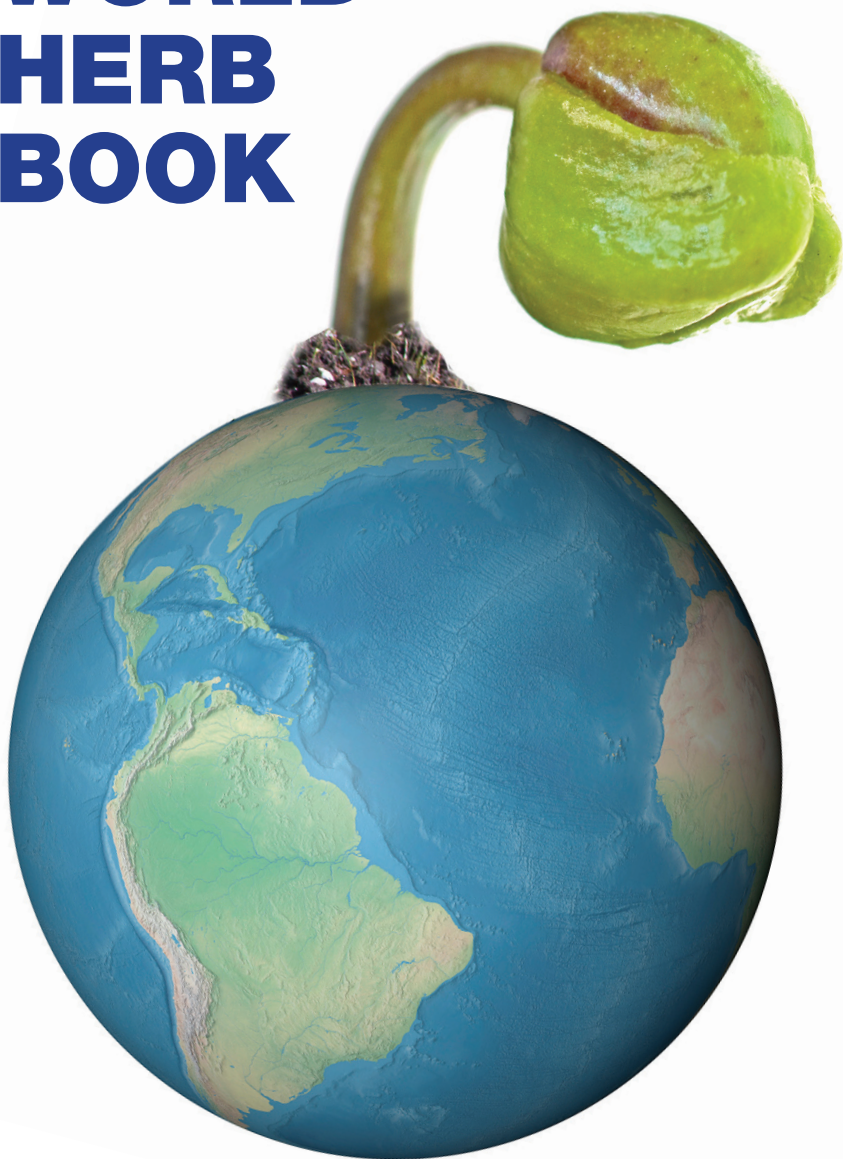


*The*  
**WORLD  
HERB  
BOOK**



by Geoff D'Arcy, Lic.Ac., D.O.M.

## **Chapter One: The Amazon**

**It was the winter of 1994, and I traveled upriver in the Amazon, away from the remote frontier town of Iquitos. As we traveled further and further upriver each day, our accommodations in the series of Explorama Lodges became more and more primitive. Our goal was the herb walk at the Amazon Center for Environmental Education and Research (ACEER) botanical field station, deep inside the rainforest of the Peruvian Amazon.**

“...the impossibility of imagining rain forests of such magnitude...three million square miles of forested lands...the size of the continental United States. The Amazon flows for 4,200 miles...50,000 miles of navigable water spread across six Latin American nations...If the mouth of the Amazon could be superimposed onto a map of Europe, the Eiffel Tower would sit on the south bank, and the north bank would support the Tower of London....”

**--Wade Davis, “Shadows in the Sun”**

My journey to the Amazon rainforest was part of an awakened urge and quest to see, touch, smell, hear and taste the medicinal plants of this amazing part of the world, and to experience their “wild *qi*” (energy) with my own body, mind, and spirit, and hopefully, develop and awaken my intuition. Over the course of my fourteen years of clinical practice as a Doctor of Oriental Medicine, I had the sad realization that my experience and knowledge of herbal medicine was book-bound and intellectual. Upon reflection, my herbal studies seemed disconnected from the life force of the wisdom and guidance of nature herself. I felt that my practice had grown stale. It was as if I had been just developing a technical knowledge of plants without searching for the primal wisdom of their source powered by the collective unconscious. I began to suspect a major error in this approach; I had been practicing herbal medicine

without the vibrant connection to the live plant world. I could tell you about a plant's energetic action according to Traditional Chinese Medicine (TCM,) or the active compounds according to modern science yet, I was ashamed to say, you could have hit me over the head with Pau D'Arco, or Ginseng, and, sadly, I would not have recognized them. Although I used plants in my daily practice, I had ignored the amazing web of life within which the extraordinary world of herbal medicine was shaped. I was ignorant of the role that medicinal plants play in the greater botanical eco-community in which they had evolved. To use these plants I felt I needed to understand the ecosystem that had, over millions of years, developed and perfected their subtle, complex chemistries and energetic vibrations. In short, I was in the Amazon because, although I had prescribed medicinal herbs for my patients for over a decade, I was only now finally aware and accepting of all that I didn't know about them. It was my mission and desire to rectify this sad situation.

We traveled to Upper Amazonia, along the Napo River, about 161 km. (100 mi.) east of the Peruvian frontier town, Iquitos, which is accessible only by air or jungle boats. We hiked a trail from the Tambo Explorama Lodge made slippery and muddy by rain. Black, ominous storm clouds gathered overhead as we headed inland towards the rainforest, away from the light and comfort of the open views and breezes of the enormous Amazon River, which in places gets as wide as a mile across. We entered into a dark, dense, claustrophobic sea of green, into the steaming, pulsating heart of the Amazon Rainforest. The constant rhythms of non-stop biological activity that surrounded us was palpable, almost audible, like the hum of a primal generator igniting our deep unconscious. I sensed a mystical energy source, just beyond my reach, yet moving through me continuously. I sensed the vast pulsating harmony of the Rainforest and wanted to tap into this energy ... if only I knew the primal password. Our destination was the Amazon Center for Environmental Education and Research (ACEER), a botanical field station reached by a two-hour hike into the rainforest, located in one of the most plant and animal rich areas on the face of our planet.

Only a few feet into the trail I looked back and was amazed by how the tall, dense growth of plants and trees had already engulfed and swallowed-up our view of the river. Moving further in, I noticed the cacophony of sounds - calling insects, screeching parrots, strange, echoing bird sounds, lizards scattering cracking leaves, palms fronds rustling in the slightest of breezes, squirrel monkeys chattering to and from the shaded deep. As our eyes grew accustomed to the darkness, my glasses steamed up from the wall of humidity that hit us. Sweat began to trickle down the back of my neck. Looking up for the comfort of the sky, the treetops seemed so far away, stretching and reaching to the light for their life energy. Some emergent trees top 61 m. (200 ft.) and may occasionally approach 90 m. (300 ft.), supported by the flaring buttresses of their roots that act as stilts in this floodplain area when the Amazon bulges with water from high up in the Andes mountains and bursts its banks overflowing every six months. Tree roots here have to suck for the scant nutrients from a soil that is required to support so much life. The nutrients are mainly shallow with ninety percent of the rainforest's root tips found in the top ten centimeters, so there is a lot of competition. It's surprisingly easy to walk. I was expecting to hack away through dense undergrowth on the ground, yet the path is clear among the widely spaced trees. Occasional openings in the canopy above allow shafts of sunlight to illuminate sunny islands of tangled growth, surrounded by a sea of deep green shade. Some shafts splinter off, high in the canopy above, splattering flecks of sun around the undergrowth. Only 1% to 2% of light at the tree tops filters through to the jungle floor. The forest is layered in growth upon growth, vines draping downward, hanging everywhere, some twisted, looking braided like rope, interconnecting trees and levels of forest life. Vivid butterflies dart brilliantly, made almost neon-colored by angled spears of early morning light. The clay-like mud stuck to our boots making every step cautious and heavy. We stepped over marching columns of ants carrying massive pieces of neatly clipped leaves often dwarfing their own size. Leafcutters are abundant throughout the neo-tropics and occur nowhere else. They march these

leaves in neat lines across our trail with martial precision and purpose, to their underground bunkers, where the ant farms will use the leaves not to eat, but to cultivate fungus for food.

As we entered into the rhythm of the trek and the rainforest, our guide led the way, Anthony in the middle, and I dreamily brought up the rear. I was enamored by the beauty of the amazing diversity of the plant life around me, distracted by the pretty, yellow-tailed green parrots swooping above us, and the neon-like butterflies swooning by. Lulled by the warmth, beauty and false sense of security of this ancient primal place, I may have had “easy prey” written like an advertisement on my back. I momentarily forgot what I knew to be true about the underbelly of this forest, that this has been a forest continuously since the dinosaurs walked here millions of years ago. So many of the developed plants and creatures here seem to pack a poisonous punch! I am reminded of the tarantula I met in my primitive washing area one morning with its two large fangs designed to inject venom into its victim with its belly covered with stinging hairs. Although not especially toxic to humans, this small creature packs a punch, just as the insects, frogs, snakes, piranhas do here in their natural habitat.

Then, suddenly, the underbelly of the rainforest called out to me. The hairs on the back of my neck shot up. At first, my rational mind denied what I had just heard, and then, denied my reaction to what I felt. Fear felt like a strange emotion in response to an out-of-place, odd snoring noise that rippled out from the forest undergrowth very close to me. I quickly followed my instincts and ran forward, catching up with my guide and friend in record time. What our guide told me was hard to take seriously at first because we had been kidding around so much. He explained that I have heard a Bushmaster, the most poisonous of all snakes in the Americas, cousin of the rattlesnake of North America. It is a member of the pit viper family. They have a light tan background color with large, darker brown to black diamond-shaped patterns on their backs. The Bushmaster has hollow, erectile fangs that are folded back against the roof

of the mouth except when the snake is striking. Its fangs can be very long, reaching as much as 35 mm, (1.4 inches). They have developed special organs of heat reception that help them to sense warm-blooded animals, an ability that is especially useful at night when many of them hunt. This makes them like heat-seeking missiles that cannot be out-run! In fact, our guide told us they were trained to take off their tee-shirts and throw them in the opposite direction if they encountered one on the chase, to divert them away towards the sweaty, “hot” shirt, (instead of towards guests like me.) The Bushmaster’s heat-sensing organs allow it to sense the heat difference between a small mammal and the cooler rocks, plants and other objects in the area. When a warm-blooded animal ventures close, the Bushmaster can detect the prey entirely by its body heat, even aiming its strike without any other sensory information. Their venom kills by causing massive internal bleeding. The Bushmaster snake has an aggressive nature. On this very same trail, that had only been cleared a few years earlier, two laborers had been bitten; one lost his leg to the wound. Fortunately, because of the snake’s nocturnal nature few bites have been recorded. But, there is truth in the name of the snake called *Lachesis muta*, or “silent fate,” - its bite can be fatal.



“Damn I hate snakes” -- **Indiana Jones, in the Temple of Doom**

“A marvelous tale is told of the explorations of Francisco de Orellana, the first European to travel the length of the [Amazon]. In 1541, having crossed the Andes in search of the mythical land El Dorado...Orellana sailed down the Rio Napo, [the very tributary of the Amazon we were on now, some 461 years later] and it is said that when he finally reached the confluence of the Rio Ucayali, as the upper Amazon is known in Peru, he went temporarily insane.”

--Wade Davis, “Shadows in the Sun”

Looking around me in the Amazon I could sense why men such as Francisco de Orellana could go insane with “green fever.” Surrounded by the wild, pulsating sea of continuous green nature, stretching as far as the eye can see from the top of the tallest tree. I imagined the jarring juxtaposition from the deserts and wide-open spaces of Spain to the sheer gigantic size of the rainforest and immensity of the Amazon. My own journey involved a transition made possible by the massive speed of modern travel. The distance we had traveled between lunch in Miami to dinner in Iquitos was a journey that crossed thousands of miles, rifts of cultures and felt like eons of time. My friend and I had eaten lunch in a fashionable new Cuban restaurant in Miami and then, dinner in Iquitos the very same day. Iquitos seemed a very long way from Miami, with its hustle and bustle of motorbikes, rickshaws, cars, exhaust fumes and blaring horns that burst into the open-air restaurant that featured fresh water, pink dolphin on the menu. We strolled around the wharves in the high hot humidity greeted by the generous, bright smiles of the people despite their impoverished shantytown. We watched travelers set up their hammocks on the decks of the riverboat steamers that embark on their long journeys the next morning, some going as far as 2250 miles down river to the Atlantic. One can only get here by primitive riverboat or by modern full-service airliners. That night as I went to bed, my mind once again shuttled between two divergent worlds as I watched MTV on satellite in the hotel surrounded by the primitive rainforest.

The next day we packed early and were on our way down river to the first of a series of primitive lodges until we arrived at the Tambo Explorama Lodge for our final trek to the ACEER botanical field station. Our destination was the Explorama Napo Lodge some 100 miles from Iquitos in the Sucusari Nature Reserve. The trip took several hours in a long, steel-hulled jet boat that seated two people across and powered by a strong outboard motor. The steel hull, I learned, is useful because as we sped upstream against the chocolate colored current, logs and, at times, entire trees floated down, narrowly missing us, despite our driver's keen eye. The river debris is a reminder that the rainforest exists in a flood plain and the river can rise and fall 30 feet. When it recedes, massive amounts of tree and plant debris are sucked into it. As it was in Iquitos, the river was busy, and this branch is a main artery. We passed paddle propelled dugout canoes, huge, flat-bottom barges several stories high, and docks with Peruvian naval gunboats. The journey was fascinating and enthralling. We watched the local *Ribernos* "River People" who eek out a scarce living from the river's banks, and fight to farm against the river's ebb and flow. We watched, entranced by the fresh water pink dolphins playing nearby. As we are carried up "the most majestic of rivers," we watch people washing clothes and fishing in the thatched roof settlements with their small fields, carved out by hand.

After an hour, we left the quickly flowing river and turned into the calm waters of the Napo River. Settlements, people and traffic became scarce. The lodge buildings, sitting on stilts with interconnected walkways, appeared suddenly as we turned a bend in the river. Our accommodations here included only the basic necessities - a room with walls that did not quite extend to the high, thatched roof, and windows that opened up to the jungle. Above and around our beds mosquito nets were suspended, although, surprisingly, there were fewer mosquitoes here than where I live in the woods of New England. Sitting on the deck, relaxing, sipping drinks before dinner, I wondered if Francisco de Orellana, the first European explorer, would have gone temporarily insane if he had had these simple, yet very pleasing, accommodations.



The next day, on the river again, we were fishing with steak as our bait. Piranhas, by all accounts, are easily baited on hooks with bits of raw beef, but after failing to catch anything for two hours in the oppressive, humid heat, our guides readily plunged into the river for a cooling swim. Hesitating for a moment, we wondered if it was really safe for us to dive in ourselves. We had been told that piranhas are only a danger if there is blood in the water. However, we were a little disconcerted to learn from another guest that just the previous day, an American woman had had a large chunk bitten out of her inner thigh by a Piranha while she was swimming near the lodge. Still, Anthony and I had been fishing without results for over two hours, we were hot and tired, we were not bleeding, hence, we looked at each other and in a split second concluded in that it was be safe, and dove in head first.



**The driver the author (middle) and guide.**

Traveling further down-river to the Tambo Explorama Lodge the next day, a warm, torrential rain bit into our faces was exhilarating. Anthony and I planned to hike with our guide to ACEER botanical field station the next day. When we arrived, the feeling at ACEER was one of a serious field camp with graduate students and Ph.D. candidates carrying out research among guests like ourselves. We swapped stories and were shocked to learn about the everyday threats to which they had become accustomed. We were stunned to hear about the female graduate student who was studying for her Ph.D. and whose

Committee suggested she collect her frogs farther out from the field station to get a truer sampling. This required her to leave the camp in the pitch-black of night in virgin rainforest (much to the horror of the locals who worked there,) to collect “Bushmaster food” – frogs! Definitely *not* a thesis I would ever want to complete.

Our herb walk wove through a trail with labeled and identified medicinal herbs that grow in the jungle. For me, this was like being invited to visit old friends in their own homes, finally meeting herbs I have known and used for years where they grow in their natural environment. Here are some of the medicinal plants I met about whom you will be hearing much more in the next decade:

**Pau D’Arco, (a.k.a., Lapacho) (*Tabebuia impetiginosa*, *T. avellanedae*)**

Pau D’Arco is an enormous flowering tree that grows as high as 46 m. and can get as wide as 2 to 3 m. in diameter. It is one of the most durable hard wood in the tropics. It has been used for centuries by the Indians native to the Amazon Basin, and by the Incas as an effective treatment for cancer and other diseases. Pau D’Arco is considered to be an analgesic, anti-inflammatory antioxidant, anti-parasitic, anti-microbial, anti-fungal, anti-viral, anti-bacterial, and is a mild laxative. It has treated terminal leukemia, arthritis, yeast and fungus infections, arrested pain, stopped athlete’s foot and cured the common cold. Most herbalists agree that it strengthens and balances the immune system, and it is currently used as a remedy for immune system-related problems such as colds, flu, boils, and other infections Lapacho, (Pau D’Arco,) is a proven antibiotic, and is often used in America to treat yeast infections, but in South America it is touted as a cure for cancer and other diseases. Many of these diseases cannot with stand the antibiotics this mighty tree secretes, to protect itself from bacteria in its primal environment. Researchers isolated a substance in Lapacho that apparently contains a chemical chain, anti-tumor agent.” Dr. Paulo Martin, a medical researcher for the Brazilian government has stated, “We isolated a compound

we called *quechua* from Lapacho and found it to be a powerful antibiotic, with virus-killing properties.”

At my clinic, we have seen wonderful results using Pau D’Arco in the treatment of Candida, a fungal yeast infection. It helps to restore intestinal balance by killing off the fungal yeast *candida albicans*, providing an anti-parasitic function along the way. A study with nine patients with various cancers (liver, kidney, breast and prostate adeno-carcinomas, and squamous cell carcinoma of the palate and uterine cervix,) showed shrinkage of tumors and reductions in tumor-related pain in all nine patients; three patients experienced complete remission, and there were no adverse side-effects. Another cancer study however reported no change. Thus it seems the jury is still out on Pau D’Arco’s anti- cancer abilities. Its application to a wide variety of problems may stem from its ability to increase oxygen supply at the local level and thereby helping to destroy *candida albicans* and other fungi, viruses and parasites.

### **Cat’s Claw, “Una de Gato” (*Uncaria tomentosa* and *Uncaria guianensis*)**

Cat’s Claw is a large woody vine. Hiking on the trail in the rainforest, it seemed to grow up to 20 to 30 meters toward the canopy. It gets its name from large hook-like thorns, resembling the claw of a cat, that cover and protect the vine. It is indigenous to the Amazon Rainforest and other tropical areas of South and Central America, including Peru, Columbia, Ecuador, Guyana, Trinidad, Venezuela, Suriname, Costa Rica, Guatemala, and Panama. Two closely related species of *Uncaria* are used almost interchangeably in the rainforests - *Uncaria tomentosa* and *Uncaria guianensis*. Both species are large woody vines that can reach over 100 feet high into the canopy with claw-like thorns. However, *U. guianensis* has thorns that are more curved and shows reddish-orange flowers, while *U. tomentosa* shows smaller yellowish-white flowers.

With my experience using Cat’s Claw in my practice with patients for over a decade, I have come to trust and respect its ability to break through severe intestinal imbalances that no other herbs can touch. It is a great “opener of the

way” because of its remarkable ability to cleanse the entire intestinal tract. It can help patients suffering from many different stomach and bowel disorders including leaky bowel syndrome, irritable bowel syndrome, Crohn’s disease, diverticulitis, hemorrhoids, fistulas, gastritis, ulcers, parasites and intestinal flora imbalance. By cleansing the intestinal walls, Cat’s Claw enables the body to better absorb nutrients, thus helping to correct nutritional imbalances created by digestive blockages. The Ashanika Indians of Peru have long regarded Cat’s Claw tea as a sacred beverage. It is used as a cleansing and tonic herb for the immune, intestinal and structural systems. In traditional medicine of Peru for over 2,000 years, *Una de Gato* has been used for inflammations including arthritis, gastritis, asthma and dermal and genito-urinary tract inflammations. The Asháninka Indian Tribe in central Peru has been the rainforest tribe most closely associated with Cat’s Claw. They have the longest recorded history of use with the plant and are also the largest commercial source of Cat’s Claw from Peru today. In the 1980’s, several extracts of Cat’s Claw were being sold in Austria and Germany as prescription medicines. With four U.S. patents describing the alkaloid extraction methods and the immuno-stimulating actions of the alkaloids found in Cat’s Claw, worldwide interest in the medicinal properties of this valuable vine of the rainforest was increasing. In 1994, the World Health Organization sponsored the First International Conference on Cat’s Claw. It received official recognition as a medicinal plant and, it was pointed out, that not since quinine was discovered in the bark of a Peruvian tree in the 17<sup>th</sup> century, has any other rainforest plant ever prompted such worldwide attention.

Cat’s Claw is also used as an anti-inflammatory for arthritis, injuries, and rheumatism. Some studies have shown 46% to 69% inhibition of inflammation in-vivo and in-vitro tests. It is believed that plant sterols like beta-sitosterol, acids and other antioxidants found in Cat’s Claw account for some of the anti-inflammatory impact. I also use it to build up and strengthen the immune system. Reports on trials of Cat’s Claw have demonstrated that cancer patients

using Cat's Claw as a supportive aid for the side effects of chemotherapy had fewer side effects such as dry mouth, hair loss, weight loss, nausea and skin problems. The Oxindole alkaloids found in the bark and root of this vine have shown a remarkable ability to stimulate the immune system. It appears that six of these oxindole alkaloids can increase the immune function by up to fifty percent. This has led to its use around the world as an adjunctive treatment for cancer and AIDS as well as for other diseases that negatively impact the immune system. In addition to its immuno-stimulating activity for cancer patients, other anti-cancerous properties have been documented on the alkaloids as well as other constituents in Cat's Claw. Five of the oxindole alkaloids have been clinically documented with anti-leukemic properties and various root and bark extracts have demonstrated anti-tumorous and anti-mutagenic properties. The alkaloids *rhynchophylline*, *hirsutine*, and *mitraphylline* have shown promise as hypo-tensive and vasodilating properties. *Rhynchophylline* has also shown to inhibit platelet aggregation (thinning of the blood) and thrombosis and may help prevent blood clots in blood vessels, as well as to relax the blood vessels of endothelial cells, dilate peripheral blood vessels, lower the heart rate and lower blood cholesterol.

### **The immenseness of the Amazon River**

The immenseness of the Amazon River, which is the very lifeblood and artery for the Amazon basin's rainforest, produces such an amazing diversity of life that it is worth pondering some more.

“In volume the river is five times larger than the Zaire, eleven times larger than the Mississippi. In twenty-four hours the Amazon pumps as much fresh water into the Atlantic as the Thames does in an entire year. Seven million cubic feet of water flow into the sea each second...[and] can provide 300 people with a bath each week for approximately 250 million years. If the U.S. Army Corps of Engineers

could figure out a way to drain Lake Ontario and divert the channel of the Amazon, the lake could be refilled in three hours...you begin to sense the overwhelming grandeur, the power of the forest.”

**--Wade Davis, “Shadows in the Sun”**

The Amazon Rainforest is called the “lungs of our planet” because of its voracious consumption of massive amounts of carbon dioxide and that it produces over 20% of the Earth’s oxygen supply. Over the course of one day on Earth, it is estimated that 100 billion tons of carbon dioxide and oxygen are recycled. The leaves of trees in the rainforest breathe out so much moisture that, from space, the water vapor can be seen creating the clouds, that later create rain. They help cool the Earth’s climate. The biodiversity is so enormous that it is impossible to imagine. The forest is teeming with life! A single pond can sustain a colossal variety of fish - more than exist in the whole of Europe. One rainforest reserve in Peru has more species of birds than the entire U.S. One tree in Peru was found to contain more species of ants than in all of Great Britain. A square mile of Amazonian forest may provide a home for as many as 23,000 distinct forms of life. In all of New England there may be only 1,200 plant species - the Amazon has more than 80,000.

“More species and their potential utility for humankind will be discovered in the next half century than has been found in the past five thousand years. With the estimates of global species diversity being revised from 3 million to as high as 125 million, the “supply” of potential medicines is much higher than we ever thought possible. Over ninety tribes have gone extinct in Brazil since the turn of the century—and virtually none of their medicinal plant lore was recorded before they disappeared.”

**--Mark Plotkin, Medicine Quest**

When you are in the Amazon you begin to understand how the monotone of the same hue of green in such an endless expanse of rainforest would loom so foreboding to travelers from Europe. Coming from an heritage of agrarian land, dominated by man for thousands of years, farmed, cut and manicured to conform to his sense of order, his first instinct might be to try to contain this wilderness, to make it, supposedly, more secure, manageable and trimmed. Perhaps it is this instinct that is driving the current rampage of destruction- whether due to greed or dominance - we are ripping through this most precious resource at a staggering rate.

“On the eve of the 1992 Earth Summit in Rio de Janeiro 4,247 square miles were being cut each year...In 1994-1995, according to... satellite images, 11,196 square miles, an area the size of New Jersey, were deforested, a separate Brazilian...study...concluded that an area twice the size of Belgium, a total of 22,393 square miles of primary rain forest, was being transformed (slashed and burned) every year.”

-- **Wade Davis, “Shadows in the Sun”**

During my stay inside the rainforest I became aware of my own urge to control this underlying pulse of wild nature. The only difference between myself and the “slash and burners” of Europe may be my own deep trust in what lies beneath the surface that I know ultimately connects us to the planet and to each other. My intuition suspects that this pulsating biomass, more palpable here than anywhere I had ever been, was the “wild energy” (or, wild “Qi”, as known from a Traditional Chinese Medical perspective,) the necessary life-blood of all living things on the planet. Some cultures honor “wildness” in nature, deeming it a necessary, valuable, health-sustaining energy. As Gary Paul Nabhan in his book, ‘Cultures of Habitat’ describes, “Some people remain who associate wildness with wellness. Piman-speaking peoples of the American Southwest use terms *doajig* for “health” and *doajk* for “wildness”. Both words

are derived from *doa*, to be “alive” or “to be cured” as are *doakam* for “living creatures” and *doajkam* for “wild and untamed beings.”

***We are evolved from the same “stuff” as every other life form on the planet.***

As humans, and as hunters and gatherers, we have not developed separately from this wildness, nor are we descended from some spaceship to populate the Earth (perhaps as agrarian man’s ego may wish.) We are evolved from the same stuff as every other life form on the planet. Earth is 6 billion years old; the most ancient life form, bacteria, evolved 3.5 billion years ago. These life forms evolved into plant life 700 million years ago, but then, humans evolved in a mere blinking of the eye in Earth’s time, 6 million years ago.

“Bacteria may be Earth’s tiniest life forms, but they took giant steps in evolution. Bacteria even invented multicellularity...Some lineages of bacteria went on to evolve into many different kinds of beings including ourselves.”

**---Lynn Margulis and Dorian Sagan, “What is Life?”**

It is only in the last 8,000 years that we have slowly abandoned our hunter-gatherer ways in favor of the agrarian, farming, and land-dominating ways. The Industrial Age further distanced man from nature. The connection of our soul essence to the “wild qi,” the underlying intelligence of Nature, has been lost. We must know somewhere in our deep memory, locked in our DNA, that we share the same elements, the same organic, chemical and bio-electromagnetic building blocks shared by all living things on our planet, but how can we restore the connection?



“The only pre-requisite for belief in a higher power is knowing...  
we are not it.”

**--Frank DuMar**

In the last two generations, this scientific focus of mankind has somehow disconnected humans from nature and its sacred intelligence, a higher power, and the roots of our species. Deep interaction and exchange with the non-human world has almost ceased, and with it, the loss of appreciation and connection to who we are and where we come from. Our distance from herbal medicine is just another broken link in the broken chain of connection with nature and her laws. Our loss of affinity and empathy to other living beings on our planet has a price, and that price may cost us our “home”. As man continues to be divorced from nature and live a self-centered, life-as-a-machine, materialistically focused existence, the health of man and the planet is greatly compromised. Many problems I believe flow from this. Even though today it is estimated that 80% of the rural world’s healthcare depends on herbal medicine, it has been violently attacked and repressed over the last 70 years. Only now in the United States, Japan and other industrialized nations is herbal medicine regaining its renewed respect as a system of healing with the understanding that herbs are designed by nature from which our chemistry and DNA are descended. Even still, in most countries that are using herbal medicine, there is no insurance coverage or national licensing regulations for herbalists. Herbal medicine only recently bubbled up in popularity as the public of the industrialized nations has clamored for gentler alternatives to powerful pharmaceuticals and their powerful side effects.

The regulatory niche where herbs do thrive is in the “wellness industry,” based upon concepts of prevention and wellness rather than the “disease system” of modern medical treatment. What may be driving this massive resurgence of general public interest is the recognition of the powerful negative side effects produced by pharmaceuticals. A recent study estimated that in the U.S. there

are 79,000 to 139,000 deaths every year are due to *appropriately* prescribed pharmaceuticals, and a staggering 2.1 million serious injuries reported. This same scenario is being played out in Japan, Europe and all industrialized nations. We tend to underestimate the health cost and over-estimate the health-giving benefit of these powerful chemicals. We forget that they stand on the shoulders of herbal medicine. In industrialized countries almost half of all the best-selling pharmaceuticals in the early 1990's were based on natural products or their derivatives. A recent study of the 150 major pharmaceuticals showed that 100% of the drugs employed for dermatological, gynecological, or hematological purposes, 76% of those used for allergy, pulmonary, and respiratory purposes, 76% used to treat infectious diseases, and 75% employed for general medicine and analgesic purposes, are derived from or based on natural products. About three quarters of these were discovered and came to us from herbal folk medicine, developed by the shamans, the witches, the priestesses, herbalists and folk healers over the ages, across the cultures as gifts to modern medicine.

It is estimated that 137 species of plants, animals and insects are lost every day. With this enormous loss, there is the compounded loss of the medicine man, dying without having passed on his healing arts to an apprentice or the tribe. With the loss of species and the loss of the irreplaceable knowledge of medicinal plants, we lose future cures for our children and their children, and the suffering is compounded down over the generations.

### **The intricate beauty of plants of the Amazon Rainforest**

“Consider the extraordinary pollination mechanism of the giant lily, *Victoria amazonica*. This famous plant, with its enormous leaves capable of supporting the weight of a small child, grows in side channels and standing bodies of water throughout much of the Amazonian floodplain. The simultaneous opening at dusk of its massive white blossoms is one of the most inspiring scenes in the Amazon. The

exterior of the flower has four large sepals covered by sharp spines. Within are numerous petals, arranged in a spiral decreasing in size toward the center. Inside the petals is a whorl of thicker structure called staminodes. Next are the 300 stamens that carry the pollen. Inside the stamens is yet another whorl of floral parts that together with the other structures form amounts to a tunnel leading to a large cavity at the base of which is the carpel, the female part of the flower. Lining the carpel is a ring of appendages that are full of starch and sugar.

When the flower buds are ready to open, they rise above the surface of the water and precisely at sunset, triggered by the falling light, open with a speed that can be readily observed. The brilliant white petals stand erect, and the flower's fragrance, which has been growing in strength since the early afternoon, reaches its peak of intensity. At the same time, the metabolic processes that generate the odor raise the temperature of the central cavity of the blossom by exactly 11 degrees Celsius above whatever the outside temperature happens to be. The combination of color, scent, and heat attracts a swarm of beetles, which converge on the center of the flower.

As night falls and temperatures cool, the flower begins to close, trapping the beetles with a single night's supply of food in the starchy appendages of the carpel. By two in the morning the flower temperatures has dropped, and the petals begin to turn pink. By dawn the flowers are completely closed, and they remain so for most of the day. In early afternoon the outer sepals and petals alone open. By now a deep shade of reddish purple, they warn other beetles to stay away. Last night's beetles, meanwhile, remain trapped in the inner cavity of the blossom. Then, just before dusk, the male anthers of the flower release pollen, and the beetles, sticky with the juice of the flower and once again hungry, are finally allowed to go. In their haste to find yet another opening bloom with its generous offering of food, the beetles

dash by the anthers and became covered with pollen, which they then carry to the stigma of another flower, thus pollinating the ovaries. This sophisticated pollination mechanism is, in its complexity, not unusual for the plants of the Amazon. Indeed, a botanist would be hard pressed to invent a strategy of pollination or seed dispersal that doesn't already exist in nature."

-- Wade Davis, 'Shadows of the Sun'.

## **The Shaman**

"Contrary to popular belief, the medicine man, or Shaman (usually an accomplished botanist), represents the most ancient profession in the evolution of human culture."

--Dr. Richard Schultes

After the trek and boat ride back to the Napo Lodge, we were tired, hungry and ready to shower off all the mud that had gotten everywhere. We cleaned up, quenched our thirst and hunger, and were sitting in the afterglow of a well-earned meal, relaxing into the dusk of the rainforest. Kerosene lights were being lit all around the lodge, and laughing frogs and toucans were serenading us from the jungle. I mustered the courage to speak with Antonio, the Shaman, who worked at the Lodge and maintained the herb garden there. I had noticed the somber respect the other workers and guides had for him and wondered how he had earned it. Was it a fear of someone who wielded a hidden knowledge of the forest arts, or mere superstition? I wasn't sure, and I wanted to find out. I sat with him to ask him a few questions about the rainforest with our guide translating, as the foreboding darkness of the rainforest descended upon us. I asked about his use of "Ayahuaska." I had read many stories of its use, chronicled in books by Professor Schultes of Harvard and his students, Mark Plotkin and Wade Davis, and here in front of me was a living expert. Ayahuaska

is called the “vine of the soul,” and is considered a sacred, medicinal power plant; it grows in the Amazonian rainforest and is a natural psychotropic and hallucinogen. Shamans prepare and cook it with various modifications, often cooking the vine together with many other medicinal plants over many hours in water to make a brownish paste. Then the paste is ingested as part of a night long ritual with the Shaman as master of ceremonies. A strange communion with “wild qi” begins. In some tribes the meaning of Ayahuaska refers to the freeing of the spirit. Such plants are considered “plants of the Gods” for their telepathic powers acquired by experienced Shamans that are said to be able to command supernatural forces residing in their rainforest.

A ceremony with an experienced Shaman is considered to cleanse and purify the mental, emotional and spiritual body, to reach deep inside a person’s soul to remove layers of impurities. Some report that it opens one up to the possibility of accessing psychic powers, journeying into the past, present and future, and reconnecting the soul essence to the energy of rainforest “wild qi.” Others report an experience of descending into the primordial underbelly of forest life. Others report hours of vomiting resulting in months of feeling unsettled in one’s emotional and spiritual life. I once had a patient whose already frail mental health was seriously upset by a dangerous prank. She suspected that someone spiked her food with Ayahuaska. That, combined with living in retreat for a week, not understanding what was happening, and without guidance or context for her experience, led her to a psychotic break requiring her parents to fly in from the U.S. to bring her home. In her consultation with me afterwards, she described an amazing account of her better moments of the experience, such as a feeling of soul-closeness with the presence of her dear Grandfather, who had recently died. This woman felt changed forever by this revelation, and recognized that her real struggle was to integrate this new psychic experience of herself. Perhaps, she considered, her mental and emotional problems stemmed from the clash of her old conditioned way of seeing the world with the new. To aid this integration, I suggested herbs that would ground her, helping her

integrate and re-adapt. She responded by venturing into a totally new line of study and settling into her new life.

In answer to my questions, Antonio, the Shaman, soberly described his use of the vine of the gods. This fit Shaman who, to me looked “forty-something,” was actually in his mid-sixties and still could climb a tree in seconds! He explained how he would prepare and take the Ayahuaska, then sit quietly and intuitively to capture the “song” of the sick person’s illness. Venturing into the rainforest, he would sing the song of the illness, and sit, quietly once again to wait for the rainforest to answer the song. Sooner or later - it could take a day or so - the answer would come, from a tree, a shrub or an herb. Assuredly, an answer to his song would come, sung back to him from the wild “qi.” It astonished me to try and imagine the noises this shaman must be able to hear – his ability to tune into the vibrational frequencies, typically unheard by humans in the forest, and the diversity of bio-electromagnetic fields and the undulating biomass he heard singing back to him. What this realization meant to me was that, if capturing the song of the illness meant capturing the *vibration* of illness, then the rainforest’s solution was to attune oneself to the vibration of the plants to restore balance and harmony to the body, mind and spirit. My next thought was that it did not matter what ‘pseudo-new-physics-spin’ I put on what the Shamans do - what was most fascinating was the realization that their experience often worked. Within the anthropological and ethnobotanical literature were documented cases of patients who had been given up for dead by their doctors, who, after going into the rainforest to be healed by Shamans, often emerged cured.

“Harry you must be very careful with the dark arts, there is a price you must pay for darkening the soul.” Harry Potter

The next question I asked Antonio the Shaman gave our friendly guide, who was translating, such trepidation that he had to be prompted a few times to actually ask the question. The anxious look on his face suggested that he didn’t know if I would want to hear this answer. He and I were starting to

get a little spooked as lightning flashed and thunder cracked far off, high over the rainforest; I repeated the question to our guide again, prodding him to translate the question to Antonio the Shaman... “What was the most frightening experience you ever had in your life in the forest?” He paused before he answered, his eyes looked up and left, into his memory, and his eyes glazed and a darkness fell across his face at its response. The thunder and lightning, ever present it seems in rainforests, encroached closer, yet not quite overhead, as Antonio the Shaman began to speak. He began by sharing his life as a young man in the Rainforest close to where we are today yet before the arrival of ecotourism and foreigners traipsing around in the jungle and with fewer ‘Ribernos,’ ‘river people,’ had settled the banks of the river. He described how he began using Ayahuaska, the “vine of the soul”, this sacred medicinal power plant or, rather, mis-using, it for selfish fulfillment and not for the good of others. He used it to satiate his own perceived needs. Whether they were the settling of grudges or the procurement of women, he would command the dark spirits to do his bidding. At the time he was living with his wife and two daughters in the rainforest. “Then one night it happened.” he paused.... almost regretfully remembering. “It was night and their hut was open on all four sides to the forest (just like the traditional built Tambo Lodge we had stayed in a few nights ago.) It is dark in the forest by day, yet at night it is completely pitch dark. “My daughter arose late at night,” Antonio the Shaman almost whispered “and dashed out into the forest and was running. I quickly came to my senses and I followed with great difficulty (a chill went up my spine). She was running, you know you can’t see to run in the forest at night, she was scratched and bloodied by bushes and branches. I used everything I could to catch her, and as I came alongside her, I was shocked to find that her eyes were closed. I finally caught her and I brought her back to my home and my wife. We were all very upset; she could have died in the forest at night had I not awoken.” There was another long pause as Antonio the Shaman looked off into the jungle night. A shadow of horror fell over the face of our guide. “I knew when I saw her eyes were shut it must have

been the dark spirits who had taken her, and I knew what I must do. I must take Ayahuaska and contact them to ask them why.” I looked to our guide to prompt for a translation and saw the horror on his face was complete, and I felt the goose bumps of fear myself. “I took the Ayahuaska and I contacted them; I was told they [the dark spirits] would take my daughter as payment for the work they had done. My wife tells me I ran off. I must have lost my mind, I was gone for months, I would come-to and find myself in a village, far from where I lived my clothes would be in tatters and then I would lose-it again. My wife eventually found me by using all of our money to pay a “dark” Shaman to find me, using the Ayahuaska. Thankfully, I was where he said I would be, my wife found me and nursed me back to health. It took a long time. Some months after, I had a dream. In the dream Jesus Christo appeared to me and he told me if I continued to use the dark spirits, they would have me when I died. Yet, if I would never use them again and only use the plants for the good of others, Jesus Christo would find me and I would go with him.”

The tension at the table passed, released in ripples that washed against the forest, we all breathed-in as the thunder rolled, passing away over the forest, and it began to rain. Antonio the Shaman continued, “That morning I went to get a Bible to study. It took me 5 days to get to the Mission and I stayed for a few weeks. I returned with a Bible and I have never used the dark spirits since! I will only use the plants for the good of others.”

I was honored that Antonio the Shaman had so sincerely shared this life-changing story. Later, I asked him what I could send him as a gift. He said if I used the story he would like some shoes. Before I left he handed me a piece of a page cut out from an “Eddie Bauer” catalog with a pair of shoes, “Explorer shoes”, encircled. I wondered if he was on their mailing list, and again thought of juxtaposition. So now I can picture this Shaman walking around the Peruvian Amazon rainforest wearing a pair of “Eddie Bauer” Explorer shoes. What a picture that would make for their next catalogue!!!



## **Chapter Two: The Highlands of the Andes**



Geoff in the mountains close to Machu Pichu, Peruvian Highlands.

The wealth of medicinal plants in South America springs not only from the Amazon basin, but extends far into the highlands of the Andes. The highlands ecosystem had produced important and fascinating traditional medicines, medicines that I am convinced continue to be crucial to the health of mankind. This was the impetus that brought me and my friend high into the Andes to explore the sacred sites, to observe the terrain and to immerse ourselves into this unique environment: I had to experience this ecological treasure firsthand.

We flew directly from the polluted hot, humid sea breezes of Lima, the capital of Peru, to the highland town of Cusco. After banking and twisting at impossible angles, our airplane contorted itself into landing in a mountain basin. We were met with the shock of a completely new culture and the unexpected challenge of the high altitude. Almost immediately, I experienced symptoms of altitude sickness, including increased heart rate, light-headedness, fatigue, and nausea, and thankfully received the offering from our hotel of a tea made from coca leaves.

