbal cigarette.

Research highlights

- **Aguru wood** has been shown to reduce allergy reactions by inhibiting histamine release from mast cells (Kim et al., 1997).
- Studies in mice show that extracts of **aguru wood** possess potent central nervous system depressant activities (Okugawa. et al., 1993). Since it doesn't contain any ephedrine, this herb can be used when **ma huang** is contraindicated.

ALFALFA

Latin: *Medicago sativa*

WHAT IT DOES: **Alfalfa** is sweet and slightly bitter in taste and cooling in action. It nourishes the blood.

RATING: Gold

SAFETY ISSUES: **Alfalfa seeds** and **alfalfa sprouts** have induced lupus in primates and should be avoided by everyone due to the presence of an amino acid, L-canavanine. Patients with lupus or other connective tissue diseases should not ingest **alfalfa** in any form (Alcocer-Varela et al., 1985).

STARTING DOSAGE:

- 1:5 tincture (with minerals retained): 20-40 drops two to three times per day
- Capsules or tablets: one to four 500-mg. pills two to three times per day

Alfalfa is a classic nutritive tonic herb, rich in chlorophyll, protein, calcium, trace minerals, folic acid, and vitamins B6, E and K. The strong nutrient effects seen with clinical use may be credited to either of two attributes unique to this particular herb. First, the plant has an extraordinarily strong root system that penetrates up to sixty feet into the soil, allowing the herb to mine out precious nutrients. Second, the herb contains specified plant enzymes which enhance nutrient assimilation (Heinerman, 1980). **Alfalfa** is also a rich source of plant phytoestrogens, useful in balancing the hormones during menopause (De Leo et al., 1998). The vitamin K content may also be useful for maintaining bone density.

I use **alfalfa** in a sweet liquid extract form as a nutrient tonic to stimulate gentle healing of the digestive tract membranes. The tonic effects become apparent after one or two weeks of use, often causing a sense of mild euphoria in the weakened. I frequently prescribe it for children and the elderly, especially when there are signs of emaciation and weakness. The tincture has a distinct root beer flavor, so I tell parents to add a tablespoon of it to cola-flavored natural sodas (actually made with juice and mineral water) from their local health food store. This is usually the easiest way to get kids to take it. Several weeks of use often imparts a general feeling of well being in such cases. It is also a good tonic base for other herbs.

Several companies make **alfalfa** in tablets, although I prefer to use it in tincture form when possible. Boericke & Tafel offers a good, inexpensive product—**Alfalco**—in 32-ounce bottles. Herbalists & Alchemists offers a superior product that undergoes an extra step before packaging to add back the minerals usually lost during tincturing.

ALOE VERA GEL

Latin: *Aloe barbadensis*
Aloe vera

Sanskrit: Kumari

Chinese: Lu hui

WHAT IT DOES: **Aloe vera gel** is bitter in taste, cold in action and mucilaginous. It heals and soothes skin irritations

RATING: Gold (external use)

SAFETY ISSUES: Not for internal use when pregnant, if suffering from any intestinal or kidney disease, or during menstruation. Do not use in children under the age of 12, and internal use is not recommended in excess of 8-10 consecutive days. Completely safe when used externally.

STARTING DOSAGE:

- External use: apply liberal quantities of fresh gel from plant leaves topically

I will only be talking here about the external use of **aloe vera gel**. (I believe there are other safer, more effective herbs that have the same internal applications as **aloe**.) **Aloe vera** is a plant that should be kept in every home, affording instant access to the fresh gel from its leaves for treating sunburn, minor burns, skin wounds, insect bites, acne and bruises. It is one of the best household items for parents to keep on-hand to educate children about using plants safely as medicine.

Aloe vera gel can benefit patients suffering from severe skin disorders such as psoriasis, frostbite and radiation burns (Miller et al., 1995; Klein et al., 1988). The healing effects of this plant result from a complex set of anti-oxidant, anti-inflammatory, moisturizing, emollient, and anti-bacterial properties.

AMERICAN GINSENG ROOT

Latin: *Panax quinquefolium*

Chinese: Xi yang shen

WHAT IT DOES: **American ginseng root** is sweet and slightly bitter in taste, and cooling in action. It is an adaptogenic (balancing) tonic that nourishes, moistens and cools the body; strengthens the lungs; reduces weakness and fatigue; and strengthens and calms the nervous system.

RATING: Gold

SAFETY ISSUES: None known. Use cautiously with nausea and weak digestion.

STARTING DOSAGE:

- Dried powder: three to six grams per day
- 4:1 concentrated dried decoction extract: one to two grams per day
- 1:5 tincture: 30-60 drops 20 times per day

TCM doctors use **American ginseng root** as a Yin tonic and a Qi tonic. To see the benefits for yourself, use it after you've endured a severely weakening bout of fever or food poisoning, followed by signs of irritability and heat. It will greatly speed your recovery time. Though not as immediately energizing as **Chinese ginseng root**, **American ginseng root** gradually strengthens neurological force, and is effective in slowly fighting off chronic fatigue, colds, coughs and bronchitis. In our clinic we frequently add it to formulas where the patient has signs of fatigue and dryness in addition to their primary problem. I've noticed it often seems to strengthen the effects of other herbs. Perhaps this is due to the herb's numerous effects on the gut and the brain. Some scientists discount differences between **Chinese** and **American ginseng root**, noting they differ little in the lab. It is clear, however, that both are strongly tonic.

Research findings

- Animal studies show that component found in **American ginseng root** facilitates the uptake of choline into nerve endings, which suggests benefit for memory deficits (Salim, 1997). It also alters brain chemistry in a way that may improve sexual performance in animals (Murphy et al., 1998).
- • Pharmacological studies done in China on animals have shown heart strengthening (cardiotonic) benefits of **American ginseng root**, as well as a calming effect on the cerebral cortex of the brain while simultaneously stimulating the central nervous system.

AMLA FRUIT

Latin: *Emblica officinalis*

Sanskrit: Amalaki

English: Indian gooseberry

WHAT IT DOES: **Amla fruit** is sour, sweet and astringent in taste, and cooling in action. It is a rasayana tonic that promotes longevity, and is especially good for the heart. It fights upper respiratory infections.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried powder: two grams two times per day
- 4:1 Concentrated powder extract: one gram two times per day

Amla fruit comes from *Emblica officinalis*, a tropical and sub-tropical medium sized tree that grows in arid areas. It is very highly regarded for traditional use as a heart tonic and as a rasayana for long life. Its tonic qualities are very strong, lending it medicinal value in the treatment of numerous diseases, including fever, cough, asthma, anemia, hemorrhage, and alcoholism. **Amla** is one of three ingredients in the famous Ayurvedic balancing tonic formula called **triphala** (three-fruit compound). It also comprises about 80% of the famous medicine called **Chyvanaprasha**, an ancient tonic made in the form of a jam that improves mental and physical well-being in people of all ages.

Modern research shows **amla** to contain an extremely high concentration of bioflavonoids and a stable form of Vitamin C, and this may partially account for its reputation. TAM doctors called this herb "tridosaghna," meaning "an agent that stimulates the brain to subdue over-balance in the three controlling systems called **Vata**, **Pitta** and **Kapha**." At our clinic we often add **amla fruit** to formulas when a gentle cleansing action is needed, especially in sensitive and weakened patients.

Research highlights

- Tannin compounds found in **amla fruit** were tested for their effects in the brains of rats on three important free radical scavenging enzymes. Levels of all three increased, and there was a parallel decrease of oxidative stress (Bhattacharya et al. 1999). This illustrates that the antioxidant activity of **amla** is due to more than its high vitamin C content, a common misconception.
- Daily administration of a water extract of **amla fruit** protected laboratory mice from arsenic damage (Biswas et al., 1999), while another study confirmed that **amla fruit** strengthened bodily defense mechanisms against stress-induced free radical damage. The researchers reported that the **amla** appeared to cause an increase in the ability of target tissues to synthesize prostaglandins, which are essential to a host of important regulatory health functions (Rege et al., 1999).
- **Amla** may also possess cancer-fighting properties, as illustrated by several studies. Extracts of three Ayurvedic herbs, **amla fruit**, **tamalaki** (*Phyllanthus amarus*) and **katuki rhizome** (*Picrorrhiza kurroa*) significantly inhibited the ability of carcinogenic chemicals to induce liver cancer. Without the herbs, the incidence of tumors was 100% (Jeena et al., 1999).
- In another study, a group of mice that received dietary supplementation of **amla fruit** along with a known carcinogen experienced a significant reduction in cell poisoning when compared to mice that received only the carcinogen (Nandi et al., 1997).
- Studies have also indicated an ability to protect against elevated cholesterol levels and the resultant arterial damage. Fresh juice of **amla fruit** reduced the atherosclerotic effects of a high-fat, high-cholesterol diet in rabbits, as illustrates by the regression of aortic plaques (Mathur et al., 1996). An earlier human study also showed a decrease in cholesterol with **amla**. However, two weeks after discontinuing **amla fruit**, cholesterol levels rose again (Jacob et al., 1988). Also, all three fruits in **triphala**

were shown to lower cholesterol significantly, although **vibhitaki fruit** (*Terminalia bellerica*) proved slightly stronger than **amla** (Thakur et al., 1988).

ARJUNA BARK

Latin: *Terminalia arjuna*

Sanskrit: Arjuna

WHAT IT DOES: **Arjuna bark** is astringent in taste, cooling in action, and light and dry in property. It is an anti-poison agent that tonifies, strengthens and protects the heart and musculo-skeletal system.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried powder: two grams two to three times per day
- 4:1 concentrated powder extract: one gram two times per day
- 1:2 tincture: 20-40 drops two to three times per day

Arjuna bark is one of the most important heart tonics in Ayurvedic medicine, used to treat all forms of heart disease. It reduces the heart-damaging culprits of inflammation (**Pitta**) and mucus (**Kapha**), and is strong enough to protect against scorpion stings.

Arjuna bark contains a fair amount of triterpenoid saponins, and cooking tends to activate these chemicals (which is why saponin-rich **Chinese ginseng root** is always cooked). Looking at the traditional literature, we see that for more than 1,500 years TAM doctors have boiled **arjuna bark** in milk or ghee to make medicine, having patients ingest it daily for up to a year.

I read an interesting report in the *Journal of Ethnopharmacology* about the tribes of the Maasai and Batemi in East Africa. It seems these people had the world's highest-cholesterol diet, consisting of basically nothing but milk and animal blood, yet they exhibited low incidences of heart disease and elevated cholesterol. Scientists finally figured out the reason. They prepared their blood and milk as a mouth-watering soup containing tree barks known to be rich in **saponins** (Johns et al., 1999).

Research highlights

- The Indian Central Council for Research on Ayurveda and Siddha, citing 20 studies, reported that **arjuna bark** is valuable in treating angina pectoris, hypercholesterolemia, cardiac artery disease (CAD), and hypertension (Pandley et al., eds, 1996; Dwivedi and Jauhari, 1997).
- Animal studies have also demonstrated its ability to improve liver mitochondrial function (Pandley et al., eds, 1996).
- According to long-term outpatient evaluation, 500 mg. of **arjuna bark**, taken three times per day in addition to standard medicines (diuretics, vasodilators and digitalis) for 20-28 months (mean 24 months), contributed to improvement in symptoms, signs,

effort, tolerance and New York Heart Association Class, with improvement in quality of life (Bharani, 1995).

ASHWAGANDHA ROOT

Latin: *Convolvulus arvensis*
Withania somnifera

Sanskrit: Ashwagandha

WHAT IT DOES: **Ashwagandha root** is bitter in taste, warming in action, and a strong rasayana tonic. It calms and strengthens the nervous system (**Vata**); reduces stress; strengthens immunity and vitality; increases sexual energy; and improves cognition and memory.

RATING: Gold

SAFETY ISSUES: Not to be used during pregnancy. Do not use *Withania somnifera* with barbiturates due to potentiation effects. The Nepalese *Convolvulus arvensis* variety has no known safety issues, but Western relatives such as bindweeds are associated with severe toxicity in animals (Todd FG et al., 1995).

STARTING DOSAGE:

- Dried powder: two grams two to three times per day
- 4:1 concentrated powder extract: one gram two to three times per day
- 1:5 tincture: 20-40 drops two to three times per day

There are two different plants known by the Sanskrit name **ashwagandha**. Both are effective. It is almost certain that the *Convolvulus arvensis* Himalayan mountain variety found in Nepal is the original one described in Sanskrit texts, and that *Withania somnifera* was discovered and used later by doctors in India. In our clinic we use both of these plants to strengthen the immunity and vital force of weakened patients showing signs of anxiety or nervousness. **Ginseng root**, commonly used as a tonic, would not be a good choice in such case due to its excitatory action.

The *Convolvulus arvensis* variety of **ashwagandha root** is a perennial bushy plant with white roots that is usually found in tropical areas. It commonly grows at the base of wheat, spiraling around the stems, and Dr. Mana and I located specimens within minutes when we searched wheat farms in Nepal. The root is an aphrodisiac, and can be used to treat any nervous system disease. It is used to treat nervous exhaustion, poor memory, muscle weakness and impotence. The strength of **ashwagandha root** seems to penetrate into the core of one's being.

Withania somnifera has now taken over the common name of **ashwagandha root** throughout the world. Also an excellent plant, it seems to impart overall energy to the system, with a marked calming effect. It is commonly called the ginseng of India. The traditional way of preparing it for nerve diseases (**Vataja**) is to mix it into an approximate 50/50 ratio with ghee, and take one teaspoon two to three

Andrew Weil, MD, reported in a *Public Broadcasting System* (PBS) special the case of a woman with multiple sclerosis who saw marked improvement in her overall health using this herb.

times per day. This tonic can be given to feeble children to increase their weight. It imparts a sense of well being and strength, as well as improved memory. In the interest of comparison, I have taken both forms of the herb. They are very similar in their calming effects, but the Nepalese variety has a much stronger aphrodisiac effect similar to that of **Muira puama balsam**.

Research highlights

- A true adaptogen, investigators have demonstrated **ashwagandha root's** effectiveness in animal models against a wide variety of biological, physical and chemical stressors (Pandley et al., eds, 1996; Rege et al., 1999; Archana et al., 1999; Dhuley, 1998).
- Pharmacological studies show it can prevent immunosuppression caused by exposure to strong chemical agents, and may be valuable in restoring immunity after exposure to or treatment with such drugs (Ziauddin M et al., 1996). It also provides protection against some side effects of chemotherapy (Pandley et al., eds, 1996).
- The alcohol extract of **ashwagandha root** has significant anti-inflammatory action in both acute and chronic types of inflammation, as demonstrated in rabbit, guinea pig, rat and frog animal models (Pandley et al., eds, 1996).
- Citing a total of 31 studies, the Indian Central Council for Research on Ayurveda and Siddha tells us that **ashwaganda root** exerts its most powerful pharmacological influence on the reproductive system, neuropharmacological disorders, cardiovascular system, respiratory system, bacteria, fungi, inflammation and gastric acidity (Pandley et al., eds, 1996).

ASTRAGALUS ROOT

Latin: *Astragalus membranicus*

Chinese: Huang qi

WHAT IT DOES: **Astragalus root** is sweet in taste and slightly warming in action, It strengthens the vital force (**Qi**), nourishes the immune system, and strengthens the heart and lungs.

RATING: Yellow, due to limitations in usage.

SAFETY ISSUES: Should not be used to treat acute infections. Use cautiously in patients with hypertension or heat signs.

STARTING DOSAGE: dried powder

- Dried powder: 1-3 grams per day for long-term use

Astragalus root is a very important vital energy (**Qi**) in TCM, as important as **ginseng root**. It has long been used to treat immune deficiency and fatigue, to heal wounds, and to improve digestion and reduce edema caused by cardiac weakness. It is also very useful for chronic or acute low blood pressure. **Astragalus root** and **rehmannia root** are key herbs in most TCM prescriptions for treating chronic nephritis (Su et al., 1993, Zhang et al., 1986, Zhao, 1983). **Astragalus** is noticeably stimulating, and its action is

described as being able to "push the blood," and "bring energy up to the head." I wholeheartedly agree with the latter statement--I get a headache if I take it myself.

To determine if a patient should take **astragalus** for immune tonification, the simple key sign I look for is weakness. It is also useful for patients who complain of catching every bug that comes around. It is best used in small doses over a long period of time for prevention of infections, in contradistinction to **echinacea** or **chrysanthemum flowers**, which are best used with acute infections.

TCM doctors also use **astragalus root** for treating prolapse syndromes of the uterus, stomach and anus, and to help stop uterine bleeding. I urge caution when using **astragalus** unless under the care of a qualified health care practitioner, because while it works really well in weak patients with signs of coldness, **it can create nervousness, headache and even raise blood pressure in patients with heat signs or hypertension.**

Research highlights

- In a study of the effects of **astragalus** on strength and endurance in mice, the group that received **astragalus decoction** exhibited greater weight gain and greater endurance in swimming tests in comparison to the control group (reported in Bensky and Gamble, 1986).
- In various pharmacological and animal studies, **astragalus root** shows considerable immune-enhancing activity. Oral doses of the whole root or root extracts have been shown to increase phagocytic activity (cellular debris gobbling), enhance production of interferon (an important immune chemical) and activate natural killer (NK) cell activity.
- **Astragalus** also excites the central nervous system, strengthens heart contraction in fatigued patients, decreases protein in the urine, and conserves liver glycogen (Ma et al., 1998; Liang et al., 1995; Hong et al., 1994; Hong et al., 1992; Zhao et al., 1990; reported in Yeung, 1983).
- **Astragalus** has been studied in vitro for its effects on ischemic heart disease, heart failure, angina pain and liver protection against poisonous agents (endotoxin). In one study of patients with ischemic heart disease, **astragalus root** relieved angina symptoms and improved EKG results (Li et al., 1995).
- A review of live animal research has indicated that it affords a cardio-protective benefit in cases of ischemic heart disease, heart failure, angina pain, and liver poisoning by endotoxin. It is an in vitro antioxidant mechanism that allows the herb to offer this protection. (Miller, 1998). Other researchers have come to the same conclusion with regard to liver protection (Wang and Han, 1992).
- In one interesting study that tested the ability of **astragalus root** to increase vital energy (**Qi**), researchers inserted microcomputers inserted into the stomachs of healthy dogs after they received a concentrated **astragalus** solution. The readings indicated that the solution strengthened the movement and muscle tone in the intestine, especially the jejunum (Yang, 1993).
- Several studies have confirmed the ability of **astragalus root** to prevent heart damage caused by viral myocarditis. Researchers used a formula composed primarily of **astragalus root, ophiopogon root** and **honeysuckle flower** in a randomized controlled cross-over clinical study of viral myocarditis in mice. They compared left ventricular function in the test group to the same function in a control group that

received Coenzyme Q10. The researchers concluded that the formula could directly inactivate the Coxsackie B3 virus, protect the heart cells, and increase interferon and NK immune cell activity (Yan, 1991).

- Another group concluded, "it is a rational choice to treat patients with **astragalus** in viral myocarditis" (Guo et al., 1995; Peng et al., 1995).
- Two weeks after receiving injections of **astragalus fraction**, 15 of 19 patients with congestive heart failure experienced relief from chest distress and dyspnea, and improved capability to exercise (Luo et al., 1995).
- In a study of rats with acute brain edema caused by pertussis vaccine, a TCM formula called bu yang huan wu tang that contains 84% astragalus root was shown to raise declining levels of the important cellular antioxidants SOD and glutathione peroxidase. Researchers concluded that the formula protected the blood-brain barrier and certain brain cells from damage (Zhou et al., 1994).
- A controlled study to test the ability of TCM formulas to improve the quality of life of persons with chronic renal failure treated 36 patients with a decoction containing **ginseng root, astragalus root, licorice root, rhubarb root and cinnamon twigs**. Researchers studied the effects on six symptoms: fatigue, lassitude in loin and legs, aversion to cold, anorexia, sexual dysfunction and mental depression. Five patients improved markedly in symptom scores, and their creatine levels approached normal readings (Sheng et al., 1994).

BALA

Latin: *Sida cordifolia*

Sanskrit: Bala

English: Country Mallow

WHAT IT DOES: **Bala** is sweet in taste and hot in action. It nourishes and strengthens immunity, heals the nerves, reduces pain and stimulates formation of healthy new tissue.

RATING: Silver, due to minor limitations in usage

SAFETY ISSUES: Contains small amounts of ephedrine alkaloids. The amount of total alkaloids in **bala plant** by average dry weight is 1/15th of that found in **ephedra**. **Bala seeds**, usually not commercially available, contain about four times as much of the alkaloids, about 1/4 of that found in **ephedra**, and so should not be used unless under the care of a professional health care provider (reported in Kapoor, 1990; reported in Huang, 1999).

STARTING DOSAGE:

- Dried powder: two grams two times per day
- 4:1 concentrated powder extract: one gram two times per day

Bala is used as a tonic and to activate the function of the nervous system (**Vata**) by increasing blood circulation. As a tonic, it increases the vital properties of the serum (plasma), which is very important for the nourishment of the cells, the strength of the healing power and the maintenance of immunity. Following this effect, it has

medicinal value in treating neuropathy related to any organ including the heart, brain, spinal cord, facial nerves and inner ear. There is a gradual tissue-strengthening effect, most noticeable with increased wound healing after injury. It is used to stimulate healing of dry painful joints in osteoarthritis. TAM doctors also use it to heal the lung in tuberculosis, as well as for chronic bronchitis and chronic hemoptysis (spitting of blood).

The low level of ephedrine in **bala** does not warrant its substitution for **ephedra** in over-the-counter weight loss formulas, though it probably lowers risk factors. It is possible that unscrupulous manufacturers may attempt to hide the presence of **ephedra** alkaloids by adding **bala** to their weight-loss products.

TAM doctors use **bala root** to make various complex oil preparations. These oils are used as external applications for various nervous system diseases, such as neuropathies, facial paralysis, spasmodic coughing or asthma, vertigo, seizures, and menstrual cramps. The oils are also used for rheumatic and arthritis pain. **Bala root** is a major ingredient in the famous medicinal oil called **narayana taila**.

Research highlights:

- Though a major Ayurvedic herb, there is still little scientific research available on **bala**. Test tube research has confirmed the presence of analgesic and antiinflammatory activities in the aerial portions and roots (Kanth and Diwan, 1999).
- Pharmacological studies have shown the presence of mucins, fatty oils and resins, as well as plant sterols, which may partially account for the tonic actions of the herb (reported in Kapoor, 1990).

BEET ROOT

Latin: *Beta vulgaris*

WHAT IT DOES: **Beet root** is sweet in taste and detoxifying in action. It nourishes the liver, intestines and other internal organs and protects them from toxins.

RATING: Silver, due to limitations of medicinal potency

SAFETY ISSUES: None known

STARTING DOSAGE:

- Vegetable: ingest freely
- Dried powder: two to three grams two times per day

Beets are cultivated worldwide both as a food and a source of sugar. I personally think they are also a very effective herbal medicine. Remember all fresh foods are medicinal, but only those with a unique composition that creates a higher-than-normal activity level qualify as medicines. The dark red color of the **beet root** is due to an intensely crimson pigment called betanin, which bleeds out if the skin is pierced before cooking. For this reason

A news report from Czechoslovakia reported that villagers who ate **beets** along with their sausages were able to lower the usual increases in colon cancer found in that country due to diet. Research seems to be backing this up and giving us the reasons why. (Filiberti R et al., 1995, Manousos et al., 1983).

experienced cooks usually bake, steam or boil them with the skins intact. It also contains sugars (up to 22%), valuable fiber, anthocyanins, and betaine etc. All byproducts of beet production are sold for use in livestock feeds. Betaine is important because it can help the body regenerate a key cellular antioxidant enzyme (methionine reductase), which in turn is used by the body to prevent the buildup of homocysteine, a very harmful chemical. Toxins like alcohol and environmental chemicals work in the opposite direction, damaging our liver, blood vessels, kidneys and intestines if we are low this protective enzyme (Barak, 1996). Although medical research on **beet root** is sparse, I suspect that more evidence of its medicinal powers will emerge. I often mix **beet root powder** into herbal formulas to make them more palatable, especially to children.

Research highlights

- Researchers tested the inhibitory effect of **beet root** extract against both the Epstein-Barr virus and mouse skin and lung cancers, revealing a higher order of activity compared to other red-pigment vegetables and fruits such as **cranberry**, **red onion skin** and short and long **red bell peppers**. Researchers concluded that " The combined findings suggest that beetroot ingestion can be one of the useful means to prevent cancer." (Kapadia et al., 1996).
- A controlled study done in Greece of patients with colorectal cancer showed they ate significantly more lamb and beef, and less **beets**, spinach, lettuce and cabbage (Manousos et al., 1983).
- A rat study suggested that **beet fiber** could help eliminate abnormal cells from an irradiated colon by initiating apoptosis (programmed cell death) (Ishizuka et al., 1999).

BILBERRY & BLUEBERRY

Latin: *Vaccinium myrtillus*
Vaccinium myrtilloides

WHAT THEY DO: **Bilberries** and **blueberries** are sour in taste and cooling in action. They remove inflammation and congestion from tiny blood vessels, strengthening vessel integrity and microcirculation; they prevent oxidative stress damage to the eye and to neuronal cells.

RATING: gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Blueberries: eat fresh berries freely in season, use frozen berries during the off-season
- Bilberry extract: 60-180 mg anthocyanosides per day.

The colorful anthocyanoside pigment compounds in **bilberries** and [to a slightly lesser extent] **blueberries** find their way to the capillary vessel basement membranes and the

A one-pound bag of frozen **blueberries** eaten over a week's time provides approximately 400 mg of anthocyanosides, or about 60 mg. per day.

surrounding collagen structures, where they neutralize free radicals which can weaken these tiny structures. Healthy and resilient capillary vessels are able to maintain their shape and function for normal, efficient microcirculation to prevent swelling in the surrounding tissues. This is very useful in the prevention of vascular complications of diabetes, and the improvement of night vision and overall visual acuity. For the same reasons, **bilberries** or **blueberries** can be used to treat intestinal inflammation, hemorrhoids, macular degeneration, rheumatoid arthritis and varicose veins.

High doses of **bilberry extract** (and other flavonoids) act to strengthen the blood-brain barrier by acting on collagen fibers to protect sensitive peptide bonds from attack and actually restoring degraded basement membranes (Robert et al., 1977, 1997). Since weakness of the blood-brain barrier is a suspected component in many serious diseases such as multiple sclerosis and chronic fatigue syndrome, I often tell patients with nervous system weakness to use **blueberries** in fairly large quantities over a long period of time. Typically, I suggest that they eat one bag of frozen **blueberries** (this form seems to be the most convenient to obtain year-round) once or twice per week, pretty much forever. Most patients love this prescription. The stronger concentrated **bilberry extracts** are needed with more serious diseases such as MS and macular degeneration, unless your love to eat **blueberries**. The best thing about them is that, like **raspberries** and **blackberries**, they contain less sugar than most other fruit.

Research highlights

- The antioxidant action of **bilberry extracts** can help prevent the problems caused by elevated LDL (bad) cholesterol levels (Laplaud et al., 1997).
- Other reported benefits based upon pharmacological studies include wound healing, anti-ulcer action (Martin A et al., 1998), protection against damage to tendons, ligaments and cartilage (Monboisse et al., 1984),
- Of great interest to me was a 1997 study showing that **bilberry extract** in high dosage (equivalent to 180 mg. anthocyanosides per day) helped animals maintain normal permeability of the blood-brain barrier during induced hypertension. The same research group was able to demonstrate this over a series of experiments done over the next two decades (Robert et al., 1977; Robert et al., 1997).

BOSWELLIA GUM

Latin: *Boswellia serrata*

Boswellia carterii

Sanskrit: Shallaki

Hindi: Salai guggul (*B. serrata*)

Chinese: Ru xiang (*B. carterii*)

English: Frankincense

WHAT IT DOES: **Boswellia gum** is pungent and bitter in taste, and warm in action. It reduces pain, swelling and inflammation in the lungs, intestines and joints.

RATING: Yellow, due to limitations in usage due to strong cooling action.

SAFETY ISSUES: None known. Long-term use may dampen appetite.

STARTING DOSAGE:

- Dried powder: two to three grams two to three times per day
- 4:1 concentrated powder extract: 250-750 mg two to three times per day

Boswellia gum is used as an effective pain-relieving anti-inflammatory in the treatment of osteoarthritis, rheumatoid arthritis, diarrhea, lung diseases (including asthma), boils, edema, pain, psoriasis, ulcerative colitis, bronchial asthma, and Crohn's disease. It works by affecting one of two classes of mediators of inflammation along the leukotriene pathway. Prostaglandins and leukotrienes are known collectively as eicosanoids, and they mediate pain and edema. TCM doctors use the related *B. carterii* species to remove blood stasis and reduce pain. What makes this herb stand out is its specificity and strength of effect.

Boswellia gum can often (but not always) be used as an alternative to NSAIDs and steroids, causing none of the common side effects such as stomach bleeding, ulceration, weakened heart and even death seen with these Western remedies. At our clinic we usually use **boswellia gum** in formulas for pain and inflammation. I have also used it successfully to reduce asthma symptoms in many patients. No plant works for all types of inflammation, so the best thing to do is test it out for a few weeks if using it by itself. Studies of **Boswellia** toxicity in rats, mice, and monkeys have shown it to be safe, even at high doses.

Research highlights

- A double blind, placebo-controlled study done on 40 asthma patients in Germany showed marked improvement in the treated patients compared to the control group (Gupta et al., 1998). Another study, done on ulcerative colitis patients using a standardized extract for six weeks, reported improvement in 82% of patients (Gupta et al., 1997).
- **Boswellia** may even be useful in treating leukemia, with one Chinese study showing that it stimulated leukemic cells to kill themselves, a phenomenon known as programmed cell death (Jing et al., 1999).

Note: The Chinese *Boswellia carterii* is sometimes called **mastic**, and should not be confused with *Pistacia lentiscus*, also called **mastic**, which is used to treat ulcers.

BROMELAIN

Latin: *Ananas comusus* (source)

WHAT IT DOES: **Bromelain** is pungent and slightly sweet in taste, with a strong long-lasting penetrating quality. It reduces inflammation and mucus, improves digestion and absorption, speeds wound healing, and helps fight tumors.

RATING: Silver, due to minor limitations in usage

SAFETY ISSUES: Do not use if taking anti-coagulant (blood-thinning) medicines. Do not exceed suggested dosage unless prescribed by a physician. Overuse may weaken intestinal membranes.

STARTING DOSAGE:

- Enzyme pill: one to two 500 mg. pills (standardized to 2000 GDU's (a measure of protein-digesting capacity) twice per day between meals

Bromelain is an herbal compound of digestive-enhancing enzymes, derived from the stem of pineapple, and has been used as a medicine since 1957. Several hundred scientific papers have appeared in the medical literature supporting its use for various problems (Murray and Pizzorno 1989). It is important to understand that **bromelain's** digestive action takes place both in the digestive system and the blood.

Your blood coagulates when a special protein named fibrinogen converts to the more elastic fibrin. **Bromelain** inhibits blood coagulation by both inhibiting fibrinogen and breaking down fibrin (Lotz-Winter H, 1990). It also blocks the formation of several inflammatory compounds, and exhibits strong mucolytic (mucus-reducing) activity (Taussig & Batkin 1988). When I see patients who cannot overcome chronic infections and are on antibiotics continuously, I give them **bromelain** to enhance the antibiotic's effectiveness and cross this impasse.

Because of its unique group of actions, we use **bromelain** at our clinic as an all-purpose anti-inflammatory and to speed wound healing, especially in patients with poor digestion or those recovering from recent trauma, surgical or otherwise. It is useful in angina, arthritis, athletic injury, connective tissue inflammation, bronchitis, burns, cellulitis, dysmenorrhea, edema, bruising, poor digestion, pancreatic insufficiency, pancreatitis, pneumonia, scleroderma, sinusitis, staph infections, post-surgical trauma, and thrombophlebitis. I consider **bromelain** second only to **tian chi root** for speeding recovery from trauma. Both can be used together as an effective combination.

Research highlights

- **Bromelain** reduces edema, bruising, wound-healing time and pain following surgery (Howat RC et al., 1972, Murray and Pizzorno, 1989).
- **Bromelain** has direct anti-cancer effects, originally attributed to its ability to digest the protein coatings surrounding tumors. However, recent evidence indicates it may also strengthen the ability of monocytes to attack target cancer cells (Eckert K et al., 1999).
- **Bromelain's** digestion-enhancing quality increases the serum levels and effectiveness of several antibiotics (Smyth RD et al., 1968, Zimmermann I et al., 1978), and is almost as effective by itself as an antibiotic treatment for sinusitis, bronchitis, pneumonia, and staph infections (Seltzer 1967, Weiss S et al., 1972).

BUPLEURUM ROOT

Latin: *Bupleurum chinensis*
Bupleurum falcatum

Chinese: Chai hu

English: Chinese thoroughwax

WHAT IT DOES: **Bupleurum root** is bitter and pungent in taste, and cooling (anti-inflammatory) in action. It releases internal tension and lowers mental stress and anxiety; reduces dizziness and vertigo; warms cold hands and feet caused by tension; stimulates the immune system; reduces fever and liver inflammation; stimulates bile flow; protects the liver; and improves digestion.

RATING: Silver, due to minor limitations in usage (can generate wind)

SAFETY ISSUES: None known

STARTING DOSAGE:

- Crude herb: three to twelve grams per day
- Concentrated powder: one to four grams per day

Bupleurum is a very important silver standard herb, critically useful for some patients. Its scientifically investigated actions are as diverse as our Chinese animal example in the text box. TCM doctors note that when you look at this plant, its branches splay outward in a free and unrestricted manner. This is the "Doctrine of Signatures" or traditional way of seeing the plant's main action--in this case, the removal of blockages from the free flow of the body's vital energy. (The "Doctrine of signatures," or "Signature of God," is the idea that the shape, form or color of a plant can tell you how to use it.) All the TCM clinical uses for this herb flow from this idea, because as the energy flows without blockage, the hands warm, the digestion eases, the mind calms and irritation and heat decrease. Once when I took this herb myself, I was amazed to feel my hands and begin to warm until they were actually buzzing in a pleasant way for over an hour. (Don't tell the government.)

Bupleurum root is a main ingredient in a formula called "Rambling without a destination," which is a great formula name, isn't it? The formula is used to treat the

same conditions as the root, but in persons with additional signs of weakness and nutrient deficiency. Drs. Dan Bensky and Randall Barolet, in their excellent 1990 professional TCM textbook Formulas and Strategies, quote an ancient text that recommends this formula for "girls with weak blood and Yin deficiency."

Bupleurum is a good illustration of the problems we face when trying to translate Chinese thinking into Western words. We remember the story of the ancient Chinese dictionary, when a Westerner looked up the word "animal" and found the following definition: *There are eight types of animals: 1) Cows 2) Pigs 3) Big animals 4) Animals that bite 5) Animals that live in holes 6) Animals that float 7) Mythical animals 8) Animals that belong to the emperor.*

Thought this seems funny at first, it is actually a quite practical if not logical grouping. In ancient times, cows and pigs were the most important domesticated food sources, large animals and animals that bit were dangerous, animals that lived in holes and floated were good secondary food sources, mythical animals were a necessary part of religious observances, and messing with the emperor's animals got you killed.

Research highlights:

- Numerous components of **bupleurum root** have shown anti-inflammatory activity in a wide variety of animal models (Just et al., 1998, Bergema et al., 1998, Tagaki et al., 1969).
- In a screening of 232 plants for anti-cell adhesiveness activity, important for tumor cell and cancer metastasis inhibition, researchers found **bupleurum root saponins** to be one of the six most active (Ahn et al., 1998).
- **Bupleurum root extracts** protected rat livers from chemical insults, leading researchers to conclude that members of this species “have potential as broad spectrum antihepatic agents” (Chin et al., 1996).
- **Bupleurum root saponins**, like other saponin-rich herbs, show potent heart and blood vessel protective effects. They have been shown to “inhibit the formation of lipid peroxides in the cardiac muscle or in the liver, influence the function of enzymes contained in them, decrease blood coagulation, cholesterol and sugar levels in blood, (and) stimulate the immunity system” (Purmova et al., 1995).
- In a series of experiments to determine the mechanism by which **bupleurum root saponins** inhibit kidney inflammation, researchers concluded that they reduced platelet sticking (blood stickiness,), protected against loss of antioxidant capacity, and enhanced blood and kidney corticosterone levels (Hattori et al., 1991).
- Researchers have also determined that **bupleurum root** enhances macrophage cell activity (Matsumoto et al., 1995).
- Various clinical studies on humans have shown liver enzyme reduction in hepatitis, fever reduction in infection, and diuretic effects (reported in Bone, 1996).
- One of the most famous bupleurum root-based formulas is **minor bupleurum decoction**, which contains **bupleurum root, scute root, pinellia tuber, ginger root, ginseng root, honey-fried licorice root** and **ziziphus fruit**. This formula was able to promote clearance of hepatitis B antigen from the blood of 14 chronically ill children (reported in Bone, 1996).

BURDOCK ROOT

Latin: *Arctium lappa*

Chinese: Niu bang zi

WHAT IT DOES: **Burdock root** is bitter and slightly pungent in taste, and cooling in action. It improves digestive, liver and bowel functions, reduces heat and inflammation, and helps detoxify poisons. It also heals the skin.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Fresh vegetable: eat freely

- Decoction: 1 teaspoon of the root simmered in one cup of water for 10-15 minutes, taken three times per day
- Dried powder: two to six grams per day
- 1:5 Tincture: 20-40 drops three times per day

Burdock root is available as a common vegetable, and it may be eaten freely in this form. As is common with many bitter herbs, Burdock stimulates digestion, increases bile secretion and reduces inflammation, which may account for its reputation as a liver detoxifier (Lin et al., 1996).

Burdock contains an abundance of inulin, a compound that feeds the friendly bacteria in the intestine. It is also mildly anti-bacterial and anti-fungal. Japanese scientists have shown that Burdock contains **desmutagens**, a word coined for substances that inactivate mutagens (cancer-causing agents) such as pesticides and toxic compounds that are created in some meats during the cooking process (Morita K et al., 1984). These findings help explain why **Burdock root** has traditionally been a first choice in treating frustrating skin conditions like eczema, boils, acne and psoriasis. Herbalists believe that imbalances or toxins in the bowels carry through to the liver and blood, and if the liver or bowels are slow in getting rid of them, they are eventually "thrown out" to the skin. TCM doctors also use **Burdock root** to treat fevers, cough and swollen red throat.

CARTHAMUS FLOWER

Latin: *Carthamus tinctorius flos*

Chinese: Hong hua

English: Safflower flower

WHAT IT DOES: **Carthamus flower** is pungent in taste and warming in action. It promotes blood circulation and helps reduce pain.

RATING: Silver, due to minor limitations in usage

SAFETY ISSUES: Should not be used during pregnancy. Use with caution if taking anti-coagulant medications. Do not take during menstruation if bleeding is heavy.

STARTING DOSAGE:

- Dried powder: three to nine grams per day

Note: To make a wine preparation add nine grams of concentrated powder to four ounces of wine and take in one-ounce doses throughout the day.

Carthamus flower has a beautiful red color. It is one of my favorite herbs for promoting blood circulation, and it stops pain and can be used safely to treat poor circulation, dysmenorrhea and amenorrhea. At our clinic we also include it in formulas for treating angina pectoris and other serious cerebrovascular diseases. **However, in such cases we only treat with carthamus in coordination with a cardiologist to assure patient safety.** TCM doctors also use it to reduce spleen and liver enlargement. A rare special

form of this flower from Tibet called **tsang hong hua** is considered to be the highest quality. TCM doctors believe taking **carthamus flower** with wine strengthens the herb's ability to break down blood stasis.

Research highlights

- Chinese laboratory studies have shown that **carthamus flower** can improve coronary blood flow and increase the time necessary for the blood to clot. Clinical trials with a tablet made from an alcohol extract of **carthamus** resulted in reduced angina pain, improved endurance and improved EEG. Intravenous infusion also proved very effective (reported in Dharmananda, 1994).
- Decoctions of **carthamus flower** with other blood moving and **Qi** invigorating herbs have also proven beneficial in patients with coronary artery disease. In one study, patients reported significant reduction in symptoms, and 41% had an improvement in ECG after one month of treatment. Following the four-month study, 90% of the patients were able to stop using nitroglycerin (reported in Bensky and Gamble, 1993).
- **Carthamus flower** has shown pharmacological actions in animal and in vitro experiments including dilation of the coronary artery, constriction on the kidney blood vessels, protection against brain injury from ischemia (lack of blood flow), and lowering of cholesterol (reported in Yeung, 1983).

CASTOR OIL

Latin: *Ricinus communis*

Sanskrit: Eranda

WHAT IT DOES: Externally, **castor oil** stimulates lymph drainage. Internally, it is used as a laxative.

RATING: Yellow, due to specific limitations in usage

SAFETY ISSUES: **Castor oil** is bitter and slightly sweet in taste. There are no known safety issues for external use. However, do not use for internal purposes with intestinal obstruction. Do not use internally for more than 10 days consecutively. **Warning: Do not ingest seeds--they are poisonous.**

STARTING DOSAGE:

- Oil—internal laxative use: ingest one to two tablespoons at bedtime
- Oil--external use: soak cotton or flannel pads in the oil and apply as a moist pack for one-half to one hour, using a heating pad to stimulate absorption.

Castor oil is used externally to stimulate movement and elimination in the lymphatic system, and internally as a laxative. I never use **castor oil** internally as a laxative for more than one or two days per month due to its potency and bad taste. However, like other laxatives, it can be

Use **castor oil** packs as follows: 1. Purchase a good quality castor oil, preferably in organic form free of chemicals and pesticides. 2. Wash cotton or flannel cloth in clean, hot water to remove poisons. 3. Saturate cloth in castor oil and place over area of treatment. 4. Cover with plastic and apply heat—medium setting on heating pad—to increase penetration. 5. Leave on for 30 to 60 minutes. 6. Repeat every day or every other day for six days.

used to cleanse the bowels in cases of chronic or acute skin eruptions. Following the Ayurvedic tradition, short-term use of a potent laxative like **castor oil** is recommended if the patient suffers from heart disease, severe hypertension (to quickly reduce elevated blood pressure), or chronic fever.

Dr. William McGarey tells us in his book Edgar Cayce and the Palma Christi that a Dr. Arthur Schoch treated ten cases of severe skin eruption successfully with a few doses of **castor oil**. One patient reported to me that she could get pimples to disappear quickly by applying a single drop of castor oil to them a few times a day.

At our clinic, we use **castor oil** primarily as an external preparation, as packs placed over swollen glands, cancers, cysts, hard swellings, and other abnormal growths. The oil seems to stimulate the lymphatic system to draw away poisons. We usually place the packs over the lymph glands near the shoulders, groin, upper back and neck, over the abdomen or liver, or over the kidneys. I remember in particular a woman with chronically swollen lymph glands in the neck who had seen several doctors to no avail. **Castor oil packs** rid her of the problem in two weeks.

CHAGA MUSHROOM

Latin: *Inonotus obliquus*

WHAT IT DOES: **Chaga mushroom** has a bitter, coffee-like flavor. It stimulates the immune system and draws the life force out of tumors.

RATING: Silver, due to high concentration of nutrients

SAFETY ISSUES: None known

STARTING DOSAGE:

- 1:5 tincture: 40-60 drops two to three times per day
- Tea: dissolve one teaspoon dried mushroom in one cup of water several times per day

Chaga mushroom grows on birch trees in the colder northern climates. There have been 150 species of medicinal mushrooms found to inhibit the growth of different kinds of tumors, especially cancers of the stomach, esophagus, and lungs (Wasser et al., 1999), but **Chaga** seems to stand out from the rest. I learned about this mushroom from herbalist David Winston, who told me it has been used traditionally to treat different forms of cancer in Siberia, Canada, Scandinavia, the United States and Russia.

Chaga is a fungal parasite which draws its nutrients out of living trees, rather than from the ground. Fungi digest food outside their bodies by releasing enzymes into the surrounding environment, breaking down organic matter into a form the fungus can then absorb. A look at the research on **Chaga** shows a similar pattern with respect to its effect on tumors.

The anti-cancer properties of betulin or betulinic acid, a chemical isolated from birch trees, is now being studied for use as a chemotherapeutic agent. **Chaga** contains large amounts of betulinic acid in a form that can be ingested orally, and it also contains the full spectrum of immune-stimulating phytochemicals found in other medicinal

mushrooms such as **maitake mushroom** and **shiitake mushroom**. Currently, **chaga** is only available from Herbalists & Alchemists (see resource guide).

Research highlights

- Studies done in Poland have demonstrated **Chaga's** inhibiting effects on tumor growth (Rzymowska, 1998).
- Betulin seems to work highly selectively on tumor cells because the interior pH of tumor tissues is generally lower than that of normal tissues, and betulinic acid is only active at those lower levels (Noda et al. 1997).
- Once inside the cells, betulinic acid induces apoptosis (programmed cell death) in the tumors (Fulda et al., 1997).

CHASTE TREE BERRY

Latin: *Vitex agnus-castus*

WHAT IT DOES: **Chaste tree berry** is bitter and pungent in taste and cooling in action. It relieves symptoms associated with PMS and menopause.

RATING: yellow, due to limitations in usage

SAFETY ISSUES: Do not use when pregnant or nursing. Use with caution if taking hormones or birth control pills.

STARTING DOSAGE:

- Tincture: 15-35 drops three times per day
- Dried berry: three to six grams three times per day

Chaste tree berry has risen in popularity over the past ten years because of its effect on the female hormone system. It has the ability to increase progesterone production, inhibit FSH (Follicle-stimulating hormone or follitropin), and inhibit prolactin. Research has shown these effects to be non-toxic and attributes them to dopamine receptor-site binding (Jarry et al., 1994). FSH assists in follicle maturation in females, encouraging progesterone production. Additionally, it increases the secretion of estradiol, one of the female estrogens. Simply put, **chaste tree berry** helps increase both estrogen and progesterone, with a stronger effect on progesterone. This explains its traditional use as a remedy for PMS, menopausal symptoms, and breast pain (mastodynia).

At our clinic we often use **chaste tree berry** to treat simple PMS symptoms before resorting to more complex formulas. Although we usually use stronger herbs like **lycium bark**, **red clover blossoms** and **soy extracts** to treat hot flashes, sometimes adding **chaste tree berry tincture** can improve results.

There is a commercial German **chaste tree** product (**Agnolyt**) that is beneficial for amenorrhea, PMS-related water retention, mouth ulceration, and severe constipation (Amann 1982; Amann 1979; Amann 1965; Hillebrand 1964). However, for best results when treating amenorrhea it needs to be taken for

In men, inhibition of prolactin causes a decrease in sperm production. Since **chaste tree berry** inhibits prolactin, monks used it in medieval times to reduce male sexual desire.

up to a year. According to herbalist Paul Bergner, elevated prolactin levels are often found in people with celiac disease. Therefore, it may be wise to undergo a trial withdrawal of gluten before using **chaste tree berry**.

Research highlights

- In a double-blind, placebo controlled of 100 patients, extract of **chaste tree berry** was found effective in the treatment of breast pain related to the menstrual cycle (Halaska et al., 1998).
- In a randomized controlled clinical trial involving 52 women with menstrual problems due to elevated production of prolactin, **chaste tree berry** capsules reduced prolactin levels significantly and restored the menstrual cycles to normal without side effects (Milewicz et al., 1993).
- In a series of animal studies, **chaste tree berry extract** proved as effective as a synthetic dopamine agonist (Lisuride) in inhibiting prolactin secretion (Silutz et al., 1993).

CHRYSANTHEMUM FLOWER

Latin: *Dendranthema grandiflorum*
Chrysanthemum parthenium
C. morifolium

Chinese: Ju hua

WHAT IT DOES: **Chrysanthemum flower** is sweet and slightly bitter in taste, and slightly cold in action. It reduces heat and congestion in the liver, lungs and eyes, eases coughs and colds, fights viral illness and infection.

RATING: yellow, due to minor limitations in usage

SAFETY ISSUES: Should not be used during pregnancy, as it is a uterine stimulant. Occasional minor side effects such as mouth and gastric disturbance have been reported (reported in McGuffin et al., 1997). Some scientists voice concerns about potential allergic reactions or cross-reactivity with blood thinning agents such as Warfarin and Ticlopidine (Barsby et al., 1993, DeSmet, 1993).

STARTING DOSAGE:

- Fresh leaves: one to three per day
- Concentrated powder: one to three grams per day

We keep little packets of **Yin Chiao** tablets on hand at our clinic and give patients three pills three times per day at the first sign of a cold. It will often stop the cold within 24-48 hours, or at least shorten the duration by a few days. I have one elderly patient who calls me every year and asks for a big supply of what she calls her "Yin Choo cold pills." I think she's hawking them on the side at her retirement home.

Chrysanthemum flowers are used extensively in TCM formulas to treat upper respiratory infections, allergies, headaches, red eyes and hypertension. It effectively reduces irritation and inflammation in the lungs, nasal passageways and throat, and scientific studies have shown it to be anti-bacterial, anti-fungal and anti-viral (reported in Yeung, 1983). It also has a calming anti-hypertensive effect. The Chinese use it for the same purposes **echinacea** is used in the West, and it is commonly found in various cold and sinus

remedies such as the famous **Yin Chiao**, available in many Chinese grocery stores.

TCM doctors rate **chrysanthemum** according to its colors and place of origin. **White chrysanthemum** (bai ju hua) is considered slightly superior to other forms for nourishing the liver, and so is used to treat diminished vision. **Yellow chrysanthemum** (huang ju hua) has a greater wind- and heat-clearing activity, and is used most often to treat eye redness and headache. The best-quality **yellow chrysanthemum** (hang ju hua) comes from the Chinese city of Hangzhou. This type, in addition to its other uses, is strong enough to reduce dizziness caused by elevated blood pressure.

COCOA BEAN

Latin: *Theobroma cacao*

Chinese: Cha ku li

WHAT IT DOES: **Cocoa bean** is bitter in taste and warming in action. It stimulates the mind and elevates mood.

RATING: Yellow, due to minor limitations in usage (contains caffeine)

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Dried powder: one to two grams two times per day. May be used sweetened or unsweetened.

The Latin *Theobroma* means "Food of the Gods." **Cocoa bean** and its derivative, **chocolate**, can help digestion, increase blood flow to the heart, and ease chest congestion. It is high in antioxidants and happens to taste better than most other herbs. In Central America, **cocoa bean** has long been used to treat pregnancy problems and ease childbirth, coughs, chest congestion, and fever. Its use in the Western world took off in 1876 with the invention of **milk chocolate**.

Cocoa bean contains caffeine, tryptophan (a serotonin precursor), theobromine (a substance similar to caffeine) and amandamides (substances that activate the same receptor in the brain as marijuana). Of course, commercial **cocoa** products are loaded with sugar, so I prefer to make my own hot cocoa with **soy milk**, sweetened with a mixture of **honey** and **stevia leaf**. Sugar-free **cocoa powder** can be a good choice in formulas for patients in need of mild mood elevation. By the way, the amandamides are present in very, very small amounts, so if you want to get high from **chocolate**, you have to get fat too (Shively and Tarka, Jr 1984).

A recent Harvard School of Public Health study that received national attention in the popular press revealed that males who eat **chocolate** once or twice per week live, on average, one year longer than those who do not indulge. Unfortunately, the same result has not been demonstrated in women. Sorry.

Cocoa bean and **chocolate**, like **coffee bean** and **tea leaves** all contain xanthines, chemicals that help relax bronchial spasms and can be useful for treating allergies and asthma, especially in emergencies where no other medication is available (reported in Duke, 1997).

The xanthines include coffee, theobromine and theophylline. People may actually use **chocolate** instinctively as a form of self-medication for dietary deficiencies, or to increase low levels of neurotransmitters such as serotonin and dopamine. Additionally, many Americans are deficient in magnesium, and **chocolate** craving may be a sign of magnesium deficiency.

Research highlights

- A placebo-controlled crossover study at the Institute of Sports Medicine at Beijing Medical University looked at the effect of **chocolate** on exercise recovery rates. **Chocolate bar** supplementation before exercise improved recovery by keeping blood sugars and other blood chemicals at good levels for up to 30 minutes after completion of one hour of running (Chen et al., 1996).
- Researchers have found that the episodic nature of **chocolate** cravings fluctuates with hormonal changes in women just before and during the menses, suggesting a hormonal link (Bruinsma and Taren, 1999).
- One cup of **cocoa** has about half as much caffeine as one cup of coffee, and it has a slower onset and longer course of action. Contrary to popular belief, and contradicting some earlier studies, caffeine in normal doses does not appear harmful to the heart, and does not increase risks of heart attack or arrhythmia (Chou and Benowitz, 1994).
- Animal studies have shown that **chocolate** supplementation seems to correct magnesium deficiency, but in the interest of calorie-counting and overall dietary sensibility it probably makes sense to correct this problem with dietary adjustments or supplementation rather than a chocolate feast (Planells et al., 1999).
- Surprisingly, **milk chocolate** does not seem to elevate blood fats such as cholesterol in spite of its high saturated fat content. Controlled studies indicate repeatedly that this is due to the unique effect of a saturated fatty acid called stearic acid (Kris-Etherton and Mustad, 1994).

CORDYCEPS MUSHROOM

Latin: *Cordyceps sinensis*

Chinese: Dong chong xia cao

English: Winter Worm Summer Flower

WHAT IT DOES: **Cordyceps mushroom** is sweet and bland in taste, and warming in action. It strengthens immunity and fortifies and heals the lungs and kidneys.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE: dried powder or tincture

- Dried powder: two grams two to three times per day
- 1:5 tincture: 10-15 drops two to three times per day

Winter worm summer flower is the direct translation from Chinese of this amazing mushroom that grows out of caterpillar larvae in the Himalayas. TCM doctors use it medicinally to treat chronic cough, wheezing from deficiency, emphysema, and consumptive cough. Because it tonifies both **Yin** and **Yang**, it is very safe and can be taken over a long period of time to stimulate endocrine function, reduce fatigue and calm nervousness. **Cordyceps** was reportedly used at the Olympics by Chinese women's track and field teams to enhance performance when they went on to set nine world-records. From the scientific point of view, attention has focused on Chaga's immune-enhancing and cancer-fighting properties. At our clinic, we find **cordyceps** most useful for treating lung and kidney weakness of any variety. We also use it with other medicinal mushrooms after cancer therapy to strengthen the immune system. Although it is clear that similar nutrients in most medicinal mushrooms are generally found to stimulate immunity, it is also obvious that various mushrooms have different actions when given to living beings.

Research highlights

- **Cordyceps**, like many other medicinal mushrooms, contains complex sugars (especially beta 1,3 glucan) and other nutrients (nucleosides, triterpenoids) which seem to strongly nourish and activate various components of the immune system, useful in treating cancer, chronic fatigue and other immune disorders (Borchers et al., 1999; Nakamura et al., 1999).
- It also seems to have value in treating nephritis (Lin et al., 1999; Li et al., 1996)
- **Cordyceps** may help the immune system recognize tumors that otherwise might escape immune surveillance (Chiu et al., 1998).
- Other benefits include positive effects on the cardiovascular and nervous systems, and an anti-aging effect (Zhu et al. 1998).

DANDELION ROOT & LEAVES

Latin: *Taraxacum officinalis*

Sanskrit: Atirasa

Chinese: Pu gong ying

WHAT IT DOES: **Dandelion** is bitter, slightly pungent and sweet in taste. It speeds removal of inflammation and dampness from the liver, intestines and gall bladder, and detoxifies the blood. The leaves promote urination.

RATING: Gold

SAFETY ISSUES: None known. Excessive dosage may dampen appetite in some individuals.

STARTING DOSAGE:

- Crude herb: two to six grams per day
- Tea: one cup two to four times per day

- 1:5 Tincture: 30-60 drops two to three times per day

Dandelion is receiving a bit less press than it used to, due to the publicity surrounding newer and more glamorous herbs. It has a worldwide reputation among traditional healers for its beneficial and safe effects on the liver, and its gentle nature allows it to be used safely over long periods of time. Most people are familiar with **dandelion**, and we know its leaves make a fine, mildly bitter salad green, delicious when tossed with sea salt, lemon juice and olive oil. **Dandelion**

Dandelion's long milky taproot is well known to gardeners, who waste countless hours trying to eradicate it from their lawns. I have a clear memory of an elderly neighbor painstakingly removing **dandelion roots** and **chickweed** from his lawn, while suffering from health conditions that could have been treated with both herbs.

is rich in minerals like iron, phosphorus, calcium, potassium, boron and vitamins A, B, and C. It contains up to 25% inulin, a phyto-chemical also found in high levels in **burdock root** and **echinacea**. It seems to selectively nourish and increase the body's supply of favorable intestinal bacteria such as bifidobacteria (Rao, 1999). Other components of the herb, including triperpeoid saponins, have been found to stimulate macrophage activity in animals and prevent tumor growth (Takasaki et al., 1999).

In the 1898 classic King's American Dispensatory Felter and Lloyd tell us, "Dandelion has long been supposed to exert an influence on the biliary organs, removing torpor and engorgement of the liver as well as of the spleen...(and is useful for) chronic diseases of the skin and impairment of the digestive functions." Because it gently improves bile flow, many people find it useful as a mild laxative. I've used it myself for this purpose. Its bitter components stimulate the nerves in the stomach to secrete more acid, gently stimulating appetite and improving nutrient absorption. Improvement in the clearance of bile has a general anti-inflammatory action, and this is most likely responsible for its reputation for improving skin disorders.

Dandelion is also known by Western herbalists to be a valuable non-irritating diuretic. Because it is rich in potassium, a vital mineral often lost when the kidneys are over-stimulated by drugs, it can be used safely to treat water retention even when caused by weakness of the heart. The leaf is more effective than the root as a diuretic, and at our clinic we use it as a safer alternative to the popular diuretic Lasix. **Check with your doctor before making this substitution.**

TCM doctors value **dandelion** highly, using it to reduce fire in the liver, especially when accompanied by red, swollen eyes. They also use it for detoxification, hepatitis, acute infections, flu, and skin ulcers. TAM doctors consider it to be an anti-poison. They use it for dysentery, fevers and vomiting.

Professor Weiss, author of the standard German medical school textbook on herbal medicine, tells us that scientists in his country have reported the definitive value of regular use of **dandelion** in preventing the formation of gallstones (Weiss, 1988). I usually have my patients drink one or two cups of **dandelion tea** per day (teabags are widely available) when they have existing gallstones and want to avoid surgery. This often puts them into a latent, symptom-free stage of the disease.

DANG GUI ROOT

Latin: *Angelica sinensis*
Chinese: Dang gui
English: Dong quai
Tang kuei

WHAT IT DOES: **Dang gui root** is sweet, pungent and bitter in taste, and warming in action. It nourishes the female essence, tonifies blood, helps form healthy new blood, and catalyzes circulation (moves the blood).

RATING: Gold/Silver, due to minor limitations in usage

SAFETY ISSUES: Do not use during pregnancy without consulting a qualified medical practitioner. Do not use with heavy menstrual bleeding. Do not use if taking blood-thinning medications such as Coumadin. (Lo et al., 1995).

STARTING DOSAGE:

- Dried root: two to four grams two to three times per day
- 4:1 dried decoction: one to two grams two times per day
- 1:5 tincture: 30-60 drops in water or juice two to three times per day

The first thing you may notice when you encounter **dang gui root** is its strong but pleasant musky odor. According to Chinese theory, this odor indicates that the herb will not only nourish, but will also disperse the blood through the body, penetrating the tissues and making the skin glow, the hair luxuriant, and the mind serene (qualities seen in young women in their prime). Similar effects are reported for **shatavari**, the Ayurvedic **wild asparagus root**, which also has a strong musky odor. **Dang gui root** is among the most important of Chinese blood tonics, perhaps sharing the stage only with **shou wu root**. **Dang gui root** is used to treat dysmenorrhea, amenorrhea, female infertility, anemia, tinnitus, hair loss, blurred vision and heart palpitations.

Dang gui, as part of the **blood-moving group**(see chapter 9) can be used for a wide variety of complaints. For example, at our clinic we were able to slow progression of severe lung fibrosis in one elderly patient for about two years.

Though **dang gui** is not estrogenic, it has a similar effect, binding to estrogen receptors in women (Fackelmann, 1998). Western analysis might therefore say it would be useful for treating hot flashes and menopausal symptoms. However, TCM analysis points out that the root's warming action would make it a poor choice unless combined with other appropriate cooling herbs. At our clinic we only use it in menopausal patients with blood deficiency. **There are concerns about adulteration of this herb with related species, so try to purchase only from reliable and knowledgeable dealers.**

Research highlights

- Pharmacological studies done on **dang gui's** reputed blood-forming properties show that its polysaccharides could "obviously promote the proliferation and differentiation" of various blood components, including blood growth factors (Wang et al., 1998).

- **Dang gui root** in animal models could also correct experimental atrial fibrillation induced by drugs (Chang and But, 1987).
- Combining **astragalus root** with **dang gui root** is a very potent method of improving blood parameters. A 1993 study showed the ability of this combination to improve all measured blood indexes (Xue et al., 1993).
- In an amazing study, Chinese patients with ABO- and Rh- incompatible blood types were given tablets of a blood-moving formula containing **dang gui root**, **leonorus** (yi mu cao / *Leonorus heterophyllus*), **white peony root**, **banksia rose** (*Rosa banksia*), and **cnidium rhizome** (Chuan xiong / *Ligusticum wallichii*). The preventative treatment significantly lowered the mortality rate in cases of Rh-type incompatibility (Bian et al., 1998). This study has not been replicated.
- In one study, the blood moving qualities of both **dang gui root** and **cnidium rhizome** proved strong enough to prevent the formation of abnormal fibrous tissue in animal models of pulmonary fibrosis (Dai et al., 1996).

DEER ANTLER

Latin: *Cervus spp.*

Chinese: Lu rong

WHAT IT DOES: **Deer antler** is sweet and salty in taste and very warming in action. It tonifies and stimulates deficient **Yang** metabolic energy, increases sex drive and strengthens the heart, bones, and blood. It increases the ability to work.

RATING: Yellow, due to highly stimulating nature

SAFETY ISSUES: Use cautiously with cases of severe emaciation and dryness

STARTING DOSAGE:

- Velvet or tip of antler: 500 mg one to three times per day. Start with low dosage and increase slowly.

TCM doctors use the velvet and tip of young **deer antler** to treat fatigue, coldness, cold hands and feet, tinnitus, male impotence, hypothyroidism, and general metabolic weakness. It strengthens the tendons and bones, making it an effective treatment for osteoarthritis and osteoporosis. The Chinese believe that the tip of the **antler** contains the most nutrients so it commands the highest price. It nourishes the bone marrow, stimulates red blood cell production and increases cardiac energy output. It also speeds the bone healing. We use it frequently in our clinic to strengthen cancer patients who have been weakened by chemotherapy or radiation.

Deer antlers are amazing structures. They demonstrate the incredible metabolic energy of these animals. Everyone knows that strong fingernail growth is a sign of good health, but consider the rapid annual growth of these bony structures, covered with living velvet and enriched by large blood vessels and nerves. The antlers of species such as the red deer develop each year in about 150 days, during early spring and summer. This is a tremendous metabolic achievement.

Research highlights

- Androgen hormones are substances that stimulate male sex organ function. These hormones and various growth factors are factors in **deer antler** formation (Li et al., 1999; Francis and Suttie, 1998).
- As **deer antlers** grow, supportive nerves must grow in tandem, at a rapid rate of up to 1 cm per day. This growth rate is related to the presence of neural and other growth factors (Garcia et al., 1997; Suttie et al., 1993, Suttie et al., 1995). This indicates that **deer antlers** may be beneficial in nerve regeneration.
- Chinese studies report that **deer antler** speeds healing of fractured bones, strengthens heart output in patients with severe fatigue (at moderate, not high dosage), and stimulates production of reticulocytes (young new red blood cells) and hemoglobin (reported in Yeung, 1983).

ECLIPTA

Latin: *Eclipta alba*

Eclipta prostrata

Sanskrit: Bhringaraja (alba)

Chinese: Han lian cao (prostrata)

WHAT IT DOES: **Eclipta** is cooling in action. Ayurvedic **eclipta** (bhringaraja) is bitter in taste, while Chinese **eclipta** (han lian cao) is sweet and sour in taste. Both reduce inflammation, obstructive swelling and pain from the liver and blood. They also calm stress and nourish the hair roots.

RATING: yellow, due to limited applications.

SAFETY ISSUES: None known.

STARTING DOSAGE: dried powder, dried decoction or fresh leaf juice

- Dried powder: two grams two times per day
- 4:1 dried decoction: 500 mg two times per day
- Fresh leaf juice: one to two teaspoons three times per day

Two distinct species of **eclipta** are differentiated by my Ayurvedic teacher in Nepal, one with white flowers, and one with yellow flowers (Bajracharya, 1979). TAM doctors use **eclipta** to treat liver cirrhosis, infectious hepatitis, and liver and spleen enlargement. They boil the leaf juice with sesame or coconut oil and apply it topically, both to retard graying of the hair and to make the hair more luxuriant. Doctors in Nepal use **eclipta** drops dissolved in sesame oil to treat sinusitis, migraine headache, and inflammation of the eye, nose, and ears.

TCM doctors use a similar species (milder in taste) internally to treat dizziness, blurred vision, vertigo and premature graying of hair, especially in cases of **Yin** deficiency. The simple combination of **ligustrum fruit** (nu shen zi / *Ligustrum lucidum*) and **eclipta** is a well-known and effective **Yin** tonic.

In 1996, I created a treatment by adding Ayurvedic **eclipta** to some of the standard TCM herbs for hair loss. I soon had a regular clientele of men and women using the formula. After an average of three months of use (it takes time to grow hair), they reported better results than we had previously experienced with the TCM formula alone. I remember in particular a young African-American woman who was so ashamed of her severe hair loss (complete with bald patches) that she wore a cap at all times. After a year or so she came back to show me her lush hair, all in beautiful braids.

Research highlights

- In one study, topical application of fresh **eclipta** leaf juice mixed with **neem oil** reportedly stimulated hair growth, and in some cases changed gray hair to black (Chandra K, 1985).
- Seven pharmacological and histological animal studies reported in India by the Central Council for Research on Ayurveda and Siddha have shown strong protective effects on the liver. Histopathological studies showed significant reduction in elevated liver enzymes and alkaline phosphate, and healing of liver tissues, within four weeks following chemical insults (reported in Pandey, 1996).
- The liver protective effects of **eclipta** (alba) seem to result from its ability to regulate levels of drug metabolizing enzymes in the liver (Saxena et al., 1993).
- Researchers have also reported a calming hypotensive effect (reported in Pandey, 1996, Gupta, 1976), as well as anti-bacterial and anti-viral activity (reported in Pandey, 1996).
- Additionally, **eclipta** (prostrata) and some of its constituents were shown in animal experiments to neutralize toxicity and bleeding caused by snake venom and mushroom toxins (Melo et al., 1994, (Mors, 1991).

For those of you out there who could use a little help with dull, thinning or graying hair, here is my formula.
Using 4:1 concentrated dried decoction extract powders, combine:
2 parts **eclipta**, and 2 parts **sho wu root**.
1 part each of **cooked rehmannia root**; **raw rehmannia root**; **dang gui root**; **salvia root**; **schisandra berries**; **codonopsis root** (dang shen root or *C. pilosula*); **mu gua fruit** (*Chaenomelis lagenaria*); and **chiang huo rhizome** (*Notopterygium incisum*).
Dose: 2 grams twice a day. If the patient has poor circulation and coldness, we add 1 part **deer antler**.

ELDERBERRY

Latin: *Sambucus species*

WHAT IT DOES: **Elderberry fruit** is sour in taste and cooling in action. **Elderberry flower** is pungent and bitter in taste, and has similar activity to the fruit. **Elderberry** reduces heat and inflammation, and strengthens the immune system to fight viral infections, including influenza.

RATING: Gold

SAFETY ISSUES: None known. Unripe fruits may cause nausea.

STARTING DOSAGE:

- Dried berry or flower (ground): two to four grams two to three times per day
- 1:5 tincture: 35-60 drops three to five times per day for healing
40-60 drops once per day for prevention

Elderberry extracts or tinctures are used around the world to enhance immune function and increases antibody response during infections. Due to high concentrations of lignans and flavonoids, the berries have anti-viral and anti-inflammatory activity (Yesilada, 1977). They work extremely well in the treatment of influenza, and can also be used to treat upper respiratory tract infections including sinusitis and sore throat. Commercial extracts are now available, and most of them are sweetened sufficiently to please the children, a problem with bitter alternatives. I often use **elderberry tinctures** in children, often in combination with **echinacea** tinctures. I add ground **elderberries** to powdered formulas as a pleasant boost to otherwise bitter-tasting herbs whenever there is a need to strengthen immunity.

Research highlights

- A report from Israel on the *Sambucus nigra* species of **elderberry** concluded, "Considering the efficacy of the extract in vitro on all strains of influenza virus tested, as well as the clinical results, low cost, and absence of side-effects, this preparation could offer a possibility for safe treatment for influenza A and B" (Zakay-Rones et al., 1995).

EPHEDRA

Latin: *Ephedra sinica*

Chinese: Ma huang

WHAT IT DOES: **Ephedra** is pungent and slightly bitter in taste, and warming in action. It relaxes the muscles surrounding the lungs, dilates the surfaces vessels of the skin and increases metabolism.

RATING: Red, due to high potential for misuse

SAFETY ISSUES: Use only under professional medical guidance. Do not use long term. Do not use during pregnancy or nursing. Do not exceed recommended dosage. Do not use with MAO-inhibiting drugs, blood pressure lowering drugs, steroids, beta-blockers or anti-depressants. Do not use if you have glaucoma, hypertension, heart disease, insomnia, cardiac asthma, adrenal weakness, prostate enlargement, arteriosclerosis, hyperthyroidism, diabetes, anorexia or bulimia, kidney disease or a history of kidney stones. Do not use as a weight-loss agent unless under medical supervision.

Symptoms of ephedra overdose include rapid heartbeat, increased blood pressure, nervousness, insomnia and sweating. Discontinue immediately if you experience any of these symptoms.

STARTING DOSAGE:

Adults

- Total alkaloids: 15-30 mg per dose, not to exceed 300 mg per day
- Crude herb: no more than 1.5-9 grams per day in divided doses as a tea

Children

- Total alkaloids: 0.5 mg per dose per weight kilogram, not to exceed 2.0 mg per kilogram per day

Note: total alkaloids in crude herb can be as high as 3.3%

Ephedra (ma huang) is a very useful herb that the Chinese use to disperse coldness, open the pores and promote perspiration, which can be helpful in treating chills, fever and headache. It also controls wheezing and relaxes the muscles around the lungs, which explains its wide use as a treatment for asthma and cough. This plant contains **ephedrine** and **pseudoephedrine**, powerful alkaloids found in many over-the-counter asthma medications (ephedrine) and nasal decongestants (pseudoephedrine). These components also stimulate the central nervous system. **If you have high blood pressure, ephedra can be deadly.** TCM doctors do not generally consider **ephedra** to be dangerous, but they prescribe the whole plant, not the extracted alkaloids, to patients with specific symptoms, and usually as only 10% of a prescription. **Ephedra** is an essential herb of TCM that simply is not prescribed when there are signs of heat or hypertension.