The coca plant has a sinister reputation in the U.S. Its concentrated extract, cocaine, has proven to be a highly addictive substance that has fueled a dangerous drug trade and has been the ruin so many lives. Yet, in its organic form as a decoction from warm water, it was a welcome cup of tonic tea that helped to ease the aggravating symptoms of mountain sickness. In decreased atmospheric pressure high in the mountains, the body struggles for oxygen. This can become life threatening at much greater altitudes, but for those of us traveling to Cusco, unaccustomed and unprepared, it was more of an annoyance than a hazard. (I tried taking an over-the-counter supplement which proved unsuccessful, while my friend tried using a Chinese Ginseng paste, which helped a little. These days, after much research and testing, I now prefer a formula of Ginkgo, Reishi Mushroom and Siberian Ginseng.)

The contrast from the warm, expansive smiles of the “lowlanders,” the contracted coolness of the highland people was the first contrast that was apparent to me. The Aymara and Quechuan speaking peoples of the Andean Highlands are the largest indigenous group in the Americas. They are herders and farmers and live at altitudes of 8,000 - 14,000 feet above sea level (2,700-4,300m.). The most skillful herbalists in the highlands are considered to be the Kallawayaya peoples who live in the high plateaus of mid-western Bolivia. The Kallawayaya herbalists are known as the “Lords of the Medicine Bags,” for the woven saddlebags in which they carry their herbs. These interesting highland people are renowned throughout South America, with 25% of their population considered skilled herbalists, many of whom become tribe leaders. Kallawayaya medicinal knowledge is transmitted from father to son, or by male apprenticeship to an expert herbalist, and their training may last up to eight years. The Kallawayaya collect their own herbs among vast, diverse climatic conditions that range from alpine mountains to cloudy rainforests; their knowledge extends to over 800 plants, with some 300 used medicinally. They have adopted and grow only eighteen medicinal herbs from European traditions. At the turn of the century, their reputation was so great that people traveled from

as far as Europe to be treated of supposedly incurable diseases by the Kallawaya.

I was completely charmed by Cusco. Cusco is the oldest continuously inhabited city of the Americas, with an amazing array of Inca and Spanish architectural styles found in temples, palaces, and plazas built with precisely fitted granite blocks. The town square is filled with old colonial Spanish houses, complete with ornately carved, antique wooden doors and wrought iron porches offering views of a town square, that appears isolated in time. It is easy to imagine the Spanish colonists sipping their after-dinner wines looking down on us from the past. In conversation with the town's colonial past, Andean history comes vividly alive here as well. Classic Spanish colonial churches sit atop bases of massive smooth stone work laid centuries before the Conquistadors. Quechuan-speaking descendants of the Incas fill the streets and markets with their brightly colored clothes and hand-made crafts, their Incan facial features making them quite distinct from the lowlanders. The "campesinos" (the highland rural farmers) dress very colorfully and move busily back and forth across the plazas. Cusco's largest open market and the adjacent Witches Market are quite a sight to behold.

The Pizarros arrived in Cusco in 1532. This first wave of Spaniards was not the most enlightened group of explorers. They were mostly illiterate, uneducated, brutal adventurers driven by greed, who had little interest in anything besides wealth and power. I have long wondered how a ragtag band of adventurers of some 180 Spaniards could bring a well-ordered Incan civilization to its knees. At that time, it is estimated that the Incan empire consisted of 12 to 16 million people. Timing and courage was on the side of the Spanish. It is estimated today that more than half of the Incan population was wiped out by disease carried by the Spanish, including smallpox. This was compounded by the fact that, at the time of their arrival, the Incans were involved in a bloody civil war that divided the people. When the Spanish arrived in Cusco, they were welcomed without resistance, the people believing that they were avengers, sent by the Gods, because they had murdered its civil war enemy en route. Moreover,

they were treated as gods because they were so different in appearance with their white skin and bearded faces, they used powerful “fire weapons,” and rode powerful four-legged animals (horses). The Incas believed that horse and Spaniard were a single creature able to split into two. They also believed that they were divine beings because old mythology stated that the Incan gods arrived by ship, and this was how the Spanish arrived. They were thus accepted and even welcomed in the city of Cusco.

The battles were over before they had even begun. Just four years after the arrival of the Spanish, in 1536, there was a major, countrywide rebellion. The Incan leader, Manco, after a failed siege of Cusco, abandoned his headquarters at Ollantaytambo and took the remnants of his Court, army and followers, and retreated back into the remoteness of Machu Picchu region. This was to be the trail we would follow the next day. Leaving Cusco, visiting the amazing stone ruins of Ollantaytambo, where you could almost imagine Manco’s panicked retreat, then onward following in his footsteps nearly 500 years later, onward to Machu Picchu.

The sacred city of **Machu Picchu** is nested like a condor’s perch on the steep eastern slopes of the Vilcanota mountain range, a chain of mountains stopped by the Apurimac and Urubamba Rivers. Fifty miles (80 km) Northwest of Cusco, Machu Picchu stands at an altitude of 2,350 meters above sea level with a wholly different climate of cloudy rainforest from where we’ve been.

After a most spectacular train and bus ride, we arrived at the base of Machu Picchu looking up at its peak in disbelief. A mudslide had completely wiped out the road to the peak. If we wanted to go up, we had to walk through the cloud forest. We slung our backpacks over our shoulders and began the arduous hike guided through the forest by a mountain goat of a nine-year old guide. The climate is subtropical with dense rainforest. The temperature is mild, warm and damp. The rainy season runs from November through March, while the months of April through October bring drier, hotter temperatures. Some of the typical plant life we saw along our hike included *platanos*, *qintas*, *alisos*, *puya* palm

trees, ferns and orchids (of which there are more than 90 species.) There is dense undergrowth, enough to swallow-up and hide the last remnants of the Incan empire hiding away from Spanish brutalities in the lush Andean jungle.

My friend and I arose before dawn and completed another slippery and arduous, steep hike to the Huayna Picchu, where we were hoping to watch the sunrise over the ancient sacred city of Machu Picchu. Unfortunately it was too cloudy to see the sun, but the slippery hike through the lush cloud forest to the Temple of the Moon offered it's own reward .

The Incas were able to control their remarkable state system through a pyramidal hierarchy. While they did not possess a written language, the Inca maintained a class, or guild, of verbal historians. According to the accounts of the time, Pizarro's own men considered the Incan medicine men far more skilled in the use of medicinal plants than their own Spanish doctors. This shows us the medicine the Incas had available to them was far more evolved than that of the Europeans.

**On the walks around Machu Picchu we saw so many beautiful and different colored orchids growing everywhere in this lush rainforest area, along with huge bromeliads that were in bloom. The fauna of this area of Peru includes the spectacled bear, cock-of-the-rocks, or tunqui, wildcats, and an amazing abundance of butterflies and insects that are unique to the region. The natural surroundings and the hidden location of Machu Picchu give this sacred sanctuary great beauty, harmony, and balance unlike any other area in the world.**

The ruins of Machu Picchu, rediscovered in 1911 by Yale archaeologist Hiram Bingham, are one of the most beautiful and enigmatic ancient sites in the world. While the Inca people utilized the mountaintop (9060 feet in elevation), erecting massive stone structures from the early 1400's, legends and myths indicate that Machu Picchu (meaning 'Old Peak' in the Quechuan language) was revered as a sacred place from a pre-Incan earlier time. The site is a small (5 square miles) but striking, mystical city. Invisible and

completely self-contained, surrounded by agricultural terraces sufficient to feed the population, and watered by natural springs, Machu Picchu seems to have been utilized by the Inca as a sacred ceremonial city. Perched two thousand feet above the roaring Urubamba River, the cloud-misted ruins have palaces, baths, temples, storage rooms and some 150 houses, all remarkably preserved. It was inconceivable that this civilization had constructed these massive stone structures from building blocks weighing fifty tons with such exactitude that the mortar-less joints that will not permit the insertion of even a thin knife blade. Carved from the granite of the mountaintop they are true architectural and aesthetic wonders. Little is known of the social or religious use of the site, yet the skeletal remains of ten females to one male suggests that it may have been a sanctuary for the training of priestesses and /or brides for the Inca nobility.

One of Machu Picchu's primary functions was as a precise indicator of the date of the winter solstice, as well as other ritualized celestial periods. Every midwinter, the Incas held a ceremony at this stone, in which they "tied the sun" to halt its northward movement in the sky. Shamanic legends say that when sensitive persons touch their foreheads to the Intihuatana stone, the Intihuatana opens one's vision to the spirit world. Intihuatana stones were the supremely sacred objects of the Inca people. The Spaniards never found Machu Picchu, even though they suspected its existence; thus the Intihuatana stone and its resident spirits remain with their original power.

The ancient pre-Incan cultures developed in the Andean highlands quite solidified supernatural beliefs. Closely attached to these beliefs was the extensive use of "magical herbs" used in the course of their rituals and was a common practice among the *curanderos* (healers), *brujos* (sorcerers) and shamans. Due to their consciousness-expansion properties, hallucinogenic plants including certain cacti and the *Ayahuasca* are common choices for soul-cleansing and evil-spirit expulsion rituals, as well as for vision quests. The sheer volume of medicinal plants available to the Incas amazed the Spanish.

The Incan civilization also gave the world the potato. They cultivated

many different varieties, seemingly aware of the importance and necessity of developing different plants. This would be a lesson lost on the agricultural practices of Ireland in the late 18<sup>th</sup> century, where a potato blight caused the failure of the entire potato crop leading to a massive famine, death and a huge wave of Irish emigration around the world. The lesson of species diversity is also lost on the giant American agribusiness conglomerates of today, as their business plans depend on only a few patented “genetically modified” species. Another Peruvian highland root vegetable is making recent headlines:

### **Maca, a.k.a. Peruvian Ginseng (*Lepidium meyenii*)**

This hardy medicinal plant grows at high altitude among the glacial mountains of the Peruvian Andes, 11,000 to 14,500 feet above sea level. The root is so nourishing that it is said that when the Spanish chased the Incas high into the Andes where they had no feed for their fatigued altitude-sick horses, they fed them Maca root, which energized and fortified them enough to continue the chase. Peruvian Maca root is a vegetable root or tuber, distantly related to the Mexican Wild Yam. Maca was used by the native Peruvians before the time of the Incas as a sexual tonic and for its nutritional properties.

Maca root grows wild in the Peruvian Andes below the glacial icecap. It is able to survive extreme weather changes, such as freezing, high winds, and intensive sunlight. There are not many plant foods that will grow at this high altitude and survive with such nutritional value. Native shepherds learned early on that as they grazed their herds in higher elevations, where Maca grows naturally, the herds became healthier, with more stamina and demonstrating more sexual stamina. The Andean herd people included Maca root in their diets and found Maca root could help promote increased energy and stamina for themselves.

The rich soil located at these high plateaus of Peru, where it is very cold and oxygen deprived, may account for the high levels of trace minerals found in Maca root. As a crop it was domesticated 2,000 years ago. As the Indians

had noted increased fertility in themselves and their livestock, so did the early researchers. Recent animal studies noted increased fertility in rats with its use. Although referred to as “Peruvian Ginseng”, it is not related to Asian or American Ginseng. Its rich supply of nutrients contains alkaloids, tannins and saponins, with reputed aphrodisiac properties from isothiocyanates. The use of Maca has grown in recent popularity due to its energizing, aphrodisiac and fertility increasing properties. In Peruvian herbal medicine, this pre-Incan herb is used as an immuno-stimulant, an aphrodisiac in both men and women, and it also balances menstruation and menopausal disorders. In order to survive and thrive at such heights with little oxygen, this plant has learned to produce compounds much needed by those that eek out a meager living at such head-splitting altitudes.

Based on recent studies I consider using Maca for increased energy, vitality, stamina and endurance in athletes, promoting mental clarity, enhancing nutrition for increased fertility and to increase male seminal fluid volume, sperm count and sperm mobility, for treating male impotence and erectile dysfunction. Women with menstrual irregularities have experienced greater consistency, while women with hot flashes, mood swings and most associated peri-menopausal and menopausal symptoms diminish dramatically. It may be due to the number of steroidal glycosides present in Maca root. It seems to be gaining popularity among the weight lifting and body building community as a natural alternative to anabolic steroids. We will be hearing much more about this nutritious medicinal food, in the near future.

### **Cinchona Bark, a.k.a. Peruvian bark (Cinchona spp.)**

“There’s no place on Earth that’s off the malaria map: Artic circle, freezing mountaintop, burning desert, you name it, malaria has been there. We are not talking millions of cases here; more like hundreds of millions.”

**--Amitav Ghosh, The Calcutta Chromosome**



Cinchona bark was discovered over three and a half centuries ago, and has an amazing history filled with international intrigue and medical miracles. Legend has it that, in 1638, the beautiful wife of the Spanish Governor, the Countess Dona Francisca Henriquez de Ribera was miraculously cured of a particularly virulent strain of malaria with an herb commonly used for such fevers, that was suggested by a Jesuit missionary who had studied with local Peruvian herbalists. Other myths about the discovery of Cinchona bark state that the Indians noted the bark's qualities after observing pumas who suffered their own intermittent fevers drinking from a lake that had been infused by the trunks fallen Cinchona trees. In the 16th century, the discovery of a "cure" for malaria was considered sensational. The effects of this miraculous cure and herb rippled throughout Europe, where from England to Rome to Spain, great malaria epidemics of 1638 and 1658, had swept mercilessly throughout. Even today, this deadly parasitic infection, spread via mosquitoes, kills 3 million people every year. Some parasitologists agree that, astonishingly, malaria (*mal* "bad" + *aria* "air" in Italian, as it was thought to be caused by the bad air around swampy environments) may have caused the death of one out of two human beings who ever lived!

Cinchona bark, the inner bark of a tree/shrub, grows as far north as Merida, Venezuela and as far south as Santa Cruz, Bolivia. It prefers hot, moist climates and thrives on rich organic soils and well-drained slopes such as the sheer sides of volcanoes throughout the 1,800-mile region of the Andean mountain range, between 4,000 and 10,000 feet above sea level, passing through the Peruvian highlands. The most effective bark and root come from the species of red Cinchona, *cascarilla roja*. Its active ingredient has been identified as *Quinine*. Before it was replaced by the synthetic drug *Chloroquine* after World War I, any endeavors in the tropics, whether motivated by war or business, could not be embarked upon without first securing an ample supply of Cinchona bark. In nearly every engagement by the U.S. Army and Navy, more casualties were caused by disease than from enemy fire. The English, in India, would place the

herb preventively in water to protect their soldiers and colonists. This was the origin of tonic water with quinine, from whence came the popular drink “gin and tonic” during the British Raj. The French placed it in the drink Dubonnet for their Indo-China colonists (a very civilized way to take anti-malaria protection). The colonization of the tropics could not have been completed without this herb. *Quinine* is a powerful antipyretic (anti-fever) medicine that lowers the body’s temperature and blocks the malaria parasite’s ability to invade the red blood cells.

The parasites, just like bacteria, are also constantly evolving, countering our moves against them. First with the French and then with the Americans in Vietnam, it was noticed that the first drug-resistant strains were starting to be appear. Chloroquine’s effectiveness was on the wane almost soon as it was developed and the reason was due to the evolution of the parasite itself. The state of the medical art for malaria returned to combinations of several chemicals or alkaloids at once; in other words, a combination not unlike cheap Cinchona bark! It seems the only long-lasting hope for malaria will be the development of a vaccine.

“We have let our profligate use of antibiotics reshape the evolution of the microbial world and wrest any hope of safe management from us. Resistance to antibiotics has spread to so many different, and such unanticipated types of bacteria, that the only fair appraisal is that we have succeeded in upsetting the balance of nature.”

— **Marc Lappe, When Antibiotics fail**

The scientists during the 1950’s thought we were within reach of a world free from malaria. A world free from bacterial infections also seemed to be in sight. Sadly, we now know the vision of a “silver bullet” -- or a drug for all bacterial diseases -- is tarnished. We are now, at the turn of the millennium, struggling to hold on to medical “advances” as they are slipping away.

According to the American Center for Disease Control and Prevention (CDC), over 13,000 patients in the U.S. were killed by drug-resistant bacterial strains in 1992. By 1997, over 100,000 people were estimated to be dying, and 3 million people were admitted to hospitals with difficult-to-treat, antibiotic-resistant bacterial infections, while an additional 2 million people developed infections getting routine medical procedures. Even Alexander Fleming, the inventor of penicillin, noted as early as 1945 the danger of staphylococcus bacteria's resistance to penicillin. In 1945, despite the fact that it only had five years of limited use, up to 14% of all staphylococcus were resistant. By 1950, 50% were resistant, and by 1995 fully 95% were resistant. In 1943, streptomycin became the first cure for Tuberculosis (TB), and by 1947 streptomycin-resistant TB strains were reported. These bacteria are quick. Bacteria evolve at fantastic speed; one bacterium can produce almost 17 million in a 24-hour period! This allows them to pass along the drug-resistant gene not only to their own species but, more significantly, to other unrelated microbes. Exacerbating the resistance problem is the prevalence of the overuse of antibiotics. In the U.S., it is legal for 80 different antibiotics to be added directly to animal grains to fight infection and make livestock to grow more quickly in factory farms. These enter the precious food supply, via meat and milk and cheeses, yogurt and eggs.

On the positive side, we must remember that our immune systems are remarkably efficient if we keep ourselves and our own bodies fully healthy and fully supplemented. When we eschew unbalanced pharmaceuticals in favor of the proactive protection of herbs and vitamins, when we use Mother Nature's medicine with all of her complex chemistries, there are *never* acquired resistances due to their use.

Even peers of Louis Pasteur's germ theory, researchers such as Max von Pettinkofer and Elie Metchnikoff, insisted that bacteria do not cause disease, but rather it is an interruption in the normally health ecology of the body that permits infection by pathogenic bacteria. Basically, human beings live in and have evolved from a sea of bacteria, and we as a species have adapted to

deal effectively with them when our systems are in balance and in full health. As Marc Lappe says, “It is the *body* which ultimately controls infection not chemicals. Without underlying immunity, drugs are meaningless.”

### **Plants generate chemicals as medicines to protect themselves**

Plants have evolved from the same “sea of bacteria” – they, too, have been generating chemicals to protect themselves. Anti-fungal, antibiotic and pre-infection anti-microbial compounds protect the plant from invading pathogenic organisms. For example, they can produce anti-fungal compounds to protect their roots; chicory roots produce anti-fungal compounds that are so strong, that if they are kept moist for long periods on a plate they will not mold. It is a matter of survival for this plant, in damp, wet soil, to protect itself and its roots against mold. Plants need to generate these natural, yet complex chemistries to survive. They can generate antibiotic, anti-microbial, mucilaginous, gum, resin, anti-inflammatory, and analgesic compounds. Plants can generate, combine and move any of these compounds where they are needed, and yet, because many of them are extremely reactive to the air, they are often stored inside cells, deep within the plant. Anti-inflammatory compounds such as *quercetin* are made by plants for release into damaged areas to control cellular inflammation. *Salicylic acid*, the precursor of aspirin, was isolated from willow bark and meadowsweet. Both plants were used as anti-inflammatory agents in herbal medicine. Salicylic acid can stimulate or inhibit growth depending on the dosage used, and it is also analgesic. Plant compounds that inhibit cell division maybe used as anti-cancer compounds. Within the plant they may inhibit cell division in other seedlings attempting to germinate too close to the plant. Plants also generate hundreds of compounds to protect themselves from animals and insects. They may produce glycosides that can be toxic only when digested by the animal, thus deterring a certain animal from that plant. Tannins in leaves have mild anti-bacterial compounds and act as a barrier against penetration and colonization by plant pathogens. They dry out leakage of fluids from any break in the plant’s cells,

causing contraction of the tissues. They also can bind with these pathogens on the surface causing a hardening or tanning of the cells, creating a protective layer, shutting down entry of the pathogen to the plant.

**Bacteria do not develop resistance to whole plant medicines. Plant medicines, unlike pharmaceuticals, contain thousands of complex compounds that work synergistically; they are so complex that it is very difficult for pathogenic agents to develop resistance.**

Numerous plant medicines have shown activity against all the bacteria that have developed resistance to human pharmaceuticals. They also show very few side effects. The African herb, *Cryptolepsia*, and Chinese herb, *Qing Huo* (*Artemisia annua*,) are more effective against non-resistant malaria strains than pharmaceuticals, and produce none of the side effects seen from *Chloroquine*. Artemisinin in the Chinese herb *Qing Huo* especially, has shown in clinical trials, to be very effective against the most deadly strains of Malaria and will soon be the treatment of choice.

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## **Chapter Three: Chile**

**In March, 2002 I set off with my family and friends on an herbal adventure to Chile. We left in our Spring, as the weather was beginning to warm our New England bones, and found ourselves twelve hours later in Santiago, Chile, at the beginning of their Autumn. We would travel 800 miles South from the capital, Santiago, through desert-like terrain, into the mountains of the Andes, south to the lush green areas surrounding Puerto Montt and on to the remote Isle of Chiloe. We encountered a wide variety of climates in a short period of time, all of them stunningly beautiful.**

As I was packing and preparing for our trip to Chile, I was thinking how wonderful it was that I was able to take my family along. Accompanying me on this “herbal adventure” were my wife, Po, and our two daughters: Cailin, who is eleven years old and Alyssa, who is nine. The timing was just right this time for all of us to make this adventure together.

This trip was inspired by conversations with our Chilean friend, Ivan Mimica, who many times had enthralled us with stories of his magical homeland, its stunning beauty, pristine natural resources and diverse micro-climates. We would be traveling with our close friends, Artemis and Peg Joukowsky and their three girls, Lydia, Alexandra and Natasha, and guided by Ivan’s friend, the wonderful Beatrice. Thus, we were a small group often, sometimes joined by others who came along for the ride.

We would travel by van and pick-up truck a total of about 800 miles, south from Santiago with its dry, desert-like climate to Puerto Montt and the magical Isle of Chiloe.

Chile is located along the Pacific coast of South America. It is a narrow country that is bordered by Peru to the North, and by Bolivia and Argentina to the East. It is a country protected by natural boundaries: in the North lies a huge

desert (with no recorded rainfall); in the East, the massive Andes mountain range provides only a handful of mountain passes allowing access to neighboring Argentina; the Pacific Ocean to the West, and in the South, the Antarctic. It is never more than 110 miles wide and has an enormous 2,700 mile-long Pacific coastline. The Andes descend from 7,000 feet above sea level down to the Pacific coast through every kind of climatic zone imaginable—deserts, fertile valleys, rainforest, and glaciers. The plant life in this country is just about as diverse as it gets. In this unusually shaped country there are 14.7 million people as well, of which 6 million are crammed in the capital city of Santiago; eighty percent of the population is urban, meaning that the wilderness is truly unpopulated. Chile is a “mestizo” country of mixed European and indigenous extraction. Enjoying poetry as a national pastime, the Chilean people have a strong inclination towards the arts, with many poets, actors and writers. Chile’s literacy rate is one of Latin America’s highest, nearly 90%. Interestingly, the indigenous herbal traditions are still very active in several parts of the country.

### **Our journey.**

After a few days exploring Santiago, with its California-like climate, we traveled south through the farmland and vineyards of Puerto Varas then steeply upwards into the Andes, to a thermal springs / ski resort awaiting the snows of winter. “Chillan de Thermales” offered herbal treatments, internally but also externally, through the wonderful minerals of the volcanic spring water and mud. People all over the world use the healing mineral waters of thermal springs, to purify their skin and soak the goodness of the water through their pores for healing. We hiked high up into the mountains along stony paths bounded by sheer drops. A plume of steam far up the mountain guided our ascent; it rose from where the thermal water bubbled to the surface, heated far below by volcanic heat. When we reached the hot springs, we stood and bathed ourselves in the sulphurous steam. Hiking up further, we reached a primitive mud bath. Content after a long hike to just hang-out in the bubbling, smooth



warmth with the soft mud. To finish, we washed off in the shocking cold numbness of a nearby glacial stream. Yikes! It was absolutely freezing, and remarkably invigorating, all at the same time.

One of my fondest memories was taking a thermal bath outside our apartment at about 6:00 am with my daughter Alyssa and seeing swarms of parrots fly into the valley and hang out in trees a few yards from the baths, with hundreds of parrots screeching and bickering in the trees. As long as we were silent, hidden by the steam, the parrots continued diving, flying a few inches over the water looking for insects, swerving at the last minute just in time to miss us in the bath. The look of wonder on Alyssa's face was priceless.



We met many different kinds of healers and herbalists in Chile. One of them was Senor Eliana, who lives and works in the remote mountains of Chillian de Thermales. He collects wild herbs, often picking them in the steam from thermal springs. He and his family camp by the roadside, collect, mix and then sell the herbs, until the snow and cold weather of the Andean Winter in April drives them back down into their home in the valley below. Senor and Senora Eliana would camp out of their van and wait, nearly until the snows to come, wild crafting the herbs and then moving to the plains. They said they were trained by Senora

Eliana's great Aunt who was a well respected herbalist in this area for many years.



I got to sample Senor Eliana's best-selling herbal mixture, taken as an infusion and sucked through a large metal straw. It did much to restore my vigor after a challenging hike. Surprisingly, one of his staple herbs is St. John's Wort (San Juan in Spanish); I had no idea it would grow so high up or so late into the fall. This is now one of the best-selling herbs in the West for depression and has outperformed the drug Prozac for mild to moderate depression.

When we left Chillan de Thermales, and stopped at the invitation of a courageous local woman, Senora Maria Teresa Ossa, who had founded and supported a local alternative HIV clinic in the face of social distain and against the wishes of some of her family. 'The *Futa Ayeyun Clinic*' (which means universal love in the local Mapuche Indian language) was able to provide patients with physical, spiritual, and emotional support through Reiki treatments, aromatherapy, and meditation instruction.

Traveling further South, we stopped off at a deserted glacier lake near Rinihue, high in the Andes. From our camp we were presented with a stupendous view of the majestic snow-capped volcano at the end of the lake. As the lake had only recently begun to be settled, at the encouragement of the government, it was nature at her most pristine. Soon I was networking through the locals to find some herbalists to meet. Eventually, I was able to interview a

local herbalist. I was told that everyone sought out this old lady, both rich and poor. The nearest medical care was a long drive away, and it seemed nearly all the local people preferred to visit with the ‘Old Herbalist’. She lived by herself, supported pretty much by her work in the community, in an old wooden shack with chickens and dogs wandering in and out. I would guess she was about 75 to 80 years old, with one lone tooth protruding out the front of her mouth, and a cracked, craggy old face. I asked a few times to capture her wonderful old wizened face with a photo, but she declined – the local Indian beliefs had rubbed off on her, and she did not want me to steal her spirit. She was from European descent and had helped people with herbs for as long as she could remember. She would pick fresh herbs year round for her customers, advising them to make herbal decoctions. The local people clearly had a lot of respect for her, and she was called as a midwife to nearly every birth for miles around.

### **Boldo (*Peumus boldus* or *Boldoa fragans*)**

Boldo is an evergreen, shrubby tree, growing 6 to 8 meters in height and found in the Andean regions of Chile and Peru. Legend has it that boldo’s medicinal properties were discovered when sheep grazing in a field of boldo no longer had constipation and liver trouble. Its aromatic minty leaves contain an essential oil that is useful for digestive upsets, liver and bile problems, as well as kidney and urinary tract illnesses. Recent excavation of Monte Verde, an area in southern Chile, has unearthed some of the earliest recorded usage of boldo. Excavations unearthed evidence of the medicinal use of 22 varieties of plants by people thought to have lived there more than 12,500 years ago. Among these plants is boldo. Archeologists found it wrapped in seaweed. It is believed that when chewed by individuals who had been severely injured or who required some kind of surgery, this combination of plants may have provided both painkilling and mind-altering properties.

Today, boldo leaves are used to treat gallstones, liver or gallbladder discomfort, and for heartburn or other mild stomach cramps. Its choleric

actions release bile, and its diuretic actions increase fluid excretion, possibly cleansing sediment or bacteria from the biliary tract itself. The constituent boldine stimulates choleric action (Tyler, 1994), which may provide relief to patients with gallstones for whom surgery is not an option or drugs have not been effective. In Chilean herbal medicine, it is customary to use boldo to kill intestinal worms. Chronic digestive problems such as gas and poor digestion also respond well to this bile-stimulating herb, which settles and reduces excess gastric acidity. It is also used to treat cystitis and rheumatism, and to lower fever. Boldo is one of the most popular herbs in South America, and is considered to be an excellent general tonic. It is used extensively in Europe and has noted therapeutic applications, including the treatment of gout and disorders of the liver, bladder, and prostate. Two new clinical studies conducted in 1998 have again validated its uses in gastrointestinal disorders in animals and humans.

### **The Mapuche**

The South of Chile is a magical land filled with uninhabited fiords and lakes, massive snowcapped volcanoes, and the high mountains of the Andes. While staying in the South, I had hoped to meet a true ‘Mapuche’ healer, to talk about the medicinal plants and the wonderful ‘Mapuche’ herbal tradition. This Southern tribe fought off the Spanish in 1600 and kept them out of their lands until the late 1800’s, they have a very strong connection with the land and the healing herbs. Among the Mapuche of Chile and Argentina, most men and women have a knowledge of more than 250 herbs. I was delighted to meet with a very accomplished healer, by the kind introduction of my good friend Ivan.



I met with Dr. Taborga, who is a fourth generation Mapuche Indian healer. He originally trained as a Medical Doctor, then returned to his Mapuche roots, healing with traditional Mapuche herbs, in his busy practice in the capital Santiago. He has also become proficient in acupuncture. He is pictured with me in his lab, where he distills some of his medicines for his patients. He also has a staff which prepares herbs and remedies for his practice and his herb shop. He believes in storing the herbs for many years before using them. His favorite herb is the ‘Canelo’, the sacred herb of the Mapuche Indians of Southern Chile.

**Canelo, Pepper Bark, Winter’s Bark, a.k.a in Brazil as Casca de Anta, (Drymis winteri.)**

This tree is a sacred tree to the Mapuche. It grows 8-10 meters high and produces an abundance of small, white, pretty flowers with yellow centers, and a small round green seedpod with black seeds inside. The leaves have a peppery taste, hence one of its less common names, ‘pepper bark’. The tree was also named after a Dr. Winter, surgeon for Sir Francis Drake’s expedition from England. He was the first one to use it to prevent scurvy attacks, in 1577; hence it became known as ‘Winter’s bark’. However, it would take a very long time for Navies around the world to adopt ‘supplementation’ to avoid scurvy. Nowadays, the cortex and the leaves are used as an important source of Vitamin C (in

levels beyond those of lemons and oranges). Among its chemical components, it is possible to find tannins, vitamin C, essential oils, terpenoids, flavonoids, antibacterial substances, and substances to prevent leukemia. Although in high doses the sap of the Canelo can be toxic for the circulatory system, the bark of the Canelo is used to treat typical dermatological problems such as itching, pimples, and dermatitis

In Brazilian herbal medicine, Casca-de-Anta (Canelo) is highly recommended for all types of stomach and gastric disorders including dyspepsia, dysentery, nausea and vomiting, intestinal pain, and colic, as well as fever, anemia and debility and it is sometimes used as a substitute for Quinine in treating malaria and other feverous conditions. The bark is brewed into a tea (infusion) for this common natural medicine.

For the Mapuche, the veneration of the “Canelo” tree dates back countless generations due to its excellent curative properties. The Araucanian region of Chile is rich with medicinal plants that have allowed the Mapuche to experiment and learn the healing powers of these plants over time. Canelo is used in infusions and baths, as a stomach aid and a rheumatism aid. The Mapuches also consider it a symbol of peace. It is used in this capacity to construct native pottery and sculpture unique to the Mapuche culture. It is also used by their medicine women, “Machis,” in rituals for healing. Machis put the leaves and sap of the Canelo in their mouths to help visualize the sickness of the patient and to expel the evil spirits.

The equivalent of a shaman or medicine woman, the machi considered both doctor and spiritual healer for the Mapuche. Machis are active in the daily and social lives of their community, and they are chosen within the community and are nearly always female. For their work they receive mainly barter as payments, from vegetables and other foods to services and occasionally money.

In an article, Rohan Radhakrishna explains the Machi and their rituals: they are seen as an go-between for the people and their God NgenechenI, and for this they are highly respected and cared for. The Machi is a balancing force between

all the opposites at odds with each other (yin vs. yang, good vs. evil, health vs. illness,) Machis can intervene between these dynamic forces and restore balance through their ties between the land, the community, ancestral spirits, natural forces and the individual afflicted with the illness. Because the Mapuche believe in the intervention of the supernatural world, the Machi begins the healing process with rituals to form a bridge between the spirits, nature and the human being. Machis also interpret dreams, thoughts, auras, and bodily fluids (urine and saliva). The ceremonies that the Machis practice are considered sacred and are rarely viewed by outsiders. Rituals and healing sessions can take the form of performances; it is through singing and music, dances and trances, that the Machi is able to enter the sick body, diagnose the evil spirit, and search for the remedy.

Machis have helpers that are always male. These translators decode the chants and actions of the Machi during rituals. Each Machi has an altar that they construct from the trunks of the Mimosa tree and from the leaves of the Canelo and Helecho trees, decorated with copihues (the national flower) and cereals. It is usually constructed based on revelations that come to the Machi in dream form and symbolically strengthens the bond between the community and the land.

With the advent of colonization, Protestant evangelical pastors and missionaries invaded the domain of the Machi and other leaders in the Mapuche community. Some Machis were demonized as witches and some were even burned at the stake. During the last decades, the role of the Machi has transformed and in many areas, they are less credible

The famous medical anthropologist Arthur Kleinman wrote that “Healers seek to provide a meaningful explanation for illness and to respond to the personal, family, and community issues surrounding illness. On the other hand, biomedicine is primarily interested in the recognition and treatment of disease (curing)” The Mapuche system of health is based on a holistic view of the Universe with a series of magical forces and supernatural spirits at work.

Imagine entering a new system culturally, structurally, and spiritually. This system is the Western hospital that many Mapuche must deal with. Everything from the administration and structural process down to the doctor-patient relationship is altered. The Machi exist to preserve and help the patient restore this equilibrium.

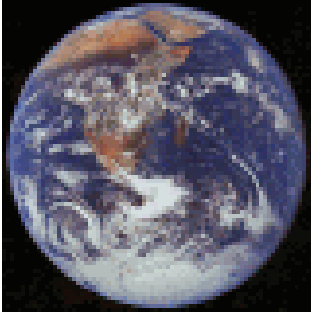
The Mapuche (literally translated to “people of the land”) are currently trying to adapt to new environmental changes. Invasive eucalyptus (*Eucalypto globulus*) and pine tree (*Pino radiata*) plantations used for exportation threaten local native forests. These insidious exotic species that are feeding the Chilean economy yet threaten to starve the people, as they suck the land dry of water, out-compete endemic species. The 9th region of Chile is known as La Araucania, named after the beautiful Araucania tree with candelabra branches, but today pines and eucalyptus have overtaken the landscape. There is a sense of displacement among the Mapuche, of being away from their traditions, from their heritage, from their Mapu -- their land. As modernization replaces tradition and the land continues to die, so does their indigenous language Mapudungun (literally “language of the land”).

For me the one great piece of news was the Intercultural ‘intergrative medicine’ at the Makewe Hospital. The Hospital Makewe began in 1895 as a health dispensary. When the government threatened to cut all funding recently, a group of 35 communities in the Makewe sector banded together to form the Indigenous Association of Makewe-Pelale, and they took over administration of the Hospital in March of 1999. Today Hospital Makewe serves 20,000 people of which 80% are Mapuche. The goal is a most noble one for an indigenous people: “to improve the quality of attention in health and to improve the quality of life for the population in the sector [Makewe region] through the fortification of Mapuche cultural identity.” Hospital Makewe is the “heart of the community combining both systems of healing, there is a “focus on integration where we take into account the health knowledge of the community and their specialists, and complement it with occidental knowledge” While the actual care in the



hospital can be described as “complementary health” (all systems combined and contributing to the other), the overall goal of the hospital is “intercultural health” because it realizes that the environment, the community, and the culture all contribute to the well-being of the Mapuche people and their patients.

## The Gaia Hypothesis



Nearly every time I look at traditional beliefs of native peoples, wherever they may be, there are common denominators within their belief systems; indigenous peoples often share a similar view in relation to illness and medicinal plants. The Gaia Hypothesis very elegantly restates this view in a modern vernacular and

context. This hypothesis seems to posit a connection between what I will call the spiritual / Earth-based and the scientific belief systems. The Gaia Hypothesis, simply expressed, is this: that the Earth is a living, self-regulating being. She is alive. It says that our planet functions as a single organism that maintains conditions, much like homeostasis in humans, that are necessary for Gaia’s survival. These theories were formulated by Dr. James Lovelock, a British atmospheric scientist, in collaboration with Dr. Lynn Margulis, an American microbiologist. These ideas, first put forward in the late 1960’s and early 1970’s, have produced much controversy and many interesting ideas, including new areas of research. The hypothesis provides much to ponder regarding the interconnections of how the Earth has transfigured and transformed itself for life, by a self-evolving and self-regulating web-of-life. All the myriad self-regulating, physical, chemical, geological, and biological processes behind it, are expansively mind-blowing.

“The recognition of the non-linear nature of all systems dynamics is the very essence of ecological awareness, the essence of

‘systemic wisdom,’ as Bateson called it. This kind of wisdom is characteristic of traditional non-literate cultures but has been sadly neglected in our over-rational and mechanized society. Systemic wisdom is based on a profound respect for the wisdom of nature, which is totally consistent with the insights of modern ecology.”

--Fritjof Capra, in his work entitled “The Turning Point”

On the spiritual side is the concept of ‘Mother Earth’ that we have all heard from so many indigenous cultures throughout the world. The concept was central to the religion of Native Americans (North, Central and South), as well as being symbolized a continent away in the Hindu goddess Kali. Within the ancient Greek metaphor, they named their Earth goddess Gaia, an embodiment of the notion of a Mothering Earth, the source of the living and non-living entities that populate our planet. Both Kali and Gaia were gentle, feminine and nurturing archetypes, but also ruthlessly cruel to any who crossed them. Gaia was the Greek goddess who drew the living world forth from Chaos. The prefix “ge” in the words geology and geography is taken from the Greek root for Earth. Dr Lovelock aptly named his concept, appealing to both the scientifically-minded as well as the spiritually-minded reader within the same hypothesis.

“The entire range of living matter on Earth from whales to viruses and from oaks to algae could be regarded as constituting a single living entity capable of maintaining the Earth’s atmosphere to suit its overall needs and endowed with faculties and powers far beyond those of its constituent parts...[Gaia can be defined] as a complex entity involving the Earth’s biosphere, atmosphere, oceans, and soil; the totality constituting a feedback of cybernetic systems which seeks an optimal physical and chemical environment for life on this planet.”

--James Lovelock, Gaia: A New Look at Life on Earth.

While the science continues to debate the Gaia Hypothesis, the global

and holistic perspective of the concept has really struck a nerve and continues to capture the imagination of people from all walks of life. To the indigenous cultures such as the Mapuche, who see the Earth as a sacred spirit, to others who sought the “oneness” in super-organism of nature, to those concerned for the environment, and to those seeking religious frameworks, to an increasing multicultural and multidisciplinary audience, the concept of the Gaia Hypothesis has nourished and supported as a paradigm for the third millennium.

# Cuba's Green Revolution

*The balm to the Achilles heel of Castro's Revolution*

Looking out across the organic medicinal herb farm in the Pinar del Rio province of Cuba, I am intoxicated by the scent from endless rows of German chamomile, calendula, and Japanese mint. This state-run 200-acre organic farm, known as the “Finca Provincial Plantas Medicinal,” grows medicinal herbs used by the Cuban Ministry of Public Health for distribution throughout pharmacies, hospitals and clinics in the Cuban healthcare system. This is one of the largest medicinal herb farms in the 14 provinces of Cuba, and, according to its director, Sergio Travieso Sanchez, this farm and many others like it are growing by 20 to 25 percent a year.



Beginning in 1990, Raul Castro, brother of Fidel Castro, wanted to rescue the Cuban tradition of herbal medicine to provide natural medicines for its healthcare system. The immaculately maintained farm has grown from a modest four crops in its first year to a spectacular 45 crops in 2003, and has continued

to grow with a small staff of only 45 workers and with no machinery. (By government mandate, only oxen are permitted for use in the fields.) As I watched the soft crimson sunset bathe the fields in a golden light, I could almost feel the purity of the herbs and the power of their medicinal value.

This State farm has to be independently profitable; its main contracts come from the Ministry of Health. The major herbs grown for use by the Ministry this season include oregano, calendula, Japanese mint, German chamomile, aloe vera, eucalyptus, banana leaves, and turmeric. Director Sanchez tells us they have two seasons that are carefully planned around the Ministry's crop requirements. He hopes that with more land and the possibility of using machinery in the fields, he may be able to keep up with the growth and success of his country's "green medicine" (medicine verde) revolution.

Green medicine in Cuba is not a gentle holistic trend, but born of the stark reality of economic collapse, as pharmacy and hospital shelves became empty of expensive pharmaceutical drugs. For the last ten years, the Cuban government has endorsed and aggressively promoted the cost-effective medicine provided by herbs, homeopathy and acupuncture.

Before the economic crises of 1990-92, Cuba had a "sweet" sugar deal with the Soviet trading bloc, which virtually turned the island into Russia's sugar "plantation." From 1960 to 1990, Cuba was highly dependent on the Soviet bloc, importing petroleum, pharmaceuticals, equipment, chemical fertilizers, pesticides, and food (even importing up to 57 percent of its calories). Amazingly, the sweet deal with Soviet trading bloc had made it cheaper for Cuba to export sugar and import all of its basic foods.

Then in 1990 came the political and economic implosion of the Soviet Bloc and Cuba's sweet sugar deal turned really sour. Almost overnight, Cuba lost \$5 billion to \$8 billion dollars' worth of Soviet support (Sheller.10),( and its Soviet-style agriculture, with its heavy use of chemicals, ground to a halt.

The Torricelli Act further tightened the screws of an already existing US trade embargo, curtailing shipments of food and medical supplies from subsidiaries of American companies. Food was scarce, pharmacy shelves were empty, and there was little fuel for transportation. Life got tougher when, during the hot, humid Cuban summer, only a few hours of electricity per day were allowed to run fans and refrigerators.

Cuba's response to the "Special Period" was already bubbling under the surface of its culture. In medicine, acupuncture training was already established in military hospitals. In rural areas, the use of herbal medicine was growing, and in agricultural communities, young scientists were agitating for less dependence on agro-chemical imports and wanting to explore organic farming techniques. This crisis, caused by financial dependence on the Soviets and importation of food and medicine, was the unforeseen weak-spot in the Revolution, and ironically is what turned it "green." The green revolution in agriculture and medicine, along with tourist dollars, has become the healing balm to the "Achilles heel" of Castro's Revolution.

In 1995, under the direction of Dr. Leoncio Padron Caceres, within the Ministry of Public Health the new Office of Natural and Traditional Medicine was created. Dr. Padron is committed to an accelerated program of growth for the development of holistic medicine, as well as its integration with conventional medicine. Throughout Cuba, each neighborhood has what is called a "green pharmacy," where alternative medicines, which compensate for unaffordable pharmaceuticals, are made and sold.. Doctors write prescriptions for medicines like oregano extract (used to reduce the frequency of epileptic seizures), and 'Imefarma,' a traditional Cuban herbal formula for asthma, that is made from eucalyptus and banana leaves.

Green medicine has taken hold in a healthcare system dominated by a scientific approach. Physicians and nurses are now offered four-year specialty training in traditional Chinese medicine, as well as two-year master's programs and various courses and seminars for the "barefoot doctor" approach, all taught

by expert doctors from China, North Korea and Vietnam.

In a recent press release, Juana Irene, an expert with Cuba's Natural and Traditional Medicine Program, said, "Though traditional Chinese medicine has been in Cuba for 150 years, Cuban hospitals and drugstores normally don't sell it because it hasn't formally entered the Cuban market. Noting that traditional Chinese medicines are popular in Cuba, Juana Irene said that approximately one million Cubans annually tried acupuncture and Cuba bought traditional medicinal materials from China, valued at 60 million U.S. dollars each year. The Cuban government encouraged Chinese experts to set up clinics and schools in Cuba, to introduce new herbal medicines, to develop traditional Cuban medicine, and to cooperate with Cubans in producing traditional medicine."(11. People's Daily )

Experts in Cuba report the integration of alternative and conventional medicines is a good approach; it will last beyond any economic improvement. Even if the U.S. embargo lifted tomorrow, and pharmaceuticals were freely available to Cubans, many experts believe that green medicine is here to stay. Dr. Leoncio Padron, National Director of Traditional Medicine, said in a recent CNN interview, "If we wake up one day to this good news, we would still continue with traditional and natural medicine as part of the same arsenal."

## **Las Terrazas Eco-Tourism Community**

When the Soviet subsidies were slashed, 900 people in the Las Terrazas EcoTourism community lacked ample food or medicine and were limited to what they were permitted to take from their biosphere reserve. The government then decided to build the Hotel Moka to develop tourism. Now eco-tourists like myself venture into the lush forests for treks and swims. Staying in the thatched huts by the river, we were lulled to sleep by the symphony of sounds from the lush forest. Although Las Terrazas is not a typical Cuban community, it was fascinating to see how its health needs were interlinked. The clinic, school and a

rare commodity in Cuba -- a vegetarian restaurant -- were all used as community assets.

### **Las Terrazas's Green Clinic**

Even though the clinic's dispensary shelves were empty, we did find in stock some homeopathic medicine and herbal tinctures, herbal teas. The community's school teaches herbal healthcare lessons, and children learn not only how to use medicinal herbs, but also how to grow them in the school garden.

According to Dr. Lisbett Dias, at least 30 to 40 plants are commonly used for medicine by the locals. These herbs come from individual gardens in the community and are prepared either as teas, tinctures, ointments or creams. The clinic also offers acupuncture, carried out by technicians with the minimum training. Dr. Dias, like all doctors trained in Cuba today, has a few months' training in green medicine, though she admitted she was not as confident in green medicine as her predecessor was.

The emphasis of care here is clearly on prevention. It is impressive to note that everyone receives a yearly check-up. Biannual exams are offered to Cubans in risk groups such as smokers and alcohol abusers. Three check-ups a year are provided for those with diagnoses such as hypertension and diabetics. Prevention clubs for the elderly, pregnant women, and teenagers. The whole community has access to acupuncture, herbal medicine and homeopathy, even if on a crude level. The two doctors and two nurses of this rural clinic suggest cooking classes at the vegetarian restaurant for those with diabetes and hypertension.

### **The children were proud to show us their medicinal herbal garden.**

The local school, "Republica Oriental Del Uruguay," at Las Terrazas was vibrant and noisy as children poured out at the end of the day. Daniel Perez, the school principal, explained that his students are taught how to use plants for



common problems as part of the school curriculum. The children were proud to show us their medicinal herbal garden. As part of the prevention theme, at-risk children, with problems such as obesity, receive counseling and encouragement from the school's therapist to change cooking and eating habits at home.

### **The Vegetarian Restaurant 'El Romero' (Rosemary)**

On the veranda overlooking a lush forest we enjoyed a bountiful lunch as the founder of the vegetarian restaurant "El Romero," Tito Nunez Gudas, guided us through course after delicious course. Tito is transforming the classic Cuban diet that is typically heavy with fried food, pork, fried plantains, fried vegetables, rice, and beans, and very few fresh fruits and vegetables. Vegetarianism is very strange to Cubans. "In fact," Tito laughed, "as a child, when I asked my uncle what a vegetarian was, he replied that is was a mad man who only eats oranges."

After using vegetarianism to help him overcome his own health problems, Tito became a committed vegetarian and went on a health crusade to found three vegetarian restaurants. Without vegetable and fruits in their diets to provide the necessary fiber and essential vitamins and other nutrients, Cubans experience the same rates of cancer and heart disease as other industrialized nations. In a recent poll conducted by the governmental Institute of Nutrition and Food Hygiene, it was reported that less than one percent of those surveyed said they would prefer a menu without animal protein, while 62 percent reported that they rarely or never ate fresh salads. It is an uphill battle for Tito that is getting a helping hand from the crisis. Beef, being resource heavy, is reserved almost exclusively for hotels and restaurants catering to foreigners. In fact, beef is presently illegal for Cubans, who can be arrested for having the meat in the refrigerator. With meat harder to come by, people are eating lots more homegrown vegetables and fruits, and the Cuban people are almost reluctantly becoming healthier. Vegetable output in Cuba climbed from 36 kg per person in 1995 to around 99 kg in 2000. The decreased intake of dietary saturated fats, a less sedentary lifestyle

and a lower incidence of obesity, has helped to promote a dramatic decrease in heart disease by at least 25 percent. Tito's expertise is in demand, yet with Cuba's Communist policies as they are, his restaurants have to be supported by the government. He is lucky to have a brother of a "Hero of the Revolution" (Osmani Cienfuegos) as a benefactor to help his work.

The Cuban diet is becoming greener and healthier (whether Cubans like it or not.) In my opinion, if more Cubans could just taste the delicious food served here on this veranda in Tito's restaurant, they would become willing converts.

### **Cuba's herbal medicine; a blend of herbal traditions**

Just like the rich history of Cuba's racial melting pot, herbal traditions are blended from many cultures. Spanish and European influences are mixed with those of the original Taino and Caribe Indians. West African slaves brought their own special infusion to the herbal mixing pot. When slavery was abolished in 1868 and the dark history of slavery ended, some 150,000 indentured Chinese laborers were brought to work the sugar plantations from Canton, and brought with them their own traditional Chinese herbal medicines. Today there is still a thriving Chinatown in Havana. Exploring the synthesis of traditions is an approach very dear to the heart of Dr. Carlos Manuel Mendez. Like myself, he is interested in how to guide locally grown herbs into formulas according to the principles of traditional Chinese medicine, and to bring this approach into the mainstream medical system. I expect this will be the next chapter in Cuba's herbal history and the logical progression for a country that lets very little of its traditions go to waste and has such rich herbal pharmacy in its own back yard.

### **Integrating Green Medicine in Cuba's Hospitals**

Walking into Havana's International Center for Neurological Restoration (known locally as CIREN), is like walking from a Third World country into a modern hospital. Like many of Cuba's innovative hospitals, CIREN has opened its doors to tourists as part of the country's need for dollars. This sophisticated

250-bed hospital is a leader in some research and treatments. It has a staff of 11 neurologists and three neurosurgeons, additional anesthesiologists, internists, pediatricians, gerontologists, psychiatrists and psychologists, 82 neuro-rehabilitation specialists, and a nursing staff of over 100. It specializes in the treatment and rehabilitation of people with neurological injuries and illnesses, whether from disease or injury. Doctors are using fetal stem cells, a controversial technology in the US, to try to restore brain and nerve function in victims of accidents and in sufferers of diseases such as Parkinson's. CIREN is also developing an integrative green medicine, holistic approach. Foreign and Cuban patients receive treatments, after being evaluated by expert neurologists and MDs with green medicine backgrounds.

Dr. Carlos Manuel Mendez, a Cuban pioneer of acupuncture, practices herbal medicine and heads up CIREN's green medicine department. He helps shape treatment plans recommended by colleagues. Together with Dr. Tahimi Cardiso, these bright compassionate doctors are on a mission to prove to their colleagues that green medicine works and to confirm results with documentation and further research.

In most countries, such labor-intensive therapy would cost a small fortune. In Cuba, the treatment is affordable because the country has a surplus of highly educated medical specialists (166 people per doctor) who earn next to nothing (\$25 a month for most doctors). Patients are assigned multidisciplinary teams of experts, from psychologists to language rehabilitation specialists, as well as physical therapists. After a week of consultation, patients undergo at least 28 days of treatment and rehabilitation, although the majority of patients stay three to six months, or as long as a year. Treatment costs vary, according to a patient's country of origin. For example, Americans pay about \$11,000 for a five-week program, citizens of Third World countries pay less, and Cubans pay nothing, if they can get in.

**Cuba's Food Farming Produces 100% Organic Vegetables**

In response to the “Special Period” the government offered huge financial incentives to farmers, outside of the established 5-tier pay system, just to be able to feed the people. In the words of Pablo Frias, a farmer, “food is a matter of life and death,” and the incentives worked! In Havana there are now estimates of 8,000 organic “victory gardens.” These farm/gardens are producing a million tons of food annually. They range in size from a few feet to several acres.

Urban farmers, like Senor Frias, are primarily growing lettuce, bok choy, onions, chard, radishes, tomato, cabbage and broccoli. Gardens can employ anywhere from one to 70 people depending on the size of the garden. Pablo Frias describes himself as a typical urban farmer. A former Army officer forced out of retirement by the need to make ends meet, Pablo started his farm from scratch, on land destined for a medical school building. What farms like these have achieved is to produce twice as much food with less than half the chemical inputs. Before the crises, Cuban agriculture was technically similar to California, dependent on mechanization, artificial fertilizers and insecticides that put the soils into poor condition, sterilized by agrochemical inputs and salinised? by excessive irrigation.

Cuba, in an unprecedented move in the modern history of agriculture, switched almost overnight to organic farming practices. Today the vegetables in Cuba are reported to be an astounding 100% organic and GMO free. Oxen have replaced tractors for plowing and transporting crops. Organic integrated pest management replaced pesticides; crop rotation, composting and soil conservation re-fertilized the soil. Government research institutes were set up to develop more sophisticated techniques of worm composting, soil inoculants and bio-pesticides. Over 200 bio-pesticides production centers were set up.

Cuba’s organic farming system is successful, and Cubans appear to be breaking apart the myth that “although organic farming is good for the planet, yields would not sustain Earth’s population.” Here, yields have been increased through organic farming techniques, a much cheaper alternative to conventional agrochemicals. Cuba’s farming is cocooned and tucked away from the world,

in an environment free of the pressures and demands of the agro-business marketplace. Lessons have been learned in this experiment that can be shared with farmers around the world.

When asked what he would do if the embargo were lifted and he had the dollars to spend on improving his farm, farm director Pablo Frias said, “We would not revert to the old methods if they became available tomorrow.” It seems that the revolution to organic farming has changed business as usual, and this innovation will not be relinquished. If necessity is the mother of all inventions, then the economic crises that created these inventive innovations have pushed Cuba out into new territory, and the entire world can benefit from their experiment.

At the end of our journey, whilst sitting and relaxing with Cuban cocktail on the terrace of the 1930’s El Nacional Hotel, music of the Buena Vista Social Club wafting in the evening air, I was reflecting back on our fact finding mission to Cuba. It occurred to me that if Castro’s dependence on imported food and medicine proved to be the revolution’s Achilles heel that inflamed the entire body of the society, then the green revolution (along with tourism) has proved to be its innovative healing balm. This is the kind of healing from which we all can benefit.

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## **Chapter Four: Costa Rica**

It had been a long, cold winter in New England. My wife and I decided a vacation to a warm place where our daughters could play outdoors and enjoy the beach, and we could all learn something about nature and another culture. We chose Costa Rica for many reasons: its support of eco-tourism, the variety of well-protected ecosystems, and because we wanted all the elements of a regular family vacation. Costa Rica offered all those things and more—we were not disappointed.

Costa Rica lies between Nicaragua to its north and Panama in the south. It has both a Pacific and Atlantic Coast. A series of volcanic chains (cordilleras) runs from the Nicaraguan border in the northwest to the Panamanian border in the southeast, splitting the country in two. In the center of these ranges is a high-altitude plain (Central Valley), with coastal lowlands on either side. Over half the 3.5 population lives on this plain, which has fertile volcanic soils. The Caribbean coast is 132 miles long while the Pacific coast is 635 miles long. Costa Rica not only has tropical rainforests and beautiful beaches but also some active volcanoes, windswept mountaintops and incredible weather. Although it is a small country, it has a very large variety of tropical habitats, which are protected by the best-developed conservation program in Latin America. Clearly it's main resource were it smiling people. Right from the airport with its vendors, it was clear, that these were non-pushy and friendly people.

Costa Rica is famous for its enlightened approach to conservation. They are serious about their commitment to conservation! About 27% of the country is protected in one form or another, with over 11% found in the national park system. Many species that are threatened or even extinct in neighboring countries still thrive here. The parks envelop complex ecosystems, ranging from cloud forest to marshland, savanna, rain forest and coral reef, and contain extraordinary biodiversity. In most parks it is possible to see several different

habitats even within the course of a day, they are home to some of the most pristine rainforests on earth. There is an incredible abundance of flora and fauna. Its home to an incredible 850 species of birds, 9,000 species of plants, 208 species of mammals, and 160 species of amphibians. This means that the traveler can experience the tropics in a really natural way. The variety and density of wildlife in the preserved areas attracts people whose dream it is (like my youngest daughter Alyssa) to see wild animals such as monkeys, sloths, caimans, sea turtles and exotic birds in their natural habitat. Apart from hiking in rainforests and mountains, the more adventurous will find the opportunity to snorkel on dazzling tropical reefs, or raft some of the most thrilling whitewater in the tropics. Costa Rica has twelve major life zones, which are home to an astonishing and diverse amount of plant and animal life. No other country in the world has so much actively protected area per capita and more botanists per capita. This small nation is truly committed to conservation.

Costa Rica, named by Christopher Columbus, means 'rich coast'. Most Europeans came to Costa Rica after the age of the Conquistadors. The local indigenous population was weak, and the country mountainous area prevented the establishment of large landholdings. This resulted in a people focused on commerce not conquest. Costa Ricans were spared 15th-century Madrid's rigid and formal hierarchies.

Costa Rica has the most stable political climate in Latin America. This is quite an achievement, considering how volatile the other Latin American governments have been. For half a century Costa Rica has been a democracy. It has had democratic elections since the 19th century and is one of the most peaceful nations in the world. After the 1948 civil war, it did the unthinkable by abolishing its armed forces. Since then, Costa Rica has avoided the despotic dictatorships, military coups, and terrorism that have torn apart other countries in the region. Successive reforming Costa Rican governments invested the resources made available by scrapping the military budget into education and health care. Now that's a revolutionary idea!! There has been no political



repression since 1948 and human rights are highly respected.

We arrived at a small airport, and in fact we were the only flight of the day. The weather was hot and dry. We were greeted by, laid-back friendly faces. The rainy season was just weeks away from starting, yet the sky did not betray this, not even a hint of a cloud. We were shuttled off, as part of a group, heading off to a traditional package vacation. We were delivered through dry desert to a tropical pacific costal area near Puntarenas. It was a classic large hotel with a beach facing the Pacific Ocean and a large complex of three kiddy swimming pools; we knew this would be a major hit with our kids.

We relaxed enjoying this hotel complex until everyone was ready to head off to the rain forest, and I could not wait. At first our daughters were not too keen on leaving. On the journey to the eco-lodge, however, we stopped on route to view some caimans and that's when their enthusiasm started to peak. We had stopped along the Grande de Tárcoles River, a river well know for bearing one of the most important crocodile populations in Costa Rica. The crocs live on the water margins, on riverbanks or often in swampy areas. Some of these animals reach more than 4 meters long. Yikes!!! These are animals left over from pre-historic times. Unlike the dinosaurs who disappeared 65 million years ago, crocodiles never died out. They have remained virtually unchanged for 200 million years. The lifespan of the crocodile is comparable to that of human beings - some crocodiles live for up to 100 years. They propel themselves in the water by their webbed feet and especially by their flattened tails. They can float near the surface almost submerged, as their eyes, ears and nostrils are situated on the tops of their heads, allowing them view-unsuspecting prey unobserved. They are pretty scary animals!!!

After this encounter, everyone was enthused more about our visit. We arrived at the Villa Lapas Eco-Lodge, which is located next to the Carara National Park. The lodge was located on a mountain, between the rainforest and a roaring river and was spartan, yet it met all our needs (after having been down the Amazon, it was like a four star hotel by comparison). This park is

important in Costa Rica because it is an “ecotone” or melding area between the dry forests to the north and the wet forests in the south. The park is about 11,000 acres and comprises secondary and primary forests with lakes and rivers. The tour is a 3-hour walk. The rainforest is quite a treat; you could feel the effects of the oxygen-laden air, not as much as in the vast expanse of the Amazon, yet it was noticeable and invigorating. Other forests around the country are frequently draped in a mist of clouds. Algae, mosses and lichens get a foothold on the wet surfaces, providing a perfect place for orchids, bromeliads, ferns and innumerable other plants. The Carara was different, as it blended dry and tropical forests. It was resonated with the songs of birds at dawn, then the forests become quiet in the heat of the day apart from the screeching of the Macaws. The word “Carara” is an indigenous term, meaning “river of crocodiles”. The area in which the reserve is located was occupied by an indigenous culture that is thought to have been allied with groups located in the Central Valley from 300 B.C. to 1500 A.D. Extensive tomb sites have been excavated here, and the burial places of people of high status are remarkably complex. Many endangered and threatened species live and breed here, like the American crocodile and the Purple Heart tree. Carara is also considered a sanctuary of the rare and beautiful Scarlet Macaw. Walking in the rainforest is like taking a step back in time. Our naturalist guide was tall a student, with close-cropped black hair and his enthusiasm for the park was so contagious, he would open his large clear, dark brown eyes wide, at each exclamation or emphasis during his explanation of the local animal or plant life. As we were walking with our guide we saw 30 or so Macaws swoop in calling and screeching to each other. These Macaws also are known to ‘self-medicate’, these large brightly colored parrots are very fond of an unripened poisonous fruit of the sandbox tree. They tear open this fruit feast on its fruit and seeds even feeding it to the young. How do they survive? well they have learned over the ages, to eat a detoxifying clay they find high on river banks before they feast. This clay neutralizes the toxins. For the most fulfilling experience, it is important to go with an experienced naturalist

guide. A naturalist will color-out and explain the complex inter-relationships of species in the forest, help you identify the birds, spot well-camouflaged creatures, really bringing the forest to life. Soon it would be the rainy season, when the Tarcoles River floods its banks, creating a large lagoon that quickly fills with water hyacinth. Crocodiles and caimans are easily spotted along with plenty of wading birds. Coatimundis, peccaries, white-face capuchin, howler and spider monkeys, and the rare two-toed sloth can all be found here, if you know where to look, along with a great variety of plant life including fabulous heliconias. Carara is one of the few nesting areas remaining for the scarlet macaw. The most frequently spotted creatures are the bigger and/or colorful ones such as hawks, toucans, tanagers, parrots and macaws. Monkeys, armadillos, sloth, deer, squirrels and bats are the most commonly seen mammals, and also frequently found are iguanas, crocodiles and a various array of lizards. An amazing variety of plant life can be found in the Carara Biological Reserve, because of the numerous ecosystems contained in the park: marshland, lakeshore, primary forest, and secondary gallery forests. The marshlands form due to flooding and the lake's colorful surface is sprinkled with water hyacinths and other aquatic plants.

Back at the Eco-Lodge the enclosed butterfly garden, about 2200 square feet, is spectacular treat. The most important host plants for the butterflies can be found inside the garden, like Lantana, Heliconia, Calathes, Lonchocarpus, Piper and my personal favorite and friend, the medicinal Passiflora.

### **Herbal Medicine in Central America.**

The knowledge and practice of traditional medicine in Central America is as diverse as its cultural heritage and botanical diversity. In an area that is not just home to more species of plants than most other regions on earth, but is also rich in cultural diversity, the number of plants used for medicines in different ways by different peoples is endless. Among Central America's indigenous cultures, everybody was their own healer and the institution of "medicine man"

or healer did not exist. Yet, within its two empires, the Aztec and Maya, they enjoyed a rich institutionalized herbal tradition. In fact, after Hernan Cortes, the conqueror of Mexico, was healed of his battle wounds by native herbalists, he requested the Spanish king not to allow European Medical Doctors to come to the “new world” because they could not match the native healers! The Spanish brought all the best-known Indian healers to the College of the Holy Cross in Mexico City, to pass on their knowledge of medicinal plants. The Aztecs were expert herbalists. In 1552, during the early years of Spanish rule in Mexico, two Native American students at the College of Santa Cruz in Tlaltuilco, Martinus de la Cruz and Juannes Badianus, compiled a list of herbs that the Aztecs had used for centuries as medicines. Martinus wrote and probably illustrated the original Aztec text, and Badianus translated the work into Latin. Housed in the Vatican Library, the Badianus Manuscript is the oldest known American herbal. In 1552, the first materia medica of Central America was published. It became known as Badianus’ manuscript. It gives 185 medical plants and 200 illustrations. It was ‘the cream of the crop’ from the rich Aztec herbal heritage, which suffused Central America at that time. Then in 1571, the Spanish King sent his personal physician to study with the Aztec healers, and in the following 7 years he recorded 3,076 plants, 1,200 included the plants medicinal qualities. In the Aztec empire, herbal medicine had reached a high degree of sophistication before being dismantled and discredited by the Spanish. Under the Aztec system experienced doctors and nurses practiced in hospitals funded by Aztec government. The nobility would even dispatch medicine hunting envoys, off to distant parts, in search of new plants.

## **Passionflower, a.k.a. Maypop (*Passiflora incarnata*)**

Passionflowers have some of the most beautiful blossoms in the world. According to legend, its name comes from a Jesuit priest, who found the vine in 1620. That night, he had a vision, the priest associated components of the blossom with ‘Christ’s Passion’, leading to the common name, “Passionflower.” The five petals and five sepals were representative of the ten faithful apostles present at the crucifixion; the five anthers represented Christ’s wounds; the three pistils, the nails. The corona was the thorny crown, while the leaves were reminiscent of the Roman spear, and the tendrils were their whips. First documented by Spanish physician, Nicolas Monardes in the 1560’s, the leaves of the passionflower had long been used as a natural sedative by indigenous peoples. When Monardes brought the vine back to Europe, it was used as a remedy for nervousness, insomnia. I have used it for many years with great results for a sedative and analgesic; One of the early successes with this plant in my practice, came when I was helping a young woman patient of mine, to come off powerful anti-anxiety drugs that were now creating more problems than solutions. The medicines had a powerful withdrawal side effect. Her Sympathetic nervous system was like a ‘taut spring’, kept at full tension, by her lack of sleep, anxiety and a continuous flaring of her bodies ‘fight or flight response’. This was taking its toll, on this once vibrant, withdrawn young woman. Almost immediately from starting the passionflower, it was like seeing the taut spring’ slowly uncoil, slowly unwind. It was not a sudden miracle-like response, more like a gentle relaxing of the tension in her hands and facial muscles, an amiability crept into her being,.... her parasympathetic nervous system was being nourished. Her ‘fight or flight response’ was being ‘switched off’. She relaxed slowly and came off her medication much to the relief of her Medical Doctor her family and myself. It was like watching a flower open to the morning sun. Passionflower is very effective without any disorientation or narcotic after-effects. I use it with other herbs in pain formulas; for instance, for headache it has a calming analgesic effect when combined with other herbs

that guide the “stuck” energy away from the head. In my insomnia formulas, it is a primary herb used to balance disturbed sleep patterns and sleeplessness. It is widely acknowledged as good medicine for anxiety, tension, irritability, and spasms, all of which can rob us of a good night’s sleep. It also calms other nervous states accompanied with asthma, palpitations, high blood pressure, muscle cramps and general hyper-activity. It has been the subject of a great deal of research for nearly a Century, and many medicinally active components have been identified in all parts of the plant. Yet as with many of nature’s chemistries, none of the active compounds have been identified as producing “specific” effects. Generally, all of the compounds work together to generate, in combination, the mechanism by which its curative properties are known.

### **Quassia, a.k.a. Hombre Grande (Quassia Amara)**

One of the most common herbs of Costa Rica is a bush called hombre grande (quassia amara.) An extract from the plant is used to soothe stomachaches. The extract is bottled and is often sold in taverns, where it is used as a folk remedy for drinking too much alcohol. It is also used as a digestive aid and appetite aid. Else where in Central America, in Surinam where its cousin grows, the Quassia tree (*Picrasma excelsa*). A native of the tropics, it was brought to Europe in 1756. It was named after the native healer who had introduced it to the Europeans, a generous gesture not often repeated throughout the New World. This is used to strengthen digestion, increase bile flow, stimulate weak appetites, and especially to treat anorexia. This herb is very bitter, as with nearly all digestive aids, and its cooling abilities lend it toward the treatment of malarial fevers. It also used to treat threadworm. Its chemistries have been explored and found to contain quassinoid bitter principles and alkaloids. Some quassinoids have cell-killing properties and anti-leukemia actions.

### **Corn, a.k.a., Seda de Maiz (Zea mays)**

Any discussion of the medicinal plants of Central America should also cover corn, (maize), the staple food of the native peoples of the Americas. Archaeological evidence from the Tehuacan caves in Puebla, Mexico, suggests that people were using corn (*Z. mays*) from about 5000 BC. Corn silk, the silky wrap around the corn, has long been used by the Costa Ricans for bladder infections, to improve urine flow. The Aztecs used a corn meal decoction for dysentery. It helps to stimulate the production of bile, and research out of China indicates that it may lower blood pressure and reduce blood-clotting time. Writing this chapter from St. Joseph's County in Michigan, which is one of the heartland's main producers of corn, there are hundreds and hundreds of miles of genetically modified (G.M.O.) corn crops. The amazing fact is that 35% of the U.S. crop in 1999 was GMO. Thankfully with European, Central American, and Japanese opposition to GMO crops, the prices here in America's heartland are falling, and with them (hopefully) GMO corn's crop domination. Corn is an amazing example of a "wind pollinating plant." It avoids dependence on anything other than wind for pollination. Therefore, as part of nature's safety valve, it sheds 130 kilograms (nearly 300pounds) of pollen from its tassels over a one-week period to try to insure its survival. There is an astounding 25 million pollen grains per stalk...more than 20 to 50,000 times more pollen than it needs to fertilize one acre completely! The idea of releasing GMO corn into the environment to pollinate in such quantities, it will eventually polute non-GMO corn.

### **Potential Health Issues with Genetically Modified Organisms**

Are GMO products bad for you? There is evidence building that may support this belief. Yet the greater question is why are we experimenting with in our eco-system, with an experiment we cannot control or maybe even stop? Let's look at the potential side effects. Scientists do not yet understand living systems completely enough to perform DNA surgery without creating mutations which could be harmful to the environment and our health. They are

experimenting with very delicate, yet powerful forces of nature, without full knowledge of the repercussions. We place our planet at risk for widespread crop failure. We should remember the potato blight of the Irish history; that produced massive famine as a result of only planting only one variety of potato, this is not a practice the farmers of the highlands of South Americas, where it originated. Genetic engineers intend to profit by patenting genetically engineered seeds. This means that when a farmer plants genetically engineered seeds, all the seeds have identical genetic structures. As a result, if a fungus, a virus, or a pest develops which can attack this particular crop, there could be widespread crop failure. This could threaten our entire food supply—insects, birds, and wind can carry genetically altered seeds into neighboring fields and beyond. Pollen from transgenic plants can cross-pollinate with genetically natural crops and wild relatives. All crops, organic and non-organic, are vulnerable to contamination from cross-pollination Health Hazards. Our Ecology may be damaged. The influence of a genetically engineered organisms on the food-chain may damage the local ecology. The new organism may compete successfully with wild relatives, causing unforeseen changes in the eco-systems.

Genetic engineering uses material from organisms that have never been part of the human food supply ever, to change the fundamental nature of food. There has been no long-term testing, and no one really knows over time if these foods are safe. Potential toxins maybe created. Genetic engineering may cause unexpected mutations in an organism, which could create new and higher levels of toxins in foods. These potentially may lead to increased allergic reactions, by producing unforeseen and unknown allergens in foods. The potential exists, for further decreasing the nutritional value of our food. The acknowledged threat to our antibiotic resistance due to antibiotics inclusion in the food chain, may be made even greater by genetic engineers who use antibiotic-resistance genes, to mark genetically engineered cells. This means that genetically engineered crops, may contain genes, which confer resistance to antibiotics. These genes may be picked up by bacteria, which may infect us. Further exacerbating our resistance



to antibiotics. If labeling of GMO products is not allowed, then potential problems cannot be traced, by our public health agencies, or even avoided by those with potential allergies.

The good news for Japan is their government seems more concerned or less controlled by big agribusiness interests. The decision of the Japanese government to request labeling of transgenic foods will slow down new cultures of transgenic foods in the US. To avoid the damages of companies images, caused by labels on GMO foods, big Japanese companies are removing GMO components from their supplies to the US, thus creating alarm among those farmers who are expanding this kind of cultivations, and lowering crop prices, which in turn ultimately influences the amount of GMO crops planted each year.

The Japan Tofu Association is planning to move on to non-GM soy. also the Nippon Flour Mills Co Ltd, the second producer of flour in Japan, is considering moving to non-GM flours for its production of oat flakes. The Japanese Tohato Inc., which produces snack foods, and is now completely dependent on the production of US cereals, is planning to move to French ones to avoid labels on modified foods.

All the herbs that I use and I am involved with are completely free of any GMO herbs or excipients. Within the herbal supplement industry in the US many manufacturers use cornstarch as an excipient to carry the extracted ingredients, and corn is now estimated to be 60% GMO, I believe the jury is still out, as far as GMO products are concerned, because of this there are no GMO products in any of the medicinal products I use.

**Bio-prospecting: “There is gold in them there rainforests.....!”**

“...that in the end, what will determine the future of biodiversity in the world are the more intellectual and spiritual values that we give it. We need to realize that if biodiversity does not exist, we are not going to survive, that microorganisms have as much right to exist as we do”

**-- Rodrigo Gámez, Director, Instituto Nacional de la**

## **Biodiversidad, Costa Rica**

Prospecting used to be associated with gold prospecting, sifting endlessly through mounds of dirt for a few grains of gold. These days, the new gold is found sifting through nature's pharmacy to screen the plants for compounds that may come to be the next pharmaceutical giant. In 1958, shamans in Madagascar led Eli Lilly Pharmaceuticals to the rosy periwinkle plant (*Catharanthus roseus*) for the treatment of Hodgkin's disease (a type of lymph cancer) and childhood leukemia. The company "struck gold" using the knowledge of the shamans and the natural resources of Madagascar. Their return has been a whopping \$100 million per year for the two drugs. Justly so, they were criticized for denying both the country of Madagascar and the shamans who led them to the plants any share in the profits. The "gold nuggets" in this "gold plant rush" are the two plant compounds, the alkaloids vinblastine and vincristine, found to be responsible for the remarkable 80 and 90 percent remission rate for Hodgkin's Disease (a type of lymph cancer) and Childhood Leukemia respectively.

In 1991, Merck signed a ground breaking, million-dollar agreement with Costa Rica's National Biodiversity Institute (INBio). This agreement, INBio will give screening rights to Merck for any plant or animal it collects for the pharmaceutical company. The agreement is important because any profit Merck earns from a Costa Rican plant-derived drug, will be shared with the tiny Central American country. "This is true sustainable development," INBio's director, Rodrigo Gamez is quoted as saying, "because we are extracting valuable and renewable products from our forests without causing damage." "Green gold" is the name he gives his country's rainforest assets. Because Merck is transferring knowledge to Costa Rican scientists, he adds, "We will develop our capacity to test plants for medicinal properties here, so in the future we can sell our knowledge to overseas markets, rather than just hauling bananas on our backs for them." He went on to explain, "When we started in INBio, there were forestry laws that said that the only thing of value in the forest was the wood

and that the rest was waste. This changed radically and now our biodiversity law is very specific and clear in reference to the perception of value. The fact is that we established a negotiation framework in which the industrial partner financed research in Costa Rica, and ten percent of the budget went directly to conservation purposes, for protected areas. This 10% provided hundreds of thousands of dollars for conservation. Also, the transfer of technology and the development of scientific and technological capacity both have much more value. This is our intellectual capital - if you will. We certainly have received a very large direct benefit in technology transfer and capacity development.”

These days the promise and the hope of a win-win situation for the funding and conservation of rainforests is waning, challenged by gene splicing. The Instituto Nacional de Biodiversidad (INBio), a non-profit organization that works with the Costa Rican Ministry of Environment to manage natural drug discovery in Costa Rica’s rainforests, believes they have noticed a significant decrease in interest from pharmaceutical companies since the early 1990s. These days only two pharmaceutical companies are working with them, whereas in the early 1990’s there were five. It seems that with newer types of technology available in drug development – most notably, genetic engineering - companies are less interested in “bio-prospecting.” Thus, the great hope for rainforest conservancy (the search for plant-based gold using indigenous knowledge), which demands a lot of time and money, is being overlooked and the drug companies are instead turning to the cheaper process of gene-splicing. It is disheartening to think we are losing the opportunity to save biological species as well as rainforest cultures. Bio-prospecting really offers opportunities for conservation of both.

Some companies still come to the rainforest, but are doing so by eliminating the cost of FDA approval and turning back to the original sources of the pharmaceuticals - herbal medicine itself. For instance, because Shaman Pharmaceuticals was millions of dollars short of complying with FDA recommendations, the plant-based remedies, under the new name of Shaman

Botanicals, are now being marketed as “dietary supplements”; these are not subject to the same rigorous testing and approval processes as drugs. Other companies have followed suit in developing herbal products from plant materials. Herbs from the rainforest that now being sold as dietary supplements include: lapacho, also known as Pau D’arco (*Tabebuia avellanedae*, and *T. impetiginosa*,) used for the treatment of cancer, especially leukemia, infections and for pain relief; passionflower (*Passiflora incarnata*,) used to reduce anxiety and tension; cat’s claw, also known as Una de Gato (*Uncaria tomentosa*,) claimed to be a possible remedy for cancer and AIDS; and boldo (*Pneumus boldus*,) used for liver and gallstone problems.

Hence, we as a society are returning back to “self-care” wellness remedies. In the new millenium, “new” healing is, in actual fact, the “ancient” chemistry of nature—we are coming nearly a full circle!

3000 B.C.- “Here, eat this root “

1000 A.D.- That root is heathen. Here, say this prayer.

1850 A.D.- That prayer is superstition. Here, drink this potion.

1920 A.D.- That potion is snake oil. Here, swallow this pill.

1945 A.D.- That pill is ineffective. Here, take this antiseptic penicillin.

1955 A.D.- Oops....germ mutated. Here, take this tetracycline.

1960-2000 - 39 more “oops. more germs mutated”.... Here, take this more powerful antibiotic, if you can afford it. 20% of North Americans cannot, 80% of the world cannot.

2001 A.D. Cipro, a last resort antibiotic, has failed, is ineffective and toxic; besides, all the microbes are resistant, and some even feed on it (even on vancomycin).

2002 A.D. - “Here, eat this root “

## **Chapter Six: British Columbia, Canada**



Because not all herbs are equal in quality or grown in equal soils, or even equal eco-systems, I was on a mission to British Columbia, Canada, to find a consistent source of the highest quality organic herbs. My motto, “good quality herbs produce the best therapeutic results,” was driving my quest. During the course of my trip, we visited a large area of British Columbia, visiting farms in the fertile, pristine valley of the Okanagan, in the southeastern part of the province. Our discovery was of some precious countryside and some amazing high-quality, organically grown herbs.

On the Pacific coast of Canada lies the spectacular beauty of British Columbia, Canada’s second most-populated province. It is an area is larger than France and Germany combined. Yet, within the massive context of Canada, British Columbia is only 10 per cent, and within this huge province lives only 4 million people. British Columbia’s climate equals its topography for variety. The mild coastal region receives a lot of rain each year, while the interior has a continental climate and certain parts of the province are dry, almost desert-like, with very hot summers followed by cool or very cold winters. At the mountain Ski resort of Whistler, North America’s number one ski resort, you can even ski glaciers in the summer!

The Okanagan Similkameen is British Columbia's sun drenched land of plenty. The Okanagan Valley is located 400 kilometres east of Vancouver in south central British Columbia, with its southern tip just grazing the US border. The Similkameen region is located west of the Okanagan Valley. This area is home to miles of farms, herb farms, orchards and vineyards. The wineries and vineyards of the Okanagan and Similkameen valleys are internationally unknown and yet compare with the best in California and Europe, thriving in this ideal growing climate. This region emerged from the last ice age filled with fertile soils and remnant lakes. The valley connects BC's dry grasslands to the western American deserts.

Although basically in a dry belt, the Okanagan's natural vegetation is divided into two general categories. North Okanagan is dominated by a "dry rain shadow forest". It is, thanks to irrigation, a green and fertile region with a relatively wetter climate than the rest of the valley. Southern Okanagan has near desert-like conditions that produce a more arid but unique vegetation, unlike any other in Canada. Although the deltas in the area hold potentially fertile soil, the extremely dry conditions in the Okanagan keep soil nutrients from plants. This climate is characteristic of many valley systems due to air movement over mountain chains. As moisture-rich air moves from the Pacific across the Cascade Range, it cools and condenses into rain on the western mountain slopes. Air crosses and becomes warm and dry, leaving the eastern slope and valley in the shadow of the rainy side a 'rain shadow.' When the valley is deep it can result in desert-like conditions. In order to tap into the fertile soil deposits created by erosion, massive irrigation is required, the rivers and lakes are now drained extensively to create lush farmland.

We had travelled as a family to Vancouver, three thousand miles across a continent, to tour this fertile area for the best organic medicinal herb farms we could find. After a long flight we found ourselves delighted by Canada and the Canadian people. The cultural mix that hit us was the mix of English and French, and, surprisingly to outsiders, the Asians. Driving through areas of

Vancouver, there were whole areas that seemed almost 100% Chinese. After the Chinese reclaimed Hong Kong in 1999, many had escaped, using their Commonwealth passports to resettle in Vancouver, swelling its existing Chinese community enormously. Every year, BC accepts 35,000 new immigrants to build their hopes of a new life. Coming from the United States, we were impressed by the cultural differences in Vancouver, and the first change that struck us all, was the simple politeness, which seemed more heart-felt than the regular ‘English politeness’ with which I had grown-up. It made the contrast to my life in the US, to the lack of ‘basic human kindness’ that city-dwelling Americans lack, so stark in retrospect.

Steven, our gracious host in British Columbia, met us at Vancouver airport, where we rented our SUV. He then helped plan our itinerary, showing us where to travel and how to finally meet up with him again at his home 5 hours from Vancouver.

Our first destination was Whistler Mountain. This was the most spectacular scenic drive of my life; every turn in the road seemed to produce spectacular views. During the first half of the drive, climbing up the mountains would produce sudden and amazing views of the Pacific. Then as we continued on, waterfalls and other snow-capped mountains would stun us. We drove over and through the spectacular mountain range east into high desert, finally descending to the town of Vernon in the Okanagan.

We met up again with Steven in his hometown. Steven and I had spoken many times on the phone but had only met in person this first time in British Columbia. We were there to visit an organic medicinal herb farm that he had part ownership in. We were very impressed with the farm but more by Steven’s straight-shooting answers and character: he just had a life-perspective about him that seemed to be on our own wavelength. It wasn’t just that we both loved the medicinal plants, or the camaraderie of being in the same business; there was a sense of intrinsic trust between us.

He met us from the hotel in the morning, and we headed out to take a look

at some local farms, out past Vernon into the dry rolling hills. These dry hills could produce huge high quality plants from their soil if only they could get one vital ingredient: water. Thus, many lakes and rivers have been used to irrigate and make lush green farmland. Steven and Nick's organic farm had this precious ingredient, ever-present as a water aquifer to be tapped into just below their land. They also had a pond with extremely high nitrogen content that they would use to produce a stunningly health crop of medicinal plants. One thing that had impressed us in general in British Columbia was how many organic farms there were, and how most hotels (certainly more hotels than back home) were offering organic produce in their restaurants. There seemed to be a heightened awareness in everyday people about the benefits of eating organic. The other interesting feature of the farm was the permanent structure of a makeshift amphitheatre right in the middle of the farm, right in the middle of a sparsely populated area.