It is possible for healthy people to safely use products containing **ephedra** when consumed in moderate amounts, and many people taking over-the-counter hay fever remedies do so with little or no trouble. Unfortunately, **ephedra** is now sold as a stimulant and a weight-loss product for its metabolism-stimulating and appetite-suppressing properties. Many people who are overweight also have hypertension—just imagine how dangerous **ephedra** can be in these particular cases. That's not to say the herb doesn't work for weight loss. In fact it does, and the result is even more powerful when combined with **green tea**, due to the additional action of caffeine. The combination of these two types of stimulants can be especially powerful. But again, this should be done under the guidance of a professional with experience about safety and dosage. Asthma and weight loss are both complex, serious problems. You can't treat them safely just by swallowing over-the-counter herbal pills.

Research highlights

- When used over time, **ephedra** can weaken the adrenal glands. Michael Murray N.D., faculty member at the John Bastyr Naturopathic University and best-selling author, recommends combining it with adrenal supportive herbs such as **licorice root**, **ginseng root** and nutrients like vitamin C, magnesium, zinc, B-6 and pantothenic acid (Murray, 1991).
- There continue to be numerous reports of ephedrine-related toxicity and death. In a random study of nine commercially available supplements, only three contained the ephedrine content listed on the label, and the alkaloid content ranged from 1.08-13.54

mg. per pill. There were also significant variations among different lots of the same product (Gurley et al., 1998). In a second study, the same researcher concluded that **ephedra** toxicity "results from accidental overdose often prompted by exaggerated off-label claims and a belief that 'natural' medicinal agents are inherently safe" (Gurley et al., 1998).

- **Ephedra** exhibits anti-inflammatory activity (Ling et al., 1995) which may enhance its usefulness for treating asthma.
- In the Canadian Forces Warrior Test, the combination of caffeine and ephedrine improved performance. Doses tested were 375 mg of caffeine and 75 mg of ephedrine, within safe levels for healthy subjects (Bell and Jacobs, 1999).
- In a study of obese monkeys, the combination of caffeine and ephedrine caused an increase in energy expenditure, a decrease in food intake, and weight loss (Ramsey et al., 1998).
- Although unsupervised use of **ephedra** or ephedrine can be dangerous, researchers conducted a controlled double-blind study on 136 obese and normal patients undergoing proper treatment with blood pressure lowering drugs as they attempted to lose weight. Subjects took 20 mg of ephedrine and 20 mg of caffeine. All groups lost weight, and the combination of ephedrine and caffeine did not reverse the effects of the blood pressure medications (Svendsen et al., 1998). An earlier clinical trial also found that ephedrine plus caffeine was as effective as dexfenfluramine (Astrup et al., 1995).
- A Harvard Medical School study found that the combination of ephedrine, caffeine and aspirin was "well tolerated in otherwise healthy obese subjects, and supports modest, sustained weight loss even without prescribed caloric restriction (dieting)" (Daly et al., 1993).

EPIMEDIUM HERB

Latin: *Epimedium grandiflorum*
E. species

Chinese: Yin yang huo

English: Horny goat weed

WHAT IT DOES: **Epimedium herb** is pungent and sweet in taste, and warming in action. It increases sperm production and motility, increases sex drive and fertility, enhances metabolism and strengthens the bones.

RATING: Yellow, due to limitations in use.

SAFETY ISSUES: Not for long-term use, which may induce vomiting and dizziness in some people due to warming effects.

STARTING DOSAGE: dried powder or concentrated powder extract

- Dried powder: three to 12 grams per day
- 4:1 concentrated powder: one to three grams per day

The Chinese name for **epimedium herb** (yin yang huo, or horny goat weed) derives from folklore accounts that originated in the northern plains of China. It seems that goats in this region that grazed on this weed would--how can I say this gently--experience increased emissions spilling onto the grass. Farmers tend to notice this sort of thing. Recently, I've heard rumors that this herb is gaining increasing popularity in Hollywood, as one might expect. We use it as a frequent addition to formulas for treating impotence, low sex drive and frequent urination. It works for both men and women. It is also useful for hypothyroid conditions. The concentrated powder can be dissolved in wine.

Research highlights

- Pharmacological and animal studies in China indicate that **epimedium** increases sperm production, increases sexual desire, and stimulates the sensory nerves. It also increases mating behavior in animals (reported in Yeung, 1983; reported in Bensky and Gamble, 1993; Dong et al., 1994; Kuang et al., 1989).
- **Epimedium extracts** (polysaccharides and glycosides) stimulate the immune system and have shown the ability to reverse suppressed immunity in animal models and clinical trials on humans. The glycosides increase coronary flow, reduce blood pressure slightly, and exhibit liver-protective effects (reported in Huang, 1999, Lee et al., 1995).
- In a study of rats with kidney disease, **epimedium** reduced the level of BUN and serum creatinine (Cheng et al., 1994).
- **Epimedium decoction** proved very effective in a controlled trial on patients with chronic kidney failure who required hemodialysis. The herb increased their sexual drive significantly and improved their immune function, as well as the overall quality of the patients' lives (Liao, 1995).
- Researchers have tested **epimedium** in vitro and in vivo for its effects on osteoporosis. In the test tube, it improves bone resorption (by osteoclasts), and in rats it increases mineral content and promotes bone formation (Yu et al., 1999).
- In a study on rats, water extract of **epimedium** reversed the side effects of long-term use of steroids, reducing adrenal atrophy and bone loss (Wu et al., 1996).

FENNEL SEED

Latin: *Foeniculum vulgare*

Sanskrit: Mahdurika

Chinese: Xiao hui xiang

WHAT IT DOES: Fennel seed is sweet in taste, carminative and aromatic. It strengthens the digestion, freshens the breath, reduces gas and relieves lower abdominal pain.

RATING: Silver, due to mild action

SAFETY ISSUES: None known

STARTING DOSAGE:

- Seed: one to two grams, two to three times per day

TCM doctors find **fennel seed** useful for relieving menstrual and lower abdominal pain. TAM doctors use it to strengthen digestion, which is helpful in the treatment of dysentery, colitis and flatus. Fennel seeds should be kept in every kitchen, and used according to the Indian custom of chewing a small handful of them after meals to aid digestion and freshen breath.

Try this if you want to impress your date when dining out. After the meal, rinse your mouth out with water three times. This will dilute the bacteria in your mouth enough to prevent tooth decay when you can't brush your teeth. Then chew some fennel seeds to freshen your breath and reduce post-meal flatulence. If you really want to go wild, carry a tiny vial of rose water and slap some onto your hands and face for a clean, fresh scent!

FEVERFEW

Latin: *Tanacetum parthenium*

WHAT IT DOES: Feverfew is sweet and slightly bitter in taste, and slightly cold in action. It reduces heat and inflammation and prevents headaches and dizziness.

RATING: yellow, due to minor limitations in usage

SAFETY ISSUES: Should not be used during pregnancy, as it is a uterine stimulant. Occasional minor side effects such as mouth and gastric disturbance have been reported (reported in McGuffin et al., 1997). Some scientists voice concerns about potential allergic reactions or cross-reactivity with blood thinning agents such as Warfarin and Ticlopidine (Barsby et al., 1993, DeSmet, 1993).

STARTING DOSAGE:

- Standardized capsules (600 mcg. parthenolide): one to three capsules per day

Feverfew is now well-known as a reliable remedy for migraine headaches. It also has a long historical record for use against arthritis and other forms of arthritis. It prevents release of inflammatory chemicals from white blood cells and platelets, which makes it useful for rheumatoid arthritis.

Large differences have been found in various commercial preparations, and there are concerns about processing methods, so be sure to purchase **feverfew** from a reliable supplier (Barsby et al., 1993, Brown et al., 1997)

Research highlights

- Researchers assessed the ability of **feverfew** to prevent migraine in a randomized, double blind, placebo-controlled crossover study using 60 patients. They found a reduction in the mean number and severity of attacks in each two-month period of the study, although the duration of individual attacks was unchanged. They also reported a reduction in the degree of vomiting. There were no serious side-effects (Murphy. et al., 1988). A previous study of 17 patients reported similar results (Johnson et al., 1985).
- Many studies have shown **feverfew** to be effective for easing migraines (Volger et al., 1998).

FLAXSEED OIL

Latin: *Linum usitatissimum*

Sanskrit: Atasi

WHAT IT DOES: Flaxseed oil is sweet and sour in taste and warming in action. It nourishes and moistens cell membranes and reduces inflammation.

RATING: Gold

SAFETY ISSUES: None known. Whole seeds should be taken with sufficient fluids.

STARTING DOSAGE:

- Oil: one tablespoon per day
- Capsule: quantity equivalent to one tablespoon of oil per day

Flaxseed oil is nature's richest vegetable sources of omega-3 fatty acids, absolutely essential nutrients found insufficiently in most people's diets. **Flaxseed oil** helps the body produce hormones, energy and moisture, while simultaneously slowing biochemical pathways that lead to inflammation. These oils end up in the membranes surrounding every cell in the body. This is why it is found in many, many natural medicine protocols.

Ayurvedic doctors use **flaxseed oil** in the form of cooking oil for treatment of urinary diseases, and also as a massage oil to calm the nerves, or **Vata**. I use it whenever I see signs of dryness, inflammation and fatigue pointing to a dietary-caused omega-3 deficiency. Some patients do better with fish oils, which are easier for the body to incorporate into the membranes, or with **evening primrose oil**, which seems to work better with diabetics (Murray, 1996). Some authorities suggest grinding fresh **flaxseed** to ensure purity and quality.

Research highlights

- Dietary **flaxseed** has been shown to help lower HDL cholesterol levels (Jenkins et al., 1999).
- There is some evidence that lignans in the oil may be active in cancer prevention (Nesbitt et al., 1997).

GARLIC BULB

Latin: *Allium sativum*

Sanskrit: Lasunam

Chinese: Da suan

WHAT IT DOES: **Garlic bulb** is pungent in taste, and warming in action. It penetrates deeply into the system to protect the internal organs and vessels against infection and blockage. It moves the blood, and aids in the digestion of fats and oils.

RATING: Gold

SAFETY ISSUES: Use cautiously with sensitive stomach or gastrointestinal inflammation. May cause skin inflammation in some individuals. Check with your doctor if taking blood-thinning medications and using **garlic** in large daily amounts

STARTING DOSAGE:

- Raw or cooked herb: one medium-size bulb two to three times per day.

Garlic bulb is one of the most effective anti-microbial herbs, with anti-bacterial, anti-fungal and anti-viral properties. It acts on respiratory infections such as chronic bronchitis, respiratory catarrh and recurrent colds and flu, and is a powerful preventative for these conditions as well as for digestive infections.

Garlic lowers blood pressure and blood cholesterol and triglyceride levels, prevents arteriosclerosis and acts as a tonic on the cardiovascular system (Steiner et al., 1998). It also strengthens the immune system and has anti-cancer effects, causing lymphocyte proliferation, cytokine release, NK activity and phagocytosis in both in vitro and in vivo studies.

Aged **garlic** may be superior to the fresh herb in these aspects (Sumiyoshi, 1997). Ayurvedic doctors point out that excessive use can over-balance **Pitta** energy, causing inflammation.

The Chinese add **garlic**, **onion** or **ginger** to oils before cooking meats to reduce toxicity, perhaps because the anti-oxidants in these and other spices slow the degradation of oils during the cooking process.

TCM doctors report that garlic is useful for increasing sexual energy and combating simple impotence, and to kill parasites such as hookworms and pinworms. It relieves intestinal toxicity, and is used to treat diarrhea and dysentery caused by poor digestion or worms. It can be mixed with sesame oil and applied topically to the skin to reduce toxic swelling or fungal infections, or to the ear for fungal infections (Pai and Platt, 1995), but **remember that too strong a preparation may burn the skin.**

By now everybody knows about **garlic's** medicinal powers. However, I am amazed that a multi-billion dollar industry has grown out of concerns about the social effects of the odor. The odor is actually the release of volatile sulfur compounds through the lungs into the air. This is why it is very effective for treating chronic lung infections. I mean, the stuff makes *people* go away, what do you think it does to germs? I tell patients to use **garlic** pills if necessary, but to use the real thing whenever possible.

Research highlights

- Thousands of years ago, TAM doctors reported **garlic** useful for combating worms, skin diseases, insanity, epilepsy, and abdominal and gastric tumors. Scientists at the National Cancer Institute confirmed the latter use when they reported that "infection with *H. pylori* is a risk factor, and garlic may be protective in the development and progression of advanced precancerous gastric lesions" (You et al., 1998).
- Pharmacological and animal experiments show that **garlic bulb** and **aged garlic extracts** have anti-allergy effects (Kyo E et al., 1997), reduce intracellular oxidative stress (Ide and Lau, 1999), antitumor activities (Kyo E et al., 1998, Lamm & Riggs, 2000, Lau BH et al., 1991), lower blood pressure et al., 1998), strengthen immune response (Salman H et al., 1999, Gao YM et al., 1993), cancer preventive action (Tang Z et al., 1997), and lower cholesterol (Morcos NC. 1997).

GINGER ROOT (rhizome)

Latin: *Zingiber officinalis*

Sanskrit: Ardrakam

Sunthi

Chinese: Gan jiang

WHAT IT DOES: **Ginger root** is pungent in taste, and warming, and mildly tonic in action. It improves digestion, reduces nausea, settles the stomach, and reduces inflammation.

RATING: Silver

SAFETY ISSUES: **Ginger** may increase absorption of pharmaceuticals.

STARTING DOSAGE:

- Dried powder: 500-1500 mg one to three times per day
- Tea: drink freely

Ginger acts as a digestive aid as well as a peripheral blood circulation stimulant, so it is useful for increasing poor circulation. Its pungent essential oils aid digestion by stimulating the activity of digestive enzymes (Platel K et al., 1998). However, despite its hot spicy taste, **ginger** inhibits the synthesis of the “bad-guy” inflammatory chemicals, prostaglandin and thromboxane (Kiuchi et al., 1992).

TCM doctors tell us that **fresh ginger** is better than dry ginger for easing nausea, indigestion and stomach pain, and for stopping diarrhea caused by poor digestion.

Conversely, they tell us **dry ginger** is better for warming the body. The anti-inflammatory actions of **ginger**, noted centuries ago by TAM doctors, are strong enough to reduce muscular discomfort and pain in osteoarthritis and rheumatoid arthritis (Srivastava et al., 1992). They explain this action in a pungent herb, as due to the **vipaka** (post-digestive action) being sweet, and therefore nourishing and antiinflammatory.

I sometimes mix **ginger** with honey to form a paste (occasionally adding ground black pepper), which is a very simple anti-asthma formula suitable for young children in the early stages of the disease. Generally, this treatment needs to be kept up for several months to see its full effectiveness.

Suggestions for using **ginger**:

- **Ginger tea** is a simple remedy for the common cold
- When using fresh **ginger**, I tell patients to use a garlic press to extract the juice
- I suggest adding **ginger, garlic** or **onion** when cooking with oils, as they contain antioxidants that keep the oil from degrading as quickly from the heat

Research highlights

- Because of its digestive and anti-nausea actions, **ginger** can be used to treat dyspepsia, nausea and vomiting associated with pregnancy, vertigo, dizziness and motion sickness (Schmid et al., 1994; Visalyaputra et al., 1998).
- It has also been shown to increase gastroduodenal motility (Micklefield et al., 1999).

- Pharmacological studies show that part of **ginger root's** antiinflammatory action is due to inhibition of the formation of inflammatory prostaglandins (Kiuchi et al., 1992).

GINKGO LEAF

Latin: *Ginkgo biloba*

English: Maidenhair tree

Chinese: Bai guo ye / Yin guo ye

WHAT IT DOES: Purified **ginkgo leaf** is bitter and astringent in taste, and stimulating and warming in action. It increases oxygen and blood flow to the brain and extremities, and increases nutrient and oxygen absorption by nerve tissue.

RATING: Silver

SAFETY ISSUES: Use cautiously with anti-coagulant drugs. Do not use with pharmaceutical MAO inhibitors. Avoid use prior to surgery.

STARTING DOSAGE:

- Standardized extract (6% terpene lactones and 24% flavone glycosides): 40-60 mg two times per day
- 1:2 Tincture: 35 drops two to three times per day

The **Ginkgo tree** is a fascinating and beautiful living entity, reputed to have survived the Ice Age. It is often planted along roadsides because of its ability to remain vibrant and alive in polluted city conditions. **Ginkgo leaf** has shown a powerful effect on various aspects of brain and nerve function and cerebral circulation in more than 500 studies. Some of its major uses include the treatment of vertigo and neurological disorders, memory and concentration problems, and diminished intellectual capacity due to poor circulation. It may also delay the onset of Alzheimer's disease.

When standardized in a 50:1 concentration, **ginkgo** belongs to a category of substances known as phyto-pharmaceuticals—halfway between crude herbs and pharmaceuticals. The herb is standardized because it is necessary to remove some slightly toxic phyto-chemicals from **ginkgo** before use, though the level of concentration does not need to be very strong. Nai-shing uses a 5:1 powder concentrate in her formulas, and I often use the 1:2 tincture. No adverse effects have ever been reported in

I remember one patient who experienced a sudden vision loss caused by optic ischemia. After prednisone treatment failed to prevent the loss of vision (down to 20/200) during the first week, three ophthalmology specialists insisted that nothing further could be done, and that the damage was permanent. Dr. Abel and I intervened, and using a complex combination of TCM blood moving herbs including **ginkgo** along with antioxidant nutrients, we were able to restore this patient's vision to 20/80 within three weeks.

these benign forms. I think these lower concentrations are best if you are creating a formula and want a milder medicine. I have found that well-prepared organic tinctures can often produce the desired results in very low dosage.

There have been limited reports of people developing bleeding or hemorrhage while taking **ginkgo** at the same time as anti-coagulant or platelet-inhibiting drugs. However, when you consider a German survey of data on millions of patient-years patient use (which means billions of **ginkgo pills** taken) without any reports of significant bleeding, I would think that the risks are very mild even in this area (DeFeudis, 1991). Caution is still wise, of course, and I do not suggest taking **ginkgo** if you are on blood-thinning medications, unless you consult a qualified health care practitioner.

I have found it very valuable for improving mental alertness and mood in some elderly patients, though I seldom use it alone. If taken in excess it can sometimes cause irritability. I have rarely found it to be an effective memory enhancer in younger persons with good circulation, though scientific reports do show some benefit on short-term memory. **Ginkgo** can be very useful in treating some cases of tinnitus, but you need to use it for a couple of months to see results. The high level of good scientific test results found with **ginkgo** are due to the fact that so much research has been done. Many, many others herbs will reach this level of proof in the coming years.

Research highlights

- Researchers performed a meta-analysis of all studies of **ginkgo** treatments for cognitive function in Alzheimer's patients. They concluded that there was a "small but significant effect of 3- to 6-month treatment with 120 to 240 mg of **ginkgo biloba extract** on objective measures of cognitive function" (Oken et al., 1998).
- Among the most encouraging studies are those that show improvements in depression with the elderly. Clinically depressed patients taking standard medications improved significantly with the addition of **ginkgo** (Schubert and Halama, 1993).
- Equally encouraging was an open trial showing that treatment with **ginkgo** was 84% effective in neutralizing sexual dysfunction caused by anti-depressant medicines, especially selective serotonin reuptake inhibitors (SSRIs) (Cohen and Bartlik, 1998).
- Animal studies have shown that **ginkgo's** effect on nerve cell membranes may possibly restore age-related declines in serotonin receptor sites (Huguet et al., 1994). If this also occurs in humans, it may explain some of the beneficial effects of **ginkgo** on mood in the elderly (reported in Murray, 1996).
- Controlled trials have shown effectiveness with tinnitus (Meyer, 1986), acute cochlear deafness (Dubreuil, 1986), senile macular degeneration (Lebuisson et al., 1986), and diabetic skin lesions (Pepe et al., 1999).
- Patients undergoing cardiopulmonary bypass often have severe problems during recovery, including tissue necrosis. In one randomized controlled trial testing **ginkgo extract** (EGb 761), patients were given either the extract or a placebo five days prior to surgery. Doctors collected blood samples at crucial stages of the operations and up to 8 days post-surgery. Researchers saw a reduction in free radical generation and a significant delay in leakage of oxygen-carrying muscle proteins. These results suggest that pre-surgical administration of **ginkgo extract** can help prevent complications (Pietri et al., 1997).

- In an animal study using **ginkgo** in combination with superoxide dismutase (SOD), **ginkgo's** inhibition of platelet activating factor (PAF) significantly reduced oxidative damage to intestinal membranes after induced ischemia in rats (Droy-Lefaix et al., 1991). This is a convincing argument for the use of **ginkgo** with low temperature dried **wheat sprouts** (which provide SOD) as an important intervention after ischemic injury, such as optic neuritis.
- When administered to Chernobyl workers involved in the infamous nuclear accident, **ginkgo leaf extract** inhibited blood levels of radiation-induced chromosome damaging factors by 83%. Researchers noted, however, that only the complete extract (as opposed to isolated components) exerted significant effects (Alaoui-Youssefi et al., 1999).
- **Ginkgo** increased pain-free walking distance more than 300% in diabetic and non-diabetic patients with arterial blockage disease (Li et al., 1998).
- In a randomized controlled trial, **ginkgo leaf oral liquor** was shown to significantly reduce clinical symptoms, airway hyper-reactivity and pulmonary function of asthmatic patients (Li et al., 1997). It has also shown benefit in children's asthma (Keville, 1996).
- In a multi-center randomized controlled clinical trial of 545 schizophrenic patients receiving 120 mg of **ginkgo** three times a day in addition to their regular neuroleptic medication, researchers found a general reduction in negative symptoms including thought disturbance (Luo et al., 1997).
- A double blind three-month study of 70 patients with vertigo showed that **ginkgo** significantly reduced the intensity, frequency and duration of the disorder. By the end of the trial, 47% of the patients taking **ginkgo** were symptom free, compared to 18% of those who received the placebo (Haguenauer et al., 1986).
- A randomized controlled study of **ginkgo extract** found it effective in treating breast and leg swelling and mood changes during PMS episodes (Tamborini and Taurelle, 1993).
- In a controlled blood flow study on ten healthy subjects, **ginkgo** decreased red blood cell aggregation (clumping) by 15%, and increased blood flow into the capillaries under the fingernails by 57% two hours after ingestion (Jung et al., 1990).
- Blood stasis can cause oxygen starvation of the venous lining tissue, leading to the development of varicose veins. In a randomized controlled clinical trial, **ginkgo extract** was one of four medicines shown to reduce circulating cells indicative of venous wall damage (Janssens et al., 1999).
- In a randomized, double blind and placebo controlled 5-way crossover design study **ginkgo leaf extract** was shown to improve memory, the best results occurring at a dose of 120 mg per day. The benefits were more apparent in individuals over the age of 50 (Rigney et al., 1999).
- In a controlled crossover study, **ginkgo** was shown to benefit glaucoma patients by increasing ocular blood flow (Chung et al., 1999), and an earlier controlled study of blood flow to the retina showed similar results. Researchers concluded that " damage to the visual field by chronic lack of blood flow (is) significantly reversible" (Raabe et al., 1991).

GINSENG ROOT

Latin: *Panax ginseng*

Chinese: Ren shen

English: Essence of Man

WHAT IT DOES: **Ginseng root** is sweet and slightly bitter in taste, and warming in action. It strengthens the vital force (**Qi**), tonifies the digestive and immune systems, reduces fatigue, sharpens the mind and slows aging.

RATING: Gold

SAFETY ISSUES: Do not use during acute fevers. Do not use with hypoglycemia or hypertension. Overdose or taking late at night may cause nervousness and sleeplessness. May cause irritability in some sensitive individuals. Consult with your physician if you are taking cardiac glycosides.

STARTING DOSAGE:

- Dried powder: three to nine grams per day
- Concentrated powder extract: one to three grams per day

Note: it is common to use a combination of the two forms

Wild ginseng root is collected in the mountains of northern China and in Korea. There are two common preparations of the cultivated root, sun-dried or roasted **ginseng**, and sweet **red ginseng**. Americans have known about the tonic effects of **ginseng** since colonial times, though I still find a lot of common misunderstandings about its use. It is a strong tonic of the vital force (**Qi**) and is especially useful when there is extreme deficiency presenting with symptoms of cold limbs, anemia, weak respiration, weight loss, chronic fatigue and a weak pulse. It strengthens the immune system, helps generate fluids and strengthens the heart. In our practice, we find it indispensable for keeping cancer patients strong when undergoing chemotherapy.

Ginseng root can also be lifesaving for the elderly. My dad began to lose weight and feel weak after he passed the age of 80, and Nai-shing made him a **ginseng**-based formula that immediately turned this situation around. Our relatives visiting from China were amazed when, at the age of 81, he chopped down and removed a large tree single-handedly. I hear they still tell this story in China.

Ginseng can be lifesaving if administered following sudden bodily trauma or shock, such as blood loss after an accident. In such cases, administer a large dose of **ginger**--about three grams of dried powder every two or three hours, up to 30 grams per day. Doctors in Chinese hospitals use a formula called "Generate the Pulse" (shengmai san) for the same purpose, and it is more effective than **ginseng** alone (Xuejiang et al., 1999). It is made from equal parts of **ginseng root**, **ophiopogon root** (mai men dong / *Ophiopogon japonicus*) and **schisandra berries**.

Research highlights

- **Ginseng's** anti-aging effects are theorized to be a result of its ability to increase the body's synthesis of DNA, RNA, and protein, as well as synthesis of gonadotropins and ACTH, all of which can prolong cell life (reported in Huang, 1999).
- Healthy male volunteers given **ginseng root** showed cardiovascular benefits, indicated by a substantial decrease in heart rate two weeks after the end of a nine-week experiment (Kirchorfer, 1985).
- It may also improve muscular oxygen utilization (Pieralisi et al., 1991).
- **Ginseng** may be of benefit to non-insulin-dependent diabetic patients. Researchers in one study reported that, "**Ginseng** therapy elevated mood, improved psychophysical performance, and reduced fasting blood glucose and body weight. The 200-mg dose of ginseng improved glycated hemoglobin and physical activity (Sotaniemi et al., 1995).
- Russian studies have shown that **ginseng** increases mental activity, efficiency of concentration and intelligence. This is accomplished partly through increased biosynthesis of neurotransmitters (reported in Huang, 1999).

GOTU KOLA LEAF

Latin: *Centella asiatica*
Hydrocotyle asiatica

Sanskrit: Brahmi
Mandukaparni

Chinese: Luo de da
Ji xue cao

WHAT IT DOES: **Gotu Kola** is bitter and astringent in taste and cooling in action. It is a brain and memory tonic, and an anti-poison, also useful for wound and skin healing.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried decoction: two grams two to three times per day
- 4:1 concentrated powder extract: one gram two times per day
- 1:5 tincture: 20-40 drops two to three times per day

Gotu kola is an annual small spreading plant found growing near rivers and ponds.

Gotu kola is often confused with another plant, **bacopa** (*Bacopa monniera*), which is also named **brahmi**, found more in the south of India. **Gotu kola** is the original plant found in ancient Sanskrit texts, and **bacopa** was added much later. Both plants are used for memory and concentration, but their energies are different. **Gotu kola** is cooling and anti-poison, while **bacopa** is warming and stimulating. Be sure to check the Latin name if you are purchasing these herbs to ensure you're getting the right one.

TAM doctors use it as a brain and memory tonic, and have found it especially useful in children. In Nepal, during the ceremony for the first day of spring, **gotu kola leaf** is given to schoolchildren to help them in their studies by improving memory and concentration. It is very safe and extremely effective. TAM

doctors also use it to cleanse the system of toxins and reduce inflammation. TCM doctors use **gotu kola** to clear up boils and toxic fevers. **Gotu kola** grows abundantly in India, China, Australia, Africa, Ceylon, Indonesia and Madagascar, so plants are harvested and used freely in the markets. Unfortunately, the chemical profiles differ among these species, and quality varies significantly. If you drink two or three cups per day of good quality gotu kola, you should notice the results quickly. The primary effects of **gotu kola** include both wound healing and improvement of mental clarity and emotional balance. It doesn't surprise me that one herb can affect such seemingly unrelated physiologies. For one thing, the nervous system and skin both originate embryologically from the ectoderm, and the skin is a sense organ. I think further investigation is warranted to explore **gotu kola's** effects on other sense organs such as the eye, as well as on neurotransmitters, immune status and other nervous system parameters. At our clinic we sometimes find it useful in treating attention deficit disorder (ADD).

Research highlights

- Western scientists have focused on the herb's wound and skin healing effects. Numerous studies from around the world have demonstrated its efficacy in treating keloids, leg ulcers, phlebitis, slow-healing wounds, leprosy, surgical lesions, cellulitis, burns, dermatitis, venous disorders, and even cirrhosis of the liver (Maquart et al., 1999; Shukla et al., 1999; Hausen, 1993; Cesarone et al., 1992). These studies illustrate the plant's numerous stimulating effects on the healing processes of the skin and connective tissue.
- The Indian Central Council for Research on Ayurveda and Siddha, citing more than ten pharmacological and animal studies of **gotu kola**, also found evidence of the following characteristics: CNS depressant, memory enhancer, anti-convulsant, antispasmodic, behavior and intelligence enhancer, and blood sugar regulator (Pandley et al., eds, 1996).

GRAPEFRUIT SEED EXTRACT

Latin: *Citrus paradisi*

WHAT IT DOES: Grapefruit seed extract is sour and bitter in taste and cooling in action. It is a relatively non-toxic contact anti-microbial useful in chronic intestinal infections.

RATING: Yellow

SAFETY ISSUES: Avoid direct contact with skin or mucosal surfaces. Do not exceed recommended dosages.

STARTING DOSAGE:

- Topical wash: four to five drops in four to eight ounces of water (this makes a strong wash for external use only).
- Internal dilution: four to six drops in 1/4-1/2 cup water three times per day.
- Pill (usually equivalent to five drops of GSE): one pill three times per day in most cases

Grapefruit seed extract (GSE) is an anti-fungal and antibiotic. It is used to treat bacterial and fungal intestinal infections, ear and sinus infections, and vaginal infections. It is relatively non-toxic to human tissues compared to other anti-microbials, and can be used internally for fairly long periods of time (up to six months) with no apparent side effects. Studies have found it effective in fighting a wide variety of pathogenic organisms, including candida (yeast), herpes, staph, salmonella, *E. coli*, influenza, and various parasites including protozoa. It only works on contact, so it is ineffective in the treatment of blood diseases. Moreover, studies done on it show that it only effective when it contains preservatives added during manufacture, especially triclosan, an ingredient used in mouthwashes and toothpastes.

We use **GSE** in our clinic as part of a treatment for patients with chronic intestinal infections who exhibit symptoms such as severe chronic gastric gas, bloating and pain. These types of infections, termed intestinal dysbiosis, can contribute to widespread system problems including mental confusion, chronic fatigue, chronic vaginal yeast infections, muscle pain, chronic constipation and severely impaired immunity. Whenever using this herbal medicine, I advise the patient to use a good broad-spectrum **acidophilus** product to ensure preservation of the “good guy” intestinal flora. I also advise them to avoid simple sugars like the plague, as they feed the “bad guy” infection-causing organisms. It is important to recognize that not all strains of “bad guys” respond to this extract, and other agents may be needed.

Dr. William Crook brought one form of intestinal dysbiosis to the general public’s attention in his classic book [The Yeast Connection](#). I have seen many, many female patients enraged when their doctors refuse to even consider chronic intestinal yeast infections as a cause of the above-mentioned problems. Although I hope gastrointestinal specialists learn to accept and treat this simple syndrome, most currently treat the idea like kryptonite. One of my patients told her doctor that the symptoms she had experienced for five years went away after two months of herbal treatment and dietary modifications. He almost threw her out of his office, exclaiming, “Don't you think my dozen years of medical training taught me anything? I'm a specialist!”

Effects similar to those of **GSE/triclosan** can be obtained with completely natural **neem** concentrate. However, **neem** contains very strong “natural” chemicals, some of which have insecticide-like properties. **Neem** is also clinically more difficult for some patients to tolerate than **GSE**.

You can use **GSE** used when travelling to disinfect local water supplies. Use ten drops of **GSE** per gallon of water, and let it sit for several hours. You can also disinfect toothbrushes by placing them in a water solution containing **GSE**.

As it turns out, **GSE** is not a completely natural product. Although very clinically effective, it is actually a combination product that essentially acts as a “mouthwash” for the intestines. Purists may want to avoid it, in spite of its clinical usefulness.

Research highlights

- A team of researchers in 1999 confirmed earlier reports (Sakamoto et al., 1996) that the microbial inhibiting effects of **GSE**, though quite effective, only occurred in samples containing the preservatives triclosan and methyl paraben (von Woedtke et al., 1999).
- Triclosan is an antimicrobial agent used in dentifrices, mouth-rinses and skin care products. It boasts a positive safety profile, and is non-toxic with no long or short-term carcinogenic, mutagenic, or teratogenic actions (Bhargava and Leonard, 1996; DeSalva et al., 1989).

GUGGUL GUM

Latin: *Commiphora mukul*
Balsamodendron mukul
Sanskrit: Guggulu

WHAT IT DOES: **Guggul gum** is bitter and pungent in taste, and hot in action. It is a longevity tonic that stimulates the breakdown of mucous, tumors, fat and cysts.

RATING: Gold

SAFETY ISSUES: Do not use during pregnancy. Excess use of concentrated **guggulipid** may cause headache, mild nausea, and vomiting (Singh et al., 1994). May cause reduced bio-availability of the drugs diltiazem (cardizem) and propranolol (Dalvi et al., 1994).

STARTING DOSAGE:

- Concentrated dried extract: one to two grams two times per day
- Standardized lipid: 500 mg (yield=25 mg guggulsterone) three times per day

Note: use only prepared extracts

Guggul gum has been used in Ayurvedic medicine for centuries to treat abnormal growths, tumors, cysts, arthritis, glandular swelling, cancer, inflammation, and as a **rasayana** for promoting long life and health. It is so important in TAM healing that it has its own group of compound medicines listed in the TAM Materia Medica. Two of the most well known medicines are **yogaraja guggulu** and **kaisara guggulu**. **Yogaraja guggulu** is used to treat enlargement of the abdomen, peritonitis, rheumatism, neurasthenia, sciatica, and nervous system (**Vata**) diseases in general. It also has significant anti-inflammatory properties (Pandley et al., 1996). **Kaisara guggulu** is used to treat weak digestion, constipation, boils, diabetic ulcers, abdominal tumors, leprosy, leukemia, psoriasis and inflammation-related (**Pitta**) diseases.

Guggul gum has been popular in the West since researchers discovered its significant cholesterol-lowering properties in human trials (Nityanand et al., 1989). The gum can be separated into base, acid and neutral fractions. The neutral fraction contains most of the cholesterol-lowering activity, while the acid fraction contains some anti-inflammatory components.

Concentrated dried decoction extracts focusing on the cholesterol-lowering aspect are now being mixed with other cholesterol-lowering herbs and nutrients (such as **ginger root** and niacinamide) and sold as alternatives to Western drugs. I personally think this is probably a safer alternative to some of the Western cholesterol-lowering drugs.

Guggul gum in its traditional form is almost always used in combination with **triphala** and/or **guduchi stem** (*Tinospora cordifolia*). Both of these have strong anti-poison, anti-oxidant, and anti-inflammatory properties. TAM doctors also divide **guggul** into two types, new and aged, and prescribe them differently. The aged form has been considered a major anti-cancer herb since ancient times.

Research highlights

- In human trials, a combination of **guggul gum** and **puskaram tuber** (*Inula racemosa*) proved superior to nitroglycerin in reducing the chest pain and dyspnea associated with angina (Miller, 1998; Tripathi et al., 1988).
- **Guggul** may also have value in acne treatment. In one study, a majority of patients with serious nodulocystic acne experienced a progressive reduction (about 60-70%) in lesions when treated with **guggulipid**, results comparable to patients who received tetracycline (an antibiotic) treatment. The researchers noted that patients with very oily skin responded remarkably better to guggulipid than the antibiotic (Thappa et al., 1994).
- Clinical studies done in 1956 by Chopra showed **guggul's** ability to elicit significant improvement in psoriasis cases (Pandley et al., 1996).
- **Guggul gum** may also have mild thyroid-enhancing activity due to its effects on fats (Panda et al. 1999).

GUDUCHI STEM

Latin: *Tinospora cordifolia*

Sanskrit: Guduchi

English: Heart-leaved moonseed

WHAT IT DOES: **Guduchi stem** is bitter in taste and warming in action, and is a rasayana tonic for good health and longevity. It has anti-toxin and anti-inflammatory properties, reduces mucous, and has a calming, stabilizing effect on the nervous system (**Vata**).

RATING: Gold

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Dried powder: two grams two to three times per day
- 4:1 concentrated powder extract: one gram two times per day.

The **guduchi** plant is a long creeper with a succulent stem that grows in temperate and sub-tropical forests. It is used to treat fevers, hepatitis, gout, toxemia, and urinary

diseases. It is also often used by itself as a tonic tea. **Guduchi stem** is a diuretic, helping expel toxins including uric acid through the urine. It is an aphrodisiac, useful in treating impotence and debility from chronic disease. Dr. Mana (my Ayurvedic teacher) told me this herb has the special power (prabhava) of restoring balance without ever causing over-balance (samanam). In our clinic we use **guduchi stem** to treat infectious or chronic diseases where there is a need to detoxify and strengthen without disturbing the system further, such as with chronic hepatitis patients or those undergoing chemotherapy.

Research highlights

- Studies have shown **guduchi** to have general significant anti-inflammatory effects as well as specific anti-inflammatory action in cases of rheumatoid arthritis and liver toxicity (Pandley et al., 1996).
- **Guduchi stem** was tested for its ability to handle changes in immune cells after rats were exposed to different types of toxins. It was found to normalize phagocytic function irrespective of the nature of change in the cells, complying with the definition of an adaptogen (Rege, 1999).
- Animals treated with the herb were able to significantly recover liver function in the weeks following experimentally inflicted damage. Their liver immune cells (Kupffer cells) were protected against the damage, while those animals not given the herb exhibited perpetuation of damage (Nagarkatti et al., 1994).
- **Guduchi's** hepato-protective and immuno-modulatory properties were also shown to enhance the host defenses of a group of surgical patients, as indicated by the absence of post-drainage sepsis (Rege et al., 1993).
- Another group of researchers concluded that **guduchi stem** and **shatavari root** were potent immunostimulants, with value for patients receiving cytotoxic drugs, when they were found to protect mice against bone marrow suppression from cyclophosphamide, a chemotherapeutic agent (Thatte UM et al., 1988).

GYMNEMA

Latin: *Gymnema sylvestre*

Sanskrit: Gurmar

WHAT IT DOES: **Gymnema** is bitter in taste, and cooling in action. It improves blood sugar control in diabetics, numbs the taste of sweet completely (for about 20 minutes), and decreases appetite (for about 90 minutes).

RATING: yellow

SAFETY ISSUES: None reported. Should not be used by people with low blood sugars (hypoglycemia).

STARTING DOSAGE:

- 1:1 extract: five to 10 ml per day
- Pill: 500-1000 mg three times per day

Gymnema actually means "sugar destroyer." It grows in the wild forests of central India, all the way to Western Ghats and up to the Himalayas. Research indicates that **gymnema** stimulates insulin secretion. Japanese studies have shown that it improves glucose tolerance in animal models of diabetes, and other studies show that the effects can last for up to two months after discontinuation. This herb is a good long-term tonic for Type I and II diabetics. Results are best seen after long-term administration, over six months to a year. I prefer to use it in combination with several other herbs for blood sugar control, because it affects only a few aspects of the imbalance.

In case you're curious, sugar tastes like sand for twenty minutes after you chew on a little **gymnema**.

Research highlights

- Triterpenoid saponins in **gymnema** are responsible for its dramatic sweet taste-blocking action (Baskaran et al., 1990).
- One animal study testing extracts of **gymnema** confirmed earlier conclusions of human studies that the herb stimulates insulin release, adding that it works by increasing permeability in the islets of Langerhans, allowing more insulin to escape into the blood (Persaud et al., 1999; Shanmugasundaram et al., 1990).
- In tests on diabetic rabbits, **gymnema dried leaf powder** not only helped control elevated blood sugars, it also corrected metabolic derangements in the liver, kidney and muscles (Shanmugasundaram KR et al., 1983).
- **Gymnema** does not seem to improve insulin resistance in diabetic rats, although other herbs have been known to do so (Tominaga et al., 1995).
- Gymnemic acids found in **gymnema** have been found to bind cholesterol, causing it to be excreted in the stool of animals (Nakamura et al., 1999).
- Gymnemic acids also bind glucose and a common fatty acid (oleic acid) in the intestine, causing reduced uptake into the blood (Wang et al., 1998, (Shimizu et al., 1997).

HARITAKI FRUIT

Latin: *Terminalia chebula*

Sanskrit: Haritaki

English: Chebulic myrobalan

Chinese: He zi

WHAT IT DOES: **Haritaki fruit** is sweet, sour and astringent in taste, as well as slightly bitter and pungent. It is hot in action. It strengthens immunity while exerting a mild laxative effect.

RATING: Gold

SAFETY ISSUES: Not for use by pregnant women due to laxative effect.

STARTING DOSAGE:

- Dried powder: two grams two times per day

- 4:1 concentrated powder extract: one gram two times per day

Haritaki fruit embodies all tastes except salt, one of the many reasons it is designated in TAM as a rasayana tonic, good for health and long life. It is also tridosagna, meaning it can be used with any type of health imbalance. Furthermore, it is an anulomanum—a mild laxative that aids digestion. **Haritaki** is used to nourish the heart, liver, and kidney, and to treat diseases of the eye, for which it is used both internally and externally.

There are seven types of **haritaki fruit**:

- **Vijaya**: looks just a squash and can be used in any case.
- **Rohini**: is round in shape and more effective for healing.
- **Putana**: is small in size with big hard seeds, and is useful for external plastering.
- **Amrita**: is fleshier, and good for body purification.
- **Abhaya**: has five lobes, and is more effective for ophthalmic use (external).
- **Jivanti**: is yellow in color and good for all cases.
- **Chetaki**: has three lobes, is good to use in the form of powder, and is more laxative than the others. Chetaki comes in two varieties—white and black.

The mature (ripe) **haritaki** fruits are harvested during the autumn season, when they have the strongest medicinal and laxative effect. Drying the fruit properly in the sun to make a powder reduces the laxative effect slightly, and cooking or steaming reduces it even further, due to oxidation of the laxative chemicals. Traditional doctors disapprove of cooking the fruit when it should be sun-dried (a tedious process). The cooking process is thought to weaken the herb's medicinal effectiveness. However, TCM doctors often cook laxative herbs (such as **rhubarb root**, which is soaked in wine then fried) in order to remove the laxative properties, so they can be used for other purposes without discomfort to the patient.

Haritaki fruit contains anthraquinone-like (laxative) chemicals as well as tannins and astringents (reported in Kapoor, 1990). To bring out these opposing actions within a given product, Ayurvedic doctors administer it with warm water to strengthen the laxative action, and with ice cold water to promote the astringent action. For example, the juice mixed with cold water can be used as a mouthwash to treat spongy gums.

The post-digestive or delayed reaction of **haritaki fruit** (vipaka) is very strongly nourishing, so this is an excellent choice as a laxative in weak or elderly patients.

Haritaki fruit is part of **triphala**, the three-fruit formula. It is generally administered in **triphala** form rather than by itself to draw upon the tonic effects. Each of the **triphala fruits** is tonic, and together they act to balance the three primary balancing forces, **Vata**, **Pitta** and **Kapha**. At our clinic, following the Ayurvedic tradition, I add **triphala** to many, many combinations for this balanced tonic action. The wide variety of liver-protective, antioxidant, nutritive and antimicrobial virtues found in these three fruits lends much credence to this traditional practice.

TCM doctors use dried or cooked **haritaki fruit** to tighten up the stool for chronic diarrhea and dysentery and to "tighten" the lungs in chronic cough. By stating that it can be used for both hot and cold patterns of disease, they are acknowledging the balanced action of this herb.

Research highlights

- Researchers tested a 10% solution of **haritaki fruit** extract as a mouth rinse to study its effect on bacteria. The mouthwash significantly inhibited salivary bacterial count and total streptococcal (*S. mutans*) count for up to three hours compared to placebo, apparently by blocking their ability to utilize sugars (Jagtap and Karkera, 1999).
- **Haritaki fruit** was one of six Ayurvedic herbs administered to animal to test their adaptogenic potential. All six traditional rasayana plants were able to aid the animals against a variety of different stressors working in different ways (Rege, 1999).
- Alcohol extracts of 82 Indian medicinal plants were tested in vitro against several pathogenic and opportunistic microorganisms. Only five plants had a broad spectrum as well as potent action, one of which was **haritaki fruit**. The others were **amla fruit**, **vibhitaki fruit**, **chitrakam** (*Plumbago zeylanica*) and **kutaja** (*Holarrhena antidysenterica*). Subsequent animal testing showed no cellular toxicity (Ahmad et al., 1998).
- Tests of alcohol extracts revealed gallic acid and its ethyl ester, two potent antimicrobial substances that acted against even resistant strains of *Staphylococcus aureus* (Sato et al., 1997). In an AIDS model with immuno-suppressed mice, **haritaki fruit** was one of four herbs found to significantly reduce viral loads in a chronic lung infection (CMV) commonly found in AIDS patients (Yukawa et al., 1996).
- **Haritaki fruit** was one of four herbs screened out for potency to test for use with the anti-viral drug acyclovir against herpes (HSV-1) in a study at the Toyama Medical and Pharmaceutical University in Japan. When acyclovir was combined with any one of the herbal extracts and ingested in oral doses similar to human use, the results were significantly stronger than the use of the drug or the herbs alone, especially reducing viral loads in the brains of the animals (Kurokawa et al., 1995).
- Rabbit studies of the cholesterol-lowering actions of each of the **triphala fruits** showed that **haritaki fruit** had the strongest effect. Although all three fruits reduced cholesterol, **haritaki fruit** significantly reduced cholesterol deposits in the liver and aorta compared to controls (Thakur et al., 1988).

HAWTHORN

Latin: Crataegus pinnatifida

Crataegus laevigata

Latin: Crataegus Species

Chinese: Shan zha

WHAT IT DOES: Hawthorn berries and flower buds are sour and sweet in taste, and slightly warming in action. Hawthorn nourishes the heart, increases oxygen flow to the heart muscle, reduces blood vessel inflammation and helps digest fats and oils.

RATING: Gold

SAFETY ISSUES: Patients taking cardiac glycosides such as digitalis should inform their physicians that hawthorn may potentate the drug's effect, and dosage may need to be adjusted.

STARTING DOSAGE:

- Dried powder: 10-100 grams per day
- Concentrated powder extract: two to 15 grams
- Concentrated syrup: one to four teaspoons per day

Similar (but not identical) species of **hawthorn** are used by both Chinese and Western herbalists to benefit the heart. Western herbalists consider it to be a tonic "food for the heart." At our clinic we use it in formulas for all heart and cholesterol-related problems. It is safe and effective for long-term use. For serious heart conditions, it may be best to use concentrated dried decoction extracts and syrups, which contain more of the beneficial pigment compounds. The darker the syrup, the better. TCM herbalists use the fruit to help patients digest fats and other heavy foods. Because the species are not identical, it is best to use the Western variety (*C. oxycantha*) to treat heart problems, and the Chinese variety (*C. pinnatifida*) to treat digestion-related disorders. It is very common in China to see children eating candy-coated **hawthorn fruit** on a stick.

Hawthorn is used to treat hypertension, hypercholesterolemia, palpitations, tachycardia, angina, cardiomyopathy, coronary artery disease (CAD) and varicose veins. The fruit contains high levels of procyanadins, which are known to be cardiogenic (Rehwald, 1995). The mature flower buds and young leafy spring tips are quite high in flavonoids and proanthocyanins, which are useful for treating diabetes and arthritis, as well as for strengthening and repairing connective tissue (reported in Upton, 1999).

Some herbalists report that long-term use of **hawthorn**, six months to a year or more, can sometimes reverse essential hypertension. I have had two patients for whom this has been true, both able to go off their western medication. This clinically-observed effect may be due to gradual reduction of low-level inflammation affecting the inner walls of the vessels combined with **hawthorn's** numerous other heart-protecting activities.

Research highlights

- German physicians combine **hawthorn** with digitalis in cases of rapid heartbeat with and without atrial fibrillation, and report it can also be used for heart conditions for which digitalis is not yet indicated (Blesken, 1992).
- Studies have shown **hawthorn** to be sufficiently strong to benefit patients with NYHA (New York Heart Association) stage II cardiac insufficiency (Weikl et al., 1996) as well as patients in stage I and stage II congestive heart failure (Ammon et al., 1981).
- Chinese researchers have also reported a beneficial effect on angina symptoms (Weng et al., 1984).

ISATIS ROOT & LEAF

Latin: *Isatis tinctoria*

I. indigotica

Chinese: Ban lan gen (root)

Da qing ye (leaves)

WHAT IT DOES: **Isatis root and leaf** are bitter in taste and cold in action. They reduce fever and heat, cool the throat and kill microbes.

RATING: red, due to safety issues.

SAFETY ISSUES: Should not be used for extended periods of time, or in patients with severe weakness. Long-term use can reduce beneficial intestinal bacteria. **Use only under the guidance of a trained professional.**

Note: In 1990, there were 38 reports in China and 16 in Taiwan of adverse reactions to **isatis** (Ko, 1999).

STARTING DOSAGE:

- Dried powder: two to three grams per day
- Concentrated dried decoction extract: one to four grams per day.

Isatis is one of the most effective TCM herbs used as an herbal antibiotic, antiseptic and anti-viral. TCM doctors use it whenever there are signs of fever or toxic heat from viral illness, blood poisoning, leukemia, hepatitis, meningitis, scarlet fever, laryngitis, tonsillitis, mumps, and other similar ailments. It is an effective alternative to Western prescription antibiotics in some cases. Although the root is used most commonly, the leaves are useful as well. TCM doctors say **isatis leaves** "go to the upper part of the body" more than the root, so leaves are used for upper respiratory infections along with the root.

I find it very safe for short-term use, less than three weeks. Long-term use can weaken digestion, and sometimes can induce a very interesting but reversible feeling of internal coldness, to the point of shivering. I have experienced this phenomenon, and it was a truly enlightening sensory introduction to the concept of "coldness." I always use this herb with caution, as it can induce nausea in sensitive individuals and weaken digestion over time. **Isatis** contains several potent dark pigments, including blue indigo and red-colored indirubin.

Research highlights

- Indirubin binds to and blocks enzymes that govern cell division, thus stopping the proliferation of blood cancer cells. An article in *Nature Cell Biology* reported the results of a study examining the effects of indirubin extract on chronic myelocytic and chronic granulocytic leukemia. According to the report, 26 percent of the chronic myelocytic leukemia patients showed complete remission and 33 percent showed partial remission. Remissions lasted up to several years. The toxicity of the extract was relatively mild (Hoessel et al., 1999).
- The Experimental Pharmaceutical Factory at the Beijing College of TCM found alcohol to be superior to water for extracting indigotin and indirubin (Zhang et al., 1990). Additionally, meisoindigo, an indirubin derivative, seems to inhibit cancer cell replication more effectively due to its superior absorption (Ji et al., 1991). From an herbalist's point of view, these two studies might argue for the treatment of leukemia with alcohol extracts of herbs containing indigo and indirubin, such as

isatis, combined with digestion improving herbs such as **black pepper** or **long pepper**. Other herbs which have shown anti-leukemic action in the laboratory include **boswellia gum** and **turmeric root**.

- In a controlled rat model of chronic *Pseudomonas aeruginosa* lung infection mimicking cystic fibrosis, **isatis** and **genkwa flower** (*Daphne giraldii* / yuan hua) were each able to reduce the incidence of lung abscess and to decrease the severity of lung pathology (Song et al., 1996). We now know that alterations in fatty acid metabolism are responsible for many of the symptoms of cystic fibrosis symptoms, and that DHA (docosahexaenoic acid) derived from marine algae or fish is effective therapy for reversing these symptoms (Freedman et al., 1999). Consequently, I wonder if the combination of these TCM herbs and DHA would provide even greater benefit for this disease.
- In laboratory studies of mice, **isatis root polysaccharides** increased the weight of the spleen and number of white blood cells and lymphocytes significantly, as well as neutralizing some of the immune suppression caused by hydrocortisone (Xu and Lu, 1991).
- A number of studies of acute viral respiratory tract infections and infections normally requiring antibiotic therapy have demonstrated the efficacy of a combination of **echinacea root**, **white cedar leaf tips** and **wild indigo root**, which contains similar compounds to **isatis** (Wustenberg et al., 1999).

KAVA ROOT

Latin: *Piper methysticum*

English: Kava / Kava-Kava

WHAT IT DOES: **Kava root** is bitter, pungent and slightly astringent in taste and warming in action. It tranquilizes the mind, calms anxiety and reduces skeletal and bladder muscle spasms and pain.

RATING: yellow, due to limitations in usage.

SAFETY ISSUES: Do not use during pregnancy or nursing. Do not exceed recommended dosage. Do not use when depressed. **Kava** potentiates the effects of barbiturates, and benzodiazepines such as Xanax. Do not use in patients with Parkinson's Disease. Extreme excess dosage over time may cause a reversible scaly rash. A single case use of **kava root** with alprazolam resulted in a coma (Almeida and Grimsley, 1996).

STARTING DOSAGE:

- Standardized extract: 100-250 mg one to three times per day.

Note: when standardized, extracts contain 30% kavalactones, also called kavapyrones

Kava root relaxes the central nervous system and can be used to treat conditions like irritable bladder syndrome, anger, anxiety, nervousness and insomnia. It is a very effective treatment for irritable bladder because it numbs pain as well as relaxing spasms.

According to written accounts, inhabitants of the Pacific Islands have used **kava root** as a mild intoxicant since the 1772-1775 voyages of Captain Cook. Typically, they would chew the root, then cover it with water. After it macerated for a while, they would strain it and drink the liquid (Felter and Lloyd, 1898). They now have more sophisticated uses for it, such as drinking the tea before marriage counseling sessions to prevent chair throwing. My experience with **kava** is that it induces a mild euphoria in the average person, but I suggest you keep quiet about it, as anything that provides too much pleasure is currently a source of great concern to our moral and political leaders.

Kava root may be a good substitute for some prescription medications for anxiety. However, a qualified physician should supervise any changeover. It is important to distinguish between anxiety and depression, as **kava** should usually only be used in cases of anxiety and irritability. **It may exacerbate depression.**

For clarification purposes, depression is when you want to lie in bed forever and hide from the world, and nothing matters. Anxiety is when your mind races out of control with fears and quickly changing ideation. I have seen many patients who were self-medicating with herbs, and did not seem to understand the differences between these conditions or the differences between **kava root** and **St. John's wort**. There are several combination products on the mass market that contain combinations of **kava root** and **St. John's wort**. This may be of benefit for persons suffering from both anxiety and depression. However, if it makes you too calm or makes you more anxious, you may not know whether to discontinue the herbs or double the dosage! Your best bet is to try each herb individually for a short period of time and determine which one is more effective for your condition. Some people may benefit more from the combination.

Research highlights

- **Kava** seems to work through a variety of biochemical mechanisms. The mood-elevating actions may be due to the activation of the meso-limbic dopaminergic neurones (Baum et al., 1998).
- In a clinical multi-center randomized double-blind controlled trial of 101 outpatients suffering from anxiety, **kava extract** demonstrated a clear superiority over placebo according to the Hamilton Anxiety Scale. Adverse events were rare. The researchers reported these results as support for the use of **kava extract** "as a treatment alternative to tricyclic antidepressants and benzodiazepines in anxiety disorders, with proven long-term efficacy and none of the tolerance problems associated with tricyclics and benzodiazepines." (Voltz et al., 1997).
- A placebo-controlled randomized double-blind study tested the effect of a standardized **kava extract** on safety when taken with alcohol. Twenty males and females participated in seven skill performance tests over several days. The **kava** did not cause any negative additive effects. However, the **kava** and alcohol group showed a "remarkable" advantage over the alcohol group on the concentration test (Herberg, 1993).
- In a controlled double-blind crossover study comparing the effects of oxazepam (a benzodiazepine anti-anxiety agent) and a **kava root extract** on recognition and memory tasks, subjects were asked to recognize and recall words. Oxazepam caused a reduction in memory for both old and new words, while **kava** showed a slight increase in recognition rate (Munte et al., 1993)

KUDZU ROOT/FLOWER

Latin: Pueraria lobata
P. tuberosa
Sanskrit: Bidari kand
Chinese: Gao gen

WHAT IT DOES: Kudzu is sweet in taste and cooling in action. The root is a general tonic that calms the nerves and heart, relaxes tension and spasms in the upper body. The flower reduces alcohol cravings.

RATING: Silver

SAFETY ISSUES: none known

STARTING DOSAGE:

- Dried powder: five to 15 grams per day.
- Tea: cut the fresh or dried tuber into small pieces (about 1/2 inch in diameter), and decoct for about 30 minutes (Yang and Zhang, 1989).

We use kudzu root in our clinic according to TCM tradition, in formulas whenever we see chronic upper body tension, stiffness, muscle spasm and pain. It is also useful for reducing thirst and fever. Kudzu root may be mildly beneficial for treating heart conditions. Patients with angina and hypertension often report that they feel much better after using this herb for a period of time, confirming traditional Ayurvedic reports that it acts as a general tonic for health and long life. For the heart, it can be taken as a tea on a daily basis.

Kudzu vine is seen as a major ecological problem in the southern United States, where it is taking over and growing everywhere. Perhaps turning it into a cash crop would be of great benefit.

If you eat **kudzu** before you drink alcohol, you will be overcome by hangover nausea almost immediately due to a chemical reaction involving a component called acetaldehyde (reported in Duke, 1997). This will of course discourage alcohol use for a very long time, especially since the initial hangover isn't the only one you experience. I suggest the government require manufacturers to put **kudzu root** right into all alcoholic drinks, along with some **milk thistle seed** to protect the liver, a little **white peony root** to aid in spatial coordination, and some B-vitamins to reduce toxicity. This would serve as an instant solution to most alcohol-related problems, including over-consumption, liver damage, morning-after hangovers and drunk driving.

Research highlights

- Compounds in **kudzu root** have been shown to suppress voluntary alcohol consumption in alcohol-preferring rats (Lin and Li, 1998).
- Individual saponins isolated from **kudzu root** have shown liver-protective activity in vitro with cultured rat liver cells (Arao et al., 1998, Arao et al., 1997).

- **Kudzu** contains phyto-estrogenic compounds, including daidzin and daidzein (Lin and Li, 1998).
- Women of the Bhil tribe of Madhya Pradesh use **kudzu tubers** to increase milk production, and it is also used on farm animals for the same purpose (reported in Pandey, 1996).
- In several Indian studies, extracts of **kudzu tubers** caused 100% post-coital anti-implantation activity in rats, hamsters and guinea pigs, leading to speculation that it might prove useful as a non-toxic abortifacient.
- In a study of 250 female patients, 50% of the pregnant participants taking **kudzu tuber** experienced pregnancy termination (Chandoke et al., 1981).
- Reviews of experimental studies and clinical application of **kudzu root** in China have also reported cardiovascular applications. The observed actions include increased blood circulation to the brain, anti-arrhythmia, increased blood flow in the coronary artery, mild anti-hypertensive actions, and mild blood sugar lowering effects (Lai and Tang, 1989; reported in Yeung, 1983).

LEMON

Latin: *Citrus limon*

Sanskrit: Nimbu

WHAT IT DOES: **Lemon** is sour in taste, and cooling in action. It stimulates the internal organs, and helps resolve kidney stones and gall stones.

RATING: Yellow

SAFETY ISSUES: None known

STARTING DOSAGE:

- Fresh fruit—use as described below

The **lemon** is one of our most common fruits, and TAM doctors draw our attention to its differences from other sour fruits. **Lemon** is unique in that its trees bear fruit continuously throughout the year, it has the ability to constrict the capillaries, and it exhibits a cooling rather than a warming action. (This cooling action makes it a stimulating summer beverage.) It has several interesting medicinal uses.

TAM doctors believe **lemon** has medicinal value in treating indigestion, nausea, and loss of appetite. To stop even severe nausea temporarily, chew or squeeze a piece of **lemon peel** and inhale the spray. It only works for a few minutes, but this can be important if you suffer from hepatitis or morning sickness. **Lemon** is one of several citrus products than can inhibit tumor formation. When administered with a chemical carcinogenic agent, oils of **orange, tangerine, lemon** and **grapefruit** inhibited tumor formation in both the stomach and lungs of mice (Wattenberg et al., 1985).

I am very partial to organic lemons because the pesticides used on most citrus fruit are detrimental to your health.

Perhaps most importantly, research performed at the University of California in San Francisco showed that patients with kidney stones who could not tolerate traditional pharmaceutical approaches benefited when they supplemented their diets with four ounces of reconstituted **lemon juice** per day. **Lemon juice** is a natural source of citrate, and four ounces provide about six grams of citrate. This level doubles urinary citrate levels and lowers urinary calcium excretion, which is required to prevent kidney stone formation. If it was up to me, I'd make sure patients always use the juice of organic fresh lemons, which contain limolene, a phytochemical that helps dissolve gallstones and is found mostly in the white parts on the inside of the rind.

LICORICE ROOT

Latin: *Glycyrrhiza glabra*

Sanskrit: Madhukam

Chinese: Gan cao

Zhi gan cao

WHAT IT DOES: **Licorice root** is sweet in taste and cooling in action. It detoxifies poisons from the blood and liver, and reduces general inflammation and pain. It moistens and heals the lungs and digestive tract.

RATING: Silver

SAFETY ISSUES: Do not use during pregnancy. Do not use high doses or for a prolonged period of time unless under the care of a qualified health care practitioner. Use cautiously with kidney disease, liver disorders, or if taking thiazide diuretics, cortisone or cardiac glycosides. **Licorice** prolongs the half-life of cortisone. ***The DGL form of licorice is free of side effects.**

STARTING DOSAGE:

- Crude powder: one to three grams three times per day, up to six weeks
- Concentrated 4:1 granules: 150-250 mg. three times per day

Licorice root is one of the most widely used herbs in the world. Every major medical tradition uses it as medicine, usually describing its effects as cooling and tonifying. TCM doctors use it in two forms. Regular **licorice root** is considered to have an intrinsic harmonizing effect useful for reducing side effects from large combinations of other potent herbs, and for disguising their bitter or acrid flavors. **Licorice** is said to strengthen the digestion and the hormonal systems and moisten the lungs. TCM doctors also use a honey-fried form to warm digestion when indicated. TAM doctors use **licorice root** to reduce the pain of sore throat and ulcers, to subdue poisons, and as a major ingredient in cough syrups.

Almost 50 years ago, a scientist by the name of Revers reported that **licorice paste** reduced abdominal symptoms and caused radiographic evidence of ulcer healing. However, about 20% of patients developed edema, headache and other symptoms due to overdose, leading to a loss of enthusiasm (Schambelan, 1994). This led to the

development of **DGL (deglycyrrhized licorice)**, a form of **licorice** that does not contain the agents responsible for the side effects. The de-acidified **DGL** tablet or capsule form used in Europe and America seems devoid of any side effects, and is effective for healing the intestinal membranes.

Paul Bergner, editor of *Medical Herbalism*, wrote an article citing recent Japanese and Chinese research highlighting the numerous positive and protective effects **licorice root** exerts on the liver. Its anti-hepatotoxic effects make it useful in treating chronic hepatitis and possibly cirrhosis. **Licorice root** contains plant (phyto) estrogens similar to those found in **soy** (Zava et al., 1998), and has an estrogen-like effect, binding strongly to estrogen receptors. This makes it a good treatment for easing hot flashes, though I would do this only at recommended doses in a formula with other herbs.

Many patients express concerns about using **licorice** because they have seen negative press coverage of this herb. It is important to understand that these reported concerns are dose-related. **Licorice** is traditionally used as approximately five percent of a formula, and that is what I usually do with it. If a patient takes the typical six to nine grams of concentrated 4:1 powder per day, this works out to about 1.2-1.8 grams of licorice, well within recommended dosage levels. Personally, I've never seen any of the potassium depletion and sodium retention effects described in the literature, and the pharmacologists I've consulted with assure me that such effects are rare, and easily reversible simply by stopping use.

The various components of **licorice root** act in a number of different ways in the test tube, on animals and on humans. It is important to keep in mind that specific results of scientific studies, such as the ones listed below, often relate to particular components of **licorice**. By examining these various reports you will be able to see the general pattern of cooling and detoxification noted by ancient doctors.

Research highlights

- We now know that the negative effects of **licorice** overdose, such as blood pressure elevation and fluid retention, are caused primarily by its dose-dependent inhibition of a specific enzyme called 11-HSD. Analysis reveals that this inhibition occurs only after multiple doses of 1.5 grams per day of pure glycyrrhizic acid. Daily doses of 500 mg. or less cause little or no problem (Krahenbuhl et al., 1994, Heilmann et al., 1999, White et al., 1997). In other words, **licorice root** is safe when used in proper dosage.
- According to several studies, **DGL licorice** is a very effective ulcer treatment (Morgan et al., 1985, Morgan et al., 1982, Morgan et al., 1987, Russell et al., 1984, Tewari and Wilson, 1973).
- Glycyrrhizin is a major anti-inflammatory compound found in **licorice**. Its anti-inflammatory action is due in part to the selective inhibition of thrombin (a clotting factor), which results in the removal of blood congestion. Glycyrrhizin was the first such compound to be isolated from a plant (Francischetti et al., 1997)
- Glycyrrhizic acid, a component of **licorice roots**, was found to inhibit the growth and cytopathology of several unrelated DNA and RNA viruses without affecting cell activity and ability to replicate. Glycyrrhizic acid irreversibly inactivates herpes simplex virus particles (Pompei et al., 1979). For this reason, **licorice** tincture or paste can be applied directly to lesions.

- In animal studies, **licorice root** has been shown to enhance liver detoxification of poisons, causing significant increases in liver and urinary excretion of acetaminophen (Moon and Kim, 1997).
- The complex sugars found in **licorice root** and many other herbs stimulate macrophages (immune cells), but some scientists have expressed concerns that the effects seen in laboratory experiments might have been overstated and due solely or in part to bacterial contamination. However, additional studies determined that macrophage stimulation by **licorice root** still occurred in plants grown in aseptic conditions (Nose et al., 1998).
- A compound in **licorice root** called beta-glycyrrhetic acid has been identified as a potent inhibitor of a certain cascade of inflammatory immune system chemicals (Kroes et al., 1997).
- **Licorice extract**, along with glutathione and the bioflavonoids, belongs to a class of substances known as "desmutagens." Scientists Kada and Shimoi categorized these molecules according to their unique ability to bind to toxic chemicals and cancer-causing agents (Shankel et al., 1993).
- **DGL** can be used as a mouthwash for small mouth ulcers (Das et al., 1989), and may reduce stomach bleeding caused by aspirin (Rees et al., 1979)
- **Licorice alcohol extract** contains a subclass of polyphenol flavonoids called isoflavones that may reduce the negative effects of LDL cholesterol, and reduce atherosclerotic lesion areas in mice (Fuhrman et al., 1997, Aviram, 1996). This effect was later shown to be similar to that of the bioflavonoid **quercetin** (Belinky et al., 1998).
- **Licorice root** has an effect on corticosteroid metabolism that links it to certain receptors in the brain and may eventually lead to applications in studies of mood, neuronal survival, and feedback related to blood pressure. Researchers hope to develop useful means to target specific action sites on the brain (Seckl, 1997).
- A **licorice root extract**, mostly glycyrrhizin (a saponin extracted from licorice) has been shown pharmacologically to stimulate interferon (Eisenburg, 1992), suggesting that a combination might be more effective than either along. A clinical test on humans showed results for hepatitis C (a reduction in viral load and ALT), but results failed to achieve significance (Abe et al., 1994).

LONG PEPPER

Latin: *Piper longum*
Sanskrit: Pippali

WHAT IT DOES: **Long pepper** is pungent in taste and hot in action, and tonic. It improves appetite and digestion, helps control coughs and asthma, and increases absorption of other nutrients and herbs

RATING: Silver, as it contains both tonic effects as well as some restrictions

SAFETY ISSUES: Use cautiously with stomach weakness or hyperacidity. Do not use continuously in high dose for longer than two weeks. Low dosage (as a spice) is safe for long term use.

STARTING DOSAGE:

- Dried powder: 200-mg concentration, one and-a-half grams two to three times per day (larger amounts--up to 30 grams per day--may be used if cooked for two hours)

Long pepper is an interesting medicine. It is one of three parts of the famous Ayurvedic digestive formula called **trikatu** (the other two are **black pepper** and **ginger root**).

Long pepper is pungent and stimulating to the appetite, and can be added to the diet to improve nutrient absorption. TAM doctors use it for bronchitis, asthma, cough and fever, and to stimulate the medicinal effects of other herbs.

Scientific attention has focused on piperine, an alkaloid found in **long pepper** and **black pepper**, which stimulates an enzyme that promotes amino acid uptake from the digestive tract and increases heat in the GI tract. Piperine appears to increase blood concentrations of **turmeric root** (Shoba et al., 1998). Therefore, instead of using the more expensive and perhaps slightly dangerous **turmeric** extract called curcumin, all you may need to do is add either of the **peppers** to ordinary **turmeric root**, about 5% by weight, for short periods of time (perhaps a few weeks at most).

Numerous studies of **long pepper** show blood levels of various vitamins and nutrients to increase by as much as 30% when ingested concurrently. Nonetheless, I do not recommend long-term continual use due to the herb's strongly spicy quality. Atal (1985) estimated that the inhibition effect lasts only 1-6 hours in animals, and this makes it very useful with ingested nutrients. However, if **long pepper** is taken continuously or in excess, it could also keep toxic molecules from being metabolized and excreted. I add **long pepper** or **trikatu** to herbal formulas for short periods of use to aid digestion when weak, especially if the patient has signs of mucous. TAM doctors report that **long pepper** reduces colic pain and mucus, and can be used for cough and asthma. It stimulates the medicinal effects of other herbs. Unlike **black pepper**, **long pepper** is reputed to have tonic qualities--good for long life.

Research highlights

- Piperine has an affinity for fatty tissue, where it interacts with the cell membranes. Its components are absorbed very quickly across the intestinal barrier, increasing permeability (Johri et al., 1992), so researchers theorize that it attaches to various molecules and helps them across (Khajuria et al., 1998).
- Piperine's most important action may be the inhibition of liver and intestinal glucuronidation, which allows molecules to flow into the blood without being excreted (Atal et al., 1985).
- Especially interesting to me was one study published in *Planta Medica* showing how piperine dramatically increased blood concentrations of **turmeric root**, one of my favorite anti-inflammatories (Shoba et al., 1998).
- **Long pepper** also has some mild liver-protective activity (Koul and Kapil, 1993).