"Why is that there?" I asked. "Oh that! Well you see," Steven said in soft slow Canadian tones, "Nick the owner used to travel all over North America in a traveling theatre group. Until he settled this land to farm, and once a year there is a festival and the group returns and puts on plays right over there, for about two weeks and then they go on their gypsy way." Amazing, I thought: huge healthy organic medicinal herbs and a theatre to boot!

After a long day filled with farms, herbs, and many laughs (always a formula for a great day for me) -- a real day of getting to know each other -- Steven returned us to our hotel, with a kind invitation to dinner that night at his house. After a quick swim and shower we were back into Steven's car heading for dinner at his house. After a great dinner, Carol, Steven's wife, invited our girls to play some games in another room. Steven, my wife Po and I, were hanging around the dinner table and an amazing chilling story started to take shape, as Steven began to tell us about an event that had changed his life forever. As Steven told the story, we fell from boisterous, and energetic dinner talk, into a painfully hushed silence around the table, as the light faded from the dusk of night outside. Steven's countenance had also faded, he had an air of pain



and patience, horror and enlightenment, that accompanies many meaningful life experiences. We listened intently as the mood shifted and the blackness descended outside and inside. He had been bitten by a rattle snake, and had lived to tell the tale.

Every Crevisse givess a hisss, To warn uss of a snake's kissss  
This is our motto as we descend, Beneath the massive cliff

--**Steven Lattey**

“Who would have thought I would wake a sleeping snake to strike with no rattle to warn. A snake would strike me unawares, as I surprised her in her slumber, dreaming of field mice to be devoured. And the walk towards the snake! The fateful walk. Carefully and carelessly chosen steps; a stop and a go; a left and a right. I started down the trail to Kalamalka Lake and changed my mind and decided to climb the ridge so I could look down from the cliffs: east into Deep Lake and south down Kalamalka Lake and west over the range hills to Terrace Mountain.”

“So fast and unexpected, with no warning sound, the rattler whacked me hard in the ankle and then slid off into the bushes, as quietly as she had struck. Such a quiet moment. A stunned, quiet moment. I reach down and touch the innocuous two holes, so clean and surgical. I say to myself, ‘You’ve been bitten by a snake.’ I am trying to convince myself of the unbelievable truth. For a moment I think I’m all right the holes look so... so professional. But my heart is pounding and I keep repeating, ‘I have been bitten by a snake.’ I am trying to understand what has happened. I fall back a few steps and the poison hits me, rushes to my head and staggers me to my knees. I am reeling; only seconds have passed and the poisons are all through me. First, one poison goes straight to my head.

‘You son of a bitch I think you’ve killed me.’

I massage blood from the two holes in my ankle to get the poison out of

my body. The dark blood comes from deep in my leg, a steady fountain. The two small holes are swelling into a purple welt. I take my shirt off and wrap it around my thigh but my hands are numb, my fumbling fingers can't tie the knot; can't twist the cloth tight. My legs are numb and I am shaking and so weak. And the worst feeling of all is this horrible sick buzzing in my head. The whole world begins to buzz. Got to slow things down. I know this. Got to stop my pounding heart. Slow my heart, cool down, slow now, steady. No time to panic like a fool. This is bad. God, this is bad. Death is near. I am already so awful sick with my limbs going numb and the sound of electrified blood rushing through my head. The sound is driving me out: high volume static inside my skull scorching the pathways between me and my body; destroying what hooks me up with my arms, my legs, my face, my tongue. Oh God, I will die. This feels so very much like death”At the top of the hill the world breaks open like a raw egg. I see lightfaces at the edge of my wavering circle. I see faces like light at the top of the hill: three shining faces. I call these faces “hoops” because they have thick rims of Hot Light and they are quiet and empty and deep through the centre. The faces are way out there, at the edge of our world. Try to imagine three dark mouths blowing silver threads, across endless space. The shining faces blow a gentle web of silver threads across a great chasm. I am standing in the meadow and the threads blown from the faces wrap around me. But I am no longer me”

“I picked my way carefully up the ridge. I could have gone anywhere. I walked directly to the snake. We were fated; an ill-tempered snake and me. There is a certainty about the whole affair. Is this an affirmation of life? Is this a demand? What is this? My teacher, the snake, is ruthless. So fast and unexpected, with no warning sound, the rattler whacked me hard in the ankle and then slid off into the bushes”.

When Steven slipped into the coma in the hospital they did not know if he would return from his reptilian subterranean torment:

“ Death (was on me now) from the inside. I curl and wait. These are dark

hours. The venom is tenacious in its cruelty. A vicious, unrelenting attack. I am days tossing in a subterranean ocean. The view is obscured by a murky turmoil of brown and red clouds but what I glimpse between the clouds is brutal, here is what I see: I see a compressed history of man: a short and nasty history of the world. The centuries are a rosy blur of savagery. I am looking inside my own poisoned blood and every droplet contains another horrid tale. There is no end to the carnage; and the loving drops are so rare. I am a captive witness There is no way to turn my head: Avert my eyes. I have No body: No head, No eyes to turn away. Death is always at our shoulder but only rarely does he tap us with his stick. And tap so firmly! And such a stick! Such a primordial stick. A stick so deeply rooted in the most ancient soil of our selves. A moment recorded on the walls of caves and in Egyptian manuscripts. I am brought, ankle to fang, to these old reptiles. These ancient ones who have stricken fear in our hearts since first we bit the apple and tasted pleasure in the flesh”.

Steven told us how tired he was, after he recovered, and how the soles of his feet were sensitive months after. In hushed tones he went on: “I walked on baby’s feet, sore little baby’s feet. I am a true tenderfoot. I go ‘ouch, ouch’ as I walk across the kitchen floor and back to my couch to rest. My leg aches where the fangs sunk in. There are hard bruises deep in the flesh.”

He continued to describe how he felt months after his recovery from near death.

“I barely move. Electricity still rushes like a black flower up my spine. I laugh easily and cry too much. I cannot read a newspaper in public because I cry at any brave story (man saves children from house on fire) or heartfelt story (boy buys bell for church). I cry at any brutal tale or pitiful tale (prostitute/drug addict murdered).”

I recently asked Steven what he thought he had gained from going through such an horrific subterranean world of snake poisoned dreams and coma. He said with his down-to-earth way, in soft Canadian tones ”You know..... when you get so close to leaving [death], it really changes how you see the world, how you see

the little things. I feel changed on all levels.”

I asked Steve who the “shining ones” were in his near death experience he said, “ I think they maybe my ‘guides’ and I still feel them with me and I’m comforted by them, even now.”

I remember at the dinner table that night, after Steven had shared the full story with us, a moment that touches me even now. Carol, Steven’s wife, leaned close to us over the table, almost as if she was sharing a secret with us. ‘You know, Geoff, it is almost like Steven was ‘tenderized’ by the experience. He became more tender in his body, mind and spirit; it changed him forever”

Steven told how rattlesnakes are endangered and a nest had been found during the building of a development up in the hills, and the laws says they must be protected and they were brought to the park across from his house. They must have been especially territorial and aggressive following the move. What really worries him, is that school kids are brought to the park for nature walks against his protests, he still sees groups of kids going into the park, where the rattlesnake that bit him still lives!

“Damn I hate snakes!”

### **--Indiana Jones—The Temple of Doom**

The Native American Indians were able to unlock the chemistries of Echinacea, with an almost ‘Harry Potter’ like magic, to use it as an antidote to the rattlesnake venom.

### **Echinacea (Echinacea angustifolia and E. purpurea)**

Echinacea has been used for centuries, maybe even millennia, for rattlesnake bite. Of course, these days it is enormously popular in Europe and the U.S. as an immune-boosting herb. Yet it is absolutely astonishing how for millennia the rattlesnake and echinacea came to live side-by-side on the prairies of North America.

This is one of the amazing and thrilling stories of nature's (or Gaia's) seeming master plan or intelligence. In the central plain of North America, from where Steven was bitten to south-western Saskatchewan, Southern Alberta and British Columbia along the Californian coastline into Mexico and eastward through the Dakotas, Nebraska and into Texas are the eight or so species of Western Rattlesnakes. We know from Steven just how poisonous and lethal their venom is. This pre-historic venom has a neurotoxin called crotoxin; it is a polypeptide protein of two modest components, one acidic and the other, basic. These two components produce a synergy in action. They both have to be injected into the victim together to kill, going into Steven's blood after the snake had bitten him caused great haemorrhage and sensory and motor depression followed by his collapse, shock and near death. Yet next door to each other, neighbours on the same prairie, lies the antidote, locked inside the chemistry of echinacea -- the chemistry of balance on the prairie. In the mesophyll compartments of the leaf tissue between the upper and lower epidermis of the *pupurea*, *angusifolia* and *palida* species of Echinacea is locked the life-saving 'first aid' and antidote to the rattle snake poison. This 'kit' is primed for rapid action. It is a glycoside-caked echinacoside. This glycoside is super water-soluble because it has a caffeic acid entity attached to it. This makes this medicine enter the blood stream with the speed of a life-saving bullet. In this first aid kit, together with echinacoside, are inulin, sucrose and betane, two isomers of 2-methyltetradecadiens, echinacin (neotherculin, sanshool), and various resins and fatty acids. This arsenal 'kicks-in' the immune system, opens up the peripheral blood vessels, climbs into the subterranean world of rattlesnake venom and wages war until the venom is detoxified, gangrene is held at bay and health is restored.

It is told that Dr. Meyer, a Nebraska doctor of the 1870's, was so confident that his patent medicine "Meyer's Blood Purifier" could treat rattlesnake poison, that he even offered to be bitten just to prove his echinacea based medicine would work! (Now that's confidence for you.) He claimed "Meyer's Blood

Purifier” was “an absolute cure” for a multitude of ills, including rattlesnake bite and blood poisoning, gangrene, and leg ulcers.

In 1907, echinacea became the most popular herb in the United States, both among eclectic physicians and conventional doctors. In 1910, research found immune-stimulating properties of echinacea such as increasing white blood cell counts. Echinacea’s reputation began to spread across the Atlantic to Germany in the 1930’s, beginning a massive export trade from the US to Germany. With the discovery and production of antibiotics between 1940-1950, the popularity and fervor regarding echinacea decreased. It was Herbalists rediscovered it in the 1970’s, and herbal product manufacturers began to produce echinacea products again. In Germany, doctors prescribed echinacea 2.5 million times in 1994 alone. Many scientific studies in the past decade have focused on its immuno-stimulant properties. In one study, a German team found that echinacea root seemed to reduce the severity and duration of cold and flu symptoms. After reviewing twenty-six human studies, a German researcher concluded that echinacea can stimulate the immune system. The studies show that it increases the number of white blood cells and enhances the process of phagocytosis (the gobbling up of invading organisms by immune cells). It may also block an enzyme that helps infections spread. There is some evidence that echinacea also stimulates cells called fibroblasts, which play a role in healing wounds. Echinacea’s properties may offer benefits for nearly all infectious conditions. Perhaps the most important immune-stimulating components are those found to increase both the production of T-cells and other natural killer-cell activity. Simply put, this herb activates the immune system.

The greek word ‘Echinos’ means spine. When you run your thumb over the cone-head of the ‘purple cone flower’ or Echinacea, in the center is a bed of ‘porcupine like’ spiny quills. These help Echinacea’s ingenious seed-dispersal-mechanism, it lives and survives in a dry prairie province, by nailing unsuspecting animals into carrying seeds to another destination, hitching itself to fur to get a free ride. Echinacea also has amazing adaptive characteristics

to withstand long periods of prolonged intense sunshine married to minimal moisture. They achieve this by having a rough hairy surface on the leaves, which reduces evaporation, and they have the further ability artificially to place the leaves at 'wilt point'. In this state the plant goes into semi dormancy. These factors combined with their thick, tough tap-root system makes the plant indifferent to the insults of summer. Nature has produced a true ally for us in echinacea. It is an efficacious antiviral, antibacterial, and blood purifier -- one of the most wonderful tools in our "wellness herbal pharmacy."

### **Dandelion (*Taraxacum officinale*)**

This hardy weed grows almost anywhere. In lawns and gardens, it drives homeowners to employ many chemicals to kill it off. If only they knew how this herb can subtly and slowly cleanse the body, improving digestion and clean the skin, they would be thankfully digging it up!

Today, young dandelion leaves are often found in the grocery store in a combination with mixed baby greens. The leaves are very bitter and act as a mild potassium-sparing diuretic. This is very good for people with high blood pressure, congestive heart failure and detoxification. The long tap-root of dandelion has different medicinal properties than the leaves. The root exerts its effects on the liver and the gallbladder, where it stimulates bile production and release. Encouraging bile release helping detoxify the liver encouraging and coaxing it do its job more efficiently, and rid the body of excess cholesterol. It also makes the stools larger and softer in a bowel movement. This is why dandelion is an effective agent for liver disease, detoxification, high cholesterol, skin disorders, constipation and gallstones.

Used for centuries, dandelion is a detoxifying herb, though its exact mode of action is still largely unknown. Its major benefits are derived from the leaves, which produce a diuretic action, yet contain high levels of potassium, giving the body back this much-needed mineral. The roots are also used as a liver tonic and digestive stimulant. They promote the flow of bile from the gall-bladder

which aids in fat digestion. They are mildly diuretic and mildly laxative as well as useful in rheumatic conditions. The roots can be dry-roasted and ground to use as a coffee substitute. A fresh root decoction (tea) can be taken as a liver cleansing tonic to treat chronic toxic conditions in the body such as constipation, joint inflammation, acne, eczema, and gout.

### **Why our Livers need encouragement**

We presently inhale, ingest and absorb more toxins, chemicals, and disease-causing foods than ever in the history of humankind! We come in contact with pesticides every day through the food we eat, the water we drink and the air we breathe. These substances enter our bodies through the skin, lungs, mouth and eyes. It is now more important than ever for our elimination and detoxification systems to be in top form. Of the five organs of elimination and detoxification (the colon, kidneys, liver, lungs and skin), the liver is the most important for detoxification. It has the astounding ability to process and breakdown natural and synthetic toxic compounds, and prepare them for elimination from our bodies.

### **The External Environment**

If the body cannot eliminate the toxins, they tend to be stored in body fat and accumulate over time. In 1989 alone, EPA estimates, in its Toxic Release Inventory National Report, that 1.9 billion pounds of chemicals were dumped into our nation's water systems. In that same year, 2.4 billion pounds of chemicals were released into the atmosphere; with the total chemical attack on the environment estimated at 5.7 billion pounds. Most Americans are subjected to 14 pounds of food additives, colorings, flavorings, pesticides, herbicides, anti-microbials, and, now, GMO toxins per year. 70,000 chemicals are commonly used in pesticides, foods and drugs according to Elizabeth Lipski, M.S., C.C.N., Digestive Wellness. Some of these chemicals can have a serious negative impact on our health, as well as cause neurological and psychological damage.



Amazingly, less than 7% of chemicals used in high volume are thoroughly studied. In the external environment, toxins surround us.

## **Water**

Significant portions of our groundwater and surface water are now contaminated with pesticides, herbicides, fungicides and fertilizers, as well as their metabolites. These contaminants find their way into groundwater, wells, cisterns, and reservoirs, eventually coming out in home faucets. A 1995 study tested tap water for weed killers in cities across the U.S. corn belt and showed that major agricultural weed killers are routinely found in tap water at levels that exceed federal health standards.

## **Air**

The Environmental Working Group performed independent air monitoring, in eight California counties and found that toxic pesticides routinely drift from farm fields into surrounding neighborhoods and schoolyards.

## **Indoors**

The EPA has ranked indoor air pollution among the top five environmental risks to public health. According to the EPA, indoor air levels of many pollutants may be 2-5 times, and sometimes more than 100 times, higher than outdoor levels. A 1990 EPA study detected 32 different pesticides in air samples taken inside and outside homes. Indoor air had much higher concentrations. They estimated that 85% of the total daily exposure, to airborne pesticides, comes from breathing air inside the home. On top of that, most products used in homes contain either organophosphate or carbonate pesticides, which are acute nervous system toxins.

## **The Internal Environment**

The liver protects our body by filtering over one liter of blood a minute

and produces up to one quart of bile a day. It metabolizes internal wastes such as harmful bacteria, fungi, viruses and parasites, while breaking down our hormones such as testosterone and estrogen, preventing build ups, that could lead to PMS or mood swings, and other hormonal imbalances. The toxins processed by the liver are excreted by the lungs, kidneys and through bile into the gall bladder and out through the intestines. So it makes sense to give your liver and gall bladder a little help from time to time. This is especially important for patients who suffer constipation as they are re-circulating wastes through their systems.

### **Is your Liver Toxic or Sluggish?**

A toxic or sluggish liver can be the causative factor in a wide range of ailments. Common symptoms include: Eye problems with the eyes becoming sore, gritty and easily tired. Low energy, with general listlessness. Nausea with bloating and flatulence. Bowel disturbances. Chronic weight gain, caused by having trouble digesting fats. PMS with hormonal imbalances and menstrual irregularities. Depression. Headaches and migraines. Irritable Bowel Syndrome, Confusion, Impaired nervous function, Respiratory allergies. Increased risk of cancer. All these can be due in part to sluggishness of the liver's functioning.

Some substances limit the liver's ability to detoxify and are suspected in toxic reactions involved in immune dysfunction, which can cause:

- Allergies,
- Inflammatory States,
- Swollen Glands,
- Recurrent Infections,
- Chronic Fatigue Syndrome,
- Auto-Immune diseases.

Some of the more common autoimmune diseases are systemic lupus erythematosus (SLE), sclerosing cholangitis, primary biliary cirrhosis, hashimoto's thyroiditis, vasculitis and rheumatoid arthritis.

## **Clean that Filter!**

If the filtering and/or detoxification system within our livers is overloaded or inefficient, this will cause toxins, dead cells and micro-organisms to build up in our blood stream. This will then increase the workload of our immune systems, which will become overloaded and irritated. Our immune system will then produce excessive inflammatory chemicals, and in some cases, auto-antibodies, because it is in a hyper-stimulated state. We should be motivated to cleanse our livers at least once a year, as we do not want these dangerous substances building up in the blood stream and moving to deeper levels in our bodies. That pesky weed that most people spend their gardening lives trying to obliterate from their yards and gardens actually proves to be quite a useful plant to help encourage and coax the liver to do its job!

## **What's a body to do?**

Dandelion (*Taraxacum officinale*) makes one of the best natural diuretics. Some drugs cause kidney stimulation which causes a loss of potassium, which can cause an aggravation with any cardiovascular problem that you may have at the time. Because dandelion has up to a 5 percent amount of potassium, this loss is counteracted. In Chinese Medicine, it has had many uses: to “clear away heat” and detoxify blood; to achieve weight-loss and as a diuretic; and to reduce swelling and dissolve clots. It is suitable for food poisoning, inflammation of the liver and gallbladder, and kidney and gallbladder stones. Dandelion stimulates bile secretions, cleansing the gall bladder. Cleansing herbs have been defined as ‘blood purifiers’, herbs that facilitate and support the elimination of wastes from the blood through the skin, kidney, and bowels. Dandelion root opens up perspiration and both dandelion and help excrete wastes. What's a body to do, then? Help the liver with herbs to help the liver detoxify and excrete harmful toxins from the body.

## **General Dietary Guidelines for Liver support.**

Plenty of organic, unrefined, unprocessed foods. Fresh whole foods. Fresh vegetables, fruits, whole grains and unrefined carbohydrates should make up the majority of the diet. Avoid red meats, animal fats, sugars, refined white flour / pastas, and processed foods. Avoid caffeine, other stimulants and alcohol. No hot, spicy, greasy, fatty, oily, fried foods. Drink plenty of bottled water or diluted juice, at least two liters per day. A minimum of one daily serving of cruciferous vegetables and at least five servings of fresh fruit should be included in the daily diet.

Protein sources can be obtained from lentils, soy, beans, nuts, seeds and fish and organic chicken.

“Organic growing is a process of attunement that calls for looking at and responding to whole ecosystems in which plants are growing, rather than concentrating on isolated aspects. “

**--Dan Jason, 1991. Greening the Garden.**

Why are organically grown medicinal plants and foods so important? Well for food as for medicinal plants, organically grown or cultivated, means avoiding the use of ‘man-made’ chemical fertilizers, chemical pesticides, chemical growth regulators/hormones and antibiotics. These substances are poisoning our planet and our bodies and our livers. Organic farming is based on a system of farming that uses production methods that minimize the impact on the environment. The primary focus is to maintain a healthy soil and develop a balanced farm ecosystem that is environmentally sustainable. “Certified Organic” in North America, means that a product has been produced in accordance with specific guidelines and organic standards, as established by a certifying agency. Some studies have shown many more vitamins and trace elements in organically grown than conventionally-grown food and of course, it will not have been treated with any noxious chemicals. As for medicinal plants the same holds true and more healing compounds are produced and held by the plant. It is safe,

healing, nutritious, and unadulterated food or herbs, produce the highest healing compounds. They do not use artificial chemicals, pesticides and fertilizers. Have you ever you have seen a picture of a farm worker spraying crops from inside a “space suit”? The space-suit protects them against some of the highest rates of cancer in the country; farm workers who are in constant contact with these chemicals are contracting cancer more often, than other groups of workers. While pesticides may pose a health risk to consumers, the risks are far greater for field workers. A National Cancer Institute study found that farmers exposed to herbicides had a six-times greater risk than non-farmers of contracting one type of cancer. Field workers on conventional farms, due to their direct exposure, are the most vulnerable to illness as a result of pesticide use. Organic farms eliminate that risk by eliminating harmful pesticides and other chemical inputs from their practices. I know I do not want to take any food or medicinal plants inside of my digestive system, that have to be sprayed with such powerful chemicals. Organic farming of medicinal plants relies on a modern and scientific understanding of ecology and soil science, while also depending on traditional methods of crop rotation to ensure fertility and weed and pest control. When you buy certified organic food and products, your money cast a vote for a healthier planet because organic agriculture and processing practices. We need to protect the health of our future generations. The average child receives four times more exposure than an adult to at least eight widely used cancer-causing pesticides in food. The food choices parents make today will impact their children’s health tomorrow. It is a medical mystery marked “urgent.” All over America, growing numbers of children are suffering from asthma, childhood cancers like leukemia, as well as learning and behavioral disabilities. Scientists are searching for clues to the causes of these illnesses, and a growing body of research suggests that everyday environmental toxins - what kids eat, drink, and breathe - may put them at risk. Medical investigators and health officials are just beginning to be engaged in the latest research on links between childhood illness and environmental contamination

We must protect our water quality it does after all make up two-thirds of our body mass and covers three-quarters of the planet. Despite its importance, the Environmental Protection Agency (EPA) estimates that pesticides contaminate ground water in 38 states, polluting the primary source of drinking water for more than half the country's population. Organic growers and processors use practices that eliminate polluting chemicals and nitrogen-leaching, and thus protect and conserve precious water resources.

“People call the soil mineral matter, but some one hundred million bacteria , yeasts, molds, diatoms, and other microbes live in just one gram of ordinary topsoil. Far from being dead or inanimate, the soil is teeming with life. These mirco-organisms do not exist without reason. Each lives for a purpose, struggling, cooperating , and carrying on the cycles of nature.”

**--Masanobu Fukuoka, The Natural Way of Farming.**

The Soil Conservation Service estimates that over 30 billion tons of topsoil are eroded from U.S. crop lands annually. The cause? Intensive monocropping (the planting of vast areas with the same crop year after year) and environmentally insensitive farming practices. The results? The worst topsoil erosion in history. Soil is the organic farmer’s most revered tool. Rather than relying on synthetic fertilizers, they build their soil through natural amenities, such as composted manure, and by planting diverse crops. Organic farmers respect the soil and view it as the foundation of the food chain. Organic certification standards are the public’s assurance that their food and products have been grown and handled according to strict sustainable procedures without persistent toxic chemicals. In the medicinal plant world this handling also means that if the plant is extracted, that non-toxic solvent are used, it means also that the herb supply has not been irradiated to lower bacteria counts, as this also lowers the plants healthy compounds and its energetic structure. Often medicinal plants are gassed with E.T.O. approved by Federal and State agencies to clean up raw materials such as herbs and spices and other food ingredients. ETO gas is used as a fumigation agent to kill pests. Ethylene oxide has also proven to be a carcinogen in animal experiments. Organically grown and processed herbs are safe from these dangers. Some governments such as the Japanese protect their citizens with laws prohibiting the importation of products that use E.T.O. and irradiation.

Many EPA-approved pesticides were registered long before extensive

research linked these chemicals to cancer and other diseases. Now, the EPA considers 60% of all herbicides, 90% of all fungicides, and 30% of all insecticides as potentially cancer causing.

Regarding heirloom seeds, the loss of a variety of species (biodiversity) is one of our most pressing environmental concerns. Many organic growers have been collecting and using heirloom seed varieties for decades. On the other hand, many conventional farms still grow hybridized vegetables and fruits, bred for uniformity, ease of shipping and cosmetic appearance. In the US we have even bred-out the bitter taste of soy beans, breeding-out many anticancer compounds in the process. Such “modern” concerns have ignored the value of preserving a diversity of seed varieties, and therefore a more balanced ecosystem. Top restaurant chefs across the country will tell you ‘organically grown foods taste better’. Why? It’s common sense - well-balanced soils grow strong healthy plants which taste great.

The organically-grown taste test. Before we left British Columbia, to come home, we decided to test the theory that organically grown, is tastier. We chose the Kelowna ‘Summer Hill Organic Winery’ for the taste test. Summerhill is a Certified Organic Vineyard that ages its wines under a pyramid. They also add glacier rock dust to provide trace minerals to their soil. Remineralized soils are proving to produce more healthier and flavourful foods. The Okanagan Valley is a semi-desert with only eleven inches of rainfall per year and hardly any humidity in the air, in any season. Lake Okanagan, creates what is perhaps the finest grape growing region in the entire world. This combined with cool evening temperatures allows the production of small grapes with high sugar content and acidity, versus fat watery grapes, for intensely flavored and aromatic wines. I wanted to put organically-grown wine to the taste test and I can report that as we sat on the veranda, enthralled the amazing view, with our successful mission under our belt, watching wisps of clouds passing along the valley below, tasting organic wines, I can assure you they more than passed the test!



## Chapter Seven: England

I grew up in the West Country of England. From twelve years old, I was irresistibly drawn to Japanese arts, an uncommon journey, in a working-class area of Bristol. It led me to Japan, and rebounded me back to England, to formally begin to my life's path as a healer. Having studied and graduated twenty years ago and left the green shores of England, my interest these days draws me back, back to the history and magic of medicinal plants with which my birthplace is so richly endowed.



Ironically, my path as a healer started because of my study of martial arts. I was drawn to Japanese martial arts from the moment I heard about the ancient “warrior priests”, it was a magnetic attraction. I began practicing Karate, Kenpo, Iaido (sword kata), Aikido, and studying related practices such as Teso (Japanese palm reading,) Shiatsu (massage of acu-points), and meditation. When our teachers pushed us too far, or we ‘took a knock’, we were instructed to make our own simple herbal remedies, such as Tiger Balm liniment. (I made

my first batch of tiger balm liniment, so strong, that by the time my students wanted to buy some, it had burned right through the cardboard container!)

At the age of 17, I started my own Karate dojo, officially sanctioned by my teacher. One year later, after an intensive, two day long examination and submitting a written thesis, I achieved a black belt. I was the youngest in the UK at the time. It was such an enriching growth experience that by 19 years old I had been exposed to Japanese culture and thought, Tibetan and Zen Buddhist meditation and philosophy, and had traveled to America and Israel, all from my involvement and dedication to martial arts.

I was infatuated with martial arts from the ages of 13 to 22 spending more and more time at the dojo, I was barely able to participate in the conventional pastimes of an English teenager, such as soccer, rugby and cricket. At twenty one years old, I was invited to live at the Oki Yoga Dojo in Mishima, Japan by Master Oki in return for teaching Karate. While I was making preparations to leave my job and go off on the biggest adventure of my young life, my world was shaken.. Looking back it was this 'catastrophic event' that really set 'my path' before I knew it and even before I headed for Japan. My Father died suddenly of a massive, unexpected heart attack, in my arms, in the middle of CPR, in the middle of his 'death rattle' belch into my mouth, he passed, and was gone. I knew he was dead and gone forever, even when the rest of my family could imagine him walking-in at any moment for years to come. I knew he was gone, as I watched his lifeless body for an hour afterwards, trying to comprehend the incomprehensible sudden death of a loved one. Then there was the inconsolable suffering that death brings to those loved ones left behind, such as my mother, numbed just trying to comprehend it, trying to understand our own mortality through theirs. When I learned that his heart attack, like many other illnesses, like many deaths were preventable. I wanted to help prevent the needless suffering, I was called to healing. Looking back at this young man who is me, from this point in my life, I can see, that this was the defining moment, that my path was set as a healer.

My family, myself and most of all, my mother, were devastated. My plans were immediately put on hold for a year. During this year, questions of my father's death were deepening within my psyche. How could a healthy 49-year-old man die suddenly without warning? Why was conventional medicine unable to diagnose heart attacks? What was the definition of health? It was clear to me that it wasn't an absence of symptoms! This led me to questions about diet and what constituted a healthy diet, and, how can we protect ourselves? I came to realize that there was so much we could do to help ourselves, through diet, herbs, complementary medicine and exercise. To call this information on 'wellness' to us, seemed to me to be 'against the flow' of our society's promotion and advertising of unhealthy practices. (junk-food, disease causing farming practices, no pharmaceutical alternatives, sedentary lifestyle). I realized then, that the "disease centered model" of our society, and our conventional medicine, was far too focused on symptoms and symptomatic relief through pharmaceuticals and surgery rather than focused on prevention and cultivating health achieving well-being! As this realization was surfacing to my consciousness, it was motivating and driving my interest, in what defined health. My questions centered around how good health can be cultivated and how we can help others heal themselves before a crisis. I was not interested in studying the 'disease model' approach with powerful drugs with their unwanted side effects. I could see there was a place for 'acute crises management' or 'life-threatening' disease; yet, because I was more interested in creating sustainable effects that work with and cultivate the body's own ecology, that take into account emotional, mental and physical imbalances that underlie chronic degenerative disease, I had no doubt the study of 'natural healing' and wellness would be my path (even if at that point in time I didn't quite know it yet!). It would take many years of study, but slowly my interest would return to the rich history and experience of the herbal medicine of my birthplace.

## **European and British Herbal History**

In Europe, ever since the Roman Empire, herbal medicine has had its roots in two main sources: local, indigenous, pre-Roman (and often prehistoric) traditions, and the Greek medical tradition brought by Romans in their colonization of the continent. In Great Britain, the pre-Roman herbal medicine was from the Druidic tradition.

### **The Druidic Tradition and the Myddfai**

Evidence of herbal medicine among the Druids, the mystical priests of the Celts of Britain and Gaul, has been found in Stone Age burial sites. Not much is known about this secret order of Priest-craft. The term ‘druid’ means ‘knowing the oak tree’ in Gaelic; the oak tree was sacred to the Celts. The **Romans** tell us that the Druids were magicians, of a Harry Potter or a Merlinesque stature. Like most ancient civilizations, every household knew their plant lore and knew of many plant remedies for everyday illnesses. The tribal shaman or the ‘Ovates’ were the healers of the Celts. They held special knowledge about plants and treated villagers for more serious illnesses. They treated illness spiritually as well as physically. Most of their plant knowledge was passed on to carefully chosen individuals in an era of oral tradition. The Celts had their own medicinal traditions usually carried out by the Druid priests for about 1,000 years BC.

In Wales, there was a group known as the Myddfai – traditional healers of doctoring families who passed on their knowledge down the generations. The physicians of Myddfai drew upon a materia medica of around 175 locally grown herbs. Their methods were very simple, just single herbs or combinations of two or three different varieties. According to legend, these Physicians were the descendants of the ‘Lady of the Lake,’ a beautiful fairy who arose from the depths Llyn y Fan Fach, married a local shepherd boy, and set up home on a farm near Myddfai. A story of love, magic and broken promises, it is one of the best-known folk tales in Wales.

This is legend of a farmer who fell for a beautiful ‘fairy woman’ living in

a lake. The farmer against the odds successfully wooed her and she agreed to marry him. But she warned that if he were to strike her three times, she would return to her watery home forever. The lovesick farmer instantly agreed. The two were married and the bride brought with her a dowry of magical cattle.

All went well until the Christening of their first son. Several times they set off to attend the ceremony and several times the Lady insisted on returning home to collect something she had forgotten. Eventually, her exasperated loving farmer patted her on the back, urging her to depart for the ceremony. The woman told him that the gesture was the “first strike.” She explained that she had been waiting for the sky to cloud over because of a premonition that their baby would die if she took him out in full sun that day. Their relationship recovered, flourished, and our couple had their second boy.

A problem emerged, however, at the wedding of the farmer’s cousin. During the ceremony, the ‘lady of the lake’ began to weep. Unknown to her husband, she had had another premonition. She had foreseen the death of the bride. Embarrassed and anxious that his wife’s tears should not stop the service, he tapped her arm – realizing a heart-beat too late that he had now struck her twice.

Our couple of legend went on to have a third son, but the woman’s tragic and magical premonition about the bride proved accurate, and worse was to come. The dead woman’s husband also died. At his funeral, our ‘the lady of the lake’ began laughing uncontrollably. She had, through her psychic powers, seen that her husband’s cousin was in a better place, smiling down happily on the gloomy funeral. Her husband the farmer was so outraged by her reaction, that he slapped her softly on the cheek to bring her to her senses. Dumbstruck and sickened, he realized too late that he had sentenced himself to the exile of his heart’s beloved. He had now struck her three times -- and he had “struck out.” His beautiful fairy wife left him. Losing his mind with grief, he pursued her, but his search was fruitless. She had returned to the lake, and she was lost to him forever.

The Lady of the Lake only appeared again for the benefit of her sons. She

instructed her three sons in the Druid ‘Ovate’ arts of healing and medicine, and showed them where to collect the herbs, which, then as now, grew in abundance in the area. And so began the lineage of the physicians of Myddfai, shrouded in Druid and Celtic magic. The eldest son of the Lady, Rhiwallon, was recorded as the personal physician of Rhys Gryg (warrior son of the Welsh Prince Rhys ap Gruffydd) who was the Lord of Dynevor and Ystrad Towy. Rhiwallon was assisted by his three sons, Cadwgan, Gruffydd and Einion and they and their descendants were famed for their skill as herbalists. The reputation and fame of the herbal Physicians spread throughout Europe over the centuries.

Their collective wisdom is contained in a thirteenth-century document called “The Red Book of Hergest,” which is now held in the British Museum. The legacy of their knowledge continues today, and the National Botanic Garden in Carmarthenshire is now growing and developing herbs used by these legendary herbalists. Legend has it that the Lady of the Lake told her sons that for many, many generations their descendants would be among the best physicians in the country. In fact, this family continued to practice medicine without a break right up until the middle of the 18th century. The last physician Rice Williams died in 1842.

My own meeting with an old mystical, Welsh woman ?

I remember my own meeting many years ago, with an old mystical Welsh woman. To this day, there is a belief throughout the British Isles, that Celts are attributed with more –than-their-fair-share of Mystics. I was visiting my friend’s house, who lived in a poor mining village in Wales. We were leaving, on our journey together to Japan. His Mother was such a mystic, and she was well respected and revered by the community for her Psychic abilities that would come to her when she would ‘read the tea leaves’. She called me in to her living room, it was dark and murky and I could barely see across the room in the half-light, to where this white haired, wizened old lady sat. She was a kindly, easily approachable old woman, hunched over by arthritis. I sat down quietly, apprehensively as I remembered the many tales my friend had told me, about

his Mother's reputation for reading peoples futures accurately. I started to get nervous. We drank a cup of tea together, I looked up and met her odd gaze, she was looking at me over her tea, gray face, gray hair and gray eyes and piercing into me, with a kind and benevolent knowingness. We finished and then she took my empty teacup and started to look into the dregs at the bottom of the cup, quite intensely. "You will meet your wife" she began and immediately I was startled, I didn't want to meet a wife any time soon.."You will meet your very beautiful wife, in a building that bends in the middle, you will work together, yet when you first meet and become friends you will not know that you will work together. I see she has will have different colored hair, than those around her. Maybe she is blonde" Well to be honest I wasn't the type that was susceptible to suggestion or easily fooled, yet I was a little bit spooked! There was something about her far-away glazed-over look that sent shivers down my spine and the fact that registered in me was how sincere she was, just something about her energy, and didn't know what she saw, but I filed it away in my mind. Within a year in a half I had forgotten, I found myself moving after a year at the Oki Yoga Dojo Mishima, to a small dojo in Shimokitazawa to make a life in Tokyo and continue my studies into the healing arts. I was teaching a small Yoga class of foreigners to pay my keep, and after the class we would hang-out and chat, I had started to have fun and make friends, when I was offered a job teaching English, I gratefully accepted as I was running short of money and I planned to start in a month. The next couple of weeks my boss-to-be would hang-out after and then one time she introduced me to Roberta, "Geoff do you know Roberta?" "Oh yes we are friends" I replied "we've enjoyed each others company, many times after other classes" "Well", my-boss-to-be said, "then you'll be pleased to know that you two will be working together next month" I had a strange sensation well-up inside me fear or apprehension, I wasn't sure, and then in a flood the strange premonition came to my mind, and I was scared.

YET no building! Two or three months went by and I was enjoying work in down town Tokyo, at the Executive training English School, on the 13th floor

of the 26 floored Kasumigaseki building. (PLEASE CHECK THIS) One day there was a mild earthquake, which was not uncommon, the first for me in this building, and it was very physically unsettling. The floor moved in one direction and the ceiling in another, I was very unsettling almost to the point of nausea.. I asked a colleague “how can the floor go one way and the ceiling another?” and his reply sent chills down my spine. “Well this building is a special earthquake design, it bends in the middle” A BUILDING THAT BENDS IN THE MIDDLE that was the strange premonition!!! The last point of that prediction was not complete; my good friend Roberta was a ‘Red Head’! I learned there was only one word for blonde and redhead in Japanese (PLEASE CHECK THIS) then I recalled her exact words” I see she has will have different colored hair, than those around her. Maybe she is blonde” It seemed the fates were set. Yet this time even though their was a very strong synchronistic connection that happen between us we were clearly ‘on the same wavelength, there wasn’t a physical connection. Yet, the meeting was predicted in the ‘strange premonition’ with uncanny accuracy, by the Celtic mystic, two years before. I believe connections may be predicted; alternate future paths can be present yet we are in charge of our own fates, and what we choose to do with them is up to us. However I did meet my very beautiful wife and she is blonde, but it was some twelve years later on another continent.

## **The Roman Empire**

The Druidic medicine in Great Britain, as well as other indigenous traditions throughout Europe, was to mingle eventually with the knowledge brought by Roman armies and settlers. The Romans, in their drive to solidify their empire, exported much of their own culture throughout Europe. This includes their medical system -- botanical medicine as well as surgery -- which they had inherited primarily from the physicians of Ancient Greece. Asclepius (1250 BC) is believed to have been the first scientific herbalist in Western



history. A great healer, Greek legend has transformed him into a god. In Greek mythology, Aesculapius was the son of Apollo, the god of healing. His mother, Coronis, a princess of Thessaly, died when he was an infant. Apollo entrusted the child's education to Ciron, a centaur, who taught Aesculapius the healing arts. Aesculapius was skilled in surgery and in the use of medicinal plants. He also was said to have acquired the power to raise the dead. Eventually Zeus, fearing that he might render all men immortal, killed him with a thunderbolt. Hygeia was his daughter and considered the goddess of health and healing. Two of Asclepius' sons appeared in Homer's Illiad as Greek army physicians. Their descendents were believed to have formed the Asclepiadae, a large hereditary order of priest physicians who kept tight control over the sacred secrets of healing. Asclepius is also the source of the image of the snake that wraps around the caduceus, the symbol of modern medicine. He was traditionally represented holding a staff with his sacred serpent coiled around it, symbolizing renewal of youth (like the serpent casts off its skin).

Hippocrates (460-377 BC), however, remains the best-known herbal practitioner in Western history. He was a member of the family of the Asclepiadae, and was believed to be either the nineteenth or seventeenth in direct descent from Aesculapius. It is also claimed for him that he was descended from Hercules through his mother, Phaenarete. Hippocrates became known as the father of medicine because he was the first to set down a scientific system of medicine (i.e. he cut out all the magic and superstition). As a testament to his strong moral character, physicians must, to this day, swear to abide by the Hippocratic Oath.

In Rome, this Greek tradition persisted, though not always without resistance. The oldest known Roman writings on medicine were written by Pliny (AD 77), who devoted seven volumes of his epic 47 volume work on plants and their medicinal uses. Pliny had a bit of Sstoic chauvinism regarding the Greeks in general, and their medicine was not spared his bias. Instead of reliance on classically trained Greek physicians, he advocated an ideal of

self-sufficiency and self-care. According to Pliny, the doctor came between man's ideal direct relationship with nature, "in which nature gives cheap and simple herbal remedies to those willing to make the effort to find and identify them." Other Roman physicians, however, were much more receptive to Greek medicine. Galen (AD 131-201), in his teens, became a therapeutes or "attendant" of Asclepius (considered a god at that time), whose sanctuary was an important cultural center for the entire Roman province of Asia. Galen, is best known as having been a gladiator-surgeon and the author of the most definitive anatomy text up until modern times; he was considered the greatest physician / herbalist since Hippocrates. His medical writings encompass nearly every aspect of medical theory and practice in his era. In addition to summarizing the state of medicine at the height of the Roman Empire, he made his own important advances in anatomy, physiology, and therapeutics. In general, the Roman Empire influenced Europe and the world by introducing formal hospitals. Each Roman legion, numbering from seven to eight thousand men, were divided into ten to twelve cohorts, and to each, Augustus Caesar assigned four doctors with a supervising legionary physician.

## **The Dark Ages**

Ignorance and inertia descended over Europe like a dark cloud, for six centuries after Rome fell, nothing happened - no research, no writing and no progression of ideas or practice. Only the monasteries kept medical and herbal practice alive. Outside the monasteries, ritual, magic and superstition returned. As the Christian Church assumed the power after the Roman Empire was torn apart, it became the locus of medical knowledge. Monks grew extensive herbal medicine gardens and wrote volumes of botanical medicine texts; they traded this accumulated knowledge together with plants among networks of monks and travelers. King Alfred (870 – 899) ordered medical texts to be translated from Latin into English to make them more readily available. The most famous and Europe's oldest surviving herbals is the Anglo Saxon book "The Bald Book

of Leech” (læce in Old English means healer) written in the 10th Century. Bald was a friend of King Alfred, and the text was a compilation of the best of the Roman and Greek literature. The knowledge it displayed of herbs is remarkable. Anglo-Saxon medical practices were holistic, in the sense that it sought to heal both body and spirit. A great deal of this period of herbalism concerns itself with charms and amulets to protect against evil influences, were treated with a combination of practical and magical means. It includes remedies sent by the Patriarch of Jerusalem to King Alfred. As Medical schools began to spread through Europe, with the most famous at Naples and Salerno, Italy instruction fell from the Church’s hands into laymen’s hands. Salerno (10th – 12th centuries) was one of the lay centers that flourished. Neapolitan medicine returned to blossom during the 12th century, under Norman rule. They taught with Hippocratic principles of good diet, exercise, fresh air/nature, yet healing and herbalism was largely still controlled by the Church. Its monasteries grew extensive herb gardens were the guardians of the books and tended the sick and poor as part of the Christian duty. As with many Herbal traditions throughout the world prayer, incantations (mind-body medicine) were fused as part of Herbalsim.

### **The Renaissance Renaissance, Onward**

Paracelus (1493 –1541) believed that medicinal plants grew where they were needed and they were marked in some way that indicated the part of the body on which they would be effective. Like cured like. Paracelus challenged the ancient Greek, and Roman’s belief that disease is caused by an imbalance of body humors, more likely known as fluids. He argued that each illness has a specific, external cause. Born Switzerland, he taught at Salerno and shifted established and entrenched ideas of the day. He lectured in German instead of the elitist Latin, and called for physicians to task for their greed, in a time of the patients sickness and need. He taught his students to always be open minded enough to learn experientially through ‘clinical experience’ instead of ‘just

academically' Paraceleus was followed by William Turner (1508 –1568) as a great light of their time. He also taught in English so that common people, apothecaries and “old wives that gather herbes” would be able to follow what was meant by the physicians latin names.

During the reign of Henry VIII (1491-1547) The balance of power between established physicians and Herbalists would set the directions of modern medicine and herbalism. In 1523, with an act passed by Henry VIII's father, the physicians, barber-surgeons and apothecaries used this act to protect their financial interests. First the physicians had authority over barber-surgeons, they in turn were over apothecaries and apothecaries Henry VIII, famous for his wives and taking off the heads of his enemies was also a keen herbalist himself, he was responsible for the famous 'Herbalist's Charter' in 1548. This law legalized a new class of practitioner, the traditional herbalists. This regulatory dance, essentially between business interests of the various Medical groups, would play itself out many more times over the centuries. At the time Physicians: were educated at universities, and drew their clientele strictly from the upper classes. After 12 years at Cambridge or Oxford Universities studying Astrology, Classical Greek, Latin, reading Galen, Hypocrates etc, they became Doctors that prescribed expensive esoteric compounds imported from a far. The poor called them 'Talking Doctors' as they talked a lot and didn't get results. They considered themselves the elite of the profession and were themselves considered of the 'Gentleman's class'. They possessed the right to prosecute unqualified practitioners. Barber-Surgeons: were apprenticed, and did not attend universities. They performed crude surgeries operations and dressing wounds. (they threw out barbers from their association in the 17th Century) Apothecaries: also apprenticed. Were responsible to supply, make up, and dispense herbal medicines. Ranking socially among tradesmen. Then there was the 'Wise Woman' tradition, where Housewives and Grandmothers and along with common herbalists, they would help people with locally grown herbs, and with knowledge passed down the generations. It was these Common herbalists

that were protected by their Herbalist King Henry VIII. He was sensitive to their plight and to the plight of the poor, who were suffering and dieing, unable to afford ‘Gentlemen Talking Doctors’. This charter not only enabled the great number of poor people of this time to obtain the means of relief for their woes but also protected the position of the herbal practitioner. It left for the future ‘the cornerstone’, which safeguards the practice of herbal healing in the U.K to this day.

In 1597, John Gerard (1545-1612) published his “Herbal or General Historie of Plantes”. His style of herbalism was traditional, his practice enhanced with his intimate knowledge of plants as a gardener. Publications of his book became a “must have” for every housewife and Mother to help their families. He had even described the use of scurvy grass as a treatment for scurvy in the 16th century. One Hundred and fifty years before the British navy prescribed a cure for it’s sailors. Gerard was, well travelled, actually gaining his M.D.degree from a medical school in Italy. He was a surgeon and an accomplished gardener. Gerard started to include some of the herbs in which the world around him had entered into trade with. Gerard produced the first description of the potato—one of the most economically significant plants to come from the New World. His descriptions come from Sir Francis Drake and Sir Walter Raleigh. He grew over 1000 plants mostly for seed. He had a lot of practical knowledge from his own experience with the plants. Gerard altered the classification of plants and added a great deal from his observations. In his work he suggests efficacy of herbs to treat not only the body but those of the mind and spirit. This belief is shared by the greatest civilizations of antiquity and the most humble of healers.

Nicolas Culpeper (1616-1654) Was on the path to become a ‘Gentleman Doctor’ studying at University, when he fell head-over-heels in love with a beautiful heiress. Tragedy struck when the heiress, on her way to meet Culpeper, to elope, one stormy night, a cruel twist of fate happened, her carriage was struck by lightning and she was killed. Culpeper was besides himself with grief, devastated and totally reconsidering his life, after an existential crises

that often follows death of a loved one, he left University. He was an educated apothecary, and practiced herbalism tending to the poor of London society. The poor could not afford the high fees and expensive, exotic treatments prescribed by the physicians. He could see the value to the poor and working man, of giving them access to knowledge of the medicinal plants, yet it was blocked by the medical ethics and greed of the day, trapped in Latin, trapped in the language of the medical elite. It was the custom of the time for official medical knowledge to be printed and discussed only in Latin. In Culpeper's opinion, this was simply an elitist ploy to keep the knowledge of herbs and healing from the masses. And Culpepper was going to do something about it. . . . . He translated the Pharmacopoeia which he retitled 'A 'Physicall Director'y.' Some of this information eventually found its way into his ever popular 'Culpeper's Herbal'. He was most loved because he was able to empower common folk with the knowledge of self treatment. There was also some sense, that this would protect the masses from possibly mis-treating themselves. In doing so, he had violated a solemn oath of London's College of Physicians by translating from the Latin

The time between the 14th and 17th centuries, produced a persecution for women healers, great numbers of common peasant, women herbalist, midwives and healers were persecuted and systematically tortured and many executed as 'witches'. There are believed to have been millions of executions, of women under accusations by the Church., before and during the 'Inquisition' for the practice of herbalism and healing by simple herbalists. This led to the masculinizing of European Medicine.

### **Some European Herbs**

So what herbal remedies have survived this long, tortuous road of herbology in Europe? There are two trees that come to mind to me. Trees occupy a unique place in nature; they are often "keystone" organisms in developing ecosystems. In the realm of healing, many have also held quite special places for many European peoples in both their traditional herbal systems as well as their

spiritual mythologies. Amazingly, it is estimated that some 65 percent of all medicinal plant species are trees.

Elder (*Sambucus niger*) is a fragrant, flowering tree, and gets its name from the old English means 'eldo' or old age. Older names refer to an ancient vegetation Goddess, Hylde Moer, as she was known in Denmark. Once the Elder-tree was considered sacred to this Goddess. It was commonly believed that Elders if treated well and honored would be blessed and protect the people who cared for it. Thus, Elders were often planted around the house and on the farm where they served as a shrine to the Goddess. There was a widespread taboo against cutting Elders down, or burning any of its wood, Its reputation to offer protection against evil spirits was throughout Europe. This well-loved, bushy tree is common all over and most parts of central and southern Europe. In May big umbel-shaped bunches of tiny 5-petaled whitish flowers, exuding a sweet, almost slightly intoxicating smell. By the end of the summer they develop into small purple-black berries. Elder has often been described as the medicine chest of the 'country people' and many of its medicinal uses are still widely employed by modern herbalists. Today the flowers are the only part of the Eldertree that is still commonly used in modern herbal medicine. The flowers have a long-standing reputation as a treatment for all kinds of inflammatory and congestive conditions of the respiratory system, especially when these are accompanied by fever. An infusion can be made to treat coughs, colds and flus, asthma and hayfever. The elder was known to the ancients for its medicinal properties, and in England the inner bark was formerly administered as a cathartic. This tree was said to have mystical abilities, and to have such an arboreal on one's property meant good luck. Maybe those who lived in antiquity somehow understood that the tree indeed offers something nearly "magical." Its berries, in particular, have been found to contain compounds that can stop a cold or flu dead in its tracks, an accomplishment that still has not found its way into OTC pharmaceutical products or vaccines. Gypsies, have used the berry from the black elder tree as a popular remedy for flu and colds. Elderberries offer good levels of vitamins

A, B and C, and they have long been used as a savory fruit in jams and pies. In the 1980s, virologist Madeline Mumcuoglu, Ph.D., set out to determine by what mechanism elderberry successfully defeats the flu. She found that the action of elderberry extract was to prevent viral hemagglutinin, or the process of the invading cells using their spike-like projections to introduce its enzyme into healthy cell membranes. She further noted that the viral enzyme is also neutralized in the presence of elderberry extract.

The Hawthorn tree (*Crataegus oxacantha*) is one of the sacred trees of Wicca/Witchcraft and is associated with the spring celebrations. The main spring celebration is that of May Day which honors the sun god Belenus. His festival commenced on the first day the hawthorn blossoms opened. Worldwide there are some 1,000 species of hawthorn. In Britain there are two main types known as the English hawthorn and Common hawthorn. The tree will attain a height of 30 feet (9 meters) and lives to a great age sometimes to over 400 years. In Irish folklore the hawthorn, is also sometimes referred to as the fairy bush, and it was considered bad luck to cut it in fear of offending the fairies that inhabit the tree. However, during the May Day celebrations the collecting of the sprigs and flowers was allowed for use in the festivities, after which they were placed in the home to banish all evil influences. The Roman goddess Cardea, who presided over marriage and childbirth, was associated with the hawthorn. Hawthorn has been used as a sedative, an anti-spasmodic and a diuretic, and is a natural regulator of arterial blood pressure. It is often used for Coronary heart disease, Congestive heart failure, Angina, Irregular heartbeat, Hypertension, High blood pressure and Atherosclerosis. In China, the berries have been used for centuries to relieve 'food stagnation' which may manifest as bloating, gas, and indigestion. Hawthorn berries are considered to 'move blood'. The flavonoids in hawthorn have been shown to work to increase oxygen utilization by the heart. It also increases enzyme metabolism and acts as a mild dilator of the heart muscle. Hawthorn is a peripheral vasodilator. This facilitates lower blood pressure and thus relieves the burden placed on the heart as a pump; when



the pipes are opened up, the heart doesn't have to strain as much. In combination with other herbs, hawthorn is given for cardiac problems such as palpitations, angina, and rapid heartbeat. Components in hawthorn have been shown to lower cholesterol and reduce the amount of plaque in arteries. Rigorous clinical trials have shown improvement in objective signs and subjective symptoms of congestive heart failure when hawthorn is used. The influence of the main flavonoids have been shown to have a positive effect on coronary flow, heart rate, and left ventricular pressure as well as on the velocity of contraction and relaxation. A reduction of triglycerides and cholesterol was also noted. Some studies suggest that it may take months of use to produce notable results. Hawthorn can interact with the pharmaceutical Lanoxin (digoxin).

In the last few centuries of the last millennium, Europe began to be influenced by other traditions outside its continental borders. This accelerated in the last half of the 20th century, as physicians and researchers began combing the world's herbal traditions, to better solutions to current health issues. In Germany, this resulted in the publication of the Commission E Monographs, a landmark publication in medicine. It applied modern research principles to the investigation of herbal medicine, gathering and sorting the voluminous data that has emerged over the years. One of the stars of the monograph is another tree, this one not native to Europe, but which has, thanks to European research, found new uses in recent years. An example of the new 'Modern European School of Herbalism'

### **Ginkgo (Ginkgo Biloba)**

With sales of \$310 million in 1998, ginkgo is extremely popular among Americans as a safe way to treat age-associated memory loss. In Germany, where the German Commission E has sanctioned the use of ginkgo for improving memory and concentration, the herb is even more popular, boasting sales of more than \$200 million per year in Germany alone. Originally an Asian tree, Ginkgo is in our European section as an example of what I call the 'Modern Scientific School' of herbalism. The Germans pioneered the

research into ginkgo leaves and extracting Ginkgo-flavon-glycosides and terpene lactones as the most beneficial compounds of the leaves. These major physiological effects are thought to be due to several groups of active chemicals or constituents, specifically, flavonoid-like compounds, such as quercetin, kaempferol and isorhamnetin, and complex molecules called terpenoids, most importantly, ginkgolides A, B, C, J, M and one bilobalide (which are unique to ginkgo). Ginkgo-flavonol glycosides are thought to reduce neurodegenerative damage caused by free radicals. Flavonoids, or bioflavonoids, are a ubiquitous group of polyphenolic substances which are present in most plants (such as ginkgo leaves), concentrating in seeds, fruit skin or peel, bark, and flowers. A great number of plant medicines contain flavonoids, which have been reported by many authors as having antibacterial, anti-inflammatory, antiallergic, antimutagenic, antiviral, antineoplastic, anti-thrombotic, and vasodilatory actions. They have demonstrated that in certain situations, standardized extracts are desirable. These compounds stimulate circulation to the brain, supports mental functioning and memory. It has been found to promote cerebral blood flow to increase short term memory, concentration, and protects blood vessels from damage. Ginkgo also has powerful antioxidant and neuroprotective properties that are therapeutic for a variety of conditions: cerebrovascular insufficiency, anxiety, stress, loss of memory & concentration, hearing disorders, impotence & male infertility, circulatory disorders and prevention of early dementia.

Ginkgo is the world's oldest living tree species on earth, a species whose existence can be traced back-over 250 million years! For this reason, the Ginkgo was referred to as a living fossil (1859) by Charles Darwin. The ginkgo tree can grow to 130 feet and some are believed to have lived for as long as 2,000 years. They are exceptionally resistant to pests and to destruction by fire. Ginkgoes have no known insect pests or diseases. The ginkgo has probably out-survived whatever insects or diseases ginkgoes may have suffered from in the past. And since the tree is no longer found in the wild, the animals that planted its seeds

are probably gone too. They are extremely tolerant of air pollution, and thrive in urban environments; there are reports of ginkgo trees re-sprouting from the blackened remains of Hiroshima. Because of the high concentration of antioxidants in the tree, it has a great resistance to the mutagens such as ionizing radiation. After the Hiroshima atomic bomb, in the first spring, one re-growth spouted out: that of an old Ginkgo. The growth was respected and encouraged. The temple-site in Housenbou was smaller after the war and they considered transplanting or cutting down the Ginkgo to rebuild the temple. It was decided to leave it there and adjust the temple to it. Next to the ginkgo, they engraved, "No more Hiroshima."

The Chinese have long used the seed or nut of this ancient tree to treat wheezing and to expel phlegm. In the late 17th century, Engelbert Kaempfer (1651-1716), a German botanist, became known as the first European to discover and categorize the Ginkgo biloba. He lived in Japan from 1690 till 1692 and described the Ginkgo tree in his book *Amoenitatum exoticarum* (1712). The leaves were used somewhat, but it was just recently that research has shown the longevity benefits this ancient tree could provide. The Ginkgo nuts are mentioned in Japanese textbooks from 1492 and on as used at tea ceremonies as sweets and dessert. In the Edo-period (1600-1867) common people began to eat them as vegetable and ingredients for pickles. In the 18th century the nuts (called ginnan) became used as a side dish when drinking sake. Today they are used a pot-steamed egg dish or in nabe-ryori (Japanese fondue). In 1932 the Japanese Furukawa isolated the ginkgolides for the first time, which were further investigated for their chemical structure by Nakanishi in 1966. Dr. Willmar Schwabe's Company produced the first extract from the leaves in 1965. Dr. Elias J. Corey of Harvard University received the Nobel prize for chemistry in 1990 for among others the total synthesis of Ginkgolide B in 1988.

Nowadays Ginkgo is prescribed in Europe and used by many people in the U.S., Canada and other countries for its medicinal abilities. Age-associated memory impairment (AAMI) affects up to 38 percent of individuals 50 and

older. Everyday factors often contribute to AAMI, including stress, sleep changes, alcohol, smoking and medications. Keeping the arteries healthy is key, say experts, because clear arteries ensure blood flow to the brain. Another way to reduce AAMI is by supplementing your lifestyle and diet with herbs such as ginkgo. Ginkgo has powerful antioxidant and neuroprotective properties. Speak with your healthcare practitioner if taking coumadin. Stop use before any surgery.

### **The Community within Eco-Systems**

“In communities there are little players and big players, and the biggest players of all are the keystone species. As the name implies, the removal of a keystone species causes a substantial part of the community to change drastically”.

--Edward O. Wilson, ‘The Diversity of life’

In terms of ‘Plant time’ we humans have been around but the blink of an eye. From our narrow time-frame, science has studied plants only in terms of ‘three year grants’ or, at most, the length of scientist’s career. Even the plant we know best have only been studied using modern scientific methods for 200 to 300 years. Taken from the Earth’s perspective, during its four-billion-years of continual evolution, it has developed such subtle communications, and community relationships, such subtleties of language and relationships, that its clear to me that we Humans, have only scratched the surface of understanding Gaia, her language and her communities.

“My elders have said to me that the trees are the teachers of the law. As I grow less ignorant I begin to understand what they mean”

--Brooke Medicine Eagle

Trees such as the Elder or Hawthorn in Europe, or the remarkable Ginkgo tree throughout Asia, have been venerated, worshipped, even planted in places of worship or planted for protection for thousands of years by the folklore populations living around them. It is not unique to these three trees or to those eco-systems within which they grow and cultivate plant communities. In fact, nearly every culture has similar beliefs around certain impressive trees. All races on all continents have picked up the energy patterning, or developed feeling, in their eco-systems, regarding ‘keystone trees’. They are the ‘keystone’ species leading the ecosystem. Where does this feeling of veneration and of leadership come from?

Each plant, plant neighborhood, plant community, ecosystem, and biome has messages flowing through it constantly—trillions and trillions of messages at the same time. The messages are complex communications between all the parts of the ecosystem...Life is so closely coupled with the physical and chemical environment of which it is a part that the two cannot legitimately be viewed in isolation from one another. As James Lovelock says (developer of the Gaia theory), ‘Together they constitute a single evolutionary process, which is self-regulating.’

--Stephen Harrod Buhner, *The Lost Language of Plants*

In his book, *The Lost Language of Plants*, Stephen Harrod Buhner develops exciting novel concepts regarding the extent of the interconnectedness of plants and their ecosystems. The ‘tip -of -the -iceberg of such inherent interconnection’ of its has been acknowledged for over a century. John Muir remarked in 1911 in *My first summer in the Sierra*, “when we try to pick out anything by itself, we find it hitched to everything else in the universe.” The intricacy and subtlety of extended connections among plants in their ecosystems and their various ways of ‘hitching’ living things together, both bio-chemically

and bio-electromagnetically, has many implications for the way in which we investigate the plant world, including its medicines. We must look to the ‘whole’ for an insight into the ‘part’. From the perspective of the medicinal plant, how and why it chemically evolved its compounds offers greater insight into and greater respect for these healing compounds and how they impact us. The plants on our planet right now are old, older than we might imagine: a Tasmanian king’s holly exists that is estimated to be 43,000 years old; a creosote bush in the southwestern U.S. is 18,000 years old; a box huckleberry in northern U.S. is 13,000 years old; a grass colony covering half a mile is nearly 5,000 years old; the oldest Bristlecone pine tree (the “Methuselah”) was found to be 4,723 years old and remains today the world’s oldest known living tree pine; the oldest Redwood tree is estimated to be 3,500 years old; a mycelial network covers 1,500 acres in the American Northwest and is over 1,000 years old. With these kind of timeframes, it’s difficult to know, or even to observe, how plants set up their support communities and what is involved in them finding or creating the right location, the right soil conditions over such enormous expanses of time. Plants move throughout Gaia, the planetary ecosystem, with their own needs, responding to their own language. The farthest seed dispersal known is 15,000 miles. Their dispersal is at the moment beyond the explanation of mathematics, and science. Furthermore, we are finding more and more that their arrangements and ecosystems are not random or accidental, as was once thought. Plants instead form symbiotic relationships, worked out over many millions of years.

Raoul France put forward the idea, shocking to the contemporary natural philosophers, that plants move their bodies as freely, easily and gracefully as the most skilled animal or human, and that the only reason we don’t appreciate the fact is that plants do so at a much slower pace than humans.

--Peter Tompkins and Christopher Bird, *The Secret Life of Plants*

Plants arrange themselves in eco-systems and throughout continents, throughout time and space, to fulfill very specific functions and needs, according to well-defined relationships with other plants developed over millions, even hundreds of millions of years. Their arrangements exist for very specific symbiotic reasons and relationships. Ironwood tree When we examine plant neighborhoods, we can begin to sense the context that within which ““healing compounds”” are generated by plants and their supportive communities. When we think of plants, conventionally or medicinally, we usually think of them in isolation, by themselves. Plants mean nothing by themselves, they are considered isolated and this is the furthest from the truth. They are a ‘part of a whole’ they share their resources selflessly with the whole, they mingle and blend their chemistries together as an ‘integrated part of the whole’. This may be one of the fundamental reasons that formulas or blends of medicinal herbs, are more effective than single herbs in clinical herbal practice. They are even used medicinally by many traditions in isolation (singles) without the community or synergy of plants and other compounds that make-up a formula. Separated from its entwined and entangled multi-faceted relationships of their dynamic, living chemistries and energy’s. To get a glimpse into the wonder and the context, the timeframes and the symbiotic relationships within plant neighborhoods, let’s look into studies done on the ecosystem of the ironwood tree, the basic workings of which are most likely true for every other macro and mini plant neighborhood.

### **The Ironwood Tree**

“By modifying the habitat under its branches, ironwood plays a leading part in creating the ecosystem that it occupies, greatly enhancing the diversity of the Sonoran Desert”

--Tewksbury and Petrovich, ‘Ironwood as Habitat Modifier Species’

The Ironwood is one of the largest and longest-lived trees in the southern California deserts. The Sonoran desert plant reaches 45 feet in height and lives

as long as 1,500 years. It is a single or multi-trunked evergreen tree, and has lavender-pink flowers beginning in March. The Ironwood survives and converts the baking intensity of the harsh desert into a nourishing place, where the tree and the community it helps to create can thrive. “Mature ironwood trees provide critical habitat for more than 275 species of wildlife, not just pygmy owls,” confirmed Dr. Gary Nabhan, Director of Conservation and Science at the Desert Museum. “In addition, more than 230 flowering species use desert ironwoods as ‘nurse plants,’ relying on their canopies to protect them from freezes, heat waves and other stresses.” The ironwood never loses its leaves, even in the baking heat of summer; this provides its community of associated plants with much needed, and constant, precious shade. At maturity it can send down roots 165 feet deep, searching for water below the desert. It then hydraulically pumps the water up into its leaves, breathing-out moisture. This refreshing cool dampness, settles downwards, nourishing the thirsty plants below. At night when the photosynthesis stops and the stomata within its leaves, are closed, the hydraulic lift stops and the water settles around its root system among nutrients just under the surface of the ground. Then the small plants come, they cover the ground, trapping moisture from evaporating from the soil, thereby raising soil moisture content.

The movement and migration of the ‘Keystone’ players in an eco-system, such as the Ironwood, may take over 400 to 500 years. At the ecosystem’s response to feedback cues are only suspected at this time. Often a ‘scout plant’ goes out ahead and prepares the way; their emergence and colonizations often signal the movement of a system shift in response to the Gaian feedback loops. When the soil is prepared then the “Keystone,” such as Ironwood, is called to fulfill its destiny as the “keystone shepherd” of its “flock” to create new ‘Archipelago of life’. Through wind animals and wind the seed moves to its destiny.

From the first signals our embryonic seed sends out, it is interconnected, plugged into a network greater than itself. The ironwood seed sends out



chemical messages, like a baby crying for its nutrients. They alert the desert soil, and are answered by *Rhizobium* bacteria that change the soil. In response, the ironwood begins to form nodules on its new roots, making nitrogen available. Next, connections fungal symbionts are attracted to help by a preexisting mycelial network, which in time will be one of the main arteries of this embryonic community. The fungi are now known to be the most essential allies of plants, even more so for the 'world of roots'. By their abilities to form alliances with other soil organisms, roots are believed to be the main reason that green plants dominate the surface of the earth. As the ironwood seeds prepare to germinate, they call out to the amazing fungal web of super-fine, fiber-optic-like fungal threads, which weave their magical way to answer the call of this embryonic 'leader' tree, the newborn prince of this coming eco-kingdom. The equivalent of a 'biological lightning flash' of connection, this quickens the growth process of both of these allies by an astonishing hundredfold. Root construction is a highly nutrient demanding process; the chance of getting this nourishment merely from the immediate limited surroundings is very small. Plants have solved this dilemma by leaping 'online.' The source they plug into is like an amazing electricity powergrid of the root world: the amazing fungal-web that already exists in soil. Using this web of fungi allows the plant instant access to nutrients up to hundreds of feet beyond its own tiny root system, which can only grow 12 inches per annum even in an exceptional year in the desert is named after the and is known as mycorrhiza. The fungus-root attachment, these mycorrhiza (Greek: "fungus and root"), are web-like-networks able to explore the soil far more efficiently and penetratingly with their fine filaments probing for nutrients and mineral sources. This enhances the partnered roots' own access to minerals such as phosphate. This enhancement is the likely explanation for why over 90 percent of plants have partnered with, one might even say 'domesticated,' their own fungi. But this is a two way street, a win-win situation for both; the mycorrhizal fungi can take from a tenth to a third of the plant's photosynthetic production as payment. A dynamic living bridge is

formed through this fungal-web, interconnecting many different species, sharing chemistries, and messages, often for the good of the whole community. The next time you are walking in the woods and you see a toadstool or a mushroom, think of the amazing network that must surround you, underneath the soil. This mushroom is like a ‘periscope’ sent up by the network; it’s not an independent entity but a spore-dispersing device, produced by a huge network of branching tubes. One huge network has been identified in Montana, it is estimated that it spreads its underground tentacles under 15 hectares of virgin forest, weighs one hundred metric tons, and is believed to be more than one thousand years old. That is some “internet infrastructure”!!

This amazing fungal-web has startling biological implications. Its resource sharing and resource balancing abilities for an eco-system is astonishing. Field experiments forty years ago by Eric Byorkman, a Swedish botanist demonstrated the ‘living bridge’ capabilities of mycorrhiza. Byorkman injected radioactive glucose into the trunk of a Norway spruce tree and was amazed to find it transferred to a neighboring plant. It seems according to Tom Wakefield in his book *Liaisons of Life*, that field-based evidence could not be reproduced in the lab. By using whole or partially dismembered plants, grown in the laboratory test tubes, they could not match the results produced in the eco-system. In the early 1990’s, mycologist Suzanne Simard began some experiments in the real forest ecosystem, to measure transference of resources between trees via their mycorrhiza. Her team demonstrated that not only do many trees of the same species share resources, but astonishingly so do even trees of different species. To the researcher’s great surprise, the sunlit birch trees seemed to be subsidizing the more shaded fir trees with sugars via their joint network of mycorrhizae. This underground-forest-welfare-state actually subsidized shaded young seedlings of another species that were struggling for photosynthesis, struggling for light’s life-blood, by sharing with those basking in sunshine higher up in the canopy.

As our seed thrives and grows, smaller plants begin to appear. In all, 230 species of plants will grow under the ironwood and 31 will grow nowhere else.

It may take a century or so to form and the older the tree, the more complex and established the community becomes. Wherever the plants 'plug-in' to the amazing fungal-web, they can share resources of the communities and the 'chemical messages' start to flow. FIND 41 BEETLE STORY LANGUAGE OF PLANTS Many messages are delivered by aromatic plants: some release aromatic compounds into the air, calling out to be pollinated; other aromatics shed useful compounds that simply fall in a gentle continuous rain over the community and are breathed in; and still other aromatic compounds fall into the soil below. Scores of insects, birds, animals and humans are called in to the system for differing purposes. They pollinate, spread seeds, build nests, dig burrows, aerate the soil, eat plants as food, eat plants as medicine, or defecate much needed soil enhancing fertilizers. The compounds that leech from the plant community can increase growth stimulation in affiliated seedlings, by up to 1,000 percent. All the plants release phytochemicals, and dead limbs and assorted decaying plant material enrich the soil. Additionally, animals and humans come and go, and their manure further strengthens and build the soil and eco-system.

The microclimate progressively builds and adjusts to: droughts, floods, fires and storms, wetlands shift locations, meadows spread, and over the decades and centuries, even millennia, the 'archipelago of life' has learned that it must shift to be flexible, to have chemical resources of chemistries 'stored for a rainy day'; the greater the biodiversity for the community, means the greater resources the eco-system has for adjusting to stressors. Each community, for example, may contain rare plants held in small quantities that often produce unique or highly potent chemistries. These may only be needed by the communities once every century. It is with such strategies that over the decades and centuries the eco-system adjusts, calls new species and diversity to itself, and eventually an oasis in the middle of a barren desert is born. These 'archipelagos of life' eventually join together to form a forest, or a meadow; they may be imperceptible due their closeness or sparsely dotted across a landscape,

yet they, their allies and associates are all tightly and inextricably connected. Their relationships have been refined over the millennia. They all form the interconnected, self-regulating messages that power that neighborhood ecosystem..

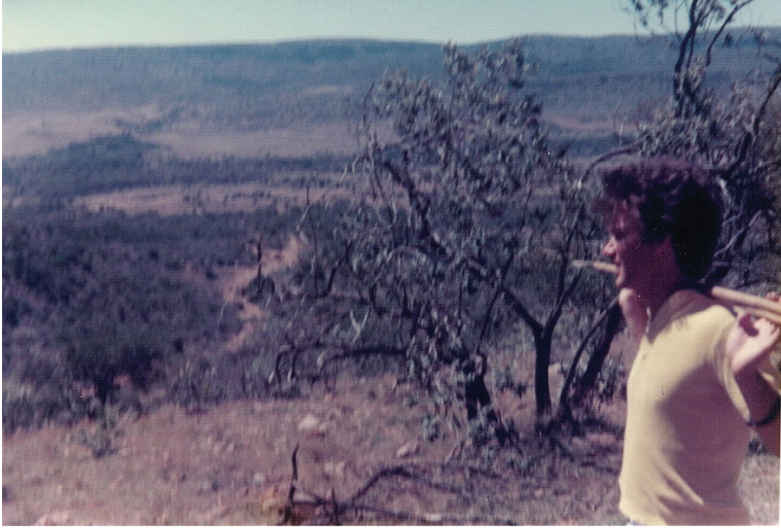
The Ironwood tree is a keystone, 'a the teacher of the law' to the ecosystem. It increases the abundance of life by 88 percent and the richness of species by 64 percent. It is the lynch-pin in the system, creating and nourishing the conditions for life. "Setting the law, that other plants may follow" -- is it any wonder that trees are revered all over the world by folk-lore and indigenous peoples? And their seeming magic awareness, that which can reach out and respond to other beings who are suffering, is the plant community's real magic.

The plant community is full of chemical and energetic messages, producing sexual pheromones, insect repellants, plant estrogens to control herbivore populations, plant medicines to combat bacterial, fungal, viral assaults, medicines to stop cell leakages, heal plant wounds, stimulate or inhibit plant growth, anti-inhibit cell mutagenesis anti carcinogens, chemistries.cancer.

In His book 'The Lost Language of Plants,' Stephen Harrod Buhner comments, "Plants always produce more chemistries than they need merely for their own health: these chemistries are released into plant communities and their ecosystems to maintain them. As with so many other aspects of maintaining ecosystems plants sense when members of their community are ill and they offer up chemistries to heal them.".. These chemistries are either sent through mycelial networks to where they are needed or chemical cues call the ill animals or insects to the plant who needs it." Is it any that in this context that animals and humans may also be considered just another species integral part of this homeostatic this eco-system community; it is in this way that we may perceive that plants may reach out to us, too. I am reminded of the Shaman's dreams? – which may be but one method by which plants make themselves available to answer our psychic calling, to alleviate our hurts and wounds?. We need simply to accept their help. "These chemistries are either sent through mycelial networks to where they are needed or chemical cues call the

ill animals or insects to the plant who needs it” “Indigenous peoples have long known that the plants heal the animals, plants, and other living organisms in their communities.”

## **Chapter Nine: Kenya:**



The Savannas of Africa are considered to be the birthplace of Man. My first encounter with true ‘Wild Qi’ and true wilderness was on those very Savannas. As a young man, a web of intrigue and unforeseen circumstances led me off my itinerary to live unexpectedly with the Maasai tribe. Living on such a savanna, with the native peoples within the beauty and wonder of the wilderness, marked my soul for the rest of my life. It became the birthplace of my interest in nature, growing within me and slowly blooming over the years that followed.

In the mid seventies, a friend who had left England to work in Nairobi, Kenya, had left me with an ‘open invitation’ to join him for a vacation. I was nineteen years old. I saved money and accrued vacation time, and a year later I joined him in Nairobi for a 5-week vacation.

The very first night, my friend Paul and his girlfriend took me out to celebrate my arrival. We visited a local nightclub; both my friend Paul and

Sabi were laughing knowingly together as we entered. This was unlike any nightclub I had been to in England: the ratio was 70% women 30% men! I was captivated, of course, by all the pretty faces and brilliant smiles coming my way from so many women. Paul continued to smirk, but I was flattered; who would have thought I'd be this popular? Nevertheless, throughout a few disappointing encounters, which were much to the enjoyment of my two hosts, the women were either looking for drinks, cigarettes or gifts. Naïve as I was, I began to wonder whether maybe I wasn't as popular as I had thought, when I finally I met a woman about my own age who made no such gentle demands.

As we began talking, she revealed that she was Kenyan and was visiting home from her studies in Japan, and we spoke a little Japanese together, as I had just started to study for my future Japan trip. At some point during the night, she told me a very sad story about her father. Only 11 years after Kenya had declared its independence, the fragile Republic was still warring internally and had made it self into a one-party-system. Her father, a well-known and wealthy landowner, had begun his own aggressive 'non government-approved' land-sharing campaign, and this coupled with his leftist political views had put the government in a very dangerous position. This was in a different time, a time of the 'cold war', and Tanzania had a Maoist communist government on its southern border. Kenya was in a precarious position holding its tribal alliances together. Her father was murdered and members of the government, police and military were implicated. The students had rioted. In this volatile environment and fearing for her safety, her family had sent her to study far away until the political atmosphere had cooled down.

We had fun that night and when it came time to leave, she passed me her phone numbers; by all accounts, I had to call a few people to get to her. When I returned to my hosts and told them this lady's name, they fell about laughing, saying what I had realized the open-joke was, that most were subtle 'ladies-of-the-night' in this club and that everyone of them might tell me the same famous story. As they were snorting their laughter, I realized they clearly did not

believe me. I tried to convince them but to no avail. We went to Paul's home to sleep.

In the dead of the night, Paul and Sabi awoke me frantically. "Do you know who that was at the club? Why didn't you tell us? We have just had a call from a friend in the secret Police, they had followed her and we were all seen together. Do you realize the position this puts Sabi's family in? You must never see her again promise us right now! If their two families are connected like this, it could be very bad."

I was in shock. As if the experience of flying 'Sudan Air' to get there wasn't harrowing enough, this shock put me over the top. I was only in Nairobi for less than one night and here I was in my pajamas burning this woman's telephone number, like I was in a James Bond Film!

After a few days of sightseeing, there was another phone call. Paul had been alerted that we were now all being followed by the secret police, "just in case." Paul thought it best that I leave town for a while to avoid any chance encounters. Where did I want to go? he wanted to know. I had read about the Maasai tribe and how they were considered the 'Samurai of Africa'; their courage and culture had made them one of the few tribes ever to have repelled the slave traders. They were reported to live traditionally and refused to pollute their way of life with Western materials. They lived with only one modern convenience, high quality Sheffield steel knives. They sounded like a great people and their land a great place to go. Anyway, curiously enough, over the next few days invitations started to come my way, the oddest one was from a member of the Kenyan Parliament (M.P.) a friend of Sabi's family who had "just happened to pass by" and was "by chance" going to the Maasai lands the next day in his air conditioned Range Rover and did I want to join him?

I then met a friend, David, who was educated at a private boarding school. David was a tall lanky 20 year old, with a bright soft smile, who exuded a gentle yet strong, confidence. His father was a well known veterinarian; he was traveling back to meet his family the next day. I would stay with them in a



village near the Tanzania border. I didn't have to be asked twice. We left with at dawn, the next morning. Chance had thrown me out to some of the most spectacular scenery I have ever seen, in one of the wildest places on the face of the Earth. Kenya rises from a low coastal plain on the Indian Ocean to a series of mountain ridges and plateaus, which stand above 3,000 meters (9,000 ft.) in the center of the country. The Rift Valley, (also known as the "Cradle of Mankind,) bisects the country above Nairobi, opening up to a broad arid plain in the north. Mountain plains cover the south before descending to the shores of Lake Victoria in the west. We hitch-hiked through the Great Rift Valley to the famous game reserve of Kenya, the Maasai Mara National Reserve. Its grass-covered smooth hills, separated by the chocolate Mara river waters with frolicking hippos, held much rich faunal diversity. This was the African landscape right out of movies like *Out of Africa*. The reserve is located west of the Rift Valley and is a natural extension of the Serengeti plains in Tanzania. The Mara River, the reserve's backbone, traverses north to south heading for its westbound way unto lake Victoria, through the Tanzanian park. The area is teeming with wild animals. Game includes elephant, black rhino, buffalo, plains zebra, hartebeest and the big cats leopards, lions hyenas; the rivers are home to hippo and crocodiles. The Mara River forms the natural barrier, which is crossed every year by large herds of migrating wildebeests and zebras that march across. A massive movement of animals that recognizes no man-made borders, more than one million wildebeests and some 200,000 zebras move in the eternal quest for better pastures. They find their way along the crocodile-crowded river. When the herds ford the stream, many animals die flattened or drowned and leave their bones littering the Mara riverbanks.

After hitchhiking many miles and walks of many miles we arrived in the heart of the Maasai lands. The Maasai are one of the best-known African tribes due to their warrior caste and effective organization. A proud people, they are tall and elegant with muscular features and a fierce, brave, and stubborn reputation. They have a distinctive appearance, with ochre-covered warriors

proudly holding their spear and wearing their bright blood-red shoulder cloaks. The women wear bangles and strings of colored beads around their necks; both men and women wear earrings stretching large holes in their ear lobes. The men sometimes cover their braided hair with a fatty ochre paste, while the women generally have shaven heads. David's family lived in an *Enkang*, a small village, encircled by a round 'fence' of sharp thorn bushes; this protects the tribe and their cattle, especially at night, from rival tribes and other animal predators. The *Enkang* may contain 10-20 families in squat huts made from branches pasted with fresh cow-dung, which bakes hard under the hot sun. Maasai huts are very small, with perhaps two 'rooms'. It takes the eyes a long time to adjust from the bright sunshine, walking into very dark rooms with a small doorway. After the eyes do adjust they tear from smoke: the huts have for a chimney merely a tiny hole in the roof, which lets smoke escape from the smouldering cow-dung fire all too slowly. These are nomadic cattle herding people and the *Enkang* used to be 'temporary,' although such a nomadic life is less feasible these days. In the past, a young would-be Maasai warrior or *Moran* could be expected to prove his manhood by killing a lion armed with nothing more than a spear. I met many young boys who had participated in such a ceremony, where first prize goes to the first boy to touch the tail of the lion, the second to he who draws 'first blood,' and the third prize to him who makes the kill! While I was there I was instructed strictly to follow David's orders at all times as it is a dangerous place. These words were still ringing in my ears, as we stopped off at a store for a drink to wash away the dust from our mouths in the small town of Narok. (Hitchhiking often means eating the dust of those who would not stop.) The dusty bar was a very foreboding place, straight out of an *Indiana Jones* film. We sat at the bar, which was covered from counter to ceiling with wire mesh, with a hole through which you pass the money and the bartender passes the beer. It was very hot and the bar was very crowded at dusk in this small, dust covered cattle town. Cattle traders, endangered-animal poachers, and ivory poachers all mingling together. There were some very rough-looking characters hanging around at the bar, with

some very rough-looking scars, no doubt from spears or pangas -- the short sword everyone carried in the bush. Every now and then I could glimpse gleam of a panga discreetly covered by their ochre-colored blankets. Maasai and other peoples, such as the Kikuyu and the Luo, were moving around drinking beer and listening to music. I was felt very conspicuous; most tourists passed through this town in groups. The other white men were working for aid agencies with the implied protection that brings. Paul's words of caution were ringing in my ears: "Many men go missing in the bush without a trace, recycled into nature by the animals. Remember, the Maasai will die over a point of honor, so do whatever David tells you and you'll be safe. He is part of the culture and knows how to respond; do whatever he tells you."