MAITAKE MUSHROOM

Latin: *Grifola frondosa*

Japanese: Mushikusa

English: Hen-of-the-Woods

WHAT IT DOES: **Maitake Mushroom** is sweet in taste and neutral in energy. It is a nourishing adaptogenic tonic that helps nourish the immune system and identify, target and destroy invaders, including cancer cells.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Fresh mushroom: one-half cup cooked, two to three times per week
- Dried fruiting body capsules: two 500-mg capsules two to three times per day.
- Extract tincture (one gram mushroom = 30 drops): 15-30 drops two to three times per day
- Proprietary D-fraction liquid: five to 25 drops two times per day.

Maitake mushrooms are a wonderful food tonic, illustrating Nature's ability to harness her magic. They have been harvested in Eastern North America for years and sold to restaurants as a delicacy. The Japanese retrieve them from the mountains of Northeast Japan. Now that they are becoming available commercially as foods, make sure to include them in your diet. When eaten whole, they tonify the body, increase energy, keep the immune system healthy, and increase longevity. We use **maitake extracts** as a staple in our treatment of immune-compromised cancer patients. The extracts contain high levels of beta-glucan, a well-researched immune system activating agent.

Research highlights

- Extracts from **maitake** show anti-tumor action by directly activating various immune system components, including macrophages, complement, cytokines, natural killer (NK) cells, and tumor necrosis factor (Borchers et al., 1999; Nanba et al., 1997; Kurashige et al., 1997).
- Beta-glucan seems to override the normal resistance of tumor cells to the cytotoxic activation of phagocytes and NK cells. This allows the complement part of the immune system to function against tumor cells in the same way that it normally functions against bacteria and yeast (Kubo et al., 1999).
- **Maitake mushroom** has demonstrated an ability to alter fat metabolism in animal studies by inhibiting both the accumulation of liver lipids and the elevation of serum lipids (Kubo et al., 1996).
- The fruiting body of **maitake** was confirmed to contain substances that exhibit anti-diabetic activity, as illustrated by its ability to lower blood glucose levels (Kubo et al., 1994).

- Feeding studies show that **maitake mushroom** can lower blood pressure in hypertensive rats (Kabir and Kimura, 1989).
- It is important to note that despite the similarities of the anti-cancer substances (including glucans) found in various mushrooms, they differ in their effectiveness against specific tumors and in their ability to elicit immune responses (Borchers et al., 1999).

MILK THISTLE SEED

Latin: *Silybum marianum*

WHAT IT DOES: **Milk thistle seed** is sweet in taste and cooling in action. It strongly protects, repairs and nourishes the liver, stomach and intestines.

RATING: Silver

SAFETY ISSUES: **Milk thistle** may speed clearance of pharmaceutical drugs. Use cautiously (consult your physician) if taking drugs which require adequate blood levels, such as cardiac glycosides or cyclosporine.

STARTING DOSAGE:

- Concentrated standardized silymarin capsules (70-210 mg): one to two pills, two to three times per day
- 1:5 Tincture: 20-40 drops three times per day

Milk thistle is a true liver tonic, useful for treating numerous liver and gall bladder conditions including hepatitis and cirrhosis. **Milk thistle seeds** are especially useful whenever chemicals, alcohol, chemotherapy, or medicines compromise the liver. It reverses toxic liver damage and protects against hepatotoxic agents, including the **deathcap toadstool**. (*Amanita phalloides*) It is used for this purpose in European hospitals. It also stimulates protein synthesis in the liver, helping with the formation and growth of healthy new liver cells by selectively inhibiting certain inflammatory chemicals in liver cells (Thamsborg et al., 1996). At our clinic, I like to combine **milk thistle seed** with **dandelion root** and **turmeric root** to create a simple liver tonic which heals, repairs, detoxifies and gently stimulates the liver.

When I was growing up in the 1950's and 60's, it was commonly believed among Western physicians that nothing could repair a severely damaged liver. This changed with the emergence of **milk thistle**. However, in TAM and TCM there are numerous liver herbs, some perhaps stronger than **milk thistle**, and there is a wide breadth of knowledge concerning how to use them to benefit the liver.

The benefits of **milk thistle** and other liver agents were well known by the Eclectic physicians. Dr. Finley Elingwood's 1919 classic, American Materia Medica, Therapeutics and Pharmacognosy, describes in detail how **milk thistle** improves "general bilious conditions" such as jaundice, hepatic pain and swelling. The Eclectics also used it to treat congestion in the spleen, kidneys and veins. Its range of action is very wide.

Research highlights

- **Milk thistle** "has been shown to have clinical applications in the treatment of toxic hepatitis, fatty liver, cirrhosis, ischemic injury, radiation toxicity, and viral hepatitis via its anti-oxidative, anti-lipid peroxidative, antifibrotic, anti-inflammatory, immuno-modulating, and liver regenerating effects" (Luper, 1998).
- In a unique application of this herb, Russian scientists have studied the addition of **milk thistle** to bread to observe its effects on health and metabolism. They reported that the addition of *silybum marianum* to bread products exerted a general restorative influence, increasing internal protection resources, capacity for work and vital activity (Gil'miarov et al., 1998).
- In a double-blind study examining patients with liver cirrhosis due to alcohol, after five years there were almost three times as many deaths in the control group as in the group taking **milk thistle** (Benda et. al, 1980). A later study illustrated similar results (Ferenci P et al., 1989).
- In a model designed to examine the effect of alcohol on pregnant women, a group of rat pups that received a diet consisting of 35% ethanol exhibit marked mental deficits, including poor social memory. The group that received silymarin in addition to the ethanol scored much better, indicating a protective effect (Reid C et al., 1999).
- Because it contains polyphenolic antioxidants, **milk thistle** may also have potential as a cancer preventative agent (Zhao et al., 1999). Noting that most antioxidants afford protection against tumor promotion, in a complex study measuring several parameters, researchers reported the protective effect of silymarin on tumor promotion, indicating that it exhibited highly protective effects against tumor promotion (Lahiri-Chatterjee et al., 1999).
- **Milk thistle** was found to have an anti-cancer effect on both breast and prostate cancer (Zi X et al., 1998). It also protects the kidneys against toxicity from the chemotherapeutic agent cisplatin in animal models, without reducing its effectiveness against cancer (Bokemeyer et al., 1996, Gaedeke et al., 1996). It also protects against the kidney toxicity of cyclosporine, an anti-rejection drug (Zima. et al., 1998).
- Studies have also shown a protective effect of silymarin on stomach and intestinal membranes (Alarcon de la Lastra et al., 1995). This may be due to a selective increase in total glutathione content in the liver, intestine and stomach found in animal studies (Valenzuela A et al., 1989).

MILKY OAT SEED

Latin: *Avena sativa*

WHAT IT DOES: **Milky oat seed** is sweet in taste, and mildly stimulating and cooling in action. It restores strength to the nervous system when exhausted, and reduces craving for tobacco and drugs.

RATING: Gold

SAFETY ISSUES: none known

STARTING DOSAGE:

- Tincture (1:2): 20-40 drops three to four times per day

Milky oat seed is a mild but reliable remedy for strengthening the entire nervous system after periods of prolonged stress. The seed is harvested when it becomes milky. Growers must squeeze the seeds each day until the milky juice oozes out, which only occurs for 5-8 days. Once collected, the juice must immediately be turned into a tincture. It is used to treat nervous debility, stress, weak nerve force, anxiety, depression and the accompanying exhaustion, and general fatigue (Felter, 1922). A chief virtue of **milky oat seed** is its extreme tolerability by otherwise highly sensitive patients who have difficulty withstanding treatment with stronger tonic herbs. It seems to exert an immediate effect (necessary when patients exhibit extreme anxiety and nervousness) as well as a long-term strengthening benefit. I often combine it with **scullcap**, which has stronger sedative action. Good alternatives include "Avena-Scullcap compound" made by Herb Pharm and "Phyto calm formula" made by Herbalists and Alchemists. These formulas have seen many of our patients through severely stressful periods, and have helped many more avoid resorting to stronger Western medications. It is safe for use by everyone, even infants.

Herbalist David Winston, who maintains a fabulous private herbal medicine library, reports that **milky oat seed** was used extensively by Eclectic physicians, and he mentioned finding a pamphlet detailing its use for treating morphine addiction as far back as the 1880's. European herbalists have also traditionally used it to treat opium addiction (Jack, 1971). Numerous studies serve to substantiate, at least partially, claims of the herb's usefulness in addiction control, including its effectiveness as an aid for smoking cessation. Although the research done so far is sparse, the clinical results I have seen remain impressive.

Dr. John Christopher, a well-known herb doctor of the last generation, tells the story of a patient who brewed a tea of **scullcap**, **milky oat seed** and a few other nervines, and left it to cool on the stove. Her infant child climbed up on the counter and drank about five or ten times the adult dose, prompting her to call Dr. Christopher in hysterics. He calmed her down and told her the child would be fine. After a very long sleep, the mischievous infant awoke well rested and in good spirits.

Research highlights

- In a placebo-controlled study, researchers gave a fresh alcohol extract of **mature oat plant** to heavy smokers. The extract was found to reduce cigarette usage significantly more than the placebo (Anand, 1971).
- In another study, a tincture of **oat seed** taken with malic acid and apple juice for four weeks led to a 67% reduction in cigarette consumption (Raffalt and Andersen, 1975).
- Chemical studies have revealed that the addition of water to **milky oat seed** causes a significant loss of potency. Water extracts have not been significantly more effective than placebos in studies of its ability to control addictions (Gabrynowicz 1974, Bye et al., 1974)

- Pharmaceutically prepared fresh alcohol extracts of both **fresh oat plants** and **oat seeds** have exhibited activity as nicotine and morphine antagonists (Connor et al., 1975).
- Additionally, out of a group of ten male chronic opium addicts taking a 2-ml dose (about 30 drops) three times per day of **oat tincture**, six gave up opium without serious withdrawal symptoms. During a follow-up period of three to 19 months, the six successful participants were able to stay off opium completely (Anand, 1971).

MILLETTIA STEM

Latin: *Millettia species*
Spatholobus suberectus
Chinese: Ji xue teng
English: Chicken blood vine

WHAT IT DOES: **Millettia stem** is sweet in taste, and warming in action. It nourishes the blood and bone marrow, moves the blood, and reduces muscle and joint pain in deficiency syndromes.

RATING: Silver. Use cautiously if taking blood-thinning medication.

SAFETY ISSUES: None known

STARTING DOSAGE: dried crude powder or concentrated dried decoction

- Dried crude powder: nine to 15 grams per day
- 4:1 concentrated dried decoction: three to six grams per day.

Millettia stem is another of the TCM "moving blood" and "supply blood" herbs used normally to treat problems such as anemia, dysmenorrhea, irregular menstruation and amenorrhea. Because it is a stem, TCM doctors say it is useful to treat muscle and joint pain by opening obstructions to **Qi** flow in the meridians. Because it both nourishes and moves the blood, it is a good choice for patients with deficiency. We always include it in formulas for cancer patients suffering from leukopenia due to radiation or chemotherapy, along with other herbs from the same category such as **dang gui root**, **carthamus flower**, **white peony root**, **salvia root** and **cooked rehmannia root**. In severe cases of anemia, it is useful to dissolve concentrated granules of these herbs into molasses to form a paste and spoon-feed it to the patient. I would use up to one tablespoon every two to three hours, adding some **ginger root** if there is a digestive problem.

Research highlights

- Pharmacological studies in China show that the blood forming effects take place in the bone marrow, significantly stimulating hematopoiesis while exerting a beneficial effect on the marrow microenvironment. Microscopic examination has shown a reduction in hyperplasia, and an increase in the proliferation of micro-vessels (Su et al., 1997).

- Clinical studies in China on cancer patients with impaired immune function various compound formulas using **milletia stem** have shown increases in white blood cell function, hemoglobin, and platelets (reported in Dharmananda, 1999).

MUIRA PUAMA

Latin: Ptychopetalum species

Spanish: Muira puama

English: Potency bark

WHAT IT DOES: **Muira puama** is sweet in taste and warming in action. It increases sex drive and stimulates nervous system energy.

RATING: yellow, due to limited mode of action

SAFETY ISSUES: none known

STARTING DOSAGE:

- 1:4 tincture: 20-40 drops two to four times per day, up to 60 drops for a single dose

Note: Muira puama must be used in tincture extracted form.

Muira puama is a Brazilian rain forest herb traditionally used as an aphrodisiac, as is obvious from the English translation of its name. It is used to treat male impotence, low sex drive and female frigidity. Researchers in Europe and Japan have studied the balsam, an aromatic oily extract of the herb, since 1969 (Auterhoff and Momberger, 1971; Iwasa and Kimura, 1969). According to Italian research reports in the popular press, **muira puama** produces an androgenic effect similar to **yohimbe bark** (an alkaloid of which is now a prescription medicine), but without its side effects. It is reputed to exert an awakening effect on sexual desire in both sexes, as well as an increase in the production of sperm in men. The exact mechanism of action is currently unknown.

At our clinic, we find **muira puama** quite effective as a short-term remedy. However, good holistic medicine dictates the additional need to identify underlying causes of the problem that should be treated long-term. Fortunately, the quick results this herb produces in many cases give the patients confidence to pursue further treatment.

Research highlights

- The Institute of Sexology in Paris, France did a clinical study of **muira puama** with male patients complaining of low sex drive and the inability to maintain an erection. In many cases, the herb proved effective within two weeks. At a daily dose of about 30-90 drops of the 1:4 tincture extract, 62 percent of patients with loss of libido claimed that the treatment had "a dynamic effect", and 51 percent of patients with erection failure also reported improvement (Waynsberg, 1990).

MYRRH GUM

Latin: *Commiphora myrrha*
Commiphora molmol

Sanskrit: Daindhava

Chinese: Mo yao

WHAT IT DOES: **Myrrh gum** is bitter in taste, aromatic, and cooling in action. It invigorates the blood and reduces pain and swelling caused by blood stasis.

RATING: Red

SAFETY ISSUES: Do not use if pregnant. Do not use with excessive uterine bleeding. Do not use with evidence of kidney dysfunction or stomach pain.

STARTING DOSAGE:

- Dried gum powder: one to three grams per day
- Concentrated dried decoction extract: 250-750 mg per day

Myrrh gum has an intense dark color, reflecting its medicinal potency. It exerts a strong and certain action against specific types of pain and swelling, such as that of rheumatoid arthritis. It is strong enough to soften hard swellings and carbuncles. Like all plant resins, **myrrh** can also lower blood cholesterol levels by binding to lipids (Michie and Cooper, 1991; reported in Bensky and Gamble, 1993). Biblical references to "frankincense and myrrh" refer to this herb along with **boswellia gum**, which is another useful resinous anti-inflammatory. Eclectic physicians considered **myrrh tincture** to be the most effective topical medicine for treating sore and spongy gums. The tincture is diluted down to 10-15% with water and applied directly to the gums. It is also useful as a gargle for spongy enlarged tonsils (Felter, 1922). They use it for similar applications in India, with the addition of honey and **rose petals** to the solution (Nadkarni, 1954).

At our clinic we use both of these plants frequently when there is painful swelling in the joints. The action is often broader and more satisfying than that of aspirin and other NSAID compounds alone. I do not use **myrrh** by itself. It's simply too strong. I prefer to use it as a smaller part of a formula, perhaps 5%, and just for a month or two.

The practice of using single strong anti-inflammatories, which block chemical actions, can often create side effects. We are now beginning to gain a scientific understanding of why the common practice of mixing anti-inflammatory herbs, found in all herbal cultures, is so effective. If you completely block a chemical pathway the body is using for some purpose, like ridding itself of a toxin, it will often express its displeasure by creating a side effect, a chain of chemical events. The different herbs work in a myriad of ways, with actions on many different chemical pathways. If you gently moderate several of these pathways, the result will often be a significant reduction of pain and swelling without side effects. Hopefully, then, by working in concert with changes in diet and lifestyle, the body can overcome the original imbalance or causative factors and come to a more complete resolution.

Research highlights

- In an attempt to determine the cause of its effectiveness, researchers examined the individual ingredients of an herbal formula used traditionally by Kuwaiti diabetics to lower blood glucose. Only **myrrh** and **aloe gums** effectively improved glucose tolerance in both normal and diabetic rats (Al-Awadi and Gumaa, 1987).
- Mixing **myrrh gum** into vinegar increases its ability to remove blood congestion and relieve pain (reported in Yeung, 1983).

NEEM LEAF & OIL

Latin: *Azadirachta indica*

Sanskrit: Nimba

WHAT IT DOES: **Neem leaf** is bitter in taste and cold in action. It reduces fever and inflammation, reduces itching, and kills microbes and fungus. **Neem oil** is used externally to heal wounds and boils.

RATING: Red

SAFETY ISSUES: Do not use for longer than three weeks due to dampening effect on digestive, sexual and reproductive functions. Do not use this products unless under the guidance of a properly trained professional.

STARTING DOSAGE:

- Dried powder: one to two grams two times per day
- 1:5 tincture: 10-20 drops two times per day
- Concentrated powder extract: 150-250 mg two to three times per day

Ayurvedic doctors use **neem leaves** for skin diseases, itching, and fever, especially malarial fever. They also use it internally and externally for all forms of fungal and other infections. We use concentrated **neem leaves** at our clinic to treat skin diseases with severe itching, and intestinal problems related to candidiasis or other fungal infections. We often combine **neem** in formulas with other anti-fungal plants, and tell patients to restrict sugar intake and take acidophilus capsules. This helps kill the "bad guy" intestinal bacteria, restricts their favorite fuel (sugar), and adds "good guy" acidophilus back into the intestine. A few weeks on this sort of anti-fungal program can work wonders with these types of infections, even is persistant cases.

Neem oil is used in India in numerous varieties of hair lotion, medicated soap and toothpaste. It is considered to be effective as a topical treatment for chronic skin conditions, ulcers and leprosy. The warm oil is also useful when applied to treat ear infections (Chadha et al., 1985). **Traditionally used to treat malaria, neem is a very bitter and potent plant, so it should be used only when other methods have failed.**

Research highlights

- Oral administration of dry **neem leaf** for 24 days resulted in a reduction in the weight of the seminal vesicles and prostate of albino rats, showing an anti-androgen effect (Kasutri et al., 1997). However, it is important to note that the dosage—20-60 mg per

day—was much higher than the recommended human dose. A review of the toxicity data by the Pharmacognosy department at the University of Utrecht in the Netherlands concluded, "reported toxicity of preparations and isolated compounds are low, except for the seed oil" (Van der Nat et al., 1991).

- Test tube studies of **neem seed extract** on the human malaria parasite showed strong inhibitory effect by way of a different mechanism of action than other anti-malaria drugs. **Neem seed** is active not only against the parasite stages that cause the initial clinical infection but also against the stages responsible for malaria transmission (Dhar et al., 1998).
- When applied to the skin, solutions of 1-4% **neem oil** in 96-99% **coconut oil** afforded 81-91% protection against mosquito bites for 12 hours (Mishra et al., 1995, Sharma et al., 1993).
- When applied with urea to rice crops, **lipid neem extracts** slowed mosquito breeding, reduced incidence of Japanese encephalitis, and significantly increased grain yield in a cost-effective manner (Rao et al., 1995).
- In a study of 814 people with scabies, topical application of a skin paste made of **neem leaves** (4 parts) and **turmeric root** (1 part) cured 97% of the cases within three to 15 days of treatment (Charles & Charles, 1992).
- The insecticide activity of **neem extracts** seems to come from its ability to reduce appetite and disrupt growth in certain insects, including mosquitoes (Ley, 1990).
- Application of **neem oil** appears to induce a strong blockage of fertility. In a controlled study of fertile female Wistar rats, a single intrauterine dose of **neem oil** caused a 100% infertility rate for periods of 100 to 180 days, while all the control animals became pregnant. Within five months, more than 50% of the test females regained fertility. There was no visible effect on ovarian function (Upadhyay et al., 1990).
- In a related study, the researchers discovered that **neem oil** acts as an alternative to vasectomy. As with females, a single-dose injection of **neem oil** in male rats caused infertility for 8 months, blocking sperm production without affecting testosterone (there did appear to be a reduction in testicular size). The effects may be due to a local immune response against the sperm (Upadhyay et al., 1993).
- In an unrelated study, oral administration of **neem extract** for 10 weeks caused a significant decrease in total testosterone in male rats. There were no cytotoxic effects (Parshad et al., 1994).
- The anti-fertility effect of **neem oil** was also reported in rhesus monkeys (Bardhan et al., 1991).
- Oral administration of **neem seed extract** (Praneem) caused abortion early on in the pregnant female baboons and bonnet monkeys. The treatment was tolerated well, and tests of blood chemistry and liver function were normal. The primates regained fertility subsequent to treatment (Mukherjee et al., 1996).
- As a result of the aforementioned effects, researchers investigated **neem oil** for hormonal properties. They found that it had no estrogenic, anti-estrogenic or progesterone-related activity. They concluded that since the post-coital contraceptive effect of **neem oil** seems to be non-hormonal, it is less likely to elicit side effects than the steroidal contraceptives (Prakesh et al., 1988).

OREGANO OIL & LEAF

Latin: *Origanum vulgare*
O. species

WHAT IT DOES: **Oregano oil** is pungent in taste, aromatic and warming. It penetrates into the system, breaks up congestion and kills microbes. **Oregano leaf** stimulates appetite and detoxifies food.

RATING:

- **Leaf:** gold
- **Oil:** red

SAFETY ISSUES: Do not use oil without diluting it. Do not exceed recommended dosage. **Direct contact with oil to sensitive areas of skin, eye or mouth can cause severe burns.**

STARTING DOSAGE:

- Sinus drops with oil: one to five drops of oil diluted in one ounce of water or olive oil
- Internal use of oil: one to three drops of oil diluted in one ounce of water, several times per day. Shake well before using
- Leaf: add fresh or dried leaf freely to foods

The Greek name for this useful herb spice is *origanos*, or "delight of the mountains." **Oregano** can and should be used freely as a spice in salads and soups, as it lowers the concentration of microbes in food. The essential oil contains volatile oils, complex chemicals that are known for the odor they emit as they turn to gas. These gases generally have antiseptic, anti-microbial and anti-oxidant effects as they disperse aggressively throughout the body. Carvacrol and thymol, two volatile oils found in **oregano**, are known to thin mucus, relieve coughing, and relax muscle spasms. These actions make the herb a very useful treatment for lung disorders, including pneumonia, sinus congestion, hay fever, chronic bronchitis and rhinitis.

In our clinic, we add **oregano oil** to water or **olive oil** to make sinus drops—snort two or three drops as often as desired to open congestion and kill microbes. Patients who are plagued by frequent sinus infections (accompanied by gunky green mucous) find that keeping these drops around the house can stop these infections before they take hold. To kill stubborn toenail fungus, put two or three drops of undiluted **oregano oil** on a cotton pad and tape it directly to the toenail. You might need to do this twice per day for a couple of months. The penetrating quality of the vapors permeates deeply enough to root out and kill fungus lurking below the nail bed. For a stronger effect, soak the toenails in vinegar every day

My friend Bob Klezics, who along with his affable partner Art Paviglianiti owns our local health food store Harvest Market, came to me complaining of chronic chest congestion. He had found some relief with herbs, but found that he had to keep taking the herbs or the problem would return. He finally discovered Oregamax, a commercial product made from a particularly potent form of Greek **oregano**, and his congestion disappeared in two or three days, never to return.

to make them more porous, and add some **neem leaf extract** to the **oregano oil**.

Research highlights

- In a test of **oregano, mint, basil, sage** and **coriander** essential oils for activity against yeast and fungi, **oregano** proved to be the strongest, inhibiting the yeast broth completely at 1,000 parts per million (Basilico and Basilico, 1999).
- In studies against food borne pathogens, oregano oil proved effective against numerous species, including *Bacillus cereus* (Ultee et al., 1999); *Salmonella enteritidis* (Koutsoumanis et al., 1999); *Acinetobacter baumannii*, *Aeromonas veronii* biogroup *sobria*, *Candida albicans*, *Enterococcus faecalis*, *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella enterica* subspecies *enterica* serotype typhimurium, *Serratia marcescens* and *Staphylococcus aureus* (Hammer et al., 1999); and *Giardia duodenalis* (Ponce-Macotella et al., 1994).
- **Oregano leaf** is one of six herbs found in a particular screening to contain a high concentration of phytoprogestones (Zava et al., 1998).
- Food studies on **oregano leaf** indicate that it stimulates appetite when added to pasta in tomato sauce (Yeomans et al., 1997), and has the same effect when added to animal feed (Villalba and Provenza, 1997). In an interesting show of instinctive intelligence, 250 pregnant women reported aversion to meats, poultry and sauces flavored with **oregano** (Hook, 1978).
- In an investigation of 60 plants, Dr. James Duke, author of The Green Pharmacy, and one of the world's leading experts on medicinal plant chemicals, reported that **wild oregano** contained the highest levels of antioxidants (reported in Duke, 1997). It is especially high in vitamin E compounds, especially gamma-tocopherol (Lagouri and Boskou, 1996).

PEPPERMINT LEAF & OIL

Latin: *Mentha piperita*

Chinese: Bo he (*M. haplocalyx*)

Sanskrit: Putani (*M. arvensis*)

WHAT IT DOES: **Peppermint leaf** is sweet and **peppermint oil** is sweet and slightly pungent in taste. Both are aromatic and cooling in action. **Peppermint leaf** cools and soothes the throat, lungs, stomach and mind. **Peppermint oil** reduces intestinal spasms internally, and calms itching externally.

RATING: Silver

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Tea: one to two teaspoons of leaf per cup of water
- Enteric-coated oil capsule: two milliliters (ml) two times per day between meals

The wonderful aroma of **peppermint tea** comes from the release of soothing volatile oils into the air. The immediate pleasurable reaction everyone has to this scent speaks volumes about what this plant can do. It has a mild anesthetic action on the intestine, so it is useful for treating nausea, morning sickness, vomiting, and stomach pain, especially when combined with **ginger root**. It also exhibits a mild anti-inflammatory action and can be used with **honey** or **ginger** as a simple remedy for colds, fevers and flu. **Peppermint tea** is good for bad breath, and TCM doctors use similar mint species to treat sore throat, red eyes, headache, and cough. Because it has a soothing effect on the mind, it is also helpful in easing painful periods and lessening general anxiety.

Peppermint oil is prescribed specifically to treat Irritable Bowel Syndrome (IBS), a problem which accounts for 50 percent of all visits to gastrointestinal doctors. Studies show **peppermint oil** directly relieves intestinal smooth muscle spasms and promotes rhythmic peristaltic movement, usually working within a few weeks (Hawthorne et al., 1988). Before using the oil, make sure that you are truly suffering from intestinal spasms, and not a more serious inflammatory colitis. Menthol crystals can be extracted from mint oils, and these have a wonderful anesthetic action on the skin, due to a stimulation of the nerves that perceive coldness. You can apply a few drops of **peppermint oil** to a cloth and wipe down the body to cool down a fever.

Herb Pharm makes an almost magical peppermint remedy called Grindelia-Sassafras compound, that our patients love. It relieves the unbearable itch associated with poison oak, ivy & sumac.

PHELLODENDRON BARK

Latin: Phellodendron amurense

Chinese: Huang bai

WHAT IT DOES: **Phellodendron bark** is bitter in taste and cold in action. It reduces inflammation and dampness, especially from the lower parts of the body. It has broad-spectrum anti-bacterial and anti-viral activity.

RATING: yellow, due to limitations of use

SAFETY ISSUES: Do not use during pregnancy. Avoid long-term use due to alkaloid content.

STARTING DOSAGE:

- Dried powder: three to 10 grams per day
- 4:1 dried decoction: one to three grams per day

“Huang” means yellow in Chinese, and **phellodendron bark** is one of the “three huangs,” or bright yellow plants used for treating inflammation and infection (the other two are **scute root** and **coptis rhizome**). The yellow color comes from an alkaloid called berberine, a substance that is slightly-to-mildly toxic in pure form, which is why it is not recommended for use in pregnancy. Berberine is also found in **goldenseal root**

(*Hydrastis canadensis*), **Oregon grape root**(*Mahonia aquifolium*) and several other well-known herbs.

The clinical differentiation among these three yellow TCM plants serves as an excellent argument against concentrating on a single chemical or group of chemical compounds in a plant. While valuable at times, this practice can limit our perspective.

It is tempting to make a general statement that all plants containing berberine are basically the same in their actions. However, TCM doctors tell us that **scute root** is most useful for treating inflammation in the lungs and upper respiratory tract, including allergies. On the other hand, **coptis rhizome** is useful for treating upper body inflammation, but not allergy. Rather, it is most effective when there is strong heat in the heart and other organs, high fever, and sore throat. **Phellodendron bark** is more appropriate for treating inflammation in the lower parts of the body and for heat cause by deficiency. For menopause, a deficiency condition, it can be used to control hot flashes. In the lower parts of the body it is used to control thick yellow vaginal discharges, hemorrhoids, foul-smelling diarrhea and dysentery. It is also used to treat dampness and heat in the legs, such as red, swollen and painful knees, legs or feet. A fellow herbalist from New York was suffering from a chronic and painful lower leg and skin inflammation. An experienced herbalist, but not in TCM, she tried various formulas in vain. When Nai-shing prescribed a **phellodendron bark** formula, her problems disappeared.

TCM doctors offer the insight that **phellodendron bark** can be used when there is weakness and nutrient deficiency present, while **coptis rhizome** should be avoided in such cases. In 1999, a member of the herbalists' Internet group in which I participate was suffering from a persistent lower leg inflammation. A formula containing **coptis rhizome** proved ineffective, so Nai-shing substituted **phellodendron bark**, which resolved the problem within a few weeks.

Research highlights

- Berberine comprises only about 0.6 to 2.5% of the plant's material, so researchers decided to study the rest of the plant without this compound. The berberine-free fraction of **phellodendron bark** exhibited anti-ulcer activity, anti-inflammatory properties, reduction of gastric acid secretion, and anti-cholera toxin effects (Uchiyama et al., 1989).
- Chinese studies on **phellodendron bark** show a broad-spectrum antibiotic effect against organisms that cause diphtheria, dysentery, typhoid fever, staph infections, pneumonia, conjunctivitis, trachoma and meningitis. It is often used in injectable form (reported in Huang, 1999, reported in Yeung, 1983).
- Others have shown action against various forms of candida, as well as viruses (Park et al., 1999).
- In tests examining eight different herbs, **phellodendron bark** proved to be the most potent suppressor of immune inflammation in animal graft-versus-host reactions (Mori et al., 1994). In a later study, the same researcher discovered that unlike cortisone-like drugs, **phellodendron bark** did not suppress antibody production (Mori et al., 1995).
- Studies also indicate a possible application in cataract prevention. A water extract of **phellodendron bark** and **aralia cortex** applied to the eye lenses of diabetic rats

"dramatically" reduced high sorbitol levels as well as other cataract-causing chemicals (Lee et al., 1999).

- Many herbalists believe that berberine-containing herbs only work topically, not internally. Dr. Duke reports that there is increasing evidence of systemic antimicrobial effects (Brennan, M. 2000).

PINELLIA TUBER

Latin: *Pinellia ternata*

Chinese: Fa ban xia

WHAT IT DOES: **Pinellia tuber** is pungent in taste and warming in action. It dries up and dissolves mucus in the lungs, stomach and intestines, and stops nausea and vomiting.

RATING: Yellow, due to limitations in use and potential minor toxicity.

SAFETY ISSUES: **Pinellia** must be processed prior to use, to remove toxic elements (Li et al., 1991, reported in Yeung, 1983). The traditional method is to cook it with ginger, vinegar and/or alum. Do not use during pregnancy. Do not use long term. Do not use with bleeding disorders. Use only under the guidance of a trained professional.

STARTING DOSAGE:

- Dried powder (purified): two to six grams per day
- 4:1 dried decoction: 500-1000 mg per day

Pinellia tuber is perhaps the strongest TCM herb for removing phlegm. We use it very frequently at our clinic to treat coughs and upper respiratory infections with thick and tenacious phlegm. It is useful in the digestive system when there are signs of nausea, poor digestion and overall sluggishness, with a thick white coating on the tongue. It can be used to stop chronic diarrhea due to poor digestion. It is almost always prescribed in formulas along with **tangerine peel** and/or **ginger root** to promote a more effective action (synergy).

A classic formula considered the best one for mucus reduction anywhere in the lungs or digestive tract is called **two-cured decoction** (er chen tang). It consists of **pinellia tuber**, **tangerine peel**, **poria mushroom** and **honey-fried licorice root**.

Research highlights

- In animal experiments, taste stimulation by **pinellia tuber** caused suppression of gastric vagus nerve activity, while stimulation with **ginger root** caused an increase in nerve activity. The mixture of the two herbs had a neutral effect. This demonstrates the rationale behind traditional use of the two herbs together (Nijima et al., 1998).
- The reticuloendothelial system (RES) consists of phagocytic immune cells (those that eat foreign materials and particles). The RES exists primarily in the liver, and it helps attack cancer cells (Baas et al., 1994). In pharmacological studies of pinellian G, a complex sugar extracted from **pinellia tuber**, researchers recorded significant RES-

stimulating activity and a reduction in inflammation (Tomoda et al., 1994). This may partially explain the herb's anti-phlegm activity.

PORIA MUSHROOM

Latin: *Poria cocos*

Chinese: Fu ling

WHAT IT DOES: **Poria mushroom**, actually the sclerotium (hardened mass enveloping the mushroom), is bland and sweet in taste, and neutral in action. It promotes fluid discharge and strengthens digestion.

RATING: Silver

SAFETY ISSUES: None known. Use cautiously in dehydrated patients.

STARTING DOSAGE:

- Dried powder: six to 18 grams per day
- 4:1 concentrated dried decoction: one and-a-half to four and-a-half grams per day

Poria mushroom is commonly used in TCM because it is a gentle and safe aid for removing stagnant fluids (dampness) from the digestive system. In our clinical practice, perhaps as many as 40% of our patients have impaired or sluggish digestion, and many of them cannot tolerate strong herbs at first. **Poria** is an excellent choice in these cases, as it safely improves digestion. It is also used for urinary difficulty and edema. It can be used freely. Recently, studies have shown it to have immune system benefits similar to those of other medicinal mushrooms, though perhaps milder. The difficult to obtain inner part of the sclerotium found near the root is called **poria spirit** (fu shen), and is used to calm anxiety.

Research highlights

- Japanese scientists reported that **Poria mushroom** stimulated various immune system chemicals (interleukins and tumor necrosis factor), while suppressing a growth factor (Yu et al., 1996).
- It has also been shown to slow tumor growth in mice (Kaminaga T, et. al, 1996), and to prevent pathological changes to the kidneys of mice with nephritis (Hattori et al., 1992).
- The saponins found in **poria mushroom** possess a calming effect on digestion that proved strong enough to prevent vomiting in frogs who were given an emetic agent (Tai T et al., 1995).

PRICKLY ASH BARK

Latin: *Xanthoxylum species*

WHAT IT DOES: **Prickly ash bark** is pungent in taste and hot in action. It stimulates the circulation and breaks up blood congestion.

RATING: yellow, due to limitations in use.

SAFETY ISSUES: Do not use during pregnancy or if taking blood thinning medications. Use with caution if you have stomach or intestinal inflammation.

STARTING DOSAGE:

- Powder: 250-750 mg two to three times per day
- Decoction: one teaspoon of bark in one cup of water two to three times per day
- 1:5 Tincture: 10-20 drops two to three times per day

Note: tincture is preferred form due to ease of use.

Prickly ash bark stimulates the circulation, lymphatic system and mucous membranes. It is effective in treating chilblains (constriction of small arteries), leg cramps, varicose veins, ulcers and other problems resulting from blood congestion and cold. Various related species can be found around the world, but they contain different amounts and types of phytochemicals. In Nigeria, people use the root of **fagara** as a chewing stick to aid in oral hygiene. And in Nigeria and Ghana, a decoction of the root bark is a common treatment for toothache pain, childbirth pain and trauma, and as also used as a general tonic (Iwu, 1993).