The bar was packed. In bar-seats, we were pushed up against the bar by the crush behind us. David told me, "Save this seat for me, do not give them up for anyone," and went off. Two very sinister-looking men opposite us immediately approached and demanded the bar stool. David told me later they were poachers with blood on their hands. I politely declined, yet leaving no room to be pushed aside. A particularly scarred taller one of the two said, "No 'white man' you do not understand. I'm not asking, I'M TELLING YOU." The tension rippled around our corner of the bar, clearing men away from the surrounding area; they must have been vacating our corner from instinct, as words could not have been heard above the blaring music -- trouble was in the air. I sized them up and down: one was wearing a ripped tee shirt with more holes than shirt, ripped shorts, and a bulge under his ripped coat looking definitely like a concealed panga to me. Adrenalin shot into my blood, fear coursed through my veins. I spoke to the taller man, so dark was his skin I could only see him through the dim smoky light, by the gleam reflected off his sweat. Trying not to show the weakness that these guys were looking for, and waiting for the nor-adrenaline to hit my blood and power and embolden my defiance, I replied, "I'm sorry I CANNOT give-up my friend's seat." At this point I realized to I'd have to defend myself and do what it took. This resolve kept the fear balanced against

the defiance of youth. It was an interminable hair-trigger moment, waiting for the first move, weighing-up each other, searching for weakness, where you look into a man's eyes and see evil, and do not let it register weakness that you've seen it. A primal 'face off', in a primal place. Thank goodness at that very moment David arrived with the largest man I had ever seen! Relief swept over me. It seems David had already surmised that these two troublemakers would be coming at me, no matter what was said, and went to get this giant, a bouncer, to throw them out. After this showdown, a few of the locals sent over free beers for doing everyone a favor.

Living in the bush was well worth the journey and its troubles. We would walk off, exploring crisp clear mornings with the smell of the day's arid heat approaching. I was instructed that everyone carries a spear in the bush; they would not let me go hiking without one. I thought they were being 'over-dramatic' until they told me about the 'Wild Buffalo' that would hide behind shrubs and suddenly charge without warning, killing more humans than the big cats. They then instructed that in such an eventuality I was not to run but to stand my ground, against every instinct, to be a warrior and stand there, pointing the spear towards the buffalo's underbelly, let the animal's own weight spear him and use his momentum to take him over you. Most young Moran herders out protecting cattle had killed buffalo this way. "This was no ordinary hike in the park," I thought, as we left the village compound! It took me a few days, to cease imagining a wild animal behind every bush. We looked for wild plants that are used for cooking. These same plants now are offering us hope against our battle with heart disease and cholesterol.

The Maasai are cattle herding nomads. Cattle are the basis of the Maasai life and economy, providing food mainly in the form of milk and meat. They could also soon become known for the traditional foods and medicinal plants that supplement such high-fat staples of milk, meat and maize meal. According to Dr Johns, an Associate Director at the Centre for Indigenous People's Nutrition and Environment of McGill University who reported, "up to 66% of

the calories consumed in the Maasai diet come from fat, primarily saturated fats in meat, milk and yogurt — resulting in a total daily intake of more than 2,000 milligrams of cholesterol. This is very high. Yet, their mean serum cholesterol levels are in the normal to low range and cardiovascular disease is virtually nonexistent. To put this in context, North American dietitians recommend that fats provide no more than 30% of the calories in a typical Western diet. Trying to understand the soaring heart disease's toll on industrialized societies, one possible explanation put forward is their cholesterol levels may be influenced by substances found in traditional food and plant products, such as chew sticks and gums stripped from local plants. For example, some of the chew sticks they use contain saponins, a family of natural emulsifiers. So far, the research team has identified some 25 plant products used by the Maasai. Among them are latex from the Ficus tree and roots and barks of various plants which are chewed to alleviate thirst. A second plant gum, which may have serum cholesterol-lowering properties, is produced by a species related to the myrrh plant. A source of antioxidants also helps, *Acacia nilotica*, whose bark the Maasai use to flavor their meat soups and milk. They add enough wild plants to milk- and meat-based soups to make them bitter and also drink herbal teas with home-brewed honey beer. Johns found that 9 of 12 common Maasai plant-derived food additives contain cholesterol-lowering phytosterols, saponins and/or phenolics.

### **Maasai traditional food and medicine**

What is in a bitter taste? James Duke renowned botanist and Herbalist worked for the USDA and in a recent interview, 'Herbal Voices, Interview with James Duke' outlined exactly why wild plants are better for us than the 'techno plant' being modernized and designed for our taste buds. There are some remarkable qualities in those 'Bitter tasting' plants, that are available in the Maasai diet.

“Scientists have changed our foods (in industrialized nations). Take the USDA for example, they have bred out most of the cancer-preventing

compounds in soy. So an average primitive soybean will prevent more cancer than a USDA soybean. This is because we Americans tend to go for bland foods and the primitive soybean has a more bitter taste, so the USDA bred out five different chemicals in soy and bragged about it. They bragged about lowering pyyate content, the bowman-burke inhibitor content, and the protease inhibitors, the very things that prevent cancer. They bragged breeding out or lowering the estrogenic isoflavones, which is what soy is getting all the press about these days. They bragged about lowering the levels of saponins and phytosterols. Yet, all these have been shown to prevent cancer....And this happens across the board. Food processors and food scientists are making our food less preventative-not only of cancer but also of cardiopathy.”

A recent study published in *The Plant Journal* showed the amazing antioxidant capabilities of *Myrothamnus flabellifolia*, a short woody shrub from southern Africa. This plant has learned to resist and survives droughts. It can be revived after years of drought by just adding water! It uses unique antioxidants to protect from free radicals that would otherwise destroy its cells as the plant dries up. It is another example how these plants used medicinally would protect us from the ravages of free-radicals in the aging, and repair processes. It may well be the type of plant used by the Maasai, in their diet to offset cardiovascular damage of so much animal protein.

According to Isaac Sindiga, an Associate Professor at Moi University, Kenya, the Maasai have used herbal medicines for millennia, and their use is deeply rooted in Maasai life. They use herbs, bark and roots which are boiled in soup that is drunk in order to improve the condition of the stomach and the blood. They also use herbs derived from trees and shrubs for curing ailments such as stomach infections, throat problems, pregnancy disorders, tooth problems, eye infections, children’s diseases, colds, swollen legs and painful joints. Most Maasai children learn about the medicinal value of herbs as they grow up. Teenage boys are taught about all the grasses on the range. Traditionally boys are assigned the task of looking after small stock (goats and sheep) around the

homesteads. In the process, they also pick up the knowledge of herbal medicines used in the home. Girls receive their knowledge of herbal medicines from their mothers and grandmothers, with whom they spend a lot of time. For example, the herb *olkiloriti* (*Acacia nilotica*) was taken as a digestive, excitant, and to prevent hunger and even thirst. Maasai accounts show that *olkiloriti* was taken by warriors before going on raids. It was also reputed to prevent fatigue. A survey was conducted in Naroosura, in the Narok district of Kenya, in 1992 showed 60 per cent had either used herbs collected by their families or had consulted traditional healers. Maasai still use bitter herbs in their daily food that are high in antioxidants that counteract the negative effects of animal fats. The idea that nature gives us better protection from disease based upon the variety of plants and therefore the variety of plant compounds consumed, is strong for the Maasai offsetting Heart Disease by the variety of plants consumed as food. The iKung bushmen of the Kalahari desert also bear this out. They eat more than seventy-five different plants regularly in their diet. They manage this in one of the harshest environment on the planet and cancer is virtually unknown, they work less and have more time for leisure pursuits. Complex plant consumption offers us hundreds of thousands of unique chemical protectants. Americans presently eat LESS than 10 plants with many eating LESS than 5, in their diet, forgoing the protection of diverse plant chemistries. Recent research confirms Lycopene in Tomatoes lower cancer risk, Sulphurophane in Broccoli lowers cancer risk even retarding tumor growth. Allicin in Garlic significantly lowers cholesterol, reduces the stickiness of blood, and widens blood vessels, helping to prevent heart disease and stroke. Allicin also enhances immunity, warding off bacterial and fungal infections as well as viruses. Cancerous cells are also a target Garlic helps fight cancer because it contains saponins, which inhibit DNA's ability to initiate replication of cancerous cells.; allicin helps deactivate carcinogenic substances. Onions also are packed with one of the more potent flavonoids, quercetin, which has the ability to reduce inflammation and counteract bacterial and viral infection. Quercetin is also an anticancer agent.

The flavors of garlic and onions make palatable the strong taste of dark leafy greens such as kale. Greens supply calcium and magnesium, both needed to maintain strong bones.

## **Africa's Herbal History**

“The farther backward you can look, the farther forward you are likely to see”

-- Winston Churchill

To gain a perspective on the deep history of African Herbal Medicine, we can look to ancient Egypt, where the first recorded and most famous Herbalist-Physician Imhotep lived 500 centuries ago. Hippocrates comes about half way between Imhotep and us!

Imhotep was a learned man, astronomer, physician, architect (he may have been the builder of the first pyramid). In later times he became worshiped, first as a physician, and later still as the god of medicine, the forerunner of Asclepius of ancient Greece. Sir William Osler tells us that Imhotep was the “..first figure of a physician to stand out clearly from the mists of antiquity.” Imhotep diagnosed and treated over 200 diseases, including 15 diseases of the abdomen, 11 of the bladder, 10 of the rectum, 29 of the eyes, and 18 of the skin, hair, nails and tongue. Imhotep treated tuberculosis, gallstones, appendicitis, gout and arthritis. He also performed surgery and practiced some dentistry. Imhotep [also] extracted medicine from plants.”

The earliest written record of African Herbalism is the ‘Ebers papyrus’ (1500 BC). One of the oldest surviving medical texts, it includes over 870 prescriptions and herbal formulas, 700 medical herbs covering conditions ranging from chest complaints to crocodile bite. Purchased in 1872 by the Egyptologist George Ebers, it comprises 110 pages a huge roll of more than 20 meters long, dated at 1534 B.C.E.



The Egyptians were just learning to write in 3000 B.C., but they were importing massive amounts of myrrh just a few hundred years later. They traded heavily with gold, ivory, ebony, baboons, and dogs, yet their most valuable commodity was myrrh, *Commiphora myrrha*. Myrrh was so highly prized because it was the most effective and important anti-bacterial of the day. It was inherited later by other ancient herbal lineages in Greece, Rome, and Persia to dress wounds. In fact, it is the most commonly mentioned wound medicine in Hippocrates' writings. Frankincense, *Boswellia carteri*, is the oleo-gum resin of a tree closely related to myrrh, and has similar anti-inflammatory and antibacterial properties. These were the ancient herbal gifts to Jesus, Joseph, and Mary two thousand years ago by the magi -- the gift of life itself. Since the 1st dynasty (3150 – 2925 BC), Egyptian medical institutes called “peri-ankh” or “houses of life” existed. The most famous ones was that of ‘Imhotep of Memphis’ which has gained an international reputation particularly for its library till AD, There were at least four other ‘houses of life’ which were attached to temples at Bubastis, Edfu, Tel-el-Amarna and Kom-Ombo. Apart from being teaching centers, they were also medical libraries where papyri were written and preserved. Commonly-used herbs included senna, honey, thyme, juniper, frankincense, cumin, pomegranate root, henbane (for worms) as well as flax, pine-tar, manna, bayberry, aloe, caraway, cedar, coriander, cyperus, elderberry, fennel, garlic, wild lettuce, onion, peppermint, poppy-plant, and zizyphus. Medicine in ancient Egypt was but one aspect of an advanced civilization. It was not practiced by witch doctors, as in primitive tribes, with mixtures of magic, herbal remedy, and superstitious beliefs. This was acknowledged by Homer in the *Odyssey*: “In Egypt, the men are more skilled in Medicine than any of human kind.” Egyptian Herbalist-Physicians were famous and often requested by other Kingdoms. A wall painting in a Thebean grave (1400 BC) depicts Nebamun, herbalist-physician of the king, receiving a payment for his services from a Syrian prince.

## **The Traditional Medical Healers of Africa**

It is estimated that 70 to 80% of Africans use Traditional Medical Practitioners. The traditional healers of African tribes have been using ritual in combination with herbal remedies to treat Africa's people for generations. There are approximately 45,000 traditional healers in Zimbabwe alone, whereas the country has only 1,400 medical doctors. The traditional healers are able to reach far more people than the medical doctors are able to. It is estimated that as many as 90% of the Zimbabwean people utilize the services of the traditional healers. In Uganda, there is one healer for every 200-400 people. Conventional medical personnel are far fewer—one for every 20,000 people. The number of traditional practitioners in Tanzania was estimated to be 30,000 – 40,000 in comparison with 600 medical doctors. In Malawi, there were an estimated 17,000 TMPs and only 35 medical doctors in practice in the country. In Nigeria it is estimated that there is one **TMP for every 110 Nigerians**, and one Medical Doctor for every 16, 400 **Nigerians**. In 1990, the African Traditional Healers Association had over 220,000 members. **The role of** TMPs takes a holistic approach: good health, disease, success or misfortune are not seen as chance occurrences but are believed to arise from the actions of individuals and ancestral spirits according to the balance or imbalance between the individual and the social environment. Their botanical knowledge of plant species and their ecology are invaluable. Throughout Africa, the gathering of medicinal plants was traditionally restricted to TMPs or to their trainees. Knowledge of many species was limited to this group through spiritual calling, ritual, religious controls..

The slow-growing evergreen *Prunus africana* tree, native to Africa, now has a skyrocketing demand for it that is likely lead to the tree's extinction in the wild in 5 to 10 years. It is the classic example of a natural remedy, that is often more effective than pharmaceuticals, that has drawn massive interest to it, through recent studies. Pygeum bark is used for prostate disorders and is being cut-down at unprecedented rates. The market in Europe and the United States market is estimated at \$220 million per year according to the Nairobi-based

International Centre for Research in Agroforestry (ICRAF). Prostate disorders, which affect most men over the age of 50, often make men more susceptible to prostate cancer. We will lose a major natural medicine for prostate disorders unless we can sustainably harvest this tree or encourage its domesticated growth. Amazingly, it is estimated that some 65 percent of all medicinal plant species are trees. Used in traditional African medicine for centuries, the bark of *Prunus africana* contains compounds that benefit the prostate gland in men. The compounds and their mechanisms are not yet understood by science. It is so effective that it has now become the conventional treatment for enlarged prostate glands in France, where it is used in 81% of cases. In addition to reducing prostate inflammation and male infertility when due to insufficient prostate secretions, in formula with other herbs it has been beneficial for the treatment of prostate cancers.

“(The) interwoven connections of the plants and their chemistries to the life around them has begun to reveal to contemporary peoples that the plant chemistries are used not only for the plants themselves, but are created and released to heal disease throughout the ecosystems in which they grow”

--Stephen Harrod Buhner ‘The Lost Language of Plants’

## **Animal Stories**

The connection of humans and animals is inextricably interwoven into Gaia’s regulatory network of life as just another aspect of nature, originating from the same primal origins. Animals and humans are called to the same Gaian ‘healing resources,’ making available to us the sophisticated chemistries and energies of plants. The healing resources of the eco-system are available and calling equally to the sufferings of animals as to humans. Plant systems automatically observe when a member is struggling and ill, and the mycelial networks within the surface of the soil, transport and direct the healing chemistries toward it. When, for example, a species is under attack by insects

and cannot produce enough chemistries to protect itself, healthy plants in the same system support it by passing along through the mycelial network much-needed chemical reinforcements. In one experiment, scientists deliberately cut a full circle of bark around the trunk of the tree, which should normally kill the tree. The tree survived on nutrients transported via the mycelial network from other plants in the community. The tree lived for years, while trees disconnected from the mycelial network died within a year. Animals are also able to utilize the plants' system; we all may have seen dogs search out certain grasses when they feel unwell to help regulate the health of mucous membranes of the intestines with the grasses' antibacterial and antimicrobial actions. It has also been observed that great apes employ over thirty species of plants for medicinal purposes. There is now even a scientific term for the study of the use of medicinal plants by animals: zoopharmacognosy.

“The idea that animals can convey meaning, and thereby offer an attentive human being illumination is a commonly held belief the world over. The view is disparaged and disputed only by modern cultures with an allegiance to science as the sole arbiter of truth. The price of this conceit, to my way of thinking is enormous.”

-Bary Lopez, 'The Language of Animals'

### **Sick female chimp using Vernonia bush for Parasites**

Dr. Michael Huffman an American Primatologist worked in Tanzania with his guide and mentor, an elder of the local 'WaTongwe' tribe who was both a skilled naturalist and a renowned herbalist. While tracking a chimp who was sick, the chimp stopped in front of a vernonia bush of the daisy family, tore off a branch, and began peeling the bark. Prior to consuming the plant sap, the chimp was suffering from constipation, malaise, and lack of appetite. A day later, she made a spectacular recovery. They continued to track the chimp, and collected dropping samples to send off for laboratory analysis. The results showed at the time of the first collection, the droppings contained 130 nematode eggs per

gram. In under twenty-four hours, the egg level was reduced to 15 per gram. The chimp resumed hunting, exercise was unable to perform the day before. The Vernonia bush was common and available year round, yet the chimps tended to consume it only during the rainy season, when parasite infections are most prevalent. Vernonia is one of the most important and widely used medicinal plants of Africa.. Some studies show that Veronia pith is effective against schistosoma parasites and contains potent chemestries including a toxic sesquiterpene lactones and steroid glycosides. The glycosides vernonioside B1 and vernoniol B1 surpress parasite movement and egg laying. Yet when infected with oesophagostomum parasitic worms, chimps seek out a different plant, Aspilia, which contains in its leaves a unique copound thiarubrine A that is active nematodes and intestinal worms. The chimps fold the bristly leaves into an accordion shape then swallow them. The thiarubrine A weakens or kills the worms that are then swept out of the intestines by the folded bristly accordion shaped leaves. By not chewing the leaves the chimps ensure they arrive in the intestines ready to pull the parasites free from the intestinal wall. In this way, furthermore, thiarubrine A is not broken down in the stomach and is thereby delivered full force as a knock-out-punch to the parasites. Both herbal remedies are taken first thing in the morning, before feeding and after the fast of the night, again to ensure a full force of the compounds are delivered to the parasite. For caenorhabditis worms, the chimpanzees' herb of choice is a variety of fig (ficus) leaves. Again, they swallow the leaf whole first thing in the morning, These leaves contain a high concentration of antiworm compounds.

### **Asian elephants use as a stimulant or a painkiller**

In the early 1940's, scientists observed Asian elephants devouring the fruits Entada scheffleri before embarking on long treks, leading researchers to theorize that the plant may serve either as a stimulant or a painkiller.

### **Pregnant elephant uses a borage tree to induce birth.**

According to World Wildlife Fund scientist Holly Dublin, African elephants (*Loxodonta africana*) seek out a particular species of tree, possibly to induce labor. Holly followed a pregnant elephant for more than a year in Kenya, and observed that the elephant followed a uniform diet and daily behavior until near the end of her pregnancy. At that time, the elephant walked 17 miles in one day, many more than her usual three, and ate a tree of the Boraginaceae family from leaves to trunk! Four days later, her contractions started and she gave birth to a healthy calf. Dublin never observed this creature eat this species before or after this particular incident and found that Kenyan women brew tea from the leaves of this tree to induce labor.

Pregnancy and Fertility of Muriqui monkeys of Brazil. Karen Strier a University of Wisconsin anthropologist found that, at different times, muriqui monkeys of Brazil go out of their way to eat leaves of *Apulia leiocarpa* and *Platypodium elegans*. These two plants contain isoflavanoids, compounds similar to estrogen. It is believed that eating the leaves may increase estrogen levels, thereby decreasing fertility. Conversely when they eat the fruit of *Enterlobium contortisiliquim* this maybe increasing the monkey's chances of becoming pregnant as the plant contains a precursor to progesterone (the "pregnancy hormone") called stigmasterol.

### **Asian two-horned rhino use tannin-rich bark of the red mangrove as antidiarrheal**

The Asian two-horned rhino was observed eating so much of the tannin-rich bark of the red mangrove that its urine was stained bright orange. Tannins are a major component of some over-the-counter antidiarrheal preparations such as Enterovioform. The concentration of tannins in the bladder of the rhino necessary to change the color of its urine was undoubtedly sufficient to have an impact on parasites in the creature's bladder or urinary tract.

### **A Young Porcupine use mulengelele for parasites**

A young porcupine that had been 'taken-in' after its mother was caught and killed in a snare in Tanzania. Shortly after being 'taken-in', the young porcupine became sick; suffering from diarrhea and lethargy. It wandered off from the village and the porcupine dug up the root of a plant the WaTongwe tribe call 'mulengelele'. The baby porcupine recovered from its illness.

### **Bears use *Ligusticum porteri*, or bear root.**

American Indian cultures have been closely observing the natural world for millennia. An Ethnobotanist has been studying *Ligusticum porteri*, or bear root. The root of this plant is a fundamental medicine for nearly every American Indian population that lives close to the plant's natural habitat. It is used as a headache remedy, as a fungicide, as an insecticide, and for numerous other complaints. Sigstedt says scientists have identified more than a dozen compounds of known pharmacological activity in bear root.

Much to his astonishment, Sigstedt found that when he gave the bear root to bears in the Cheyenne Mountain Zoo in Colorado Springs, they immediately began to chew up the root and rub it over their bodies--precisely what many Indian legends say that the bear taught humans to do.

## Chapter Ten:India

India is a vast land, filled with extremes, a land of great ignorance, of sickness, crushing poverty and immense suffering, yet also a land of great spiritual enlightenment, of health, astounding wealth and bliss. India is a churning cauldron of contrasting opposites; just being in the midst of its startling dualities, you are never the same again. I had traveled to India a few times on my own spiritual quests. Then in 1981, enroute to China, I stopped off in India again. I was in the land that gave birth to the Buddha, to do Vipassana meditation courses, a little Yoga and to travel. As the journey moved through me, I realized that the wisdom of these disciplines were embedded in Indian Ayurvedic medicine. Conventional medicine is just now beginning to validate and discover the wisdom of ‘mind-body medicine’, the ‘holistic’ approach, ‘herbal medicine’, ‘prevention and wellness’. Yet since 4,000 years ago, these were the cornerstones of the foundation of Ayurvedic medicine

India is a mystical land of saints, magicians and snake charmers; it’s an exotic and beautiful land, ranging from the bathing ghats of Varanasi to the sunny beaches of Goa, to the snowcapped Himalayas, to the beauty of Nilgiris. From the sandy deserts shimmering in the setting sun of Rajasthan, to the rainy northeast. Like the spectrum of colors of the rainbow, India has many colors and many faces. India is a vast expanse of geographic, cultural, racial, and religious diversity. 3,000 km from east to west at its widest point, & 3,000 km from the Himalayas in the North and Kanya Kumari at her Southern tip. The Subcontinent is separated from the rest of Asia by the Massive Himalayan range; it occupies an area only 33% compared to the landmass of continental United States, yet it has 75% more people! It is the second most populous nation in the world and the largest democracy. A staggering 350-400 million of its 1 billion inhabitants, are estimated below the poverty line. This enigmatic nation is as luxurious as it is squalid, the plains are flat but richly fertile, the Himalayas



are massive and spectacular as they are arid, the food is as bad as it can be magnificent, the transport as exhilarating as it can be frustrating. Nothing is ever quite the way you expect it to be.

My friend Andy and I flew directly into Bombay (Mumbai). India is a massive assault on the senses like no country I have ever been to in the world. You are immediately struck by a cacophony of sights, sounds, smells, tastes and emotions. Bombay (Mumbai) is a teeming sprawl, bursting at the seams, 18 million people and growing. It has one of the highest population densities in the world, and by 2015 Mumbai is estimated to grow to the second largest metro area in the world at 26 million inhabitants. The hustle and bustle of the streets is intense: congested traffic, blaring horns, beggars, rich red-ochre color of skin, of the marks on foreheads, of the earth itself, and iridescent colors of saris. The devil-may-care drivers of three wheeled motorized rickshaws dodge cows meandering through traffic; blaring Indian music hangs over everything. Merchants shouting, coolies carrying boxes on their heads. Smells of food, of sweat, of spices, of excrement, of incense. Passing bazaars, temples, mosques, and sidewalk vendors selling chai, cutting hair, cleaning ears! Here, set against a backdrop of crushing poverty and suffering of enormous proportions, the fancy hotels, shops, clothes and even Rolls Royce cars -- displays of wealth unremarkable in developed nations -- are rendered obscene in juxtaposition. The 7-year-old girl dressed in rags begging for food or money, the countless families living in shanties or simply throwing down a sheet of plastic on the sidewalk. The babies toddling barefoot around trash-and-filth-strewn street dressed only in a torn shirt... the young women carrying emaciated babies, who follow you along a shopping street pulling at your elbow (and heart) for a handout,... kids faces smeared with filth, from rummaging through a trash dumpster for scraps of a meal... These are heart-wrenching scenes that wear-away at your humanity, day-after-day. You find yourself cycling through different phases of philanthropy, while being perpetually hounded and hustled as a rich foreigner (all foreigners are considered rich), first you try giving nothing, and hide behind

fatalism, then equally inappropriate, you give everything, or then only give when you feel a calling. My friend Andy, seeing his young daughter in all girl beggars, gave generously, and was enraged when he saw the thugs who control these beggars, and their turf, collect the money from them at the of the day. After seeing this, he would only buy food to give to them, and was very pleased to see them eating their reward. Amazingly, just before we arrived, were there was a 'beggars strike' (only in India!) they complained their handlers were taking too much, and went on strike!!!

The earliest traces of civilization in the Indian subcontinent are to be found in places along the Indus river in the North, a highly complex civilization that first developed some 4,500-5,000 years ago. Aryan tribes from the northwest invaded about 1500 B.C.; and with their merger with the earlier inhabitants, created classical Indian culture. At its height, around 2500 BC, the first Indian civilization comprised of 1400 cities and towns spanned an area from Afghanistan to Goa (South West India). It was the largest trading and oldest seafaring civilization in history. Later, Arab incursions started in the 8th century, and then the Turks in 12th were followed by Europeans, beginning in the late 15th century. By the 19th century, Britain had assumed political control of India. Challenged by a unique form of Indian nonviolent revolution led by Mahatma Gandhi, amazingly British colonialism ended and led to independence in 1947.

So many cultures have been rolled by its history into one. Of course there is the pervasive British influence everywhere, yet not so well known is the Portuguese influence in Goa, on the Southwest Indian coast. It combines old Portuguese architecture with a Portuguese flavor to the lifestyle, which somehow manages to exist even 25 years after India took over Goa. In fact I remember attending a Portuguese Catholic Mass, one Christmas Eve, so incongruous is this enclave that since the 1500's the Indians were only able to dislodge the Portuguese in 1961. The French had their enclave in the South at Pondichery, given by the Sultan of Gingee; the French took charge in 1674. Eventually, the French handed over Pondicherry to India in 1954. It was a Roman settlement

thousands of years before that. Amazingly, we were walking the trash-strewn streets of Bombay (Mumbai) one day, and a pleasant beggar called to us from his spot slumped against a wall. I remember in astonishment as my friend struck up a conversation in English that suddenly slipped into Hebrew! Both the beggar and my friend had lived and studied Hebrew in Israel. It seems there is a strong Jewish community Bombay (Mumbai), and other areas around India. The Bene Israel claim to be descended from Jews who escaped persecution in Galilee in the 2nd century B.C.E. The first Jews in Cochin (southern India) were the so-called “Black Jews,” who spoke the Malayalam tongue. The “White Jews” settled later, coming from western European nations such as Holland and Spain. Thousands of years of trade swirling around India has created this fascinating mix of cultures and religions. It becomes easy to see how Indian plants also involved in trade wound up in the Traditional Chinese Pharmacopoeia and many healing traditions around Europe and Asia.

We were heading north to the Vipassana Meditation center in Rajistan and to get there is to pass through the most organized chaos in the world, the Indian train system. There are as many as 961 local train services plying on the Western line carrying over 23 million commuters everyday while the 1070 services on the Central and the Harbor play hosts to a truly staggering 30 million commuters daily. The Indian Railways is the world’s largest employer with over 1.7 million people on its payroll. We were registered on a 10 day meditation intensive the very next day headed North from Bombay to Dammagiri in Rajastan.

## **Meditation**

“Other explorers of inner truth went still further in their search; and by experiencing the reality of mind and matter within themselves they recognized that diverting the attention is only running away from the problem. Escape is no solution: one must face the problem. Whenever negativity arises in the mind, just observe it, face it. As soon as one starts observing any mental defilement, it begins to lose strength. Slowly it withers away and is uprooted”

**--Bill Hart ‘The Art of Living’.**

This particular type of meditation called Vipassana, which means to see things as they really are, is one of India’s most ancient techniques of meditation. It was rediscovered by Gotama Buddha more than 2500 years ago and was taught by him as a universal remedy for universal ills. As practiced today, it is gloriously non-sectarian -- not a statue or picture of a Buddha or saint seen anywhere. It is, above all, about the technique. The technique aims for eradication of mental impurities and the resultant highest happiness of full liberation. Healing, not merely the curing of diseases but the essential healing of human suffering, is its purpose. Vipassana like other forms of meditation is a way of self-transformation through self-observation. It focuses on the deep interconnection between mind and body, which can be experienced directly by disciplined attention to the physical sensations that form the life of the body, and that continuously interconnect and condition the life of the mind. It is this observation-based, self-exploratory journey to the common root of mind and body that dissolves mental impurity, resulting in a balanced mind full of love and compassion. The scientific laws that operate one’s thoughts, feelings, judgments and sensations become clear. Through direct experience, the nature of how one grows or regresses, how one produces suffering or frees oneself from suffering is understood. Life becomes characterized by increased awareness, non-delusion, self-control and peace. The course requires hard, serious work.

Yet, as I told Andy (we both needed reassurance; it was his first course and I needed to settle myself as well), over a million people have gone through this program, which often feels self-imposed torture, and there are many benefits. Institutions, prisons, addiction centers, corporate management, and human researches were all promoting the technique throughout India and the world.

There are three steps to the intensive training. The first step is, for the period of the course, to abstain from killing, stealing, sexual activity, speaking falsely, and intoxicants. This simple code of moral conduct serves to calm the mind, which otherwise would be too agitated to perform the task of self-observation. The next step is to develop some mastery over the mind by learning to fix one's attention on the natural reality of the ever changing flow of breath as it enters and leaves the nostrils. No easy task for our hyperactive minds. By the fourth day the mind is calmer and more focused, better able to undertake the practice of Vipassana itself: observing sensations throughout the body, understanding their nature, and developing equanimity by learning not to react to them. Finally, on the last full day, participants learn the meditation of loving kindness or goodwill towards all, in which the purity developed during the course is shared with all beings. This is the greatest experience of pure peace that I have ever experienced. Overall the course is tough; you basically 'sit on your behind' all day for long hours, but your attempted equilibrium between 'not avoiding the unpleasant' and 'not craving the pleasant' starts to become a habit pattern of the mind that plants you firmly in the present moment. Your mind becomes stronger with each passing day. It was Andy's first course, and there were times that his agitation became so extreme, I thought he would bolt, running and screaming for the front gates. Yet we both stuck it out, and when the 10th day arrived and we begin to talk again, it slowly descended on us both just exactly how profound an experience it actually was, and what an amazing difference to body and mind meditation really makes. The entire practice is actually a mental training. Just as we use physical exercises to improve our bodily health, Vipassana can be used

to develop a healthy mind. Because it has been found to be genuinely helpful, great emphasis is put on preserving the technique in its original, authentic form. It is not taught commercially, but instead is offered freely. No person involved in its teaching receives any material remuneration.

Meditation involves “cleansing” your mind through self-observation, and eventually gaining control over your emotions like anger, greed, disgust or any other negative emotion, and restoring your mental equilibrium by overcoming stress and its myriad symptoms. This “cleansing” of the mind eventually is bound to have a positive impact on our physical well-being as well, as it is inextricably intertwined with our emotional health.

### **A simple shower and Christmas Eve**

When we returned to our in cheap hotel in Bombay. I was really looking forward to a simple shower. At the front desk of the hotel they told me they had a room, yet the shower was not working. I took the room expecting it fixed at any moment. Days went on, I complained everyday. Final the manager looks at me with a straight face to answer my pained complaint and said “yes, yes it is true I said your room had a shower ” then gave the universal Indian head nod side to side, his eyes making a figure-eight. It means “yes an no and oh my god!” all rolled up into one, as far as I could tell, and he looked me in the eyes and said, “Yes its true I said your room had a shower in it.....BUT..... I never said it worked!!!” I didn’t whether to laugh or stay annoyed; I left the hotel, smirking. Anyway, before I left I remember the first day in the hotel I was on the veranda, overlooking a bazaar, having a cup of tea, in a very mindful state, when drifting over the strange and exotic noises of the steaming hot market came Bing Crosby singing “I’m dreaming of a White Christmas.” I found my mind was able to observe an usually unconscious sequence of events, normally buried below my conscious mind. A subtle yet extremely pleasant biochemical and bio-electromagnetic sensation began to well up in my solar plexus. Suddenly I remembered, this day was actually ‘Christmas Eve,’ and sentimental

memories came quickly into my mind. As suddenly as this song was hovering over the market place, it was gone. I felt a flood of craving come to my mind and body, immediately I wanted to hear more and more. Where could I buy Christmas music? How could I find who had played this song to get them to play it again? Then I realized, my mind clear as a result of having just finished the meditation course, how the inability to let go of pleasant experiences creates such suffering just as surely as avoiding an unpleasant experience. It was a small ‘ah ha! moment’, an example cleanly laid out before me. I could see how both unconscious responses had created so much suffering for myself over my (then) brief life. Since then, minor and major insights followed year after year, from one course after another. I have thus come around to verifying and accepting the wisdom of the ancient Ayurvedic and Chinese physician–sages: we must intervene on the level of the mind before disease is manifest upon the body.

### **‘Chaiwalla’**

After the first meditation course, we left the meditation center for a break before the next 10 day retreat. We traveled to Shirdi, to the shrine of the original Sai Baba (the Sai Baba who currently has a large ashram in Bangalore is reported to be a reincarnation of the original Shirdi Sai Baba). I had felt drawn by a connection and stories from my former roommate in London. London had seemed like a life time ago at that time. My friend Carlo had been a student activist in Rome during 1968, and he had escaped arrest by going to India. He was very idealistic and eventually became a Hindu holy man, a sadhu. He wandered the country with no possessions, dressed in just a loincloth with his hair matted in the traditional way. He begged for his food, the time honored way. He told me of times of drought and of failing crops, sitting outside a village until the head man of the village would come to question him and his sadhu companions regarding religious points. He told me of the enormously generous villagers sharing their meager meals with him. He told me also of the wonders of Indian spirituality. He really lived the life, and had felt a connection to the

miracles attributed to the late Saint Shirdi 'Sai Baba' (1854-1918), of a man who had broken down age-old barriers between the Hindus and Moslems. We found ourselves so close to Shirdi, I had to go and pay respects. After a day at the shrines, my friend Andy and myself, were trying to leave but were lost due to our failure to penetrate classic Indian indifference in which they might tell you anything at all except what might be helpful or true. We were trapped in the 'misinformation zone' that sooner or later snares every tourist. We could not get the same information twice about which bus to take and what time to leave for our destination, we were stuck at this awful bus station. It was getting really frustrating, my friend Andy was getting sick and the bathrooms, I can quite safely say, were some of the worst I had ever been in. They were really quite a puzzle: no running water, just a hole in the middle of the room, which you could not get to without getting quite messy from all the people who also could not get to the hole and had defecated in an ever-widening circle to the corners of the room. We sat for many cups of cardamom-flavored, unbearably sweet chai tea. We had missed bus after bus all day in an information blackout courtesy of the bus officials. We were served chai by a very nervous, Robinson Crusoe-like figure. This gentleman had long white hair and a long white beard. To say he was wearing rags would do rags an injustice. He was barefoot, wide eyed, with a great intelligence hidden behind his eyes. This 'Chaiwalla' had quite a story to tell his best customers of the day. He served us for a while, before we realized how great his English was. The more carefully I listened the more I could tell his English was nearly accent-less. What was such an educated man doing serving tea in the Shirdi bus station? He told us his story, which in the context of India is not so unusual. He had been married and had a large family. For many years he had a very successful and lucrative career as an accountant for one of India's top corporations. But then his voice started to get uncharacteristically horse. Eventually it became difficult to speak. Finally, his voice just stopped. He visited many doctors, psychiatrists and experts in India and in other countries, receiving no help, only the diagnosis of Hysterical Aphonia. Finally, after a long disability,



he lost his job, he lost his investments, and lost his savings, and finally his wife left him and took his daughters. He was destitute, depressed and in a spiritual crises. He had heard about the power of Shirdi Sai Baba energy, and he took the few rupees he had left and bought his bus ticket to Shirdi. By now, Andy and I were dumbstruck from such a compelling story out of such a sincere man. He rushed off to serve someone else tea in this busy station. We waited anxiously for his to return, in silence. When he came back he was hovering over the table. “Well, I arrived in Shirdi with nothing,” he continued. “I visited the Shrine and prayed. Then I joined the parade, with the crowd singing hymns and swaying in unison. I found that after all the years of not being able to speak I could sing!!! Then I could talk!!! It took me many days of talking non-stop to whom ever would listen before I believed that finally with all the expensive doctors, after losing my family, after suffering for 10 years, I could now speak again! I was cured and it is a Sai Baba miracle.” We were so curious and amazed he would want to stay here instead of reclaiming his old life and I asked, “But why do you stay here?” He was pensive and the serenely replied, “This was where I could be of service to Sai Baba’s pilgrims.” He beamed a bright smile, bursting through his scraggy beard, showing his blackened teeth. And that was it. He had stayed in the Shirdi Bus stations just to be of ‘selfless service’ to pilgrims like myself and Andy, rather than return to a spiritually bankrupt life. He had chosen poverty and service, and it seemed to me that this was his reward. He felt ‘of service’ like never before, freed, pursuing his spiritual life, and he seemed very much at peace with it. He then told us times for all our buses and the connections to the trains and the train times for the trains so far down the road, into our schedule, that we did not believe him. He told Andy to drink an infusion of herbs that he mixed for him, and he drank turmeric, ginger and another ingredient. Andy’s stomach-upset was gone almost immediately. Our mood was completely lifted, as we caught the ‘right bus’ out of Shirdi, and do you know what? All his information proved to be exactly correct right down the line.

## **Out of Cash and in the middle of nowhere**

As we traveled our way back, through buses and trains, to the Meditation center for our second 10-day intensive in Dhammagiri, we realized we had no cash left to buy our final rail ticket with. It was also a public holiday and we soon came to realize all the banks were shut. We decided we would get off in the small town, which was our train connection and try somehow, to get the travelers' checks cashed. Andy loves these kinds of challenges, loves the 'hunt'. He assured me he would 'save the day' and get us cash, even if there were no restaurants or banks open to cash the travelers checks. He would do all this in time to catch our connecting train. After being on the road with Andy for nearly a year, I realized he should go off and do his 'hunter and gatherer thing.' I would guard the luggage, which was considerable by this point; we were looking like a small caravan, as Andy was buying everything with an idea of starting a shop for his wife on his return to Boston. "Ok," I said, as I heard the novel I had been reading calling to me. "O.K., Andy, you go off and save the day. I'll stay here and read." To be honest, it seemed like a hopeless task to me; everything was closed for a religious holiday, "but O.K you go for it" I told him anyway. Chapter passed chapter in my book, hours went by and our train was looming on the horizon. Still no Andy. I was getting anxious. If we missed this train, we would miss the meditation course. I wonder what could have happened to my large, boisterous friend? Then suddenly off in the distance I heard a police siren, and around the corner drives a police jeep, siren wailing and a small yellow light flashing, and there is Andy in the front seat. My first thoughts were that he had gotten into some serious trouble. Then I saw his beaming face and I could tell from his body posture this was his triumphant return; we were going to make our train deadline after all and WITH MONEY. He came sauntering over to triumphantly explain, no one could cash travelers checks so he had talked the police chief of this town into offering a loan! We would repay the loan when we reached the meditation center. "How would we do that?" I asked tentatively "Well" Andy said with a gleam in his eye, "He is sending this 'plain

clothes detective' with us." I looked over to a small untidy man dirty clothes and disheveled hair gleaming with oil who was sat in the police jeep. I replied, "You mean he will travel with us for 4 hours and then another hour walk to the meditation center, get the money and return for another 5 hours? That's a 10-hour total journey!"

"Yep, that's the deal." By now Andy could barely contain himself, he had gotten us out of scrape with such style. The plain-clothes detective got out of the jeep, and pulled out with him a large, antique looking rifle left over from the 'British Raj'. As our new companion joined our caravan, it looked as though he was our armed guard. He was a small smiling man, with the rifle nearly as big as he was, he became our companion till our repayment!!

## **Heading South**

After we completed our two 10 day meditation intensives, Andy was ready to 'hit the road.' It is so very intense to do your second course so close to your first course. We decided we would head south to Bangalore and then on to Kerala to Thiruvananthapuram, formerly known as Trivandrum. Traveling through Kerala via the inter connecting lagoons and rivers was fascinating. Some lagoons would be totally covered in vegetation. We would be in small boats watching Indian life go by. Watching women washing their hair, their clothes, their dishes. These riverways were the center of their lives. Eventually we reached Thiruvananthapuram, Even as early as 1000 B.C., this southern tip of India was in frequent trade contact with foreign trading in cotton fabrics, spices, ivory and medicinal plants. We wanted to visit the present Sai Baba in Bangalore and Sivananda ashram in Bangalore and then on to the Sivananda Yoga Ashram at the Nayar dam in Thiruvananthapuram. To do this, we had to get there using the organized chaos of the Indian train system. And we had to use a strange kind of torture, the 'overnight sleeper,' but we were prepared by all our other experiences. As it happens, we had a wonderfully uneventful trip. Bangalore, ' the city of gardens', exemplifies the cleanliness of South India in

contrast to the North. It is the place where high-tech is remodeling India for the next century, and India will be a major force in high-tech. This means that there are now about 600 Internet cafes. We went straight to the Ashram, with some fellow travelers who were heading in the same direction. The present Sai Baba has been a guru of many controversies, so I was more than a little skeptical when we arrived just in time for Darshan, the religious audience with his devotees. As he moved through an adoring throng of devotees, I did see the powder of 'Whibuti'—sacred ash manifested mysteriously from his hand to his devotees. He was wearing long sleeves, and the energy was very intense as he passed by. I was quite shocked; clearly he had great energy.

The next day we then proceeded on with our trip, and decided on a brief 'stop-over' in 'Snooty Ooty'. Ooty (Ootacamund), in Tamil Nadu, is situated in the Nilgiri Hills, also known as the Blue Mountains. Snooty Ooty got its nickname from an earlier more elegant life of the British Raj occupation. The native Indians and other poor, had to make do with life on the broiling plains of India in the summer; only the well-off could afford to go to the Hill Stations to seek relief from the heat. The British Army would only allow officers and their ladies permission together with important and rich members of privileged classes. The mountains shimmer blue in the moist haze due to the hue of Eucalyptus trees growing on the mountainsides. It was amazing to see transposed into Southern India a little piece of England, the hills were dotted with English-style bungalows and, incredibly, there were still British remnant retirees left over, living out there pensions in India. Both Raj and Rajas enjoyed classic British pastimes: riding, golf, tennis, hunting with Red jackets, jodhpurs and riding boots and hounds. There was of course also, racing and polo and a full social season, complete with flower shows and dog shows. Snooty Ooty, from 1869 it became the summer headquarters of the Governor of Madras.

In my mind, however, it is remembered for the only cheap hotel I had ever been to that charged rooms by the blanket -- and expensive ones as it turned out! Of course, when you travel for extended period you tend to get fixated on price.

We checked-in and went to our room to get settled in for the night, quite pleased with the price, coming from the heat of the plains into this hill station it was impossible to imagine how cold it could get. At 11pm, I descended down to the front desk and paid for more blankets.....and, you guessed it, yet again at 3am... and again at 5 am... and by the morning it had turned out to be much more expensive than anticipated (only in India!).

Our tussle with the bureaucratic Indian railway system began in earnest when we returned to pick-up our sleeper train. By all accounts we had committed the cardinal 'railway sin': we had an unplanned 'stop-over' and we were unable to pick up our journey with sleepers for another 14 days. That's how far in advance you had to book long journeys which required sleeping births. We were outraged; no one had mentioned this when we had gotten off. Anyway, my cunning friend had a private conversation with the ticket officer and some 'backshish' changed hands, and the railway officer was all smiles and "how could I have overlooked these two births right here on the next train?" With that, we were on our way again, or so we thought. Before the departure of any train, especially a long distance express, any Indian station looks like a Kasbah in the Middle East. Our station was no different; prior to the departure it looked 10 times more crowded and just as chaotic. Passengers are running after coolies, who are trying to locate particular carriages; vendors are trotting up and down the platform trying to sell their wares, mineral water, fruits, newspapers and periodicals. Finally just before the train arrives we are all lined up in front of the designated places for our particular carriage, I thought how odd, order has suddenly appeared from chaos, at least that was until the train pulled up in the wrong spot, then 'all hell broke loose'. Andy looked at me and said "don't worry I will find and save our seats, you wait here with the luggage." The 'shop stock' luggage was getting larger by the day. Andy disappeared into the melee, elbows flying, easily out-barging those around him. Andy was bigger -- head and shoulders above the Indians. About 10 minutes later, the platform had cleared except myself and the 'shop-luggage.' Andy reappeared with a 'shell

shocked' look, his demeanor was completely deflated and he said" I've traveled everywhere, but I have never seen anything like what is going on in there, I can't make any sense of it, you try" Eventually, it turned out we only had one sleeping birth and no seat. Yet the carriage all rallied round, and helped us, by squeezing us into sharing seats. Andy had a bad back and complained about not being able to sleep on the floor. So I did. The sleeping births were stacked 3 high on each side, with me sleeping on in the middle of the floor. The people were very nice, yet the most unfortunate thing about this whole experience was a 'reflex action' most of them had, from having too much phlegm or mucus constantly in their throats, and the place to automatically displace this phlegm is .....on the floor. EXCEPT I was trying to sleep on the floor!! As the night wore on (and it did) I developed my own 'reflex action' one of quickly and almost unconsciously rolling to my side as soon as I heard anyone above me in the sleepers, clear their throats, as a big spit of phlegm would be descending from above. After much shouting and apologizing everyone remembered not to react to his or her 'reflex actions.'

Having chai is an experience not to be missed on a train. The Chaiwalla is an institution in himself, unlikely to be seen anywhere else in the world. Their strident cries of "Chai, garam chai"(tea, hot tea), wakes you even at 2 o'clock in the morning, as they parade up and down with undiminished spirit. The typical way of making it is to boil the living daylights out of a mixture of water, milk, sugar and tea leaves, and when no more tannin can possibly be extracted, strain it off into small cups or glasses.

### **Sivananda Yoga Ashram at the Neyyar dam in Thiruvananthapuram.**

The Ashram is nestled into a picturesque setting, of 12 acres of tropical splendor in the quiet foothills of Kerala's Western Ghats. The natural beauty of the Neyyar Dam lake, the peaceful surroundings, the beautiful coconut palms and flower filled views offer an ideal atmosphere for the practice of Yoga and meditation. The Ashram's program of classical yoga techniques, taught

in a warm and friendly environment, helps to instill a deep awareness of the spiritual essence of life. We arrived and stayed a while immersing ourselves in the harmony of the ashram routine, discovering the daily routines of gentle meditation, yoga assanas, and philosophical talks with the Italian swami who was heading the Ashram. The evenings would end with the harmony of peacefully singing Indian Hindi hymns, 'bajans,' together in a court yard open to the stars.

## **Yoga**

“ Union, communion. The word 'yoga' is derived from the root 'yuj' meaning to join, to yoke, to concentrate one's attention on. It is the union of our will to the will of God/Goddess, a poise of the soul, which enables one to look evenly at life in all its aspects. The chief aim of yoga is to teach the means by which the human soul may be completely united with the Supreme Spirit pervading the universe and thus secure absolution.”

- B.K.S. Iyengar

The study of yoga is not about just physical health, through doing yoga assanas or positions it can be a spiritual path in its own right. Yoga was introduced to the West in the 50's and 60's and has recently become popular as a fitness regime offered in many health clubs. A 1990 study of patients who had coronary heart disease indicated that a regimen of aerobic exercise and stress reduction, including yoga, combined with a low-fat vegetarian diet, stabilized and in some cases reversed arterial blockage. It is said, “When 'assanas' are mastered, the yogi is not touched by the play of duality. His will and concentration are developed to such an extent that heat and cold, pleasure and pain, good and bad, and all other worldly influences do not touch him.”

## **Psychoneuroimmunology**

Psychoneuroimmunology is defined as ‘an interdisciplinary science that studies the interrelationships between psychological, behavioral, neuroendocrine processes and immunology.’ Conventional medicine, through this new field of ‘psychoneuroimmunology,’ is starting to explore how the mind can and does impact the body, and how it impacts a multitude of systems—the immune system, the endocrine system, the nervous system, and the cardiovascular system. We are now seeing how emotions are translated into chemical substances that impact our endocrine system, immune system, and other systems within the body. Emotions get communicated a number of ways to the physical level. For example, neuropeptides have been identified as the chemical messengers that allow our emotions to “talk” directly with the billions of defense cells in our immune system. They also influence cellular activity and the mechanisms of cellular division. Laboratory scientists have been able to see that certain nerve fibers actually end on the surface of white blood cells. This gives us physical evidence that white blood cells receive direct messages from the nervous system messages which are part of the endocrine system and signal the regeneration process in our cells, and which are stimulated by the emotion of pleasure. Therefore, emotions play a central role in cellular division and regeneration. Sometimes the impact is positive, e.g. when the immune system is enhanced to combat diseases; other times the impact is negative, e.g. when cancer and heart disease (and the immune system) is significantly negatively impacted by the effects of stress or negative emotions. Current research is demonstrating that conventional medicine can no longer ignore the impact of the mind, the emotions or the spirit on the health. Just as the ancients were counseling us, thousands of years ago.

According to Ayurvedic philosophy, health is dependent upon one’s ability to live in harmony with one’s self and with the external universe. Traditionally, as much attention was given to illnesses of the mind as to illnesses of the body. The Ayurvedic physician taught that in order to avoid illness and pain,



the patient must control the destructive (and self-destructive) nature. Living in harmony with the environment was recognized as essential to one's mental, physical, and spiritual well-being.

Ayurvedic physicians taught that prevention was more desirable than a cure. Their ideal was to develop an individual's natural resistance to disease to the point where one's immune system could function as one's best medicine. Their goal was to maintain an individual in his or her optimal health throughout life, so that the ultimate goal of life--the awareness of his or her connection with the life principle--could be pursued without hindrance.

Let medicinal plants grow sky wards.

Let two legged and four legged (living beings) prosper!

OM Peace! Peace!! Peace!!!

(in thought) (in word) (in deed)

--Taitriya Upanishad

From the developed civilization around the Indus river nearly 5,000 years ago came the 'Vedas'. These books are known as the four Vedas; Rik, Sama, Yajur and Atharva. The Rik Veda, a compilation of verse on the nature of existence, is the oldest surviving book of any Indo-European language (3000 B.C). They are the foundation of Hinduism one of the most complex, diverse, and tolerant of the world's religions; you can find within Hinduism almost any form of religion. (I remember on a previous visit how ironic it was, that I had stayed with some Christian Nuns, sent as young missionaries 60 years prior. They were saintly and enormously revered by the Indians, they were in their eighties, and after a lifetime of India the only practice they were left-with, was the singing of simple Hindi bajans hymns each morning. It seemed to me, India had converted them, not the reverse.) The philosophical teachings of the Vedas were challenged from the fifth century BCE by the Shakyas tribal group, Chief's son,.....Siddhartha Gautama this path developed on to become –

Buddhism.

“The object of Ayurveda is the restoration to health of those who are afflicted with disease and the preservation of sound health of those who are well.”

--Susruta, famous Ayurvedic physician 600 B.C.E.

Ayurvedic medicine, traces its roots from the Vedas of ancient India. The Atharva Veda lists the eight divisions of Ayurveda: Internal Medicine, Surgery of Head and Neck, Ophthalmology and Otorhinolaryngology, Surgery, Toxicology, Psychiatry, Pediatrics, and the Science of Rejuvenation, and the Science of Fertility. The Vedic Sages took the passages from the Vedic Scriptures relating to Ayurveda and compiled separate books dealing only with Ayurveda. The Vedic Brahmanas were not only priests performing religious rites and ceremonies, they also became Vaidyas (physicians of Ayurveda). These sage-physician of the time were the same deeply devoted holy people who saw health as an integral part of spiritual life. The Ayurveda system combined the use herbs, foods, yoga, mantras, lifestyle and surgery to support healing of body and mind. This medical system quickly grew into a respected and widely used system of healing in India. Students traveled from far and wide, all drawn to study Ayurveda. From China, Tibet, the Greeks, Romans, Egyptians, Persians, and more, they traveled to India and returned to cross-fertilize their own systems, with their new knowledge.

Like Traditional Chinese Medicine, Ayurveda has a deeply holistic perspective of the inter-relationship between physiological processes, external factors including climate, life, work and diet, along with the internal psychological and spiritual condition. The patient's ethics are also considered and are merely a means to the end of find peace and balance within us. Ayurvedic sage-physicians counseled that “right” action is action that brings us nearer to knowledge of God. “Wrong” action leads us away from that

knowledge, towards dis-harmony. Ideas of “good” and “evil” are, therefore, only relative values and must not be used as an absolute standard by which we judge others. The sage-physician also emphasizes a regimen of diet with the use of appropriate drugs. Many other factors are taken into consideration. The age of the patient, the climate in which he lives, his cultural and social surroundings, and his bodily constitution, need to be taken into account before offering a prognosis. Touch, inspection, and interrogation are the main tools of diagnosis. Unlike the present conventional medical systems in most industrialized countries, which view health passively as a state absent of symptoms, Ayurveda believes that disease occurs not as an arbitrary affair but for definite reasons that, when correctly understood, could help to cure, and it emphasizes a technology of prevention of disease. Human beings should be in harmony with the universe; when there is an upset of the balance, disease occurs. Using natural medicine restores balance and equanimity. Treat the whole, and not just the affected part. There is great emphasis on prevention in body-mind and spirit, engaging and educating for healing, rejuvenation and a healthy lifestyle, as opposed to the ‘disease model’ of ‘cure’. Holding the balance, achieving and maintaining an optimum state, is based on herbs, yoga meditation and diet. Ayurveda is growing popular in the West for its common sense focus on the science of longevity, the promotion of positive health, natural beauty and long life. Ayurveda, with its tridosha or three humours system, is able to provide an understanding of the cause of health in terms of a metabolic balance. Disease is simply understood as an imbalance between the nerve energy (vata), catabolic fire energy (pitta) and anabolic nutritive energy (kapha). All foods and experiences have an effect on the overall balance of these respective humors. Imbalance of the tridoshas leads not only to impaired health, but also to an impaired mental condition, because the mind’s mental condition is dependent on the body’s health. Ayurveda aims to keep the three humors in equilibrium, for only then can perfect health be attained and maintained. As each individual has his own particular forces; Ayurvedic treatments are specific to the patient, rather than disorder specific.

The physician emphasizes a regimen of diet with the use of appropriate herbal formulas designed to fit the imbalance embedded within the constitution of the sufferer, as much as the removal of the disease pathogen. Ayurvedic treatment is carried out through the internal and external use of herbal medicine in a coordinated or integrated manner. Herbs are used to eliminate excesses and strengthen deficiencies. While they may possess a powerful nutritive impact on a weakened body, their primary action is to stimulate particular organic functions.

### **Ayurvedic Medicine today in India**

In every Clinic or Ayurvedic Doctor's office throughout India you will find a statue of Dhanvantari Lord of Ayurvedic Healing. According to the Puranas this incarnation of Vishnu was a ruler of Benares who originated a universally effective system of traditional herbal medicine. He holds a golden leech (symbolic of blood purification) and a medicinal plant in his right hands, and the conch of wisdom and pot of rejuvenating nectar in his left. The tulsi-seed mala around his neck, plant-wreath halo, and his sometimes blue-tinted skin emphasize his connection to Vishnu the Preserver.

There is a vast infrastructure of medical institutions, practitioners, dispensaries, hospitals and pharmacies. There are 154 Undergraduate Colleges with admission capacity of 6,300, thirty-three postgraduate colleges, and there are about 2,189 hospitals as well.

The Research activities for the past three decades, have resulted in the validation of herbal formulations such as Ayush-64 for malaria. This formulation is a combination of Katuki, Saptaparna, Kiratatikta and Kuveraksa **prepared from four different types of indigenously available herbs, which has been found to be very effective in the safe treatment of malaria effective for both cure and prevention.** Ayush-56 for epilepsy, Ayush-82 for diabetes mellitus, 777 oil for psoriasis, Pippalyadi yoga as an oral contraceptive and about 18 patents on processes developed in the Council's laboratories, which are poised

for commercial exploitation. Through medico-botanical surveys, more than twenty thousand plant specimens have been collected. About 3,000 samples of plant, mineral and animal origins have been collected. Information on 3,800 plant-based folk medicines have also been collected and a monograph covering about 2,900 folk medicines has been compiled. The pharmacognostical investigations on about 175 important Ayurvedic medicinal plant/drugs have been completed so far.

### **The Banyan Tree**

One of the main keystone species of Indian culture and its eco system is the banyan tree. It is the most wide-spreading tree. Its branches spread out and send trunk-like roots to the ground in order to support itself. Single Banyan trees may cover acres of ground. In fact, one tree in Bangalore covers 4 acres. The tree under which the Buddha sought Enlightenment is classified as *Ficus religiosa* or sacred fig-tree. Towards the West of the Maha Bodhi temple, Bodhi Gaya in Northern India, is the tree where Gautam Buddha (563-477 B.B.) is said to have attained enlightenment. The heart-shaped leaf is revered and used as a charm. Research has demonstrated that the fruit contain serotonin. The nyagrodha (*Ficus bengalensis*) a.k.a. banyan, is one of the truly massive trees of north India. When mature, its branches are so stout that the largest birds can perch on them without their breaking, yet they are believed to be vulnerable to the tiny tailorbird, which can peck its life away. Its base forms caves and channels where it is possible to take shelter from the rain. It is a tree that not only grows up like most others, but also down as aerial roots that emerge from the branches descend to implant them in the soil. Therefore one tree can form a grove all by itself. This type of fig tree can store up to 25,000 gallons of water within itself. It is believed that it can live for a thousand years. It creates a grove where thousands of pillar-like prop roots support massive limbs. Banyans are said to grow so large that Alexander the Great could camp 7,000 men under one tree. Ayurvedic medicine recommends the use of a concoction made with its

astriugent milky sap to arrest miscarriages. Therefore, the tree is associated with healing, protection, sensitivity, reliability and generosity.

### **Andrographis, *Andrographis paniculata*,**

Commonly known as “King of Bitters,” it is a member of the plant family Acanthaceae, and has been used for centuries in Asia. The leaves and stems are used to extract the active ingredients. It grows abundantly in India, Sri Lanka, Pakistan and Indonesia, and is cultivated in China and Thailand. I have used this herb very successfully in my practice for many years for viral conditions of all sorts, known and unknown. It acts by blocking an enzyme known as reverse transcriptase, which viruses use to translate genetic information into a form it can use to replicate. This herb was first used by used in Ayurvedic medicine, and then found its way into Chinese Medicine. Recent studies have demonstrated its ability to protect the liver and help the liver regenerate itself. It has the added benefit of hindering the replication of viruses by altering cell-to-cell transmissions, so it is especially supportive against the hepatitis virus. I use it all the time for liver problems of any kind; it seems to have a real affinity for liver and gallbladder complaints. It is classically used throughout Asia to treat GI tract and upper respiratory infections, fever, herpes, sore throat, and a variety of other chronic and infectious diseases. In Traditional Chinese Medicine, *Andrographis* (*Chuan Xin Lian*) is an important “cold property” herb: it is used create balance by cooling the heat of fevers, and to clear “heat-toxins from the body. In Scandinavian countries, it is commonly used to prevent and treat common colds. Swedish research conducted in the ‘80’s and ‘90’s has confirmed that *Andrographis* has been extremely beneficial in the treatment of influenza. Its actions are manifold: 1) anti-inflammatory: it reduces swelling and cuts down exudation from capillaries; 2) antibacterial: fights bacterial activity; it appears to have a weak direct action, yet can be remarkably beneficial effect in reducing diarrhea and symptoms arising from bacterial infections; 3) anti-malarial: counteracts periodic/intermittent diseases; 4) helps prevent blood clots, preventatively; 5) helps fights, even kills, cancer cells; 6) cardio-

protective: it protects heart muscles and researchers have reported that an extract of *Andrographis* was effective for lowering blood pressure; 7) it supports and alters the properties and flow of bile; 8) cleans and purifies the blood; 9) immune enhancement: increases white cell (scavengers of bacteria and other foreign matter) phagocytosis, inhibits HIV-1, hepatitis B and C, influenza virus replication, and improves CD4+ and T lymphocyte counts; 10) it is a mild relaxing herb.

Its leaves contain the highest amount of andrographolide (2.39%), the most medicinally active ingredient to yet be discovered in this plant. The other medicinal ingredients are also its most bitterest tasting principles diterpenoids viz. deoxyandrographolide, -19 $\beta$ -D-glucoside, and neo-andrographolide, all of which have been isolated from the leaves. Andrographolides are thought to enhance immune system functions such as production of white blood cells release of interferon, and activity of the lymph system. Liver & Gallbladder Protection

This is a major herb in at least 26 classic Ayurvedic formulas used to treat liver disorders. Four of its related medicinal compounds were tested for a protective effect against liver toxicity produced in mice by poisoning them with a cleaning solvent, alcohol, or other toxic chemicals. These chemicals damage the liver by a process whereby free radicals produced by the chemical attack and destroy cellular membranes that surround liver cells. When the *Andrographis* were given to animals three days before the toxic chemicals, there was a significant protective effect in the liver. This effect was attributed to the antioxidant ability of the *Andrographis* compounds. In another case it was found was more potent than silymarin in milk thistle, the famous liver-protective herb. Infective hepatitis is an acute inflammatory condition of the liver. It is often followed by liver cirrhosis. Ancient Ayurvedic physicians used treat similar liver ailments with *Andrographis*, a study was conducted to evaluate the effect of AP in infective hepatitis. There was marked improvement in the majority of patients tested. The andrographolides also appear to be potent stimulators of gallbladder

function. In animal experiments, those that received andrographolides for seven consecutive days showed an increase in bile flow, bile salts, and bile acid, helping to improve gallbladder function. This is definitely an Ayurvedic herb we will be hearing much more about in the future.

### **Gotu Kola, *Centella asiatica***

Gotu Kola one of the herbs known in Ayurveda as 'Brahmi' -- it is regarded as perhaps the most spiritual of all herbs. Growing in some areas of the Himalayas, Gotu Kola is used by yogis to improve meditation. It is said to develop the crown chakra, the energy center at the top of the head, and to balance the right and left hemispheres of the brain, which the leaf is said to resemble. It is regarded as one of the most important rejuvenative herbs in Ayurveda

the legend also goes that Sri Lankans first noticed that elephants, known for their longevity, munched on Gotu Kola leaves and the herb thus gained a reputation for promoting long life. An ancient Singhalese proverb says: "Two leaves a day will keep old age away." Gotu kola is a perennial plant native to India, Japan, China, Indonesia, South Africa, Sri Lanka, and the South Pacific. An ancient Ayurvedic herb, Gotu Kola grows as a slender, creeping, herbaceous plant in the swampy areas. It is a tasteless, odorless plant. It has small fan-shaped green leaves with white or light purple-to-pink flowers. The leaves and stems of the Gotu Kola plant are used for medicinal purposes. This is one of the most famous Ayurvedic herbs. Said to 'aid knowledge of Supreme Reality'. It is a revitalizing herb that relaxes the mind while improving concentration and for revitalizing the nerves and brain cells. One study showed a significant improvement in memory and behavior patterns when administered to mentally retarded children for a period of twelve weeks; the study showed the children increased scores on intelligence tests. Two glycosides, brahmoside and brahminoside, have been shown to exert sedative and hypoglycemic effects in experimental rats. It strengthens nerve function and improves memory; calms anxiety, insomnia,



epilepsy and hyperactivity. For thousands of years it was noted to be also good for many skin disorders. It has a long history for chronic venous insufficiency, minor burns, varicose veins, and poor concentration more recently it has been used to reduce cellulite. Research has found the saponins, asiaticoside, madecassoside, and madasiatic acid to be the active constituents responsible for Gotu Kola's effect of enhancing development of normal connective tissue matrix. Gotu kola also seems to help improve blood flow through the veins in the legs. In one study, it improved such symptoms as heaviness in the lower legs, numbness, nighttime cramps, swelling and distended veins. It has long been a valuable herb for any wound healing after surgery or trauma; it has also become popular for treating varicose veins and cellulite. One of Gotu Kola's actions is a balanced effect on cells and tissues participating in the process of healing, particularly connective tissues. One of its constituents, asiaticoside, works to stimulate skin repair and strengthen skin, hair, nails and connective tissue

Gotu Kola is traditionally used as a revitalizing herb and mind relaxer that promotes concentration. It strengthens nervous function and memory and is also used as a tonic. In Ayurvedic medicine, Gotu Kola has been used classically for thousands of years as a major cleansing herb, especially for skin disorders. It is useful for healing wounds, soothing digestive problems, and relieving Apply as an external wash to skin irritations and even acne. The main compounds for Gotu Kola are known as the triterpenoid these compounds in animal studies indicate that triterpenoids strengthen the skin, increase the concentration of antioxidants in wounds, and restore inflamed tissues by increasing blood supply. The major triterpenoid components are: asiatic acid, madecassic acid, asiaticoside and madecassoside. Saponin glycosides include brahmoside and brahminoside. The plant is also a source of calcium and sodium. Gotu Kola is often confused with kola nut that has caffeine Gotu Kola is not related to kola nut and contains no caffeine.

Caution: Gotu kola should not be taken during pregnancy. Gotu Kola is known

to thin the blood.

**The Bio-Pirates are coming, the Bio-Pirates are coming!**

## **The Neem Tree (*Azadirachta indica*) Turmeric (*Curcuma Longa*) and the Bio-Pirates**

“Consider the implication of ‘turmeric patent’ #5,401,504. If an expatriate Indian in America sprinkles turmeric powder -- just as her ancestors in India have done for centuries-- on her child’s scrape, she would in fact be infringing US patent laws and was open to prosecution.”

--D V Sridharan , [www.goodnewsindia.com](http://www.goodnewsindia.com)

Imagine the Pirates are anchored off the Malabar coast off of Kerala in Southern India. It is the Seventeenth Century; they may be valiant explorers and sailors in service of their own nations navies, or they maybe from any European Nation looking to expand its plundering (I mean their national interests). They are streaming ashore and they return with their booty... the uprooted peppervine (Turmeric). They have plundered the turmeric pepper business. Fast forward to October, 1996, when the prestigious New Scientist magazine wrote under the title, “Pirates in the garden of India” that similar plunder is happening right now and the pirates have traded-in their eye patches and swords and skull and cross bones and for suits corporate logos and all in the service of their own corporate interests! Is it some discovery they have made? is it some great breakthrough made by modern science? No. The Indians have used both neem and turmeric for may thousands of years, for the same purposes and extractions, it’s just not known in Western Patent offices, that’s all. Neem was actually granted a patent for about five years until May 10, 2000. At the conclusion of a two-day Oral Proceeding, the Opposition Division of the European Patent Office (EPO) this revoked in its entirety Patent number 436257 and turmeric has won its battles too.

## **India fights off two, yet more on the Horizon**

According to Mr. D. V. Sridharan, “Two battles won indeed, but there are many ahead. London’s Observer reported that there were more than 100 Indian plants awaiting grant at the US patent office. And patents have already been granted to uses of Amla, Jar Amla, Anar, Salai, Dudhi, Gulmendi, Bagbherenda, Karela, Rangoon-ki-bel, Erand, Vilayetishisham, Chamkura etc, all household Indian names.”

## **Turmeric (*Curcuma Longa*)**

For thousands of years, turmeric powder healed open wounds. Drunk with warm milk, it stems coughs, cures colds and comforts throats. Indians paint doorways with turmeric paste as an insecticide. Women in the south make a depilatory skin cream with it. Today it is used in clinical practice by many herbalists around the world for atherosclerosis, bursitis, inflammation, and rheumatoid arthritis. In Indian Ayurvedic Medicine, turmeric is used for the treatment of anorexia, liver disorders, cough, diabetic wounds, rheumatism, and sinusitis. It is currently being evaluated for its anticarcinogenic and antimutagenic properties. Wound treatment: sprinkle a bit of turmeric on cuts and scrapes after they have been thoroughly washed. The turmeric, with its antibacterial action, will prevent the bacterial wound infections. Digestive aid: turmeric helps stimulate the flow of bile, which helps digest fats. Intestinal parasites: turmeric fights protozoans in laboratory tests, supporting its traditional use in treating dysentery. Liver protection: curcumin has a protective effect on liver tissue exposed to liver-damaging drugs. Its anti-oxidant activities are well known to cooks in third world countries; recent research shows that meat kept in turmeric marinade lasts twice as long as that kept long outside of refrigeration. Arthritis: turmeric’s anti-inflammatory action help relieve wound inflammation and in treating arthritis. Heart protection: studies have shown that turmeric may help reduce cholesterol. It is also shown to prevent the internal blood clots that

trigger heart attack and some strokes. Others: recent studies show promising results on the use of turmeric to treat cancer. It is believed to inhibit the growth of lymphoma tumor cells. Another study has shown that turmeric helps prevent tumor development in animals.

## **The Neem Tree (*Azadirachta indica*,)**

Neem is a fast-growing evergreen of up to 20 meters in height. The tree has always been associated with wisdom and immortality and its recent scrape with Western bio-pirates actually was settled with wisdom. Hindu scripture describes a celestial tree having its roots in heaven and its branches in the underworld that unites and connects beings of all kinds. Ancient Indian texts refer to Neem as Sarva Roga Nivarini, “the curer of all ailments.” The neem tree grows in tropical climates, but is especially plentiful and revered in India. The Upavanavinod, an ancient Sanskrit treatise dealing with forestry and agriculture, cites neem as a cure for ailing soils, plants and livestock. Neem cake, a residue from the seeds after oil extraction, is fed to livestock and poultry, while its leaves increase soil fertility. Scientists also echo this ancient knowledge calling it one of the most helpful plants on earth, while Indians consider it sacred. Its bark, leaves, flowers, and seeds are used to treat a variety of illnesses including leprosy, diabetes, ulcers, and skin disorders. The twigs are used as an antiseptic toothbrush while the seed oil is used to make toothpaste and soap. Neem oil is known to be a potent spermicide and is considered to be 100% effective when applied intra-vaginally before intercourse. The powdered leaves are used for facial cream. In northern India, the bark of the Neem tree is used for treating wounds. The leaves, fruit pulp and flowers of Neem all have anti-septic properties. In southern India it is considered a tonic. In the northwest it is prescribed for liver complaints and worm infestation. According to Ayurvedic medicine, the tree possesses powerful cooling energies that act as an anti-inflammatory and antiseptic in cases of excess heat. Neem can be used to treat imbalances

involving fire such as skin eruptions and infections. A powerful blood purifier, neem is often used in Ayurvedic detoxification programs.

Then W.R. Grace started researching this plant and found that the oil from the seeds is a powerful insecticide, repelling more than 200 species of bugs. Neem disrupts an insect's metamorphosis. It is most effective on younger stages of an insect's development. It also makes an excellent antifeedant and repellent when sprayed on plant foliage. It has an extremely bitter flavor, which can make many insects stop feeding. One of the most gratifying points of neem to W.C. Grace and to Gaia is that as an insecticide, it is an organic. The neem's many virtues are to a large degree attributable to its chemical constituents. The tree contains a number of potent compounds, notably a chemical found in its seeds named azadirachtin. Having garnered their patents and with the prospect of a licence from the EPA, Grace set about manufacturing and commercializing. For centuries the Western world ignored the neem tree and its properties: the practices of Indian peasants and doctors were considered too lowly by the majority colonialists. However, under U.S. law, a process or substance or invention may receive a patent--which is a temporary right of exclusive use and production--if it is novel, useful, and not obvious. In short, the processes are supposedly novel and an advance on Indian techniques. However, this novelty exists mainly in the context of the ignorance of the West. Over the 2,000 years that neem-based biopesticides and medicines have been used in India, many complex processes were developed to make them available for specific use, though the active ingredients were not given Latinised scientific names. Common knowledge and common use of neem was one of the primary reasons given by the Indian Central Insecticide Board for not registering neem products under the Insecticides Act, 1968. The Board argued that neem materials had been in extensive use in India for various purposes since time immemorial, without any known deleterious effects. The reluctance of Indian scientists to patent their inventions, thus leaving their work vulnerable to piracy, may in part derive from recognition that the bulk of the work had already been accomplished

by generations of anonymous experimenters.

## Chapter Ten: China

I arrived in China just months after the ‘Bamboo Curtain’ was let down. Most Chinese were either giddy with, or intimidated by, their new-found freedom. I traveled over-land from Hong Kong to Nanjing. I was in China to study at a World Health Organization course for Traditional Chinese Medicine (T.C.M) at one of the most respected colleges and hospitals in The People’s Republic of China. My objective was to digest and thoroughly understand the principles T.C.M. and to experience what it was like to practice at the source -- mainland China.

I was astounded by how developed it was as a medical system, from acupuncture anesthesiology for surgery, to the providing access to free, top quality herbal medicine and acupuncture, all within a healthcare system that lacked dependence on pharmaceuticals.

From massive metropolises to the epic grasslands of Inner Mongolia - with deserts, towering mountains, and imperial ruins, China is about 9.6 million square kilometers of diversity; east to west is about 5,000 kilometers, from the Heilong Jiang (Amur River) to Pamir Mountains in Central Asia; north to south distance is about 4,050 kilometers, from Heilongjiang Province to Hainan Island in south. It is a cultural and historic melting pot. (Despite the Cultural Revolution and the Great Leap Forward, China has not completely eradicated its past - it’s more that revolutionary enthusiasm is now being balanced against economic pragmatism, and the old-guard communists are finally giving way to new wave entrepreneurs.) Most of the country is in the temperate belt, with climactic patterns ranging from cold-temperate north to tropical south. Yet there was no heating at all in the hospitals or public buildings North of the Yangtse river. China’s terrain descends in four steps from west to east. The top of this four-step geographic “staircase” is the Qinhai-Tibet Plateau. More than 4,000 m above sea level, often called the “roof of the world.” The second step includes

the Inner Mongolia, Loess and Yunnan-Guizhou plateaus, and the Tarim, Junggar and Sichuan basins, between 1,000 m and 2,000 m.. The third step, about 500 - 1,000 m in elevation, from north to south are the Northeast Plain, the North China Plain and the Middle-Lower Yangtze Plain. To the east, the land extends out into the ocean, in a continental shelf, the fourth step of the staircase.

In 1982, China had opened up, and visas were only just available in Hong Kong for travel throughout China. My friend Andy and I were traveling overland into Guanzhou and then onto Shanghai, bringing us eventually to my final destination, Nanjing, where I would study T.C.M. on a World Health Organization (WHO) sponsored course. The WHO had originally sponsored the course for third-world Medical Doctors, to train them in non-pharmaceutical therapies such as herbs and acupuncture. The reasoning was that these countries could not afford to buy the Western drugs with their hard-earned foreign currency and needed to train their doctors in other natural therapies. There were doctors from the South Pacific, Central and South America, and Africa. There were also practitioners like myself from Australia, U.S.A., and England.

When we left British Hong Kong and passed over into Red China across a famous railway bridge (known from spy-novels for the swapping of captured agents by the British and the Chinese governments), we were reminded of a different time, a time of ‘cold warriors’ passing undetected between Chinese and British territories, and this time had just barely ended only months before. Previous to the ‘open door’ policy, tourism was only allowed in strictly controlled groups, and visas were very difficult to come by. Now here we were, passing over into China with permission to travel almost anywhere. China had never seen “back-packing” tourists before, and we were stared at everywhere we went. In fact, I remember walking down one street followed by a crowd staring and pointing in disbelief at the size of my six foot four inch friend Larry, who had size 11 feet! (It seems feet that size are a rarity in China.) China seemed very bleak, the people wearing drab blue and green standard “Mao suits” contrasted against the gray cold February skies. One could sense a pall



hanging over the country, a specter of grief, loss, and abuse. I had heard stories of how China was ravaged by the Cultural Revolution, and what I would find in the personal stories that people would confide once I had their confidence was shocking beyond my belief. The extent of their suffering, such wrecked lives and death, has been little revealed to the West. You could see it in the cities and villages long neglected; new buildings and developments, such a part of our lives in industrialized societies cities, were conspicuous by their absence, nowhere to be seen. In fact, in 1982 the Shanghai skyline remained virtually identical to what it had been in the 1930's, when new construction had stopped. Today, Shanghai is probably one of the fastest growing skylines in the world. Yet in 1982, after years of struggle, stagnation, and devastation by the in-fighting of the Cultural Revolution, China stood still in time, paused between the past's devastation and the future's promise. It felt as if 1.3 billion people of the world's most populous nation were holding their breath. The infrastructure of the country was beginning to think about rebuilding itself, but the vestiges of Communist culture remained still strong. Throughout the North of the Yangtze, it was impossible to get fresh vegetables in the winter, even though vegetables grew in abundance in the South; there was no transportation or commerce in place to transport them North. Workers were long used to the 'Iron Rice Bowl Policy,' promised a job for life regardless of their performance or profitability. It was a common experience to walk into a shop and wait ten minutes while two shop assistants finished their conversation before deeming to serve you. We nicknamed them the Mrs. "Mayo's" of China -- ma yo means 'can't-do.' and this was heard everywhere, the Chinese man-in-the-street was just as frustrated by it as we were. It would eventually change as the commercial realities in the country changed.

We traveled slowly North, sightseeing as we went. We traveled on sleeper trains from a bygone age, steam-powered engines with potted plants and waiters serving green tea every 5 minutes. Eventually we arrived in Shanghai, the intellectual, artistic and commercial heart of China. Change was in the

air everywhere you went. At the Peace Hotel, the original jazz band from the 1950's had been searched for and regrouped, and they were finally again playing to packed rooms every night. Decades ago, this band had been branded as decadent, 'foreign lackeys'. They had been dispersed to the four corners of rural China, living desperate peasant-like lives for their sins of jazz, by the teenage zealots of the cultural revolution. Now they were having their last hurrah - these 70- and 80-year old musicians were 'packing them in'. Here in Shanghai, the cultural heart of the nation was beginning to beat again, pulsating back to life. New businesses were flourishing everywhere: night clubs, bars, restaurants, shops, stores and side-walk vendors selling their wares. So it was with much trepidation that I departed for the gloom of Nanjing, in which I was preparing for three months of six-days-a-week study. Then I realized during the first week, when I had to scale the gate of my hotel -- which shut and locked its gate every night at 8:30 pm sharp -- that this was a better place to study, without the distractions of Shanghai. Nanjing was still controlled by the old-guard Maoists, paralyzed, resistant, not quite knowing how to respond to the new policies and new changes. Foreigners like myself were required by policy to stay at the 'Western Foreigners Hotel,' which just happened to be extremely expensive. The next tier in Hotels was the 'Chinese Friends hotels', where Hong Kong and Taiwanese Chinese were able to stay, cleanly and inexpensively. Lastly there was the 'Chinese Hotels': amazing, cheap and rough for the few traveling Chinese. I had dodged the expensive 'Western Hotel,' staying at the 'Chinese Foreigners Hotel'. I would speak with everyone in the Hotel including the manager in poor Chinese, and we would have a laugh and a joke. Then one day he approached me, saying that foreigners like myself, because it was official policy, were only permitted to stay if traveling through for a few days only, and that if I said I was only staying a week this would be OK. Then formally, in front of everyone at the front desk, he asked, "Are you leaving this week?" Taking the hint, I said "Yes I expect so," and from that point on, as long as I stayed at the hotel (which ended up being 3 months) every Saturday he would be waiting for

me and we would do our ritual, all smiles: “Are you leaving this week?” “Yes I expect so.”

One month into the course, to save money I was joined at the hotel, by my roommate Larry. Larry was a gentle six foot four inches tall Texan whose legs were so long for the Chinese beds that his feet would poke out the end of the bed. Larry is extremely bright and had just become a Medical Doctor and while he was waiting for his residency, his curious mind decided, he would like to Study TCM. (He is now one of the brightest Ear, Nose and Throat Surgeons in Texas) While Larry was studying in Texas he had become friendly with a Chinese Neuro-Surgeon who was visiting and studying in Texas. That Surgeon had returned to China and became the Head of Neuro-Surgery for a very large slice of China and he was based in Nanjing. One day Larry told me that this Head of Neuro Surgery, was coming over and would take out to dinner. I was very please to be able to break from the daily grind of studying and excited to be taken out to dinner by a famous Surgeon. I imagined a fancy chauffeured-car car picking us up and then going to a fancy restaurant that our meager student budget could ill-afford, and then eating our fill with all kinds of Chinese delicacies. What I had failed to consider was this was still Maoist old-guard controlled Nanjing. The esteemed surgeon showed up at of Hotel on a bus, wore the same drab, olive green uniform that everyone wore, with very tatty worn sneakers and a blazing smile. He earned 70 dollars a month and didn't have his own car, or house. He was part of a system that only a few years would have condemned his bright mind and bright smile, as an ‘intellectual’ and if he was lucky, would have sent him off to the fields to work as a peasant. Times were changing, now bright surgeons were being groomed, brought up through the system, promoted to head of departments to fix the decades of neglected systems, devastated by the ‘Cultural Revolution’. We all caught the bus, but not to a restaurant as I had imagined, and to my stomach's disappointment, a stuffy museum. We walked around the museum, with the esteemed Surgeon strangely talking in a Texan accent to Larry about his old teachers, with Larry ducking

quickly to get his tall Texan frame through tiny Chinese doorways, without leaving a piece of his scalp on the door frame. I was starting to get hungry and bored. Then I noticed, the museum was closing and people were heading to the exits, yet we continued to move deeper into the museum. We came to a cordoned-off area, which our esteemed Surgeon promptly stepped over and sat down, on some very ancient lacquered furniture. I was a little stunned at this uncharacteristically and distinctly un-conventional behavior. But ‘when in China, do as the Chinese do’ Larry and I looked at each other, stepped over the cordon and sat down too. We could start to smell some delicious amazing aromas wafting around the corner. Within minutes delicious appetizers started to appear before us, dish after exotic dish appeared on the antique tables in front of us. The museum was now completely cleared, except for us enjoying the most amazing food in the cordoned-off area of priceless antiques..... it was very surreal. I imagined these priceless antiques may have been saved from being smashed-to-smithereens by the zealots of the Red-Guard, only a few years before. Toast followed toast of plumb wine and we found out that high-office may not pay very much, and the esteemed Surgeon’s monthly wage might have only been equivalent to just a meager 15 minutes of an America Surgeons wage, but office held its privileges and we were experiencing one. After an amazing meal, at a place normally only available to such ‘high Cadre’, we caught the bus home and send out heart-felt thanks to our humble host.

After being in China for 4 months, I was so used to being around the Chinese that when I saw the occasional American tour group, I was shocked by the contrast in health between the two peoples. To see these American tour groups usually older retired people walking through the streets contrasted so starkly. Nearly 70 percent of the Americans were obese, many carried walking sticks, they were pale, and very tired looking. The Chinese were slim and fit looking. I remember getting lost in Nanjing, and the only way back to college was to admit defeat and flag down a peddle-rickshaw. My friend Beverly and I had the embarrassment of just sitting there for the next half hour while having

a seventy year old rickshaw driver peddle us several miles back to the College. It was then I realized how fit this man was from his daily life, and how fit most Chinese were, in comparison to the sedentary life of excess led by most Westerners.