Doctors in Nigeria use **fagara** (*F. zanthosyloides*) to reduce the painful crisis of the genetic disease, sickle cell anemia (Iwu, 1993). This herb has a variety of unusual properties that reduce platelet and blood cell sticking. After reading the reports from Nigeria many years ago, I decided to try **fagara's** relative **prickly ash bark** for the same indication. I made a simple tincture of 50% **prickly ash bark** and 50% **ginkgo leaf**, and gave it to a young African-American girl in the first grade who constantly missed school and needed to be hospitalized 3-4 times per year due to the painful sickle cell crisis. I gave her about 25 drops three times a day. She immediately stopped having serious problems, her thinking was no longer fuzzy, the frequency of her attacks went down to about one per year, and the severity of the attacks decreased appreciably. This success has continued through the years, as long as she takes her medicine. I saw her last year, and she has blossomed into a beautiful junior high school student, the sickle cell disease now only a bit-player in the background of her life.

Another of my patients had lived with the disease his entire life, with almost constant pain, and bimonthly crisis. I gave him 35 drops three times per day, and he immediately improved in the same way as the young girl. This improvement in both frequency of attacks and level of pain has persisted in three of my long-term patients over many years. The wholesale cost of this medicine is less than \$20 per month at full dosage. My biggest fear is that this knowledge will be co-opted by a pharmaceutical company, and made available to the many suffering children only at an exorbitant cost.

Research highlights

- We do not know the full extent or the cause of the anti-sickling activity of *Zanthoxylum species* plants. Researchers have identified several types of coumarins been (Chen et al., 1995), as well as various alkaloids that reduce platelet sticking (Sheen et al., 1996; Ko et al., 1990).
- Among the agents know to possess anti-sickling inhibitory activity at low concentrations are the aqueous extract of the roots of *Zanthoxylum xanthoxyloides* (anti-sickling ether fraction), vanillic acid, parahydroxybenzoic acid and paraflurobenzoic acid (Osoba et al., 1989).
- In vitro testing of 43 African plants traditionally used to treat malaria have shown strong anti-malarial action in four of the plants, including the *Zanthoxylum chalybeum* species of **prickly ash**. The other plants that demonstrated this action against malaria were *Cissampelos mucronata*, *Maytenus senegalensis*, and *Salacia madagascariensis* (Gessler et al., 1994).

In 1995 I wrote the following letter, which was printed in my local paper. Unfortunately there has been no follow up.

News Journal (Wilmington, DE)--February 10, 1995

To the editor:

This is in response to your article Tuesday Jan. 31, 1995 reporting on the use of the cancer drug hydroxyurea for reducing the crisis of sickle cell anemia in adults. The article is noteworthy not for what it says, which is quite accurate, but for what it omits. For instance, it omits the fact that this treatment is currently not recommended for children due to its severe side effects. According to the PDR, it requires close physician supervision (weekly blood tests), because it "causes bone marrow depression, leukopenia, anemia, ... affects DNA synthesis ... may be mutagenic," and is a "known teratogenic agent in animals." This risk is balanced against a 50% reduction in sickle cell crisis episodes. It might be interesting to ponder why our scientists have not heard of the Fagara chewing stick (*Zanthoxylum spp.*), a widespread plant species found in the forest savanna mosaic of the lowland rain forest in west tropical Africa. It has been reported since as early as 1975 that "the root extract and the aromatic acids have been shown to significantly reduce the painful crisis of sickle-cell patients. " In fact, the crude extract is currently dispensed by the Nigerian health service for the management of sickle-cell anemia. Far from having side effects, it is used freely in Africa as a chewing stick to prevent tooth decay, a tea for pain during childbirth, and as a tonic for general body weakness. It is considered quite safe for use by children.

Sincerely,

Alan Tillotson

RASPBERRY

Latin: *Rubus species*

Chinese: Fu pen zi

WHAT IT DOES: **Raspberry** is a gentle astringent and blood nourishing tonic good for the immune system and the eyes.

RATING: Yellow

SAFETY ISSUES: Do not use in high dosage with restricted urination.

STARTING DOSAGE:

- Fresh or frozen whole berry: for therapeutic benefit, eat one to two pounds per week.

Berries are my favorite fruits. They are low in calories and high in colorful flavonoid nutrients. Flavonoids aid in the body's absorption and utilization of vitamin C, which is synthesized from plant and yeast sugars.

If you think of vitamin C as Pavarotti (the opera singer), then flavonoids act like the supporting orchestra. The big guy sounds great by himself, but he's even better with a good orchestra in the background.

Modern scientists now agree that chemical waste products (secondary metabolites) produced by plants, including plant pigments, can act as protective agents which can repel insect herbivores through a variety of mechanisms (Berenbaum, 1995). However, TAM doctors knew of the benefits of fruit and plant pigments long ago. More than 24 years ago my Ayurvedic teacher told me that colorful or strong-smelling plant waste products would neutralize poisons in animals, and vice-versa. That is, eating colorful fruits and herbs would neutralize poisons found in human blood and tissues. We now know that flavonoid pigments increase blood vessel integrity and have anti-viral, anti-microbial, anti-allergy, and even liver-protective effects. In addition to their benefit for immune function (as potent antioxidants), they also improve capillary and cerebral blood flow, reduce platelet aggregation (blood stickiness), and affect cholesterol, histamine and prostaglandin

You can purchase frozen berries and process them in a blender. Taste the unsweetened juice and you will realize how little natural sugar **raspberries** actually contain--about 75% less than strawberries. Simply add some **stevia leaf** for sweetness, and you have a delicious low calorie fruit juice that is safe and helps inhibit microbes. This juice is also good for diabetics and people trying to lose weight.

metabolism. All of these actions make them especially valuable for the heart and blood vessels. The astringency of **raspberries** and **blackberries** (caused by their condensed tannins) explains their traditional use for treating bedwetting and simple diarrhea. The Chinese tell us that their **raspberry** (fu pen zi) is very effective for this. These berries protect inflamed mucous membranes, reduce excess secretions, and inhibit viruses and other pathogens. Though not quite as high in tannin concentration as **green tea** or **oak bark**, **raspberries** and **blackberries** are usually much more enjoyable for both children and adults. When treating chronic

intestinal infections (including yeast infections) it is beneficial to restrict all simple sugars, including fruit sugars. The only exceptions are **blackberries** or **raspberries**, due to their low sugar and high tannin contents.

Phytonutrients called furanones are important natural flavoring and aroma agents found in **raspberries**, **strawberries**, **pineapples**, **tomatoes** and some other foods. The colors and aromas act to attract animals (and people) to the fruits, ensuring seed dispersal via defecation at a new location. In addition, they have been found to be very effective anti-cancer components of the animal diet, protecting against carcinogenic chemicals.

Researchers have identified two food-derived furanones that exhibit antioxidant activity

comparable to that of Vitamin C. They are also sometimes mutagenic (destructive) to bacteria (Colin-Slaughter, 1999).

Raspberry leaf tea is well known for its ability to facilitate childbirth by relaxing the uterus, ligaments and tendons. It should be consumed freely (several cups per day) beginning about four to six weeks before delivery. A kennel owner once told me that ever since she started using it with pregnant dogs, the pups just "popped out."

RAUWOLFIA ROOT

Latin: *Rauwolfia serpentina*

Sanskrit: Sarpaghandha

African: Numerous (*R. vomitoria* species)

Chinese: Lu fu mu (various species)

English: Rauwolfia / Indian snakeroot

WHAT IT DOES: **Rauwolfia root** is bitter in taste and cooling in action. It lowers blood pressure, tranquilizes the mind, and promotes sleep.

RATING: Red, due to safety issues.

SAFETY ISSUES: Use only under the guidance of a trained physician or herbalist in proper dosage. Do not use in pregnancy, breastfeeding, or depression. May exacerbate symptoms of Parkinson's Disease. Do not combine with alcohol, barbiturates (Pfeifer et al., 1976), SSRIs, blood-pressure lowering agents such as beta-blockers, unless under guidance.

STARTING DOSAGE:

- Tincture (standardized to 1.0% w/v total alkaloids): two to 12 drops three times per day

Rauwolfia is a reliable blood pressure lowering and tranquilizing agent when used properly. It is used in traditional medicine in India, China, Africa and many other countries. In India and Nepal, it is a common treatment for hypertension and insomnia. Gandhi took it frequently at night for its calming actions. It warrants a red rating because of its ability to cause severe reactions in overdose, including trembling and collapse. Reserpine, the chief alkaloid in **rauwolfia root**, seems to be the component responsible for its blood pressure lowering activity. Doctors began using reserpine-based hypertension medicines in the 1950's, but they went out of favor because of the side effects, chiefly depression (Weiss, 1988). Consequently, **rauwolfia** can only be acquired from a licensed health care professional.

During the scientific controversy in the 1950's surrounding the question of whether reserpine by itself was superior to the whole **rauwolfia root**, an Indian physician named Dr. Vakil reviewed all 151 studies available at the time. He came to the conclusion that the combined action of the whole root improves tolerance and reduces the risk of side effects that occur with the use of isolated alkaloids (reported in Weiss, 1988).

In collaboration with Western doctors, I have used a **rauwolfia tincture** safely to treat dozens of mild to moderate hypertension patients. We combine 30-50% of a standardized whole root tincture with other mild herbal tinctures known to lower blood pressure, such as **linden flowers** and **mistletoe**. In mild cases, we start with two drops three times per day and perform regular blood pressure checks, instructing the patient to increase the dosage until the blood pressure normalizes or they reach the limit in dosage. Patients marvel at how effectively they can control their pressure drop by drop and control the dosage to manage day-to-day variations. We stop dosing at well below the levels where side effects usually develop. If it does not sufficiently lower the patient's pressure, the doctors will prescribe mild Western medication at a lower-than-normal dosage. This combination treatment will often work.

Rauwolfia root is not curative. Following traditional Ayurvedic procedure, once we have controlled the blood pressure we employ other herbal agents and lifestyle changes to resolve the underlying problem, especially **hawthorn**.

Research highlights

- The mechanism of action of **rauwolfia root** differs from most other blood-pressure lowering agents, acting on the central nervous system. This may explain why it works when other medicines fail (Weiss, 1988, Shibuya and Sato, 1985).
- In doses higher than those used for hypertension, **rauwolfia alkaloids** cause a depletion of norepinephrine, resulting in a tranquilizing effect. Very high doses can cause a loss of coordination (reported in Huang, 1999).
- Many patients who take medication to control hypertension still have problems with balance, due to difficulties in circulatory regulation. Upon examination of blood-pressure lowering agents available up to 1980, researchers discovered that only **Rauwolfia** alkaloids and clonidine do not have an undesirable influence on balance (Teichmann and Vogel, 1980).
- In a Chinese study on 200 patients with moderate hypertension, **rauwolfia alkaloids** lowered blood pressure was reduced by as much as 30-40% with minimal side effects (reported in Huang, 1999).
- **Rauwolfia root** has proven highly effective (89%) in cases of chronic hives (reported in Huang, 1999).
- The pharmacological effects of reserpine were formerly cause for concern that it might promote breast cancer. However, in epidemiological studies, **rauwolfia alkaloids** did not increase the risk of breast cancer (Shapiro et al., 1984, von Poser et al., 1990).
- **Rauwolfia root** has occasionally proven effective in cases of malnutrition that were unresponsive to high protein or high-energy diets (reported in Huang, 1999).

RED CLOVER BLOSSOM

Latin: *Trifolium pratense*

WHAT IT DOES: **Red clover blossom** is sweet and slightly salty in taste, and cooling in action. It thins, cools, nourishes and detoxifies the blood, and reduces respiratory irritability.

RATING: Yellow

SAFETY ISSUES: Do not use during pregnancy. Use cautiously with blood-thinning pharmaceuticals.

STARTING DOSAGE:

- Tincture (dried, 1:5): 10-30 drops two to six times per day.

Red clover blossoms can be used as part of a safe treatment for chronic skin problems such as eczema, eruptions and psoriasis. In our clinic, we have sometimes found that addition of this gentle herb to our treatment protocol for childhood eczema can improve results in difficult cases. Perhaps the mild blood-thinning chemicals (coumarins) and the herb's hormone-like nourishing qualities improve micro-circulation and bring more moisture and nutrition to the skin cells. It also exhibits mild anti-bacterial activity against gram-positive organisms, and was used by Eclectic physicians for dry, irritable or spasmodic cough, including whooping cough. They also reported it retarded cancers.

Red clover contains a broader spectrum of beneficial plant estrogens (isoflavones including genistein, daidzein, biochanin and formononetin) than the more commonly used **soybean extracts**. This may account for its usefulness in reducing hot flashes and maintaining bone health after menopause, and may also explain its reputation as a cancer-fighter.

It is important to note that the use of phytoestrogens in herbal therapy should be guided by the philosophy of treating the whole person. For example, we often use liver herbs such as **dandelion root** (*Taraxicum officinale*), **burdock root** (*Arctium lappa*), and **white peony root** (*Peonia lactiflora*) to improve the liver's conjugation of estrogenic compounds to enhance their elimination from the body.

Much of the **red clover** found in capsule form or as dried blossoms is brown and basically inert. During harvesting, wildcrafters must collect it with plastic gloves to avoid contamination, and dry it to keep its deep colors intact. Therefore, I only use it in tincture form from companies like Herbalists & Alchemists or Herb Pharm.

Research highlights

- A recent randomized controlled trial indicated that **red clover** helps maintain the elasticity of large arteries such as the thoracic aorta, reducing cardiac risk (Nestel et al., 1999).
- Of the 150 herbs and spices tested for estrogen and progesterone activity, only **red clover**, **thyme** and **turmeric** were found to exhibit high levels of both (Zava et al., 1998). This indicates that the herbs are more beneficial (balanced) than herbs that only exhibit estrogenic activity, as progesterone deficiency is as much a problem for menopausal women as estrogen deficiency.

REHMANNIA ROOT

Latin: *Rehmannia glutinosa*

Chinese: Shu di huang (cooked)
Chinese: Sheng di huang (raw)
English: Chinese Foxglove

WHAT IT DOES: **Rehmannia root** strengthens and nourishes the blood and Yin, reduces inflammation, and strengthens the kidneys.

RATING: Gold

SAFETY ISSUES: Do not use with indigestion, poor appetite or diarrhea.

STARTING DOSAGE:

- Dried powder: 9-30 grams per day
- 4:1 dried decoction: three to nine grams per day

In the thick black roots of **rehmannia**, TCM doctors see a strong reservoir of nutrients beneficial to the kidneys and blood, and capable of removing heat and inflammation. The cooked form of **rehmannia** is sweet in taste and warm in action, while the raw form is sweet and bitter in taste, and cold in action. The raw form, being cold in action, is used more frequently to remove inflammation. Conversely, when you cure the root by cooking it with wine it becomes more nourishing and warm in action (Kubo et al., 1996). Both forms are used in the treatment of deficiency diseases where the presence of heat (look for a red tongue) causes symptoms such as fever, menopausal hot flashes, and thirst. **Rehmannia** can be used when there is a need to generate fluids—especially with the weakness that results from prolonged low-grade fevers.

Rehmannia root is very thick and gummy, so it can impair digestion, which explains the contraindications listed above. It is one of the base herbs included in the highly valued **Six-flavored rehmannia pill** (liu wei di huang wan), also called **rehmannia six formula**, used as a primary treatment for **Yin deficiency**. Scientific studies have shown a number of interesting actions of this herb.

We use **Rehmannia root** in our clinic routinely to treat problems related with **Yin deficiency**, such as fatigue with heat signs, irritability, and low-grade fevers. Herbs useful for **Yin deficiency** are those that increases the body's ability to absorb or use nutrients necessary for protection, regeneration and repair. For the treatment of nephritis, we often combine **rehmannia root** with **astragalus root**, **shilajatu** and **triphala**. **Rehmannia root** is also very useful in treating autoimmune diseases in general.

Research highlights

- Its anti-inflammatory action has been shown in animal models to reduce inflammation in the central nervous system, by affecting astrocytes--CNS immune cells (Kim et al., 1999).
- **Rehmannia** and **astragalus root** based formulas may also help reduce nephritis and its complications. In one study of 100 patients, researchers reported that their formula "was markedly effective for proteinuria, hematuria, improvement and recovery of renal functions, edema, anemia, anorexia etc. in comparison with the control group. " (Su et al., 1993).

- **Rehmannia six formula** has been shown effective for protecting immune and blood cell formation as well as heart, liver and kidney function during chemotherapy (Xu, 1992).
- One interesting study done on guinea pigs showed an ability to protect against chemical induced deafness, verified by scanning electron microscope of the inner ear (Zhuang et al., 1992).
- In one study performed in China, when Yin-deficient animals were pre-treated with **Rehmannia six formula**, they sustained less damage to their periodontal tissues from outside trauma than the non-treated animals (Cai et al., 1990).

REISHI MUSHROOM

Latin: *Ganoderma lucidum*

Chinese: Ling zhi

English: Spirit plant

WHAT IT DOES: The fruiting body of **reishi mushroom** is sweet in taste and neutral to slightly warming in action. It calms the spirit; strengthens immunity; slows aging; strengthens the heart, lungs and liver; and relaxes spasms.

RATING: Gold

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Syrup: four to six milliliters (ml) per day
- 1:5 tincture: 10 milliliters (ml) three times per day
- Concentrated 5:1 tablet: 500 mg two to three times per day
- Dried powder: three to 15 grams per day

The once extremely rare and precious **reishi mushroom** is now cultivated and widely available. It is a very potent immune system and longevity tonic. Traditionally used to "nourish the heart and pacify the spirit" it has also been found to have numerous other health benefits. At our clinic we use several mushrooms to strengthen the immune system to prevent and treat cancer, including the **royal agaricus mushroom** and **chaga mushroom**. Each mushroom has its own unique energy that gives us clues about when to use it clinically. **Reishi** is the most calming of the medicinal mushrooms, so I use it when there is immune deficiency with signs of nerve (**Vata**) weakness. It can be also be used in formulas for insomnia and general nervousness. According to medicinal mushroom expert Terry Willard, PhD, it combines well with **maitake mushroom**.

Reishi calms the central nervous system, exerting a blood-pressure lowering effect beneficial to the heart (Lee et al., 1990). It is now employed in China for treatment of autoimmune diseases, and to calm hypersensitivity (reported in Huang, 1999). Like many other medicinal mushrooms, **reishi mushroom** can be used to treat cancer patients due to its ability to activate NK cells, macrophages, T lymphocytes, and cytokines, all important immune system components (Wang et al., 1997). Kee Chang Huang reports that **reishi** "exerts a synergistic effect with other anticancer chemotherapeutic agents or

radiotherapy, to augment the clinical therapeutic effect in the treatment of cancer patients" (1999).

Research highlights

- **Reishi** has been shown in several studies to lower cholesterol levels, helping to prevent atherosclerotic changes in the blood vessel walls (reported in Huang, 1999).
- Clinical studies on over 2000 patients in China have shown a very high (60-90%) effectiveness in the treatment of chronic bronchitis (reported in Huang, 1999; Tasaka et al., 1988).

RHUBARB ROOT

Latin: *Rheum palmatum*

Rheum officinale

R. species

Sanskrit: Amlavetasa

Chinese: Da huang

WHAT IT DOES: **Rhubarb root** is sour and bitter in taste, and cooling in action. It is a stimulant laxative that drains inflammation from the liver, large intestine and kidney.

RATING: Yellow, due to problems with long-term usage.

SAFETY ISSUES: Do not use during pregnancy or nursing. Do not use with bowel obstruction or gout. Do not use in cases of severe deficiency. Do not use long term. Use only under supervision with inflammatory bowel disease. Long-term use can cause hypertrophy of the liver, thyroid and stomach, as well as nausea, griping, abdominal pain, vomiting and diarrhea (reported in Huang, 1999). Short-term or occasional use is safe in appropriate dosage unless otherwise contraindicated.

STARTING DOSAGE:

- Dried powder: one to six grams per day
- 4:1 dried decoction extract: one to three grams per day

In spite of the contraindications (which are common to most laxatives), **rhubarb root** is still my favorite of the readily available laxatives. Of course with simple constipation, it is always better to try basic remedies first, like increasing dietary fiber and fluid intake. TCM doctors use **rhubarb root** to treat constipation, high fever, abdominal distension, gall stones, jaundice and, surprisingly, acute dysentery, due to the herb's anti-bacterial activity. They stir fry **rhubarb root** with wine to reduce the laxative effect when it is used for diseases other than constipation. TAM doctors use it in formulas to treat cirrhosis of the liver, alcoholism, neurasthenia and asthma. Recent experimental discoveries offer important evidence of **rhubarb's** effect on kidney failure.

The major concern with herbs containing anthraquinones--natural laxative chemicals such as emodin and sennidin--is that long-term use can lead to dependence. Anthraquinones stimulate peristalsis approximately 6-8 hours after ingestion. The effects on the gut are largely topical, and the substances flush out of the system without being absorbed. It seems that **rhubarb root** has an advantage over other laxatives like the

more powerful **senna** and **cascara sagrada**. Its higher tannin levels tend to tighten the bowel after 14-18 hours, somewhat limiting the possibility of the flaccid condition that can result from laxative overuse. In fact, the tannins are the reason that small doses of **rhubarb** (.03 to .3 grams) can actually cause constipation.

In our clinic we treat constipation with lifestyle changes and supportive formulas containing small amounts of **rhubarb root** mixed with other herbs that strengthen the digestion, improve liver function and lubricate the bowel. The **rhubarb** dosage can be reduced with improvements in bowel and liver health.

Glyconda, a formulation of pharmacist John Uri Lloyd, was one of the most famous of the Eclectic remedies. He combined glycerin, a non-sugar sweetening agent, with **rhubarb root**, **golden seal** and **cinnamon bark**, occasionally adding **ginger root** and **peppermint oil**. He adjusted the amount of **rhubarb** to make sure it would not purge, and the amount of **golden seal** make sure it was not too bitter. When made properly, it had a pleasant sweet taste, agreeable even to most children. Doctors administered it by the teaspoon or tablespoon to clear the stomach and intestine of "fermentive and irritative conditions" (Felter, 1922).

Research highlights

- In a three-month clinical trial, alcohol extracts of **rhubarb** made into tablets reduced obesity complicated with hypertension, menstrual irregularities and elevated blood lipids (Chen, 1995).
- Test tube studies of emodin, an active component of **rhubarb root**, demonstrated inhibition of *Trichomonas vaginalis* (Wang, 1993).
- Oral administration of emodin cured intra-vaginal infections in mice (Wang, 1993).
- A ten-year controlled clinical double blind trial at the Xiang Shan TCM Hospital in Shanghai tracked all patients using three types of alcohol-extracted **rhubarb** tablets to treat chronic upper digestive bleeding. All three types were shown to stop bleeding within 56 hours at an effectiveness rate greater than 90% (Zhou and Jiao, 1990).
- Researcher Deng Wenlong, of the Sichuan Provincial Institute of Chinese Materia Medica, presented a paper at Chengdu University of TCM in China explaining **rhubarb's** traditional reputation for treating fevers and inflammatory diseases. He began by describing endotoxins, chemicals that are released into the host as a result of the breakdown of the cell walls of Gram-negative bacteria. He demonstrated that endotoxin content in the blood increased greatly in the presence of severe stress, inflammation or infection, and that the bowel was the greatest repository of endotoxin. With the use of **rhubarb** (and other herbs) to remove endotoxin from the bowel, animals infected with a variety of febrile diseases experienced faster resolution (Wenlong, 1994).
- A controlled randomized clinical trial on rats evaluated the effects of **rhubarb extract** on uremia—the collection of nitrogenous wastes in the blood due to kidney diseases. The uremia symptoms decreased and other blood markers improved, prompting the researchers to conclude, "both the in vivo and in vitro studies have

proved the effectiveness of **rhubarb** in preventing the progression of chronic renal failure” (Li and Liu, 1991).

- A randomized controlled clinical trial examined the effect of **rhubarb extract** on patients with terminal end-stage kidney failure. Blood tests showed a decrease in negative blood markers and an improvement in positive blood markers (albumin, lipoprotein, apolipoproteins) in the test group subjects (Ji et al., 1993).
- According to animal studies, the beneficial effect of **rhubarb extract** is dose-dependent, and due partially to suppression of swelling in kidney tubular cells (Zheng, 1993). In a study on diabetic rats with nephropathy, **rhubarb extract** stopped the swelling (renal hypertrophy) at an early stage, and so may be useful in the early stages of human diabetic kidney disease (Yang and Li, 1993).

SALVIA ROOT

Latin: *Salvia miltiorrhiza*

Chinese: Dan shen

English: Asian red sage

WHAT IT DOES: **Salvia root** is bitter in taste, and slightly cold in action. It promotes blood circulation while reducing inflammation.

RATING: Gold

SAFETY ISSUES: Should not be used while taking anticoagulant medications such as Wayfarin unless under the direction of a qualified health care practitioner. Bleeding may result (Izzat et al., 1998). Do not use internally in tincture form.

STARTING DOSAGE:

- Crude herb: three to 15 grams per day
- Concentrated 4:1 dried decoction: one to four grams per day.

TCM doctors use **salvia root** to invigorate and move the blood. In animal experiments it has been shown to increase coronary blood flow, lower blood pressure slightly, improve microcirculation, and mitigate injury and accelerate recovery from ischemic attack (stroke). Human experiments illustrate numerous circulation benefits, including dilation of the coronary arteries and increased capillary action. Because it has a strong cooling action, **salvia** has a distinct advantage in certain medical conditions over warming herbs such as **prickly ash bark**. It is especially useful in coronary artery disease, where there is almost always a combination of inflammation and blockage. It is the most commonly used "moving blood" herb in our clinic. A popular **salvia-based** formula in

According to TCM theory, herbs that increase circulation to the roots of the hair can prevent hair loss and slow the graying process. The related **garden sage** (*Salvia officinalis*) has been used for the same purpose. An African-American dockworker once told me his grandfather had a great head of hair into his 90's, which he attributed to the use of **sage tea** to "keep the water off the brain."

China called Tanshinone IIA is used frequently to treat various cardiovascular problems. A similar formula is available in the USA from a company called ITM.

Research highlights

- In one experiment, 81 percent of patients with coronary artery disease (CAD) who were given a **salvia-based** formula reported benefits, while 57 percent experienced normalization of EEG (reported in Dharmananda, 1994).
- A controlled trial of patients who had developed adhesive intestinal obstruction (a common after surgery complication) was done by giving them an injection of **salvia root extract** before closing the abdominal cavity. The patients were then given an oral blood-moving formula, and were followed for two to nine years. They demonstrated a 100% effectiveness rate, with no adhesions developing, while more than one quarter of the control group patients (given antibiotics) experienced continued problems (Wang et al., 1994).
- A series of four animal experiments done in Italy showed that **salvia root extract** reduced alcohol absorption from the gastrointestinal tract, reduce alcohol craving, reduced blood alcohol levels, and even affected the animal's ability to discriminate between alcohol and water. Researchers concluded that the use of **salvia-like** medicines "may constitute a novel strategy for controlling excessive alcohol consumption in human alcoholics" (Colombo et al., 1999).
- **Salvia root** has been shown to inhibit fibrosis (formation of scar tissue) in animal wound-healing models (Liu M et al., 1998), while similar protective effects were found against chemically-induced liver fibrosis in rats. In fact, histological examination showed that **salvia** could actually reverse the fibrosis (Wasser et al., 1998). These studies demonstrate that **salvia root** shows promise in prevention and treatment of cirrhosis of the liver.
- **Salvia root** has also been indicated in the prevention of memory and learning deficits caused by aging in animal models (Nomura et al., 1997).
- Restenosis (arterial blockage) occurring after angioplasty is a major surgical problem. In a study of air-injured carotid arteries in rats, the **salvia**-treated group experienced less thickening of the arteries. These results indicate that **salvia root** may be used to prevent arterial restenosis after angioplasty (Zhou et al., 1996).
- There is even evidence that **salvia root** may protect against structural damage to the optic nerve in cases of ocular stress and induced intra-ocular hypertension. In a glaucoma study on rabbits, researchers concluded that the protective effect of **salvia root** was due to improved micro-circulation in the retinal ganglion cells and the optic nerve (Zhu et al., 1993).

SARSAPARILLA ROOT

Latin: *Smilax species*

Chinese: Tu fu ling

WHAT IT DOES: **Sarsaparilla root** is sweet and bland in taste, and neutral in action. It removes toxins from the bowel, and reduces inflammation and dampness from the blood, liver, urinary system and skin.

RATING: Yellow, due to limitations in usage.

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried root: three to 12 grams per day
- 4:1 dried decoction: one to four grams per day
- 1:5 tincture: two to four milliliters (ml) in water or juice 3 times per day

Sarsaparilla root has been famous in the West since 1574, when a French physician described its use in treating syphilis. Various *Smilax* species are used to treat infections and inflammation--especially those affecting the skin and intestines--in many countries including India, China, Europe, the United States, Brazil, Guatemala, and Saudi Arabia. Because of the historical use for syphilis, many herbalists now use **sarsaparilla root** for Lyme disease, also caused by a spirochete organism.

Naturopaths believe that **sarsaparilla root** binds and remove endotoxin from the bowel, perhaps by stimulating liver clearance (Murray & Pizzorno, 1989). Deng (1994) tells us that endotoxin--chemicals released into the host after breakdown of the cell walls of gram-negative organisms-- accords closely with the idea of "pathogenic toxins" in TCM. His studies have shown that the removal of endotoxin helps control many inflammatory and febrile diseases.

I have found **sarsaparilla root** to be very useful in treating various skin diseases, especially psoriasis. Interestingly, psoriasis has been linked with higher circulating levels of endotoxin (Belew et al., 1982). When the patient shows serious signs of toxicity--greasy yellow tongue, rapid pulse--I sometimes start with a laxative (which also removes endotoxin) for a few days, then follow with pure **sarsaparilla** powder for a week or so. I usually follow this with a longer-term formula designed to restore balance to the whole system. I find it difficult to completely eradicate psoriasis, but we have helped several patients achieve semi-remission for several years.

Research highlights

- In 1942, the *New England Journal of Medicine* published a controlled study showing that an endotoxin-binding saponin extract of **sarsaparilla** was effective in reducing psoriasis symptoms (Thurman, 1942, reported in Murray & Pizzorno, 1989).
- Clinical tests in China demonstrated that the Chinese species called **Tu fu ling rhizome** (*Smilax glabra*) is effective for treating syphilis in about 90 percent of acute cases and 50 percent of chronic cases (Bensky & Gamble, 1986). Since Lyme disease is also caused by spirochete organisms, it may prove beneficial in the treatment of this disease as well. TCM doctors use **Tu fu ling rhizome** to treat joint pain, turbid urine and jaundice caused by heat and dampness.

SCHISANDRA BERRY

Latin: *Schisandra chinensis*

Chinese: Wu wei zi

English: Five flavored fruit

WHAT IT DOES: **Schisandra berry** is sour in taste, astringent and warming. It calms the mind and nerves, nourishes the Yin, generates fluids, strengthens general vitality and tonifies and protects the heart, liver and lungs.

RATING: Gold

SAFETY ISSUES: Use with caution if pregnant. Avoid if you have elevated intracranial pressure or epilepsy. May increase stomach acidity. May potentiate barbituates. (reported in Upton, 1999).

STARTING DOSAGE:

- Dried powder: three to nine grams per day
- 4:1 dried decoction: one to three grams per day

Note: For treatment of hepatitis, administer three grams three times per day.

Schisandra berries are one of my first choices in the treatment of neurasthenia, along with **milky oat seed tincture**, **scullcap tincture** and **ashwagandha root**. Neurasthenia--nerve weakness, fatigue and pallor--is a condition that has reemerged as a synonym for chronic fatigue or other stress-related disorders. Historically, TCM doctors have always considered this fruit to be a superior medicine, able to prolong life. One reason for its reputation is that it contains five tastes. Interestingly, Ayurvedic herbs that are said to contain multiple tastes--**haritaki fruit**, **vibhitaki fruit** and **amla fruit**--are also revered as life-prolonging (rasayana) tonics.

Medicinally TCM doctors use the tonic/astringent actions of **schisandra berries** to treat chronic cough and wheezing due to lung deficiency, as well as for chronic diarrhea. They are also used to quiet the spirit and calm the heart, and to treat irritability, palpitations, night sweats, disturbed dreams and insomnia. The modern Chinese understanding states that these clinical effects result from an amphoteric (balancing) effect on the sympathetic and parasympathetic nervous systems. The way I understand it, **schisandra berries** stabilize the nervous system.

Schisandra berry is one of the three ingredients in "Generate the Pulse" powder, along with **ginseng root** and **ophiopogon root**, routinely used in Japanese and Chinese hospitals to treat coronary artery disease. Animal studies have shown it effective to protect against and to treat cerebral ischemia (stroke or blockage of blood flow to the brain). None of three individual herbs were able to prevent damage when administered alone, an impressive demonstration of herbal synergy (Xuejiang et al., 1999).

Research highlights

- Pharmacological studies have demonstrated the liver-protective effects of **schisandra berry extracts**. Rat livers were "remarkably" protected by an extract of **schisandra berries** against deadly poisons (Mizoguchi et al., 1991).

- Male mice that received diets containing 5% **schisandra berries** exhibited a threefold increase in the important liver cytochrome P-450 antioxidant system (Hendrich et al., 1983). Equally important is the enhancing effect of **schisandra** on the status of liver mitochondria in rats (Ip et al., 1998).
- **Schisandra berries** were shown to lower elevated liver enzyme levels in patients with chronic viral hepatitis (Chang and But, 1986, Liu et al., 1982).
- **Schisandra berries** have been shown to promote heightened learning ability in animals and increased anti-depressant effects and endurance in humans (reported in Bone, 1996).
- The combination of **ginseng root** and **schisandra berries** reportedly improves memory (reported in Huang, 1999).
- Human clinical studies have shown antiinflammatory actions of **schisandra seed powder** (reported in Upton, 1999).
- Human studies in Russia indicate that **schisandra** has an adaptogenic activity, prompting telegraph operators to transmit messages more accurately, increasing recovery after exercise, and improving blood levels of nitric oxide after heavy exercise. It was also shown to promote recuperation in racehorses after exercise (reported in Upton, 1999).

SCULLCAP (Skullcap)

Latin: *Scutellaria laterifolia*

WHAT IT DOES: **Scullcap** is bitter in taste and cooling in action. It calms the nerves.

RATING: Silver, as not everyone needs to be calmed

SAFETY ISSUES: None known

STARTING DOSAGE:

- Tincture: 20-40 drops, two to six times per day

Note: use only in tincture form

Scullcap tincture is an excellent and reliable nervine. It relaxes and strengthens the nervous system in a manner that can be felt within thirty minutes. It is reliable and safe for treating premenstrual syndrome (PMS) symptoms as they occur. The highly respected English herbalist David Hoffman tells the story of how he found **scullcap** the best remedy for PMS when he lived on a commune as the only male with dozens of women. It is strong enough that it will calm anxiety in fairly serious situations, such as alcohol or drug withdrawal and hysteria. In these cases it needs to be taken every two to three hours, increasing the dosage until you see results. Based upon a recommendation from herbalist David Winston, I gave **scullcap tincture** to a patient with Parkinson's disease, and she experienced a moderate reduction of tremors, improving her quality of life.

Herbalist David Winston suggests using 60-120 drops four times per day to help control the tremors associated with Parkinson's disease.

According to King's American Dispensatory, **Scullcap** "is tonic, nervine and anti-spasmodic," and "it has proved especially useful in chorea, convulsions, tremors, intermittent fever, neuralgia, and many nervous affections. In all cases of nervous excitability, restlessness, or wakefulness, attending or following acute or chronic disease, from physical or mental overwork, or from other causes, it may be drunk freely with every expectation of beneficial results. When its soothing effects have ceased, it does not leave an excitable, irritable condition of the system, as is the case with some other nervines" (Felter and Lloyd, 1898).

Dried **scullcap**, commonly found in over-the-counter herbal preparations, is basically inert, and therefore useless. The related Chinese herb **scute root** is more anti-inflammatory and less calming in action.

SCUTE ROOT

Latin: *Scutellaria baicalensis*

Chinese: Huang qin

WHAT IT DOES: **Scute root** is bitter in taste and cold in action. It drains heat and inflammation from the liver, lungs, blood and intestines. It also reduces allergy symptoms.

RATING: yellow, due to limitations in usage

SAFETY ISSUES: Not to be used as a general tonic. Use for the indications listed below.

STARTING DOSAGE:

- Dried powder: three to 10 grams per day
- Concentrated dried decoction extract: one to four grams per day

Scute root is a broad-spectrum, anti-microbial, anti-pyretic and anti-inflammatory herb that is especially useful for treating lung infections. It is used for treating high fever, flu, pneumonia, and the accompanying irritability, thirst, cough and mucous. It also acts on the digestive system, easing diarrhea and dysentery-like disorders. TCM doctors use it in formulas for treating chronic allergy and inflammation. In mild doses, about 10% of a formula, it can be used safely over a long period of time.

Scute root contains a yellow flavone called baicalein. Its structure is very similar to quercetin, a bioflavonoid frequently used by naturopathic physicians to treat allergy. **Scute root** is very reliable, and we use it more frequently in our office than perhaps any other anti-inflammatory. I find it an especially effective treatment for asthma and digestive system inflammation.

Research highlights

- According to numerous in vitro and animal studies, the flavonoids in **scute root** possess arteriosclerosis and chemoprotective actions (Gao et al., 1999; Shao et al.,

1999; Lim et al., 1999; Kim et al., 1999; Yabu et al., 1998; Park et al., 1998; Amosova, 1998; Kimura et al., 1997; Lin et al., 1980).

- Several animal studies have demonstrated a hypotensive (blood vessel relaxing) effect (reported in Bone, 1996)
- **Scute root** dry extracts and flavonoids can restore normal blood cell production depressed by sleep deprivation or other psychoemotional stress (Dygai et al., 1998).
- Researchers in Russia administered **scute root** preparations to lung cancer patients undergoing chemotherapy. The herb helped restore depressed T-lymphocytes and other immunoglobulins (Smol'ianinov, 1997).
- Baicalein partially but significantly ameliorated kidney damage in rats receiving intravenous injections of a toxic serum (Wu et al., 1985).
- Research indicates that **scute root** offers neural benefits as well. Oxygen deprivation leads to rapid mitochondrial-related energy loss and cell destruction. In rat studies, **scute root** has been shown to prevent energy loss in the brain mitochondria and preserve mitochondrial membranes (Saifutdinov and Khazanov, 1998).
- Glial cells help to protect and maintain nerve cell integrity. When tested on rat glioma cells, two major flavonoids found in **scute root** (baicalin and baicalein) were shown to protect against histamine-related damage by inhibiting inflammatory phospholipase (Kyo et al., 1998).
- It has also shown some success in China as a treatment for chronic hepatitis, as indicated by the results of one study that reported a 70% success rate (reported in Bone, 1996).

SHALAPARNI

Latin: *Desmodium gangeticum*

Sanskrit: Shalaparni

WHAT IT DOES: **Shalaparni** is sweet in taste and mildly warming in action. It is calming, strengthening and anti-inflammatory. It restores balance to the system when other herbs fail.

RATING: Gold

SAFETY ISSUES: None known

Shalaparni is a sub-tropical perennial spreading herb that grows in dry hilly areas. It is a general tonic and aphrodisiac, has a calming, sedative effect and is also used control inflammation, fever and neurological imbalances. Dr. Mana says, "this plant has unique medicinal value to regulate the function of the nervous system (**Vata**), venous system (**Pitta**) and arterial system (**Kapha**). These three regulatory systems balance each other to restore health. However there are several very serious diseases where herbal medicines fail to work, such as typhoid fever and tuberculosis. **Shalaparni** is often effective in restoring balance to the system when the other herbs fail."

Research highlights:

- The leaves and stem of **shalaparni** are used in African countries for fevers, skin diseases and anxiety states (Iwu, 1993).
- **Shalaparni** was one of five Nigerian herbs tested by a Walter Reed Army Institute research team for alkaloids active against serious parasitic protozoal diseases (Iwu et al., 1994). Although Dr. Iwu's group found promising results, the diseases treated by these herbs (malaria, leishmaniasis and trypanosomiasis) are found primarily in poor countries, so drug companies have shown no interest in developing them. Therefore, Dr Iwu plans to encourage local companies and herbal practitioners to develop these plant extracts as phytomedicines.
- Other species of *Desmodium* have shown very interesting effects. TCM doctors use **guang jin qian** (*Desmodium styraciflium*) to remove heat and dampness from the liver and gall-bladder, to treat stones (Hirayama et al., 1993), and for jaundice. They use **pai chien cao** (*D. pulchellum*) for fevers and malaria (reported in Huang, 1999). African *D. adscendens* is analgesic and suppresses convulsions, seizures and mortality in mice when induced by chemical poisons (N'gouemo et al., 1996).
- Traditionally used for asthma, crude extracts of *D. adscendens* have also been shown to be "the most potent potassium channel openers known." This means the plant extracts are able to both regulate the tone of the airway smooth muscle and inhibit the release of allergic and inflammatory bronchoconstrictive chemicals from nerves in the lung (McManus et al., 1993, Addy and Burka, 1988).
- In light of the potent regulatory effects reported for various *Desmodium species* plants, I found it fascinating that chronobiologists are studying the movements of *D. gyrans* leaflets. It seems the leaflets show strong up and down rhythmical movements due to swelling and shrinking of motor cells in special organs caused by ion pumping followed by depolarization (Engelmann and Antkowiak, 1998). The movements are circadian, meaning that they follow 24-hour cycles, and can be altered by electromagnetic radiation (Ellingsrud and Johnsson, 1993).

SHILAJATU

English: Bitumin

Mineral Pitch

Sanskrit: Silajit / Shilajatu

Hindi: Silajit / Shilajeet

WHAT IT DOES: **Shilajatu** is bitter and slightly pungent in taste, and mildly warming in action. It has the distinct odor of cow urine. **Shilajatu** strengthens immunity; reduces fatigue; slows aging; tonifies the brain; cleanses the blood; and strengthens the liver and kidneys.

RATING: Gold

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Purified sediment: combined with 50% **triphala**, use one to two grams twice per day

Shilajatu is a secretion gathered off Himalayan mountain faces. In the heat of summer it can be found on the southern slopes. It is a black, gummy substance that hardens easily into a solid rock-like mass. It is a complex but completely natural mixture of minerals with organic and inorganic compounds, and is one of the most important rasayana tonics in Ayurveda.

Shilajatu contains aluminum, antimony, calcium, cobalt, copper, iron, lithium, magnesium, manganese, molybdenum, phosphorus, silica, sodium, strontium, zinc, fatty acids, hippuric acid, benzoic acid, fulvic acid, chebulic acid, tannic acid, resin and waxy matter, gums, albuminoids, glycosides and an ichthyol oil (Tiwari et al., 1973). The substance must be purified before use. It is mixed with water and filtered, then slowly evaporated in the sun. Then, the sediment is again mixed with water, filtered and evaporated. This process is repeated a total of seven times. It is then combined with other herbs, most frequently with **triphala** (three-fruit compound).

Shilajatu can be used with benefit for long periods of time, and is a true tonic. It increases the potency of other herbs. Ayurvedic doctors use it to strengthen immunity and cleanse the blood, noting that it benefits the liver and kidneys, our two most important blood-filtering organs. They use it to treat diabetes, anemia, aging, bronchitis, skin diseases, acne and boils, liver diseases, constipation, dyspepsia, allergies, fatigue, cancer and all urinary diseases. It also speeds wound healing. It is the first treatment given to people suffering from kidney failure and various chronic nerve diseases. The native peoples of the northern regions of Russia and Afghanistan collect and use a similar rock secretion (mumiyo) from their mountains.

Research highlights

- The Indian Central Council for Research on Ayurveda and Siddha cited a series of experiments showing significant anti-inflammatory activity as well as cardiotoxic action (Pandey et al., eds, 1996, Frotan & Acharya, 1984).

In 1976 I was traveling through Afghanistan, contracted severe dysentery in the 110-degree heat, and lost almost 60 pounds during the following few weeks. I was so weak I could hardly stand. I was transported quickly by my tour guide's bus to Kathmandu, where I first met the eminent Ayurvedic healer, Dr. Mana Bajra Bajracharya. Dr. Mana gave me anti-dysentery herbs, some **deer musk** (to revive me), and a **shilajatu**-based formula to restore my energy. I still remember the strong odor of the **shilajatu** and the amazing effect it had, restoring my energy so quickly. I know that Dr. Mana's emergency treatment saved my life.

Ancient doctors described four forms of **shilajatu**: gold, silver, iron and copper. Today only the copper form is available. No one has seen the others for at least one hundred years. Unfortunately, **shilajatu** is a precious resource in the mountain kingdom of Nepal, and unscrupulous traders extract it and transfer it across borders into India, where it is sold as an expensive commodity. It is believed that hundred of tons are secreted away, while local doctors have difficulty finding it at a reasonable cost. It is currently illegal to export **shilajatu** from Nepal, and the only legal sources in America come from India.

- Laboratory experiments have shown that **shilajatu** is anti-ulcerogenic, stabilizes mast cells, and has protective effects on the liver and pancreas (Tiwari et al., 1973; Ghosal et al., 1989; Acharya, 1988; Vaishwanar et al., 1976; Mitra et al., 1996).
- A clinical study done in Russia on 38 patients with swollen prostate (BPH) showed a reduction in subjective and objective symptoms (reported by Sodhi, 2000).

SHOU WU ROOT

Latin: *Polygonum multiflorum*

Chinese: Ho Shou Wu

Hé shou wu

Shou wu

WHAT IT DOES: **Shou wu root** is bitter, sweet and astringent in taste, and slightly warming in action. It nourishes the blood, protects the liver and heart, reduces heat, and fertilizes the hair roots. It promotes longevity.

RATING: Gold

SAFETY ISSUES: Do not use with diarrhea, as it is mildly laxative. Use in combination with digestive tonics if there is weak digestion.

STARTING DOSAGE:

- Crude powder: nine to 15 grams per day;
- 4:1 concentrated dried decoction extract: two to four grams per day.

Shou wu translates as "black hair." It is one of the strongest TCM blood tonics, and is an ingredient in many tonic formulas. Blood tonics are used in TCM when there are signs of pallor, dizziness, lethargy, dry skin, menstrual disorders or pale tongue. It is the main ingredient in a TCM base formula we use to delay or reverse balding and premature greying of hair, which can be purchased commercially in Chinese grocery stores under the name "Alopecia pills." One popular way of preparing this herb is to cook it with black beans.

Research highlights

- **Shou wu root** has been shown to reduce blood cholesterol levels (reported in Huang, 1999).
- Pre-treatment with **shou wu root** was proven more effective than treatment with vitamin E in preventing heart injury in mice (Yim TK et al., 1998).
- Extracts of **Shou wu root** also significantly reduced tumor incidence in animals exposed to mutagenic chemicals (Horikawa et al., 1994).
- In a study on rats, **Shou wu root** and **Astragalus root** inhibited lipid peroxidation damage against the cardiac mitochondria (Hong et al., 1994). In another study it exhibited similar effects when it extended the lives of quails (Wang, 1988, reported in Bone, 1996).

SIBERIAN GINSENG ROOT BARK

Latin: *Eleutherococcus senticosus*

WHAT IT DOES: **Siberian ginseng** is sweet and slightly pungent in taste, and neutral in action. It nourishes the adrenal glands, supports liver metabolism and increases energy and endurance against stress and pollution.

RATING: Gold

SAFETY ISSUES: None known. In rare instances it may raise blood pressure. There is a remote possibility that its mild anti-platelet aggregation effects might interact with blood-thinning medications.

STARTING DOSAGE:

- Powdered 5:1 extract: 500-100 mg two to three times per day
- 1:2 tincture: 30 drops three times per day.

Siberian ginseng is the herb for which the word *adaptogen* was coined. It is one of the medicines we use most frequently in the clinic, because it really helps fight stress-induced fatigue. It increases general vitality, strength, endurance and the ability to overcome the effects of long-term illness. We prefer it to **ginseng root** in sensitive individuals who may find the stronger herb too hot or overly stimulating to the nervous system.

Siberian ginseng has been shown to delay stress reactions during the alarm phase of stress. When we are alarmed, our adrenal glands release corticosteroids and adrenaline that trigger the fight or flight reaction. If these hormones are depleted by short- or long-term stress, we develop adrenal exhaustion. **Siberian ginseng** delays the onset of the exhaustive phase by causing a more efficient release of these hormones into our system (Pearce et al., 1982; Brunner et al., 1990; Fulder, 1980; reported in Farnsworth, 1989).

Several negative studies have been published since the original Russian research (Lewis et al., 1983, Dowling et al. 1996). However, my own personal experience and that of my patients shows **Siberian ginseng** to be very effective in a majority of those who take it. I have spoken with suppliers, and they tell me that much of the **Siberian ginseng** used in America is made from the whole root, while the original Russian studies were performed using the root bark. If you find a good supply, the results should be immediately obvious.

Research highlights

- In a placebo-controlled study of the effects of a **Siberian ginseng** extract on the immune system of healthy individuals, researchers reported “a drastic increase in the absolute number of immunocompetent cells, with an especially pronounced effect on T lymphocytes.” In addition, they observed a general enhancement of the activation state in T-lymphocytes (Bohn et al., 1987).

- According to translations of original Russian research, **Siberian ginseng** has the ability to increase our endurance and capacity to work by improving the ability of the liver and adrenals to regulate hormonal levels, dispose of lactic acid, and regulate blood sugar (reported in Farnsworth et al., 1989).
- Russian telegraph operator were able to increase the number of messages they could handle by taking about 60 drops of a **Siberian ginseng** tincture daily (reported in Farnsworth et al., 1989).
- Factory workers taking about 60 drops of a **Siberian ginseng** tincture daily recorded a 50% reduction in illness and a 40% reduction in lost work days (reported in Farnsworth et al., 1989).

SLIPPERY ELM INNER BARK

Latin: *Ulmus rubra*

WHAT IT DOES: **Slippery elm inner bark** is sweet in taste and neutral in action. It coats and soothes the intestines and kidneys.

RATING: Silver, due to mild action

SAFETY ISSUES: None known

STARTING DOSAGE:

- Powder: two to four teaspoons, two to three times per day

Slippery elm contains abundant vegetable mucilage, which has a coating action useful in treating digestive conditions with inflamed mucous membrane linings such as gastritis, gastric or duodenal ulcer, enteritis and colitis. It also soothes bladder and kidney inflammation. The powder can be prepared in gruel form: mix warm water and honey to make a paste, add two to four teaspoons two to three times per day, and take with water. The soothing action is quick and direct, which helps with patient compliance. **Slippery elm** is also known for its nutritive qualities. Eclectic doctors used to boil a teaspoon of it with milk to alleviate bowel complaints in recently weaned children (Felter and Lloyd, 1898).

I make use of its soothing action by finely grinding about 60% **slippery elm** with 40% anti-inflammatory herbs like **licorice root** or **boswellia gum**, giving about one teaspoon twice or three times per day. This attaches the herbs to the surface mucosa a little longer than normal, promoting the healing process. We have had perhaps a hundred patients over the years with various forms of chronic intestinal inflammation who have found this simple prescription a vital intermediate step in their healing process.

Research highlights

- Herbalist John Heinerman reported on a laboratory study done in India where researchers fed a similar highly mucilaginous herb (**comfrey root**) to cats. They demonstrated upon autopsy that the mucilage formed a smooth coating over the entire digestive tract which lasted for over 24 hours (Heinerman, 1979).

ST. JOHN'S WORT

Latin: *Hypericum perforatum*

WHAT IT DOES: **St. John's wort** is bitter and astringent in taste and cooling in action. It elevates the mood, stimulates the nerves and strengthens immunity.

RATING: Silver, due to action on other medications

SAFETY ISSUES: Do not use if pregnant. Use cautiously with anxiety. May potentiate MAO inhibitors. High doses may lead to photosensitivity. Do not take with protease inhibitors (used for HIV and AIDS) or cyclosporine. Because this herb can strengthen liver detoxification causing quicker drug clearance, use cautiously with all pharmaceutical drugs.

STARTING DOSAGE:

- Crude herb: two to four grams per day
- Standardized extract pills containing 300 mg. of hypericin: one pill three times per day
- 1:2 tincture: 25-35 drops three times per day

St. John's wort is a nervine stimulant useful in treating neuralgia, depression, and irritability due to menopausal changes. It is prescribed throughout the world as a mild anti-depressant, sold seven times more frequently for that purpose than Prozac, and it has an impressive safety profile (Ernst et al., 1998). Long-term use can improve sleep quality, and it is helpful in easing minor nerve-related pains such as sciatica and neuritis. Originally, one of the compounds in **St. John's wort**, hypericin, was thought to be the

Standardized extracts are usually advertised as superior to other products. However, **St. John's wort** has been used for centuries in Europe, and seeing the beautiful blood-red liquid tincture, one can't help but think it must be potent. A good 1:2 tincture will give you sufficient concentrations of the required components with 4-5 ml per day, or approximately 25-35 drops three times per day.

"active ingredient." This turned out to be false, though it can still be used as a marker to measure the strength of a particular batch. Another chemical called hyperforin is now considered to be the important marker compound. Scientists have determined a method to assure that the fragile active compound (hyperforin) in **St. John's wort** is preserved and stable in the finished product. From an energetic standpoint, the bitter and astringent tastes of **St. John's wort** stimulates the nerves, while the cooling effect reduces irritation and inflammation, and

the red color nourishes the heart.

I use **St. John's wort** whenever I see a patient with mild depression or depressed immunity due to mental causes, and especially if they have a viral illness or signs of nervous irritation. I find it useful for chronic hepatitis, not only for its anti-viral qualities, but to help lift the black cloud that appears when patients are told they have an incurable illness that will lead to cirrhosis and liver cancer in ten or twenty years. In one case, a

patient of mine with hepatitis C compounded by depression had this lift within a few days of beginning treatment with **St. John's wort**.

Hypericin and pseudohypericin are anti-viral, so **St. John's wort** can be used externally when brewed as a tea to dab onto herpes sores (though I prefer to use Earl Grey teabags). **St. John's wort** also contain several other anti-viral, anti-bacterial and anti-inflammatory phytochemicals, including xanthenes, phloroglucinol derivatives, and flavonols. (Nahrstedt et al., 1997).

Because **St. John's wort** is able to induce a liver detoxification enzyme (CYP3A4), it can lower drug and toxin levels in the blood. This is positive in most cases, and may account for why it clears the mind. However, in the case of drugs where maintaining blood levels is critical, such as in HIV protease inhibitors and organ rejection drugs, the same effect can be deadly. Dr. Duke points out that broccoli, brussel sprouts and tobacco also induce similar liver detoxification of drugs.

Research highlights

- The anti-depressant activity of **St. John's wort** has been shown in a number of studies to act on three major biochemical pathways, inhibiting the synaptic re-uptake system for serotonin, norepinephrine and dopamine with rough equality of action. It is the only antidepressant that can act in this way (Nathan, 1999).
- A controlled human clinical study showed **St. John's wort** effective in reducing symptoms of depression, anxiety and sleep disturbance ((Muldner and Zoller, 1984).

STEVIA LEAF

Latin: *Stevia rebaudiana*

WHAT IT DOES: **Stevia leaf** is sweet in taste and neutral in action. It sweetens without adding calories.

RATING: yellow, due to limitations in use

SAFETY ISSUES: None known. **Do not use in excess.**

STARTING DOSAGE:

- Drops or powder: add to food and drink as a sweetener, to taste

Stevia leaf is a natural sweetener that comes from the rainforests in Paraguay and Brazil. Per weight gram, the purified white dried leaf extract of **stevia** is up to several hundred times sweeter than sugar--almost as sweet as saccharine. Unlike white sugar, **stevia leaf** is calorie-free and non-disruptive to blood sugar levels. So far, there have been no recorded side effects from **stevia** consumption. It has passed strict Japanese health trials, and is used in Japan to sweeten diet sodas. Several drops take the place of teaspoons of sugar. Although **stevia** in its sweetening dosage does not have medicinal effects, it is an important tool in helping patients manage their sugar intake.

Many people working to improve their health discover that it is difficult to stay away from excess sugar in foods and drinks. For example, it is difficult to find drinks

other than spring water that are beneficial to your health and low in sugar among the typical offerings of sodas, milk products, alcohol, sugar drinks, and various hybrids containing things you can't pronounce. Commercial sugared sodas are loaded with chemical additives like caffeine and phosphoric acid. They have little nutritional value and cause health problems, including calcium loss in children. The few natural choices, such as juices, contain natural sugars in amounts too high for persons with diseases such as diabetes or intestinal infections.

For a natural, low-calorie soda, add some **stevia leaf** and **lemon, lime**, black cherry or other flavoring to carbonated mineral water. Spring water-based sparkling waters such as Perrier (available in most supermarkets), offer the benefit of additional healthy minerals. To make a low-calorie fruit drink, use about 10-20 percent pure juice and the rest water, along with several drops of **stevia**. A glass of this kind of beverage one hour before meals can actually assist in weight reduction by decreasing hunger. For those people who aren't on a no-sugar diet, about 20% fruit juice of any kind mixed with **stevia** works well. You should experiment to find the flavors you like the most.

Though safety concerns about saccharin seem to be overblown (Elcock and Morgan, 1993, Chappel, 1992), there are still many concerns associated with aspartame. There is actually a large consumer movement behind these questions—you can follow this ongoing controversy on the Internet. For these reasons, **stevia leaf** is a good addition to our natural pharmacy.

Research highlights

- In animal models, **stevia** exhibits a mild diuretic effect at high doses (Melis, 1996; Melis, 1995).
- When given to fasting rats, it causes an increase in stored sugars (glycogen) in the liver. This effect has not been shown in humans, but the results offer promising implications for hypoglycemics and Type I diabetics, both of whom have problems with storage of glycogen. **Stevia** may have a beneficial effect beyond replacing sugar (Hubler et al., 1994).
- In another study of human subjects in good health, water extracts of **stevia leaf** caused a decrease in blood sugars and an increase in glucose tolerance (Curi et al., 1986).
- **Stevia** has shown very little, if any, significant toxicity in both human and animal studies. In an experiment with cultured human lymphocytes, there was no evidence of mutagenic activity until dosage reached very high levels (Suttajit et al., 1993).
- Studies have also confirmed that **stevia** does not possess any cancer-causing potential in animals (Das et al., 1992), and has no effect on growth or reproduction in hamsters (Yodyingyuad and Bunyawong, 1991).

STINGING NETTLE

Latin: *Urtica dioica*

Sanskrit: Vrishchikali

WHAT IT DOES: **Stinging nettle leaf** is bitter in taste and cooling in action. It cleanses the blood. **Nettle seed** nourishes and removes toxins from the kidneys.

RATING: Yellow, due to strong action

SAFETY ISSUES: Do not touch or ingest fresh plant.

STARTING DOSAGE:

- Dried leaf powder: two grams two to three times per day as an infusion (10-15 minutes)
- 1:5 leaf tincture: 20-40 drops two to five times per day
- Standardized leaf extract: 250-350 mg. two times per day.
- 1:5 seed tincture: 20-40 drops two to five times per day

Stinging nettle is well known for its poisonous hairs that contain formic acid and histamine. Both of these chemicals can cause severe stinging and inflammation upon contact. Consequently, it makes sense that rest of the plant contains a number of materials that protect its interior structures from its own poisons. Scientific studies show that **stinging nettle** has a number of very interesting, wide-ranging and unique compounds which block inflammation. *This herb is a good example of how different parts and preparations of the same plant can have quite different actions and uses.*

Herbalist David Winston reported in 1999 that he had successfully used **nettle seed** to reduce creatinine levels in six cases of severely diminished kidney function, including glomerulonephritis and other degenerative kidney diseases. He believes this seed is a kidney "food," useful for treating severely diminished kidney function, glomerulonephritis, and other degenerative kidney diseases. Following his lead, I was able to stabilize a severe case using this preparation. Thanks to **nettle seed**, the patient showed marked and completely unextected improvement in creatinine levels (a marker for disease progression). The general improvement stopped after two years, and she began to slowly decline, but at a much slower rate than normal for this stage, apparently buying a few precious years for this elderly woman.

Nephritis is a debilitating and very expensive disease to treat. A group of doctors from Washington contacted me looking for natural medicine treatments and I referred them to David. A study is currently underway. If the results are positive, **nettle seed** will prove to be a very important herbal medicine.

Cultures in many different parts of the world prepare the tender parts of **stinging nettle** by cooking them as vegetables. The dried form of **nettle leaf** is prepared as a tonic useful for nourishing the blood, and can be used to treat anemia. Both Western and TAM herbalists use it for this same purpose.

Stinging nettle leaf is traditionally used to cleanse the blood by removing toxins. It can be a beneficial treatment for eczema, particularly in children. It can also be used to treat lower back pain caused by chronic low-grade infection—it is best prepared as an infusion for this purpose. **Nettle leaf** can also be used to reduce prostate swelling.

Research highlights

- **Nettle leaf extracts** reduce inflammation, in part, by suppressing the release of inflammatory cytokines. They do this by blocking a chemical inducer known as NF-

kappaB, which alters gene expression. This may be one explanation for the beneficial effects this herb has exhibited in rheumatoid arthritis (Riehemann et al., 1999).

- One set of in vitro experiments on live blood using extracts of **stinging nettle leaf** exhibited its ability to slow down the inflammatory cytokine response caused by endotoxins. In the same experiments, when there was no endotoxin present, the **nettle leaf** actually stimulated an immune response. Researchers believed these results could explain the positive effects of this extract in the treatment of rheumatic diseases (Obertreis B et al., 1996).
- The herb has also been indicated as a treatment for prostate diseases. Lignans obtained from **stinging nettle roots** attach to and alter prostate membranes (Schottner et al., 1997). This in turn leads to less prostate tissue stimulation, and a reduction in prostate swelling (Lichius et al., 1997).
- **Stinging nettle** is an approved medicine for the treatment of prostate diseases in Germany (Vahlensieck, Jr et al., 1996).
- **Nettle leaf** contains a lectin called UDA that has been shown to stimulate the production of a protein-digesting enzyme called gelatinase B. Low levels of UDA concentration reduce sticky proteins in the blood and reduce inflammation, but high levels can cause shock. Researchers from the Pasteur Institute have said that UDA "is an unusual plant lectin that differs from all other known plant lectins . . . [due to] its ability to discriminate a particular population of CD4+ and CD8+ T cells . . ." Such unique and extremely specific actions are beginning to give herbalists and physicians new tools for fine tuning the immune system, and may play important roles in development of therapies against very serious diseases (Galelli et al., 1993). Other plants that share this action include **bindweed** (*Convolvulus arvensis*) and **meadow saffron** (*Colchicum autumnale*), both of which exhibit some toxicity (Dubois et al., 1998).

STONEROOT

Latin: *Collinsonia canadensis*

WHAT IT DOES: **Stoneroot** is sour and spicy in taste, and warming in action. It relaxes constriction and clears venous congestion and inflammation from the mouth, throat and lungs, down through the lower bowel and anus.

RATING: Silver, due to limitations in usage

SAFETY ISSUES: None known

STARTING DOSAGE:

- 1:5 tincture: 30-40 drops three to five times per day

Stoneroot is very useful for treating various types of venous congestion associated with constriction and lack of venous tone, including hemorrhoids, varicose veins, benign prostatic hypertrophy (BPH) and chronic laryngitis. The whole plant is used as a tincture, and it can be used in formulas treating gastritis and colitis. Eclectic physicians used

stoneroot as an effective gargle for “Minister's throat,” a condition of scratchy congestion that results from talking too much. Used over time, this herb strengthens the veins.

At our clinic we combine **stoneroot** with **gotu kola** and **butcher's broom** to make a very effective venous congestion formula. In addition to prescribing this formula for internal use, we instruct patients to use cotton to apply the combination topically over spider veins twice a day. Before I was married I suggested this to a girlfriend, and the treatment made her spider veins disappear within two months. I got lots of points for that one.

TANGERINE PEEL

Latin: *Citrus reticulata*

Chinese: Chen pi

WHAT IT DOES: **Tangerine peel** is aromatic, warm and pungent in taste, and warming in action. It aids digestion, dries up mucus and reduces nausea.

RATING: yellow, due to limitations in usage

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried powder: three to nine grams per day
- Dried peel: one to two teaspoons per day
- Whole fruit: one or more per day while in season, including the juice and the white rind

Doctors use aromatic **tangerine peel** to dry up mucous in the lungs and stomach. It helps regulate and strengthen digestion, and is a component of many TCM formulas used to treat diarrhea, nausea, dyspepsia, and cough, especially when accompanied by copious sticky sputum. Chinese pharmacological studies show that it increases the secretion of gastric juices and relaxes the smooth muscles in the gastrointestinal (GI) tract. It also stimulates secretion and expectoration in the lungs (reported in Yeung, 1983). TCM doctors say it moves the qi downward, so it also is useful for treating hiccups and vomiting. **Immature tangerine peel** (zhi shi) has similar properties, but shows a stronger unblocking action, and is most often used to treat digestive and mucous problems with constipation.

The herbal concept of heat is a much more palpable experience with **tangerines** than with **oranges**. Both fruits are similar in taste, though **tangerines** are a bit sweeter. However, if you eat several **tangerines** in one sitting, the next day you can often feel the effects of the heat they produce, sometimes causing dryness and a burning sensation in the digestive system and mouth. This effect does occur nearly as frequently or as powerfully with **oranges**.

Tangeritin, a bioflavonoid found in **tangerine peel**, has been shown to strengthen epithelial cells in a manner that inhibits the metastasis of cancer cells (Bracke

et al., 1996). Naturopath Bill Mitchell explained in a lecture that the compound increases the functional integrity of E-cadherin, which is a cell-to-cell adhesive protein found to be deficient in tissue samples of most cancer patients. Based on these results, we can deduce that **tangeritin**, and its source, **tangerine**, might be useful as a cancer preventative. The reasoning is simple--about 80 percent of breast cancers start in the epithelial tissue lining the breast ducts, and this bioflavonoid makes the tissue tougher and more resistant. In order to get this benefit you must eat quite a bit of fruit, so the body will have enough left over to store in the tissue. I suggest eating at least one **tangerine** pretty much every day while the fruit is in season (but not year-round).

Research highlights

- An extract of **tangeritin** (not **tangerines** per se) blocked the cancer-inhibiting action of tamoxifen in female mice. It takes quite a large number of **tangerines** to extract the amount of **tangeritin** used in the experiments, and mice may not metabolize it in the same way as humans. However, researchers caution against excessive use of **tangerine** products during tamoxifen therapy until we know more (Bracke et al., 1999).
- Chinese clinical trials have shown decoctions of **tangerine peel** and **licorice root** to be 70% effective within a few days for treatment of mastitis when treatment began in early stages of the disease. However the treatment was not effective in chronic or purulent cases (reported in Bensky and Gamble, 1993).

TEA LEAVES

Latin: *Camella sinensis*

Sanskrit: Chai

Chinese: Hong cha

WHAT IT DOES: **Tea leaves** are bitter and astringent in taste, and stimulating in action. There are two different types of medicinal tea. **Black tea** directly neutralizes external viral outbreaks, while **green tea** prevents cancer, strengthens immunity, stimulates the nerves and neutralizes bacterial, chemical and radiation poisons.

RATING: Gold (**green tea**), Silver (**black tea**)

SAFETY ISSUES: Excessive long-term internal use of black tea is not recommended.

STARTING DOSAGE:

- Topical application of teabag: apply externally as directed below for lesions
- Tea: drink one to two cups per day for general protective benefits

Green tea and **black tea** both come from the same plant. **Black tea leaves** are fermented, which elevates the tannin content, while **green tea** is steamed to preserve important medicinal constituents. The caffeine, theobromine and theophylline found in **tea leaves** can help relax bronchial spasms, and may be used to treat asthma attacks in emergencies when no other medicine is available.

Herpes sores are very ugly and embarrassing, and getting rid of them quickly is a high priority. According to a report in the journal *New Scientist*, external application of **black teabags** is a simple cure for viral infections like herpes. It works better than the common treatment acyclovir, costs less, and has fewer side effects. You can apply cooled liquid from brewed black teas such as Earl Grey to lesions, including cold sores, genital herpes and shingles. Simply put a teabag in boiling water for a few minutes, cool it, and apply it to the skin for five minutes two or three times per day. The tannins in the tea calm the lesions, dry them up more quickly, and keep them from recurring for longer periods of time than usual. At the first warning tingle that typically precedes a herpes eruption, I tell patients to apply ice to the area for a few minutes, for as long as they can stand the cold. Then they use the teabag cure for about three days. I capitalize on the success of this simple symptomatic treatment to get patients to trust me so they will work seriously with me to treat the real cause of the breakouts--usually an underlying problem of weakened immunity. Fast symptomatic cures are an important part of herbalism.

Research highlights

- In a study of rats with chemically induced gastric ulcers, hot water extract of **black tea** significantly reduced gastric lining erosion (ulcer formation). The results suggested that the tea helped preserve the cellular antioxidant glutathione peroxidase (Maity et al., 1998).
- Both green and black teas show the ability to prevent various kinds of bacterial infections (Chosa et al., 1992), and in one study, **green tea** inhibited the growth of various bacteria species that cause diarrhea (Toda et al., 1989).
- Promising experimental results on **green tea** continue to accumulate. Researchers have identified a wide variety of benefits, including the existence of a polyphenol (epigallocatechin-3-gallate or EGCG) that encourages cancer cells to kill themselves (apoptosis). There are approximately 200 mg of this compound in a single cup of tea (Hirose et al., 1994, Wang et al., 1994).
- According to one study, long-term administration of EGCG to mice via their drinking water significantly prolonged their life span after lethal whole-body X-irradiation (Uchid et al., 1992).
- Another group of researchers concluded, "the main constituent of **Japanese green tea**, EGCG, is a practical cancer chemopreventive agent available in everyday life" (Fujiki et al., 1992).
- **Green tea extract** (EGCG and caffeine) is known to stimulate thermogenesis, the natural heat production process in the body that aids weight loss. In a recent double blind study, subjects experienced an increase in daily energy expenditure and fat oxidation, concurrent with increases in the concentration of the extract (Dulloo et al., 1999).
- Clinical studies indicate that increased consumption of **green tea** lowers cholesterol levels, even when subject rankings are adjusted based on smoking, alcohol use, physical activity, and body mass index (Kono et al., 1992).
- **Green tea** has also been shown to prevent the formation of dental caries in animals by inhibiting the attachment of bacteria to teeth (Otake et al., 1991).

TEATREE OIL

Latin: *Melaleuca alternifolia*

WHAT IT DOES: **Teatree oil** is sweet and pungent in taste, with a penetrating and drying action. It is an effective topical anti-bacterial & anti-fungal.

RATING: Silver

SAFETY ISSUES: **For external use only.** Poisonous when taken internally. Avoid contact with eyes or mucous membranes. Dilute with olive or other oil if skin irritation occurs.

STARTING DOSAGE:

- Standardized oil (full-strength or diluted): apply directly to the affected skin

Teatree oil derives from the **tea tree**, native to New South Wales, Australia. In 1930, a surgeon from Sydney reported that **teatree oil** dissolved pus, leaving surgical wounds clean without any apparent damage to the tissues. During World War II it was issued to soldiers for use as a topical disinfectant (reported in Murray, 1991).

Teatree oil can be applied externally to treat fungal infections, athlete's foot and abscesses. It is also used for bruises and insect bites. It has several qualities that make it more valuable than other anti-microbial oils. It has a complex chemical structure, making it difficult for microorganisms to develop immunity against it. It penetrates deeply into the tissue, and does not seem to injure healthy tissue at therapeutic dosage.

My office manager, Mary, uses **teatree oil** to effectively soothe her minor psoriasis problem.

Olive oil has a soothing demulcent quality that neutralizes the drying effect of **teatree oil**. The old adage for skin conditions is to dry if moist, and moisten if dry. With moist conditions, use **teatree** by itself, and for dry conditions, mix it with **olive oil**. The best way to get rid of toenail fungus is to mix **teatree oil** with **oregano oil**, **thyme oil** or pure neem leaf, put it on a cotton pad, and tape it right to the toenail. Change the pad twice daily, and keep it up for a couple of months. To improve results, soak your toenails in vinegar for 20 minutes each night. The vinegar also kills fungus, and makes the nail more permeable.

Research highlights

- The antiseptic action of **teatree oil** is partially due to its ability to activate immune system white blood cells (Budhiraja et al., 1999).
- In a randomized, double blind, placebo-controlled study, patients with a six- to 36-month history of toenail fungal infections were treated with a cream containing 2% butenafine hydrochloride and 5% **teatree oil**. After 16 weeks, 80% of the test group patients (those who used the cream) were cured. None of the patients in the placebo group were cured. In a follow-up, none of the test group patients had experienced any relapse, and none of the placebo patients had improved (Syed et al., 1999).
- In another double-blind study, 60% of patients with toenail fungus who used **100% teatree oil** had partial or full resolution (Buck et al., 1994).

- In tests of intra-vaginal **teatree oil** suppository products used to treat yeast infections, all three products exhibited sufficient fungicidal action to be effective (Hammer et al., 1998).
- Patch tests on 28 patients for sensitivity to **teatree oil** resulted in three (about 11%) strong reactions (Rubel et al., 1998), indicating a need for caution when first applying the oil.
- **Teatree oil** demonstrated effective activity against *Candida albicans*, *Trichophyton rubrum*, *Trichophyton mentagrophytes*, *Trichophyton tonsurans*, *Aspergillus niger*, *Penicillium species*, *Epidermophyton floccosum*, and *Microsporium gypsum*. (Concha et al., 1998).
- A study at an inner city HIV/AIDS clinic evaluated the effectiveness of **oral teatree oil solution** on AIDS patients with persistent mouth and throat yeast infections resistant to fluconazole (an anti-fungal agent). After four weeks, eight of twelve patients demonstrated a positive response, and two were cured (Jandourek et al., 1998).
- One very interesting study tested **teatree oil** against resident skin flora (the bacteria that are normally present on your skin), and transient flora (bacteria likely to cause disease). The results indicated that "**tea tree oil** may be useful in removing transient skin flora while suppressing but maintaining resident flora" (Hammer et al., 1996).
- A single-blind randomized trial tested a **5% tea tree oil gel** on 124 patients with mild to moderate acne. Results showed a significant reduction in the number of inflamed and non-inflamed lesions with fewer side effects than benzoyl peroxide lotion (Bassett et al., 1990).

TIEN CHI ROOT

Latin: *Panax pseudoginseng*
Panax notoginseng

Chinese: Tien chi / San qi / Tian qi

WHAT IT DOES: **Tien chi root** is sweet and slightly bitter in taste, and warming in action. It stops bleeding while simultaneously reducing blood congestion and clotting. It also relaxes, detoxifies and repairs blood vessels, and speeds wound healing. It is a mild tonic.

RATING: Gold

SAFETY ISSUES: Do not use during pregnancy.

STARTING DOSAGE:

- Crude powder from Yunnan province: two to three 500-mg pills two times per day for three weeks following traumatic injury

Note: may be used up to three months or longer for chronic conditions.

Tien chi root is very popular among martial artists because of its unusual ability to simultaneously stop

<p>The root from Yunnan province is considered to be the best quality, harvested from remote mountains in the autumn or winter of the third or seventh year before its flowers bloom.</p>

bleeding and reduce blood stagnation. This makes it the premier Chinese herb for wound healing. It reduces swelling and pain, and is used to treat traumatic injury, diabetic retinopathy, optic neuritis, hemorrhage, surgical wounds, blood clots, sprains and fractures.

Tien chi root is the main ingredient in **Yunnan Paiyao capsules**, known throughout the world for their unparalleled ability to heal wounds, stop hemorrhage and repair tissue. I often prescribe **tien chi root** for two or three weeks to speed healing from surgery. The use of pure **tien chi tablets** can usually stop retinal bleeding within two

I recall a particular case referred to us by Dr. Abel. The patient was a diabetic woman who had undergone more than four emergency surgical operations for bleeding diabetic retinopathy. Thanks to the hemostatic action of **tien chi tablets** she stabilized within days, and continued use over the next three years stabilized her vision loss and prevented the need for further surgical intervention.

days, and over three months, it can heal the capillaries and basement membranes at the back of the eye. I use it myself several months per year to prevent retinopathy, and so far I have never had a problem (40 years and counting). In addition to the herb's benefits on diabetic retinopathy, one of the components of **tien chi root** has been indicated for lowering glucose-induced increases in blood sugar.

Research highlights

- Studies from China show that it speeds recovery from wounds by over 50% (reported in Dharmananda, 1994).
- Studies have shown that this action is strengthened by repeated administration and tends to be dose-dependent (Gong YH et al., 1991).
- In mouse studies, **Tien chi root extract** has shown significant anti-tumor activity on skin tumors induced by chemical toxins (Konoshima et al., 1999).
- In a study of patients with essential hypertension, **tien chi root saponins**, were shown to precipitate remarkable improvement in left ventricular diastolic function. The researchers concluded that the herb could improve heart muscle relaxation by enhancing calcium pump activity, inhibiting intracellular calcium overload, and lightening left ventricular muscle mass (Feng et al., 1997). In spite of this positive effect, however, the herb is not a reliable blood pressure-lowering agent by itself, though it may be a useful addition to a treatment protocol (Lei XL et al., 1986).
- The development of cardiac dysfunction and weakness immediately following traumatic burns is a serious problem, and one that is very difficult to treat. In a placebo controlled trial performed on rats at the Institute of Burn Research in Chongqing, China, researchers determined that **tien chi root** was effective in improving early post-burn cardiac function (Huang et al., 1999).
- The actions of this herb on the cardiovascular system are complex, involving multiple mechanisms. Studies done at the Chinese Academy of Medical Science in Beijing have shown that the saponins in **tien chi root** act as calcium channel blockers in neurons (Ma et al., 1997).
- The protection the whole root affords against hypoxic damage is attributed to the improvement of energy metabolism, preserving the structural integrity of neurons (Jiang KY et al., 1995).

- Other effects include lipid-lowering activity (Xu et al., 1993), increased outflow of coronary vessels and relaxed constriction of ileum smooth muscles (Hu Y et al., 1992), and anti-arrhythmic activity (Gao BY et al., 1992).
- A study on rabbits suffering from hemorrhagic shock examined the effects of various combinations of **salvia root**, **tien chi root** and **chuan xiong rhizome** (*Ligusticum wallichii*). Blood tests showed that all three herbs were effective for relieving blood pressure and heart rate reduction, but that the combination of any two herbs was superior to using a single herb, improving results and lowering the required dosage (Wang et al., 1997).

TULSI

Latin: *Ocimum sanctum*

Sanskrit: Tulsi

English: Holy Basil

RATING: Yellow, due to limitations in use

WHAT IT DOES: **Tulsi** is bitter in taste and cold in action. It reduces fever and affords potent short-term protection against toxins and stress.

SAFETY ISSUES: Do not use if pregnant or nursing. Do not use for extended periods of time.

STARTING DOSAGE:

- Dried powder decoction: two grams two to three times per day
- 4:1 concentrated powder extract: 500 to 1000 mg two to three times per day

Tulsi is a very effective treatment for certain types of fevers, flus and colds, including typhoid and malarial fevers. In our clinic we use it to treat tough fevers, especially when there is lung constriction. It is very effective as a tea mixed with honey and taken twice a day. Its action is narrow, so it may only work against specific organisms (Phadke and Kulkarni, 1989). Traditional doctors do not use strongly cooling herbs for extended periods—I would recommend the same caution here.

Ayurvedic doctor and Naturopathic physician Virender Sodhi mentioned in a lecture that **tulsi** is considered sacred in India, and many households will keep a plant near the center of the home for purification purposes. It seems the plant gives off small amounts of ozone, an unstable form of oxygen that helps break down toxic chemical compounds into their elemental forms. This reaction is completely harmless to humans, but it irritates the heck out of viruses, bacteria and small insects, chasing them away.

I was once was giving a lecture on herbs at a Yoga ashram in upstate New York, and one of the Guru's disciples came in and said he was experiencing a conflict. He was trying to complete his cleaning duties and still spare the lives of insects. It seems capturing and carrying the little guys outside took up too much time. If it was up to me, I would have voted for helping them along into their next lives, but the Guru suggested putting **tulsi** plants in the rooms.

Research highlights

- Recent evidence suggests that ocimum flavonoids in **tulsi tea** may offer protection against radiation damage via antioxidant action, and by inhibiting radiation-induced lipid peroxidation (Devi, 1998, Uma, 1999). The researchers concluded that the low dose needed for protection, and the high margin between the effective and toxic doses, made the ocimum flavonoids promising for human radiation protection."
- **Tulsi** has shown activity against several forms of fungus, including *Aspergillus niger* (reported in Pandey, 1996).
- **Tulsi** has shown strong anti-inflammatory activity via both the cyclooxygenase and lipoxygenase pathways (Singh, 1998), and ulcer protective activity against aspirin, alcohol and other ulcerogenic chemicals (Singh and Majumdar, 1999).
- It has also demonstrated cellular protection against the early events when cells become cancerous (Karthikeyan et al., 1999; Prashar et al., 1998).
- The cooling action of **tulsi** has been found strong enough to lower T4 concentrations in the blood of mice (Panda and Kar, 1998), and to lower sperm counts in animals (Seth et al., 1981; Kasinanthan et al., 1972).
- In an interesting study of albino rats exposed to noise in single episodes (100dB), the animals showed significant elevation of corticosterone levels. When exposed to the noise repeatedly (4 hours daily for 30 days) the rats had depleted hormone levels, indicating chronic stress. **Tulsi alcohol extract** prevented these hormone changes, illustrating its stress-protective action (Sembulingam et al., 1997).
- This action was also demonstrated against pentobarbital, electroshock- and pentylenetetrazole-induced convulsions, and forced swimming in rats and mice (Sakina et al., 1990).

TURMERIC ROOT

Latin: *Curcuma longa*

Sanskrit: Haridra

Chinese: Jiang huang / Yu jin

WHAT IT DOES: **Turmeric root** is bitter in taste and warming in action. It strongly reduces inflammation and mucus in all parts of the body, protects the liver, lungs and intestines, and helps prevent and treat cancer.

RATING: Gold

SAFETY ISSUES: Due to mucin-reducing effects, do not use the concentrated extract (curcumin) or oil in high doses, especially if you have bile duct obstruction, gall stones, or stomach ulcers. Use **turmeric** as a spice freely.

STARTING DOSAGE:

- Crude powder: 500 mg two to three times per day.

Turmeric is a common tuberous vegetable spice used all over the world. It stimulates gastric juices, and it is used in Indian households in most vegetable dishes as an anti-food poisoning agent that also reduces mucous formation.

Turmeric root is used externally by TAM doctors to treat skin diseases, and as a plaster to reduce swelling. It is a valuable anti-inflammatory. Modern research has shown it to be a powerful antioxidant, anti-inflammatory, and anti-hepatotoxic herb, useful in the treatment of many inflammation-related conditions such as diabetes, hepatitis, arthritis, diarrhea, psoriasis, eczema, asthma and smoking related lung inflammation (Pandey et al., 1996).

Turmeric rhizome is yellow in color and egg-shaped (called **jiang huang**), with numerous secondary garlic bulb-like projections (called **yu jin**). TCM doctors report that these two parts have different medicinal properties. Though similar in action, the larger **jiang huang** is used to invigorate the blood, relieve menstrual cramps, and treat the pain and swelling associated with trauma. The smaller **yu jin** is cooler in action and used more to break up blood stasis and relieve constrained liver energy with symptoms of internal tension.

Turmeric root can be rendered more effective in treating inflammation by adding a small amount of **trikatu** (three-pepper compound). Piperine, an alkaloid found in **black pepper** and **long pepper**, enhances the bio-availability of **turmeric** considerably. For patients low on funds who suffer from arthritis, I suggest purchasing a pound of **turmeric** from an Indian grocery store, and then adding about three percent **trikatu**. This can be taken in half-teaspoon doses three times per day at a cost of less than \$10 for a six-month supply. Based upon traditional use patterns, I think it is better to use this formula for periods of three to four weeks, with a one or two week rest in between.

Research highlights

- The anti-inflammatory action of **turmeric root extract** is partially based on its ability to strongly inhibit arachidonic acid (AA) metabolism, which affects the inflammatory enzymes 5-lipoxygenase and cyclooxygenase. This gives it a lower side effect profile than aspirin (reported in Bone, 1991).
- Various pharmacological and animal models have shown curcumin and **turmeric root** to possess cancer, radiation and chemical toxin protective effects (Chun et al., 1999; Singhal et al., 1999; Kang et al., 1999; Bhaumik et al., 1999; Navis et al., 1999; Choudhary et al., 1999; Khar et al., 1999; Kawamori et al., 1999; Lee et al., 1998; Huang et al., 1997).
- In a study of 32 patients with chronic eye inflammation (anterior chamber uveitis), a 375-mg dose of curcumin three times per day for three months showed improvement comparable to the effects seen with a similar cortisone dose (Lal et al., 1999).
- Several studies suggest that **turmeric root** also has a mild to moderate cholesterol-lowering action (Ramirez-Tortosa et al., 1999, Pandey et al., 1996, Deshpande et al., 1998).
- Because it also has low toxicity as well as anti-platelet, anti-inflammatory and antioxidant activities, it appears to be a good addition to the diet for long-term prevention and treatment of cardiovascular diseases (reported in Bone, 1991).
- Slow tissue repair and wound healing are difficult problems for diabetics. In an animal study done at the Center for Combat Casualty and Life Sustainment Research

in Bethesda, Maryland, curcumin was shown to enhance wound repair in diabetes-impaired healing (Sidhu GS et al., 1999).

- It has also been shown to reduce diabetic kidney damage (Suresh et al., 1998).

VALERIAN ROOT

Latin: *Valeriana officinalis*

WHAT IT DOES: **Valerian root** is bitter, slightly sweet and pungent in taste. It is warming in action with a strong odor. It calms the nerves and muscles and helps induce restful sleep.

RATING: yellow, due to limitation in use.

SAFETY ISSUES: None known. Use cautiously when driving. May potentiate the effects of benzodiazepine drugs.

STARTING DOSAGE:

- 1:5 tincture: 15-30 drops two to three times per day, and up to 60-120 drops one hour before bedtime.
- Concentrated 4:1 powder: 250-750 mg one to three times per day

Valerian root is an excellent non-narcotic nervine for treating certain forms of anxiety and tension. It is best known as a gentle, safe sleep aid, and is most often used to treat insomnia, stress and anxiety. It has an additional antispasmodic action that makes it useful for easing muscle tension and menstrual cramping. **Valerian root** is easily identified by its strong, unpleasant odor. Every herbalist knows that there are patients for whom it works really well, and others for whom it does not work at all.

Valerian occasionally has an excitatory effect, making insomnia worse. There are three possible reasons for this. First, as **valerian root** ages, the odor worsens due to the degradation of chemicals called valepotriates. As this degradation occurs it becomes less effective at inducing sleep. Therefore, I only use tinctures made from fresh plants (as opposed to dried). Second, the Eclectic doctors classified **valerian** as a warming cerebral stimulant, more effective "when brain circulation is feeble" (Felter, 1922). If your system is irritated and hot, the warming and stimulating qualities of **valerian** may exacerbate the problem. Finally, pharmacological studies show that **valerian** has a dual action depending on dosage. It's still worth trying, as you will know after three or four nights of use whether or not it has value for you. If it does work, it induces a calm, restful sleep, and you awaken the next morning with no sense of a "drug hangover."

Research highlights

- **Valerian root** interacts with GABA (gamma-aminobutyric acid) and benzodiazepine sites. At low concentrations **valerian extracts** enhance activity at specific sites, but at higher concentrations they inhibit the same sites (Ortiz et al., 1999).
- Based on reports from animal experiments demonstrating the ability of **valerian root** to cause vasodilation and relieve smooth muscle spasms (Hazelhoff et al., 1982),

researchers performed a controlled clinical trial on 82 chronic heart disease patients with angina pectoris. The total effective rate in reducing symptoms was greater than 87%. Valerian was significantly superior to **salvia root** in short-term symptom reduction (Yang and Wang, 1994).

- In a randomized controlled clinical trial on 128 subjects, an aqueous extract of **valerian root** caused a significant improvement in sleep quality, most notably for people who were poor or irregular sleepers, smokers, and those who reported difficulty in falling asleep quickly (Leathwood et al., 1982). A follow-up study showed that **valerian root** is as effective at improving the ability to fall asleep quickly as barbituates and benzodiazepine (Leathwood and Chauffard, 1985).
- In a controlled clinical trial, **valerian root** did not cause the side effects of morning-after sleepiness seen commonly with pharmacological sleep agents (Lindahl O, Lindwall, 1989).
- In a controlled double-blind clinical trial, **valerian root** in combination with **St. John's wort** was reported to be more effective than valium (diazepam) (Newall et al., 1996).

VIBHITAKI FRUIT

Latin: *Terminalia belerica*

Sanskrit: Vibhitaki

Bibhitaki

English: Beleric myrobalan

WHAT IT DOES: **Vibhitaki fruit** is sour and astringent in taste, and warming in action. It combines tonic qualities with action as a mild laxative that reduces inflammation and fever (**Pitta**), cough and mucus (**Kapha**).

RATING:

- Sun-dried: gold
- Ripe: silver, due to laxative effect

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried powder: two grams two times per day
- 4:1 concentrated powder extract: one gram two times per day

Vibhitaki fruit comes from a large tree that grows in the sub-tropical mountainous climates of the Himalayas. **Vibhitaki fruit** is widely used in formulas for fevers, productive coughs and general inflammation. It is part of the famous three-fruit tonic **triphala**, along with **amla fruit** and **haritaki fruit**. The fresh ripe fruit has a stronger laxative effect, while the sun-dried fruit is less laxative. The cooked or steamed fruit loses laxative action and becomes more astringent and binding.

Dr. A. Lakshmapathi applied **triphala powder** to a cut he sustained from a dirty razor, and covered it with a bandage. The cut completely healed within 72 hours with

no evidence of a scar. After that, he used it for healing fresh surgical wounds with great success for many years (Nadkarni, 1954). The tonic qualities of **haritaki fruit** are also used to aid in hair growth in parts of India. The fruit pulp can be applied directly over non-traumatic corneal ulcers.

Research highlights

- The high level of tannins (17%) may partially account for its healing actions (reported in Kapoor, 1990).
- Alcohol extracts of 82 Indian medicinal plants were tested in vitro against several pathogenic and opportunistic microorganisms. Only five plants had a broad spectrum as well as potent action, three of which were the fruits of **triphala**. Subsequent animal testing showed no cellular toxicity (Ahmad et al., 1998).
- Pharmacological studies show **Vibhitaki fruit** lowers cholesterol in rabbits fed a high cholesterol diet (Shaila et al., 1995).
- **Vibhitaki lignans** have demonstrated activity against malaria and fungal strains (Valsaraj et al., 1997).
- **Vibhitaki fruit** has shown antihistamine action against experimental asthma in animals, (reported in Pandey, 1996).
- The Gerontology Research Center at the National Institutes of Health screened numerous Ayurvedic plants looking for new psychotherapeutic compounds active against various cellular receptors related to mental health. **Vibhitaki fruit** stood out, and was found to contain several active compounds which bound to CCK and GABA receptors (Misra, 1998), effects which would tend to calm nervousness.
- It has shown antihistamine action against asthma in human clinical trials (Trivedi et al., 1982).

VILWA FRUIT

Latin: *Aegle marmelos*

Sanskrit: Vilwa / Bilwa

English: Vilwa Tree

WHAT IT DOES: **Vilwa fruit** is sweet and astringent in taste, and warming in action. It slowly heals difficult-to-cure chronic diarrhea.

RATING: Yellow, due to limitations in usage

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Dried powder: two grams two to three times per day
- 4:1 concentrated powder extract: one gram two times per day.

Vilwa is a tropical and sub-tropical middle sized thorny tree that produces fruit year-round. **Vilwa fruit** is one of those niche herbs that tends to work when nothing else does, in this case for the treatment of sub-acute and chronic intestinal malfunction. The raw, unripe fruit pulp is sweet and astringent in taste, and TAM doctors use it alone or in formulas to treat diarrhea, dysentery, chronic sprue, and amoebic dysentery. I use it to treat cases of chronic diarrhea that don't respond to conventional or alternative treatments within a reasonable period of time. I don't usually use it right away, because it is important to try to correct underlying digestive system weakness, dietary errors and other contributing factors. **Vilwa root bark and leaves** are bitter and astringent in taste and can be used in nerve disorders (to reduce Vata). It is also added to medicinal compounds used to treat and reduce colic pain and swelling.

I once treated a very motivated and intelligent young patient who was going to the bathroom ten times a day. She had consulted numerous doctors and had done everything possible to control the problem. She was taking more than two dozen different herbal and vitamin supplements, followed a sensible diet, exercised religiously, and corrected other metabolic problems. Nonetheless, she had daily episodes of diarrhea that resisted every remedy. I had her cut out all but the most essential of her dozens of daily pills, and gave her a simple **vilwa fruit** prescription--four 500-mg capsules three times per day of the concentrated powder. After two weeks, the frequency of her diarrhea episodes decreased to every other day.

Research highlights

- In a randomized double blind controlled study of patients with irritable bowel syndrome (IBS), researchers administered a combination of **vilwa fruit** and **bacopa** that proved effective in 64.9 percent of patients, compared to only 32.7 percent in the placebo group. The researchers concluded that this Ayurvedic therapy was "particularly beneficial in diarrhea predominant form as compared to placebo" (Yadav et al., 1989).
- **Vilwa fruit** is also selectively effective against hookworm and Raniket disease virus (reported in Pandey, 1996), but ineffective against shigellosis (Haider et al., 1991).

WHEAT SPROUTS

Latin: *Triticum spp.*

English: Wheat sprouts

WHAT IT DOES: **Wheat sprouts** are sweet in taste and cooling in action. They boost cellular antioxidants for detoxification.

RATING: Silver

SAFETY ISSUES: None known. Use cautiously if constipated.

STARTING DOSAGE:

- Dried sprouts: two to three grams twice per day on an empty stomach, taken with several glasses of water.

Note: use for periods of three to six weeks, then take a break.

The popularity of products known today as low temperature dried **wheat sprouts** began decades ago when Ann Wigmore of the Hippocrates Institute used "wheat grass" juice to treat numerous diseases, to all accounts with great success. It turns out that in their early stages of growth, **wheat sprouts** contain high levels of several important cellular antioxidants--glutathione peroxidase, catalase, methionine reductase and superoxide dismutase. The scientific community was initially skeptical of this claim, as it was believed these nutrients were destroyed in the intestinal tract. Studies have shown that the antioxidants can be absorbed in the digestive tract (Rigo, 1977).

I have used **wheat sprouts** with great success for rapid yet safe detoxification when patients show signs of accumulated inflammation due to long-term poor diet or exposure to chemicals. I usually treat them with three 900-mg tablets twice per day for periods of three to six weeks. I instruct patients to drink a large volume of water, as the poisons seem to be flushed out through the urine. In some cases, patients will experience flu-like symptoms for a period of three or four days, and often there is also a strong odor in the urine. After this inconvenience passes, seemingly intractable inflammations seem to melt away.

I have treated myself with various forms of **wheat grass** or **wheat sprouts** and I can verify that they have a fairly rapid (3-4 weeks) and noticeable detoxification effect. I felt a definite looseness and freedom of movement in my joints after treatment. A close friend of mine had a severe plantar fasciitis (foot pad inflammation) which was resistant to a slew of different anti-inflammatory preparations, both natural and prescription. Six weeks on **wheat sprouts** decreased his pain by about 75 percent. I also saw a patient who enjoyed a temporary (1-year) but quite dramatic partial reversal of his graying hair using **wheat grass juice**. TCM doctors use **immature wheat seed** (fu xiao mai) to nourish the heart and calm the spirit when accompanied by symptoms of heart palpitations, irritability and emotional instability.

Sprouting is widely used in various cultures to improve the nutritional value of grain seeds. The practice appears to selectively increase the uptake of various trace elements (Lintschinger et al., 1997).

WHITE ATRACTYLODES RHIZOME

Latin: *Atractylodes macrocephala*

Chinese: Bai zhu

WHAT IT DOES: **White atractylodes rhizome** is sweet and bitter in taste and warming in action. It strengthens the vital force, improves digestion, and aids in recovery from chronic illness or fatigue.

RATING: Gold

SAFETY ISSUES: None known

STARTING DOSAGE:

- Dried powder: nine to 24 grams per day
- Concentrated powder: one to four grams per day

White atractylodes is perhaps the most commonly prescribed TCM herb for treating poor appetite and indigestion with signs of fatigue and/or diarrhea—the condition TCM doctors call spleen **Qi deficiency**. We use it in our clinic as a first line digestive treatment. In Western countries, it is not as well known as other digestive herbs such as **bromelain, black pepper, ginger** or pancreatic digestive enzymes. According to TCM theory, **white atractylodes** directly enables the digestive system to do its job of transporting nutrients. Doctors often prescribed it with **ginseng root, pinellia tuber, tangerine peel, poria mushroom** and **licorice root** in a classic digestive formula called “Six Gentlemen Decoction.” Considering how many illnesses are related to digestive weakness, this herb is an important addition to the modern herbalist's repertoire.

The related species called **black atractylodes** (cang zhu /*Atractylodes lancea* rhizome) is drier, excellent for drying digestive system dampness. It is often combined with **mangolia bark** (hou po) for epigastric fullness, reduced appetite and vomiting.

Research highlights

- In an experimental attempt to scientifically define the TCM concept called **Spleen Qi** deficiency, researchers examined the gastric mucosa of 247 patients. They reported “retrograded degeneration” of all kinds of antrum gastric mucosa cells, with 82.3% showing sparse, broken and swollen mitochondria. The severity of the damage was more intense with patients who had additional **Yang** deficiency, as indicated by inflammation and vacuolation--holes in the tissue (Ren and Niu, 1992).
- Pharmacological and animal testing shows that **white atractylodes** increases secretion of gastric juices in the stomach and intestines, promotes urination, prevents glycogen loss in the liver, and increases body weight and muscle strength over time (reported in Bensky and Gamble, 1986, reported in Yeung, 1983).
- One clinical trial looked at patients with severe gastric disease caused by *Campylobacter pyloridis*. Patients in one group received one of two TCM medicines, either a combination of **astragalus root, white atractylodes, and white peony root,** or **dandelion root and oldenlandia**. The other group received an antibiotic. The effective improvement rate was the same for both groups—about 80%. Pathology, endoscopic and bacteriology tests showed differences between the two groups to be statistically insignificant (Fang, 1991).

WHITE PEONY ROOT

Latin: *Paeonia lactiflora*
Chinese: Bai shao

WHAT IT DOES: **White peony root** is bitter and sour in taste, and cooling in action. It nourishes the blood of the liver, reduces pain and soothes and clears the mind

RATING: Gold

SAFETY ISSUES: Do not use if you have diarrhea

STARTING DOSAGE:

- Dried powder: two grams two to three times per day
- Concentrated 4:1 dried decoction: one to four grams per day

White peony root is one of Nai-shing's favorite herbs. TCM herbalists rely on its nourishing and calming actions to treat nervousness, skin eruptions, anemia, painful menstruation, muscle spasms and mental depression. The fact that this herb calms while enhancing cognition and reducing pain makes it very useful at our clinic. Nai-shing has often used the simple combination of **white peony root** and **licorice root** to reduce nerve pain, especially trigeminal neuralgia.

Research highlights

- **White peony root** has been shown to lower testosterone levels in women, but not men. In a study of seven infertile women, a simple combination of **white peony root** and **licorice root** induced regular ovulation in six of the subjects, two of whom subsequently conceived (reported in Bone, 1996).
- Several animal studies have demonstrated the muscle-relaxing effects of **white peony root**. (Bone 1996)
- Animal studies have also demonstrated the cognition-enhancing effects of paeoniflorin, a major component of **white peony**. It has been shown to block chemically induced mental deficits in rats, allowing them to run mazes more quickly (Ohta et al., 1993), and to slow learning impairment in aged rats (Bone 1996).
- Studies have identified **white peony root** as one of several Chinese herbs with the ability to improve memory by inhibiting Prolyl endopeptidase (PEP), an enzyme that metabolizes several neurotransmitters (Tezuka et al., 1999).
- High fat diets produce lipid peroxides, which inflame the linings of blood vessels and contribute to arteriosclerosis. In a 1991 study on rabbits, **white peony root** inhibited formation of the peroxides, correlating with a 74.2% reduction in aortic lesion size (Jia and Tang, 1991).
- A later study of rats on a high cholesterol diet showed a protective effect on the endothelial cells lining blood vessels. **White peony** caused an increase in vessel lining relaxation and a reduction in free radical damage (Goto et al., 1999).
- The combination of **salvia root** and **white peony root** has also been shown to protect rats against acute chemically induced liver damage (Qi, 1991).

WHITE SANDALWOOD

Latin: *Santalum album*
Sanskrit: Chandanam
Chinese: Tan xiang

WHAT IT DOES: **White Sandalwood** is bitter and taste, aromatic and cooling in action. It reduces fever, heat sensations, and dizziness. It also promotes the flow of vital energy (**Qi**) and relieves pain.

RATING: Silver

SAFETY ISSUES: Contraindicated in diseases involving the kidney parenchyma, due to its high volatile oil content. Do not use at full dose for longer than six weeks (McGuffin et al. 1997). Use cautiously with blood-thinning medication.

STARTING DOSAGE:

- Powdered heartwood: one to two grams two times per day.

The highly fragrant heartwood of **white sandalwood** is burned as incense in oriental temples as well as on funeral pyres. It contains volatile oils (2.506%), dark resins, and tannic acid (reported in Kapoor, 1990). It is a slow-growing parasitic tree that attaches its roots to those of other trees and draws water and minerals through a specialized structure called a haustorium.

Ayurvedic doctors use **white sandalwood** medicinally to treat fever, dizziness, heat sensation, and menopausal hot flashes. It is also used as an anti-poison (*visaghna*) to reduce **pitta** (inflammation) in various types of poisoning. TCM doctors use **white sandalwood** to promote the movement of **Qi** and to relieve pain. They also use it to treat stomach, chest and abdominal pain, and for vomiting.

White sandalwood incense is useful for relieving anxiety and depression, and as a meditative aid. The oil can be applied as a cooling massage. The tea is a useful treatment for bladder and urinary tract infections. Make a tea by simmering one teaspoon of the powdered heartwood in water for ten to twenty minutes. Drink one cup three or four times per day. When added to **sesame oil**, a few drops of **sandalwood oil** can be used as anti-inflammatory nose drops. Drop two or three drops in each nostril two to five times per day.

Following the TAM indications, I have used **white sandalwood** powder in the clinic successfully for hot flashes. I have also found the nose drops very effective for nasal inflammation. Nai-shing uses it for the TCM indications, including stomach pain and painful menstruation. She often combines it with **red sandalwood** (*rakta chandanam* (*Pterocarpus santalinus*), which aids its cooling action.

Research highlights

- Chinese scientists have found **white sandalwood** useful for treating coronary artery disease (reported in Bensky and Gamble, 1993).
- Researchers have also found that oil from the wood enhanced liver function in mice, increasing glutathione S-transferase (GST) activity and acid soluble sulphhydryl (SH) levels. This suggests a possible internal protective action against chemicals (Banerjee et al., 1993).

- Other studies have indicated **white sandalwood** as a potentially effective chemopreventive agent against skin cancer when used topically (Dwivedi & Abu-Ghazaleh, 1997).

WILD ASPARAGUS ROOT

Latin: *Asparagus racemosus*

Asparagus lucidus

Sanskrit: Shatavari

Chinese: Tian men dong

WHAT IT DOES: **Wild asparagus root** is sweet and slightly bitter in taste and cold in action. It calms the nerves, reduces inflammation and protects and moistens the intestinal and lung membranes. It also promotes fertility and lactation.

RATING: Gold

SAFETY ISSUES: None known.

STARTING DOSAGE:

- Crude powder: one to two grams two times per day
- Concentrated dried decoction: 500-100 mg two to three times per day

Wild asparagus root is a tropical and sub-tropical thorny, perennial, and tuberous shrub, sometimes growing as high as 20 feet. TAM doctors say the *racemosus species* calms the nerves, reduces inflammation, and strengthens the heart, brain, and mind. In our clinic we have found it quite effective for increasing breast milk production in nursing women, and also for promoting fertility and nourishing the female reproductive system. We also use it whenever we see chronic inflammation combined with dryness and fatigue. It works well when administered with healthy oils such as those from **flaxseed** and fish in cases of dryness. A simple Ayurvedic "mental clarity tonic" combines **wild asparagus** with eggs (preferably organic). I have made omelettes with the much milder grocery store asparagus, and I almost always note a mild increase in mental clarity over the next few hours (not that my brain isn't plenty clear already).

TCM doctors use a similar form of **wild asparagus root** (*lucidis species*) as a Yin tonic to replenish the vital essence, promote the secretion of body fluids, and moisten and nourish the lungs. They also mix it with honey to soothe the lungs and relieve coughs and bronchitis.

Research highlights

- After exposing mice to the carcinogen ochratoxin A (OTA), researchers reported a significant decrease in the activity of their immune system macrophage cells, especially interleukins (activating chemicals) and tumor necrosis factor (TNF, a group of cancer killing chemicals secreted by macrophages). Treatment with **wild asparagus root** significantly inhibited this suppression, as illustrated by increased production of TNF-alpha (Dhuley, 1997).

- Indian researchers performed a series of tests on six Ayurvedic tonic (rasayana) plants, They discovered that **wild asparagus root** exhibits adaptogenic and protective activities against a variety of chemical and environmental stressors. The effects were equivalent to those of **amla fruit, guduchi stem, ashwaghandha root, long pepper** and **vibhitaki fruit** (Rege et al., 1999).
- Pharmacological studies in China and India have shown **wild asparagus** to possess various anti-cancer, cardio-protective and immune stimulating effects (reported in Pandey, 1996, reported in Yeung, 1983, Thatte and Dahanukar, 1998).
- **Wild asparagus root** also has shown a mild antacid effect on the stomach in humans, and contains fat and carbohydrate digestive enzymes (Dalvi et al., 1990, Dange et al., 1969).
- Adhesions are a very problematic aftereffect of surgery. Based on its immuno-stimulant properties, researchers tested **wild asparagus root** for its ability to modulate this problem. Animals treated with the herb showed a significant increase in macrophages, and 15 days after surgery, a significant decrease in adhesion scores (Rege et al., 1989).
- Numerous human and animal studies, including randomized controlled trials, have confirmed the stimulating effect of **wild asparagus root** on breast milk production. (Sharma et al., 1996; Pandley et al., 1996; Patel and Kanitkar, 1969; Sabnis et al., 1968; Joglekar et al., 1967).
- Interestingly, the *International Journal of Cancer* also reported an inhibitory effect on chemically induced breast cancer in rats (Rao, 1981).