Nanjing College of Traditional Chinese Medicine was one of the most respected colleges in China. It had a very large campus, where students stayed in dorms and most were part of a seven-year course that included conventional medical studies, yet were based primarily around herbal medicine and acupuncture. The WHO courses were held in a separate building, which were clean, filled with wood chairs and tables, and with a few teaching aids. The medical interpreters were excellent, and translated the best faculty the college had. The experience of some of the professors was quite remarkable. In the West, where I had studied and gained a license in Traditional Chinese Medicine, the teachers were considered experienced if they had 10 years experience, as Chinese Medicine was so new to the West. Here in Nanjing, the teachers had 40 to 50 years of hard-core experience in primary care.

In the afternoons we would split into small groups for practice in one of the local TCM hospitals. I enjoyed visiting the herbal pharmacy there. Visiting a Chinese pharmacy in China is much like being inside a miniature museum of natural science. Tucked away in row after row of tidy drawers are animal, plant, and mineral products, each with a particular purpose. Among the assortment of curiosities is amber, to relax the nerves; peach pits and safflower, to improve blood circulation; Chinese ephedra (mahuang) to induce perspiration; and ginseng to strengthen cardiac function. The filling of a prescription ordered by a Chinese doctor in the hospital was a fascinating process to watch. The pharmacist selects a ten or so particular ingredients to make up the individually prescribed formula, from the hundreds on his shelf. These are then placed on a white sheet of paper. The herbs are taken home by the patient, boiled into a “soup”, and drunk.

By far, the most prized equipment in our building were the 4 table tennis tables. Towards the end of the lectures, before the break, the translators and even some of the faculty would slowly idle their way back to the classroom door. All of the students began to twist their heads towards the clock, timing the end of their lecture perfectly with the beginning of the break. Many would position themselves for a perfect exit from the room ahead of all the foreign doctors, and other Chinese staff, getting themselves to the choice table-tennis tables first! The four table-tennis tables were coveted items during breaks and after lectures; the Chinese were passionate, enthusiastic players.

Towards the end of three-month stay, we were wondering how we could thank our lecturers and teaching doctors, interpreters, and staff. We were pondering what we could do for them that would be an appropriate party. They were not allowed in the new, fancy Western hotel, just built, which towered over Nanjing. (When this new hotel development switched on the air conditioners for the first time, it blacked out the whole of Nanjing and the surrounding power grid.) Then I had the idea of a table tennis tournament. It was a hot sweaty Sunday afternoon. We had special tee-shirts made for each of the four teams. We had rearranged the lecture halls for spectator seating, making it look as much like an Olympic table tennis tournament as we could. We even paid for beer and food to be delivered (not an easy task to accomplish at that time). They were completely shocked and the usual reserve between teacher and student dissolved into an amazingly enjoyable afternoon. Of course, we all sweated profusely and the foreign Doctors were beaten soundly, some even might say overwhelmingly, but main goal had been accomplished we all had a party no one would soon forget.

### **Traditional Chinese Medicine History**

“Chinese medicine” includes all healing traditions emerging from East and Southeast Asia that have their origins in China. The traditions of Japan, Vietnam, Taiwan or Korea all have their roots in Chinese Medicine. It is a complete

medical system treating a very wide range of conditions. It includes herbal therapy, acupuncture, dietary therapy, and exercises in breathing and movement (tai chi and qi gong). Chinese herbal medicine is one of the greatest herbal systems of the world, with an unbroken tradition going back to the 3rd Century, B.C. The Huang Di Nei Jing, the “Yellow Emperor’s Inner Canon,” dates from around 200 B.C., but certainly contains much older material. Most of its two parts, 81 chapters of each, discuss diseases, their origins and therapy. This text is based on the detailed observations of nature and her natural laws. It contains concepts of how these laws govern all living things. It lays out the central principles that still govern T.C.M. to this day, Yin-Yang and the law of the Five Elements, developing the concept of how nature effects health. For thousands of years, the Chinese have documented more than 7,000 kinds herbs that possess healing properties. The written records (Shen Nung Ben Chao) started from (3494 B.C.). Shen Nung, the emperor, and his administration examined many kinds of herbs to discover their healing properties. Later, the government of the Song Dynasty (1,000 years ago) reviewed thousands of herbal formulations and published approximately 2,000 nontoxic herbal formulations for public use. Zang Zhongjing who wrote several classics during this fertile period of the second century AD. When Chinese Medicine was starting to thrive including the venerated Shang Han Lun, the “Treatise on Being Affected by Cold” and the Jingui Yaoue Fang, “Summarized Prescriptions from the Golden Case.” Throughout its unbroken written history, Chinese Medicine has continually developed, sustained by research and constant refinement in every aspect of its use. In the fourth Century, pulse diagnosis was already well developed; it was discussed in detail in the Majing, “Classic on the Mai,” written by Wang Shuhe

Chinese herbal medicine along with the other components of Chinese medicine, are based on the concepts of Yin and Yang. According to this theory, everything holds two opposite forces: “Yin” (negative) and “Yang” (positive). The balanced body achieves harmony, which in turn gives strength to fight against disease and disharmony. T.C.M. aims to understand and then treat the

many ways in which the balance and harmony between Yin and Yang may be undermined and the ways in which a person's 'Qi' (Energy/Life-force) or vitality may be weakened or blocked. Clinical strategies are based upon diagnosis of patterns of signs and symptoms that reflect an imbalance. According to Chinese Medicine, 'Qi' is said to be that which differentiates the dead from the living, the animating spark, the vital force of the body, the force of the seasons, the planet and the universe. From non-solid gaseous ethers to gross dense matter, all is composed of and defined by its Qi. Qi is matter on the verge of becoming energy and energy on the verge of becoming matter. Many cultures have developed similar concepts of energy within the body and universe. Prana is an almost identical concept employed by the Ayurvedic medicine of India, which seeks to harmonize "pranic" energies within the body. Pythagoras of Ancient Greece, the father of Hellenic medicine, spoke of healing energy called pneuma. Hippocrates, the father of Western medicine, described the natural healing force of nature, which he labeled physis. The father of homeopathic medicine, Dr. Hahnemann, spoke of bioenergetic energy called "vital force." Mesmer's "animal magnetism," Bergson's elan vital, Burr's L(Life)-Fields, and Nordstrom's "biologically closed circuits" are all labels for energy within the body.

From ancient Chinese to modern science, the refining goes on. Today, new research speaks of bio-electromagnetic energy. Most schools agree that the body/mind has energy; if this energy is weak, the body's natural healing capacities don't respond. We can sometimes forget that the so-called "magic pills" of biochemical medicine only aid our body's systems to heal themselves. Chinese medicine, herbs and acupuncture brings no magic, but rather reduce excess or helps the body to create more energy in a natural non-toxic way to aid the body's ecology. Many martial artists of the internal schools are able to control their Qi flows. A most graphic episode was shown on the public television series, Ring of Fire: a healer in Indonesia demonstrated his control over his energy by projecting his Qi towards a piece of crumpled newspaper and setting it afire.



Fifty million qigong practitioners practice every dawn in China for their own health, and many masters treat a wide variety of illnesses by manipulation of energy using only their hands. One of the best views was from my room, high up in the hotel along the river in Shanghai, looking down along the river in the early morning: I could see thousands and thousands tai chi and qigong practitioners doing their exercises. External qigong exercises are promoted for patient self-care in China. Inside the body there are many different expressions of 'Qi' with specific functions. For example, through careful observation, the ancient Chinese noticed that the energy from absorbed nutrients in food and water is produced by the digestive system, and they called it "gu qi." "Zong qi," pectoral or ancestral energy, is the Qi that provides basic rhythmic beats of the heart. Our modern equivalent is the contractile and rhythmic properties of cardiac muscle tissue. "Wei qi" is the protective Qi, the system of Qi that produces our first line of defense from disease. Wei qi flows under the skin; some say it is equal to the immune and lymphatic system in modern terms. Qi flows through "meridians." Meridians are the "Highway for Qi." These channels or pathways carry the Qi throughout the body. These circuits of Qi link together all the systems and organs of the body. The meridians are highways of energy that are connected internally and externally by many web-like minor roads. If we could see this invisible energy we would see an amazing three-dimensional energy body interfacing with our biochemical body. There are twelve major meridians and eight "extraordinary" meridians. The meridian circuitry is like a three-dimensional energetic road map with "acupoints" on the surface at various junctions and rotaries. At these control points we can exert a regulatory influence on the flow of traffic coming from or going to the vital organs. Each of the twelve primary meridians serves as an energy conduit for a particular organ from which the meridian takes its name. For example, Qi that flows through the Heart meridian helps to regulate its energy field and the organ. Six yin organ/meridian systems and six yang organ/meridian systems form a crucial dynamic relationship of balance within the body. Disharmonies in an organ may cause

disease in the meridian. For example, pain along the Heart meridian, down the inside of the arm and hand, may be caused by ‘stagnant Qi of the heart.’ In this case Salvia (dan shen) would be an herb that would help reduce the stagnation. Salvia is considered to be a “blood vitalizing” herb, used to improve circulation. Recent research in China and Japan indicates that this herb can improve the condition and functioning of the cardiovascular system. Organ disharmony may show up on the meridian and disorder or blockage in the meridian may show up by deranging flow further along the meridian.

### **Acupoints**

Acupoints are specific sites along the energy meridians where the energy can be manipulated. They are located on the surface of the body, at junctions or highway intersections with other meridians, and they facilitate the flow of energy. The T.C.M. Doctor is trained to diagnose where there is deficiency or excess energy and then select prescriptions of herbs and acupoints to open up a traffic jam, or slow speeding traffic down.

### **Organs**

The twelve major meridians connect to twelve organs. The Chinese do not view organs in isolation, but rather see each organ as an energy field with an associated energetic function in relationship to other organs via functions that affected the psyche as well. These basic concepts are inherently holistic and serve to guide the astute practitioner to consider the whole of the patient and not merely his/her symptoms. For example, the function of the small intestine is to ‘separate pure from impure’ in the body and in the psyche as well. When under-functioning, we may dwell on the negative or impurities in the mind instead of eliminating them and keeping a positive focus. A dysfunction in the organ/meridian field could manifest in the body and the mind; the ancient Chinese made no distinction between the two. Of course modern TCM, even though superbly systematized by the communist Chinese government, downplays

or even suppresses many of the original Buddhist and Taoist influences upon Chinese Medicine and how it views mind and spirit. The organ/meridian fields are not static and inert; rather, they resemble a living rhythmic pulsation with energy increasing and decreasing function in a wavelike flow. These rhythms are affirmed by ancient treatises and confirmed by pulse diagnosis and present day bio-energetic testing. Within every 24-hour time span, each organ meridian field has a wave of energy that lasts for two hours and then fades. Qi flows through the circuitry of the organ meridian fields in a sequence. There is great emphasis placed upon prevention as a system of Chinese Medicine, a glaring oversight, in my opinion, within modern ‘disease-focused care’ so prevalent in industrialized nations.

“The fine Doctor acts even before there is anything wrong”

--Huangdi Neijing, The Yellow Emperor’s Inner Canon, Chapter 2,  
Suwen, 200BC.

This classic quote from 2,200 years ago underlines the emphasis placed on prevention. Care with regular tai chi or qigong, meditation, preventative self-medication, and self-care of maintaining a healthy diet, living in harmony with ourselves emotionally and with our society and Gaia or the laws of nature are what creates and sustains health.

### **Traditional Chinese Medicine and the Mind and Body Connection.**

Both Western and communist thinking tend to separate mind from body and spiritual from material. Descartes said, “There are two substances, mind and matter. They can’t influence each other because they exist in different realities.” He also proposed “that animals are machines and humans, machines with minds, and that mind cannot interact with matter.” Only in the last few decades have these chains been lifted from scientific inquiry, yet these principles are still deeply ingrained in conventional medicine. In Chinese medicine and thought, no absolute contrast exists between the body and the mind. Chinese medicine

as a system recognizes that emotions play a part in both illness and health. The physiological effect of different emotional states on bio-energy and bodily substances has been accepted and studied for thousands of years within Chinese medicine. To the ancient Chinese 4000 years ago, it was clear that certain mental or emotional states produced physiological effects that contributed to illness. As stated in the classic *Nei Ching*, the central classic of Chinese medicine, illness may be caused by six pernicious influences: wind, cold, heat, dampness, dryness, and fire, as well as the seven emotions: joy, anger, sadness, grief, pensiveness, fear, and fright, in excess or deficiency. The Emperor Huang Ti asks, "I know that all the sicknesses are owed to a disturbance of the energy, but do the emotions have a repercussion on the energy?" The physician Chi Po answers: "Anger makes the energy climb toward the upper part of the body. Joy procures tranquility, the yang energy circulates easily, this is why the energy is then peaceful." Chi Po continues, "Anguish provokes constriction of the heart and dilation of the lungs; the energy of the upper triple burner no longer circulates and the yang energy, no longer being able to circulate, is dispersed little by little. Fear provokes closing of the upper triple burner; the energy of the triple burner no longer being able to pass, the abdomen distends because the energy of the organism no longer circulates. Physical overworking provokes excessive dispersion of the energy; intellectual overworking blocks up the circulation of energy. The *Nei Ching* identifies seven emotions that particularly affect the body and that are still considered most important: joy, anger, sadness, grief, pensiveness, fear, and fright. The differences between sadness and grief, fear and fright, appear to be of degree; sometimes these pairs are combined as one emotion. It is only when the emotion is excessive or deficient over a long period of time, or when it is suddenly and powerfully invoked, that it can disrupt normal flow of energy and bodily substances. Internal energetic disharmony can cause unbalanced emotions: "Excessive joy is associated with slow and scattered Qi; excessive anger induces the Qi to ascend; excessive sadness and grief, weakens Qi; pensiveness generates knottedness or stuckness; excessive

fear induces chaotic Qi. The seven emotions are thought to correlate with the five Yin organs: joy with heart, anger with the liver, sadness and grief with the lungs, pensiveness and overthinking with the spleen, and fear or fright with the kidneys.” The two organs considered most susceptible to emotional disturbance are the heart and the liver. A major function of the heart is to store the Shen (spirit). Disharmonious emotions can lead easily to disturbances of the Shen, resulting in insomnia or muddled thinking, inappropriate crying or laughing, and in extreme cases, fits, hysteria and insanity. The liver harmonizes the emotions through its sprinkling-of-Qi function. Thus, ‘liver Qi’ going in the wrong direction can be a result of excessive anger or the source of it. Disharmonies of liver Qi and anger accompany one another. Stagnation of liver Qi may be associated with any emotional frustration, or with inappropriate and extreme mood changes.” In addition to external disease influences, internal emotional factors may cause disease. Disruptive sensations may come about as a result of joy, anger, pensiveness, sadness, grief, fear, and fright. Oriental medicine maintains that pain sensations are associated with the activities of a person’s spirit. The ancient Chinese maintained that pain sensations are caused by a disturbance or blockage of energy streams and that the balance and flow of energy streams are connected to the condition of the spirit. Strong emotions cause strong ‘electro-magnetic storms’ or disruption in the body’s energy flow. If experienced often enough, this can create an imbalance within the organ/meridian functioning of the body/mind. Although this can become a chronic disposition, it can be treated by herbal medicine and acupuncture. The tradition as a whole, like Ayurvedic medicine, places great emphasis on lifestyle management in order to prevent disease before it occurs. Chinese medicine recognizes that health is more than just the absence of disease and it has a unique capacity to maintain and enhance our capacity for well-being and happiness

Peace is easily maintained  
Trouble is easily overcome before it starts.  
The brittle is easily shattered;  
The small is easily scattered  
Deal with it before it happens.  
Set things in order before there is confusion  
--Lao Tsu, 'Tao Te Ching'

The mind states affect the body's energy and vice versa. For example, stagnation of "liver Qi" can lead to depression. Likewise, depression can lead to stagnation of liver Qi. To a T.C.M. Doctor, emotional disharmony is seen as 1) a sign of an organ/meridian field disharmony; and 2) as a factor originating from organ/meridian field disharmony. Once the disharmony has been diagnosed, often with questioning, pulse and tongue diagnosis, then a formula of herbs or a formula of acupoints are prescribed.

### **Formulas are Herbs in Harmony**

"It has become vital to educate the medical and scientific establishment and show that there are some features which are unique to phytotherapy and which contribute both to efficacy and safety. One of these is the concept of synergy, in that a plant extract is more than the sum of its parts, ... This is already accepted by patients and practitioners, but we now have an opportunity through further testing to prove that it is a true phenomenon which should be appreciated and utilised for therapeutic benefits".

-- Dr Elizabeth M Williamson, 'Synergy: Interactions within Herbal Medicines'

European, traditional Chinese medicine and Ayurveda generally believe through practice and experience that synergy between herbs is happening and is a central part of their philosophy. This synergy is the harmony created by the individual as part of an orchestra or a team. Formulations of herbs are normal and may be either historical formulations, which have been developed by empirical observation or are custom-designed for an individual patient. Science may not have the tools yet to confirm the super-subtle synergistic interactions and increased efficacy of ancient formulation practices. A recent case in point occurred at the London Royal Free Hospital England in the early 1990's. During trials to study a Chinese herbal formula for eczema, researchers were astonished when the addition of 'one extra herb' was added to a formula containing 10 herbs. It resulted in a dramatic improvement in previously unresponsive patients.

According to Dr. Williamson of the School of Pharmacy University of London, England "The approach taken by herbalists to skin disorders such as eczema differs radically from conventional treatment, which usually involves topical application of corticosteroids with their inherent disadvantages, and may lead eventually to the use of cytotoxics in

refractory cases. In contrast, the multi-targeted approach of the herbalist must surely be preferable, and the Chinese herbal remedy containing multiple ingredients used to treat eczema is a good example of this." She also goes on to say there are several reasons holding science back from the study of formulation synergy, "the main one being the difficulty of proving such effects, since to do so would necessitate the testing of each individual constituent and comparing the activity with an equivalent dose in the mixture. This is an immense undertaking and prohibitively expensive in terms of time and money." Also, the present methodology for investigating botanicals is flawed: "If a combination of substances is needed for the effect, then the bioassay-led method of investigation, narrowing activity down firstly to a fraction and eventually a compound, is doomed to failure, and this has led to the suggestion that the plants are in fact devoid of activity."

The mechanism of action of most herbs is still unknown as yet to science due to expense, and present methodologies yet there are ‘proven’ instances where a total herb formulas work better than an equivalent dose of an isolated compound, for which we have no real rationale.

In a study published in the International Journal of Oncology, PC-SPES, an herbal mixture used by prostate cancer patients as an alternative form of treatment, was investigated; previous published studies have shown this formula to be effective for prostate cancer. Since PC-SPES is derived from eight individual herbs, each with distinct as well as overlapping properties, this study investigated whether a particular herb in the formulation principally accounts for the biological properties of PC-SPES. They concluded: “Lack of concordance between changes in prostate cell growth and prostate specific gene expression makes it unlikely that the activity of a single herb can account for the overall effects of PC-SPES.”

In other words the team (formula) was greater than its individual parts. In one final example a double-blind, crossover trial using 20 young, healthy volunteers, taking a formula containing ginseng, Panax ginseng, and ginkgo ginkgo biloba was recently demonstrated to be more effective in improving cognitive function than either alone, (Scholey and Kennedy 2001).

### **The Wisdom of TCM Organizing Principles for Herbal Formulas**

When did Chinese Medicine start to develop and record these synergistic effects of herbal formulas? Around two thousand years ago, one of the early Chinese Emperors was entombed along with many artifacts, giving us a snapshot picture of the society and medicine of that time. When the tomb was opened, many scrolls were found. One of the best-preserved manuscripts, called Wushier Bing Fang, written on silk, described prescriptions for treating 52 illnesses. It is believed it was compiled around 900 BC, nearly three thousand years ago! It showed that a sophisticated system of formulation of herbs to increase their efficacy was already beginning. This 3,000 year old document contained 170



formulas, made of two or more ingredients. It shows us just how long ago herbal formulation was beginning its development, and how the experience of treating all that suffering was beginning to be refined and recorded. Half of those formulas were for inflammatory conditions such as urinary tract infections and skin diseases; the other half were for traumas, injury, hernias, and animal bites, not the usual shamanic or magical conditions one would expect for that era. Over sixty percent of the 250 ingredients were plant medicines; the rest were of animal origin.

Every herb has a down side; good formulas knock the hard edges off the “star player”, with the philosophy that “the team is greater than its star player.” The whole is greater than the sum of its parts. The combination of individual components in a formula produces a new therapeutic agent that treats more effectively and completely the cause, as well as the symptoms, of a health problem. These principles have been proven and refined over thousands of years of written clinical experience and refinement. There are organizing principles that govern the combining of thousands of active ingredients in plants to create a harmonized, effective team. The foundations for the organizing principles, which I use in my practice today, were laid down in the first or second century in the Chinese medical text, the Yellow Emperor’s Inner Classic.

In the seventy-fourth chapter of the basic questions, (Su Wen), it is stated, “That [ingredient] which primarily treats the disease is the Chief, that which aids the Chief is the Deputy, that which is bound to the Deputy is the Envoy/Messenger.” Through centuries of practice, these Confucian-like roles are expressed in an ancient political organization of the State, and have come to be defined as follows:

**Chief /King/ Emperor herb:**

Produces the main effects, in treating the cause or the main symptoms of a disease. It dominates the whole formula with greatest dosaging, and is the chief ingredient, the primary therapeutic agent. One or two herbs will focus

the purpose of the formula. For instance, Chinese Rhubarb, Da Huang, used in large dosage as a ‘Chief’ will exert a laxative effect through the predominance of anthraquinones, purgative compounds, yet when relegated to a lesser role or dosage, its tannins predominate and contributes, overall, a stool-solidifying effect.

**Deputy /Minster herb:**

A “deputy” or “minister” has the primary function of helping to strengthen the effect of the “chief” or “king” herb, and secondarily it treats symptoms that accompany the disease that the king herb is treating. Added to assist the primary effect of the chief or king. Usually one to five herbs are added to work with the leaders to emphasis magnify or broaden their effects.

**Assistant herb:**

The idea of an “assistant” has, since the *Su Wen* was written, been incorporated into standard TCM practice. It is added to treat symptoms, or to lessen the hard edges of the chief. For example, it may cool the overheating effect of the chief. The assistant herb performs this function by opposing the irritating property of the king herb without lowering its therapeutic effects. They may counteract side effects or modify the overall energy of the formula from warm to cool or visa versa.

**Envoy/Messenger/Servant herb:**

This herb directs and guides the chief or smoothes the way for its use. It may help transport active constituents into the body for the best possible absorption and circulation throughout the body. This functions also traditionally

included binders for pills. The “messenger” may also lead the other herbs in the prescription to the affected site in the body.

Chinese Medicine and Ayurvedic medicine have the oldest continuous written traditions of herbal medicine on the planet. Both traditions place great emphasis upon using combinations of herbs, formulas. Gaia herself places great value in her eco-systems design upon diversity and production of complex combinations of her chemistries to fight bacterial overgrowth without them developing resistances to the plant antimicrobials. I believe that the hundreds of compounds in any one plant, when formulated with nine others should produce one thousand compounds ( $10 \times 100 = 1,000$ ), yet in actual fact, one hundred new compounds are produced from interactions of compounds upon each other, therefore 1,100 total may be produced by a formula giving each formula a totally unique ‘signature’ that is not possible just from the sum of its parts, the Whole is greater. The Chinese have believed for thousands of years that these combinations, were more effective than any single herb by itself and they developed guidelines for the formulation assigned roles to the herbs. The energetics of the plants were assessed to consider their therapeutic action and help in their assignments into formulas.

### **A Holistic, Energetic approach versus a symptomatic approach**

A difference between Western and Eastern herbal traditions is the ‘symptomatic’ versus the ‘holistic approach’. For example, let’s look at both approaches to a herbal treatment of an inner ear infection. While in the West, just taking Echinacea may be recommended. While echinacea does boost up the immune system and aid it in fighting off the bacteria or yeast infection of the inner ear, it does not address the more holistic perspective of shifting the environment of the “host” that supported the thriving of the ‘guest’ bacteria or yeast. Many underlying conditions such as food allergies, seasonal allergies or trapped water after swimming create a hot bed for infection and should be addressed.

One of the main differences in the holistic TCM approach to a health problems is that TCM energetics would employ a “Herbal Shotgun” approach to boost the immune system while also working on ridding the body of the underlying cause of the illness. For example, from the TCM perspective a damp, “swampy” environment in the ear can become a hot bed for bacterial growth. Wax produced from an imbalanced constitution or from cleansing toxins increases the swamp-like condition and may allow recurrent infection. To break this chronic cycle, a TCM practitioner seeks to change the damp environment. The Formula , Long Tan Xie Gan Tang, “Gentiana Combination Formula” accomplishes this by using drying and cooling herbs such as gardenia, gentiana and scutellaria that target damp heat in the upper torso. Yet, given our contemporary knowledge of other herbal traditions as well as biomedicine, we can also add echinacea and fo-ti help to fight infection and support the immune system. The Eastern approach is to shift the “damp heat” swamp-like environment of a waxy, watery-exudate ear, that allows the “guest” to thrive while combating infection. A “drying-cooling” herbal formula, directed to the ear, can actually include echinacea and contain berberine ingredients to go after a staphylococcus, or staph, infection, yet it also works to shift the environment that supports it. This is the holistic wisdom I bear in mind with every formulation.

### **Traditional Chinese Medicines Energetics of Herbs**

According to Chinese legend, Shen Nung, the Chinese father of agriculture and leader of an ancient clan, took it upon himself to test, one by one, hundreds of different plants to discover their nutritional and medicinal properties. Many of these turned out to be poisonous to humans. Over the millennia, Chinese have used themselves as guinea pigs in this same way to continue testing plants for their properties of inducing cold, heat, warmth, and coolness. Given that the Buddhists monasteries were involved in the use of herbs for the poor and needy and the Taoist obsession with longevity herbs, it has been said that a lot of these

guinea pigs, were monks and priests. Both spiritual paths placed great emphasis upon rigorous meditation and mind-body awareness techniques such as ‘Qi Gung’ and ‘Tai Chi Chan’. Many of these Priests and Monks were finely tuned human beings, who had access to altered states through their strenuous perusal of meditation and mind-body enhancement techniques. Both the Buddhists and Daoists were extremely involved with medicinal plants and examining upon their own bodies and minds the effects and properties of these herbs. Imagine if you would over the course of thousands of years the lifestyles of these amazingly committed Priests and Monks, supported by their communities fasting, meditating many for weeks on end, purifying their bodies and minds, focused upon just one goal at the end of their religious activities, to observe the action of a particular herb or a particular combinations, upon their own body. They would have had detailed knowledge of the meridian systems and organ fields within their body and direct experience through their practices, with the laser like focus of an altered state these amazing guinea pigs, through their own direct experience of their subtle energy flows. They helped classify the medicinal effects of the plants on the various parts of the body, and determine their toxicity, what dosages would be beneficial and what would cause side effects, etc..

TCM herbal medicine and other mature systems throughout the world apply herbal ‘energetic’ effects on the body and mind. Within TCM, the energy of the plant has several aspects that give it its unique personality. In order to organize a good herbal formula, a Chinese herbalist has to know which characteristic elements and which organs are the beneficiary of which herbs. Each according to their herb should be classified on the basis of a number of classifications, e.g. Yin-Yang and Five Elements, so the sum of all herbs in a formula will be the total harmonious effect of the formula. The “Four Energies” are classified as Hot, Warm, Cool, Cold or Neutral. The “Five Tastes” are pungent, sour, sweet, salty, bitter. These tastes help to classify herbs further, including their effect on certain meridian/organ systems throughout the body. The “Four Directions”

help to classify the tendency of the herb with respect to area of effect in the body. This helps select herbs to target certain parts of the body, or to facilitate the movement of other active compounds in the formula such as the Envoy/Messenger/Servant herbs, e.g. sinking, or floating outward to the surface or downward , or rising upward.

### **A Classic Traditional Chinese Formula Example:**

•**Chief /King/ Emperor herb:** For example, ginseng has been known to energize the body. It also causes strong side effects when used alone. Ginsenosides in ginseng make the arteries become constricted.

•**Deputy /Minster herb:** Astragalus serves to broaden and tonify energy.

•**Assistant herb:** Combining ginseng with other herbs, such as kudzu, balances the side-effects of arteries becoming constricted. The proper combination of herbs increases the potency in the desired direction while balancing the undesired effects allowing ginseng to energize the body.

•**Envoy/Messenger/Servant herb** The combination of bitter orange and ginseng with other herbs relaxes muscles for the delivery of energy. It also helps with muscle aches and an abnormal digestive tract caused by poor Qi circulation. Bitter orange also has the effect of stimulating Qi (vital energy) circulation.

One of the uses for this formula is to increase vital energy. The energy level is for individuals who need to strengthen the body's Qi.

### **The Wisdom of TCM Formula Organizing Principles and Energetic assessment of herbs, a foundation for 'World Herb' Formulas**

Using the wisdom of T.C.M. as a base, I build the formula using the best herbs from many continents and cultures. Blending these 'World Herbs' into formulas using the sophistication and wisdom of TCM formula organizing principles and the TCM energetic classification herbs I believe makes for more effective use of herbs. The effectiveness and wisdom of Chinese herbal medicine

is not in the herbs themselves, but the gem is in their principles and energetics. Once understood, I believe we can employ any of the healing herbs on our planet according to these principles. Important herbs from all over the world and from many healing systems can be utilized and guided by the formulation principles of the classical Chinese medicine to bring a new perspective to herbal medicine. This perspective, developing consciously or unconsciously among modern herbalists, I call the ‘World Herbs’ school. I believe in bringing the best most effective herbs from around the world using the principles of Traditional Chinese Medicine and scientific verification. It’s time to share and combine the treasures from all cultures. What ancient Chinese herbal master wouldn’t have been ecstatic to use the North American herb Echinacea or the Polynesian herb kava kava in their formulas if they had known of its existence? What would Europeans have done with ginseng? By trying to understand the herbal traditions from different parts of the world, we can gain a broader perspective from which to employ a more targeted use of plants for healing. For example, Traditional Chinese Medicine (TCM) gives us an “energetic” picture of the herb, while the resurgence of Western scientific interest gives us a deeper understanding of its biochemistry. I believe in uniting these various dimensions of understanding plants to better use them as healing agents. TCM has the longest recorded written history of any herbal medicine, over twenty-five hundred years of tradition. Chinese herbs are no more potent than the ones growing in your backyard; however, they have been better observed, both energetically and biochemically, and used in every formula configuration possible. The World Herbs perspective that I formulate and use in my practice is developed by using superior herbs from all the traditions guided into formulas using the wisdom of TCM. Using Traditional Chinese Medicine’s botanical wisdom as a foundation, and adding to that the wisdom of modern scientific research, Ayurvedic, European, North American, and South American herbal traditions, we come to a very powerful perspective and the basis for World Herb formulas.

## **A Modern Example of a ‘World Herb’ Formula, for Ladies’ Support**

This is a modern formula for the treatment of PMS, combining Chinese herbal guidelines and herb energetics with some scientific information. For the treatment of PMS, or premenstrual syndrome, is also often referred to as premenstrual tension (PMT). It is a recurrent disorder that disrupts the emotional and physical aspects of many women’s lives for up to 2 weeks out of every month. Symptoms can range in intensity from mild to incapacitating. The most common symptoms are sudden mood swings, weight gain, breast pain, irritability, anxiety, and, frequently, a sense of feeling out of control. An estimated 30 to 40% of women between the ages of 25 and 50 experience mild to moderate symptoms of premenstrual syndrome. Ladies’ Support is an example of using herbs from all over the world combined using the wisdom of TCM for Ladies’ Support.

### **Vitex , (Agnus-Castus ) Chief /King/ Emperor herb**

Energetics: Bitter and Pungent taste, a bit astringent, neutral with both cooling and warming potentials, dry, relaxing and stimulating, harmonizes menstruation, relieves pain, promotes menstruation, and relieves amenorrhea, tonifies menstruation, fertility and sexuality.

Used for centuries in Europe, this herb is now understood to exert a balancing action on the hormones to gently regulate menstruation. The greatest use of vitex lies in normalizing the activity of female sex hormones, and it is thus indicated for dysmenorrhoea, premenstrual stress and other disorders related to hormone function. It is especially beneficial during menopausal changes. And in a similar way, it may be used to aid the body to regain a natural balance after the use of the birth control pill. It is found to have a strong effect on the corpus luteum, which increases progesterone. Scientists think that it regulates the pituitary gland, which detects increased estrogen levels and tells the ovaries to make less. Recent findings confirm that Vitex helps restore a normal estrogen-to-progesterone balance. It can not only ease, but with time,



actually cure premenstrual syndrome, which has been linked to abnormally high levels of estrogen, especially if symptoms tend to disappear when menstruation begins. European herbalists also use it today to treat fibroid tumors and other female complaints. Vitex is commonly known as the Chaste Tree Berry, has been used for centuries to help women with menstrual problems. It has now been documented by medical science through clinical study that vitex is a safe and effective treatment for PMS (premenstrual Syndrome).

170 women (average age 36) diagnosed with PMS participated in this randomized, double-blind placebo-controlled study. The women received either one 20 milligram tablet of Vitex extract or a placebo pill each day, at the start of their menstrual cycle.

After 3 months of treatment, the women's symptoms were assessed both by the participants themselves and by their physicians with an assessment called clinical global impression. The results showed that 52% of the women taking Vitex had significant improvement, compare to 24% in the placebo group. The greatest benefit was seen in reductions of irritability, mood changes, anger, headache, and breast fullness.(Reported in the British Medical Journal 2001)

### **Black Cohosh (*Cimicifuga Racemosa*), Deputy /Minster herb:**

Energetics: Pungent, bitter, sweet; cool dry, relaxing, calming, anti-inflammatory, stimulating and restoring, it circulates uterine energy, promotes menstruation and estrogen, stops discharge and bleeding.

Used by Native Americans and American colonists to treat gynecological and menopausal complaints. Black Cohosh Root also relieves headaches and muscle pain and stops irregular bleeding. Clinical studies from Germany demonstrate that black cohosh decreases Luteinizing Hormone (LH), which can be responsible for hot flashes and other problems. widely used in Europe and the US to relieve the symptoms of PMS. Black Cohosh is commonly used for PMS and menopause (particularly hot flashes, menstrual cramps, changes to the vaginal lining and even depression). Assists in minimizing cramps from

PMS. Ease menstrual cramps. Black cohosh has antispasmodic properties that may lessen menstrual discomforts. In addition, by possibly increasing blood flow to the uterus, it may reduce the intensity of particularly painful cramps. By stabilizing hormone levels, the herb's phytoestrogens may even benefit women with premenstrual syndrome (PMS).

**Licorice, (*Glycyrrhiza glabra*) Envoy/Messenger/Servant herb:**

Energetics: Very sweet, neutral, moist, restoring, relaxing, softening; increases digestion and absorption of the formula, restores endocrine function.

Licorice is the most frequently used herb in Traditional Chinese Medicine (TCM) and has been extensively studied. TCM classifies licorice as a sweet, mild herb and uses it to supplement the body, clear "latent heat," regulate stomach functions, expectorate the lungs, and invigorate the spleen. It has been used as an antipyretic, detoxicant, and anti-inflammatory. Many TCM formulas use licorice as a corrective adjunct and harmonizing ingredient.

**Vervain, (*Verbena officinalis*) Assistant herb:**

Energetics: Bitter, slightly pungent, cool, neutral, stimulating, dispersing, relaxing and restoring, circulates and promotes energy flow, loosens constrained energy, and relieves pain. Vervain is a herb that will strengthen the nervous system whilst relaxing any tension and stress. It can be used to ease depression and melancholia that can accompany PMS.

**Ginger, (*Zingiber officinale*) Assistant herb:**

Energetics: Very pungent, slightly sweet, hot, dry, stimulating and relaxing.

Helps warm the formula, which would otherwise be overcool, and promotes digestion of herbs that might be difficult to digest when too cold energetically. As the Assistant, it is added to treat symptoms or to lessen the hard edges of the chief. For example, it may warm the overcooling effects of the chief and the deputy and others.

## **TCM Today**

“In China today there is a clear effort to realize and create a medical infrastructure going beyond a simple reliance upon two divided systems TCM and Western medicine. There exists in fact a three-tiered medical system comprising traditional medicine, biomedicine, and integrative medicine”

--Cai Jing --Feng ‘ Oriental Medicine’

After a stormy beginning to the twentieth century where TCM was banned by the Government in favor of conventional Medicine, it was nourished back to thriving health by a Communist government desperate for affordable healthcare. Currently, TCM still predominates in rural areas where it is responsible for up to 60 percent of healthcare. In the cities, however, conventional care is mainly predominant. Healthcare is based upon the patient’s choice of which system to use. Chronic conditions are referred towards TCM and acute care towards Western Medicine. However, there seems to be a place where they meet and work together and that is developing into “integrated” care, using one to support the other. For instance, with some cancer, life expectancy increases when both systems are utilized. This kind of integration is the fertile field of a new medicine for industrialized nations that are being crippled with pharmaceutical costs for elderly and chronic care. This in my opinion is where the next breakthrough will happen in the healthcare of the Industrialized Nations of the West and Japan.

## **Conclusion**

I left China in awe. As I sailed out of Shanghai Harbor on a cruise ship heading towards Hong Kong, I was savoring all the luxuries missed over the last 4 months (hot baths , good plentiful food for dinner). With our feet up on the rails of the deck, we raised our glasses of plum wine to the full moon

overhead and toasted China and the sophisticated wisdom of her millennium old healing arts. As we glided peacefully through the balmy summers night, toward the China Sea, I reflected on the hard work of the last few months and on good friends made. It seemed to me that China had developed a super-sophisticated system of natural health care and had integrated it successfully with Conventional Medicine. I knew that in the years to come, this would be a central theme that I would dedicate my life towards.

## Chapter Eleven: Japan

I arrived in Japan, for the first time, after being attracted to Karate and Japanese arts, since twelve years old. To be in Japan, felt so extremely foreign to me, yet curiously at the same time, it stirred deep within me, a strange familiarity of an old friend, met for the first time yet dear to my heart. Looking back over the years, to the brash and naive young man who arrived to study at the Oki Yoga Dojo, I am so thankful for my studies, the remarkable characters I met, and my fate shaped by a unique Japan experience. I arrived remarkably interested in tough ‘yang’ style martial arts. I left changed forever, my life course reset for the ‘yin’ study and practice of Oriental healing arts. It has now been 25 years since I had last been in Japan, when I returned just few months ago, at the invitation to teach at a seminar on Herbal Medicine. I had left a student and returned a teacher. I had come full-circle.

Japan is fascinating and so unique, the ancient and traditional are held alongside the ultramodern. The modern present of science and technology, culture and fashion contrasted with Japan’s ancient past, somehow finds “balance.” The ancient peace and tranquility of a Zen temple garden, next door to a modern sanitized shopping mall. The serene beauty of a woman in traditional kimono contrasts against the modern brand name suits of the business samurais, cramming the trains to work each morning. A land where Shinto priests still bless new office buildings with traditional ceremonies. The inspiring beauty of its shrines and gardens are reminders of an isolated island empire while the modern robotics at the Nissan factory show’s Japan is a bustling high-tech leadership, in today’s interconnected world of commerce. Japan’s heart begins to unfold between these opposing poles. The high culture of a traditional tea ceremony or in the ancient art of flower arranging in balance against high rise-buildings of its metropolis’s, the triple layered trains, one

above the other, ferrying millions into central Tokyo each morning. Admiring the accomplishments of the past through the Great Buddha of Kamakura and the splendid architecture of 400-year-old Himeji Castle, the exquisite design of a Zen temple. Yet also admiring the accomplishments, of the Japanese regeneration and modern economic success. Somewhere between the elegant formality of Japanese manners and the candid, exchanges that take place over a few drinks, between the super-modern Shinkansen trains and the unexpected rural traditional festivals. Somewhere between and the modern and the ancient lies the heart of the Japanese culture. A fascinating unique culture un-like anywhere I had ever been to in my life. I experienced a ‘push and pull’ of its polarities yet always in fascination and love.

Japan is slightly larger than the United Kingdom and one twenty-fifth that of the United States. Japan has a population of 127 million, making Japan the world’s eighth most populous nation. It also has one of the world’s highest population densities; there are 338.4 residents for every square kilometer of land. Compared to the U.S where it’s is 28! Three-quarters of Japan is mountainous, and two-thirds is forested. 70% of the people live on 20% of the land. That kind of intensity has developed its highly developed sense of formality some say as a way to civilly deal with social interaction in the midst of such population densities.

Japan is detached and separated from the Asian mainland by 160km (100 miles) it has been physically isolated for at least Five thousand years by the sea of Japan (Yet, once before the seas came, it is believed that it was connected by grasslands). Japan’s History has been strongly influenced by the rest of Asia. It is often speculated that as a result of this geographical separation, that the Japanese have a strong sense of cohesion and cultural identity.

Approximately 70% of the country is covered by hills and mountains. The island nation is still subjected to natural disasters such as earthquakes, tidal waves and volcanic eruptions, more than most. Lowlands and plains are small

and scattered, mostly lying along the coast, which is very long in relation to the land area. The deeply indented bays with good natural harbors tend to be alongside mountainous terrain. Though lying completely in a temperate zone, Japan stretches 2500 km from North to South. The climate, with four seasons, ranges from very cold winter, in Hokkaido, to subtropical Okinawa region. Typically, winters are fairly mild, and summers are very hot, except for the North and South extremes of the nation. Rain falls throughout the year, and is intermittent with sunshine; in June and early July is the main rainy season. The plant life also varies in southern Japan there are many broad-leaved evergreens, such as chinquapins and evergreen oaks. Yet as you move north, beeches and non-evergreen oaks become common. Forests in Hokkaido in the northern part of the country often consist of conifers. Because there are four distinct seasons in Japan, different types of flowers bloom during the year. Plum blossoms appear in early spring, and the Japanese obsession with the ethereal, the cherry blossoms in mid-spring. Japan, holds on to its unique connection to nature, perhaps more than any other country I have been to, treasuring even their small connections to nature, from a small bamboo screen, to the small area viewing garden, even despite a scarcity of space. Japan is a land of opposites. The frenetic daily world is delicately balanced against the timeless traditional. A luscious and diverse land Japan has 7,087 species of higher-order plants.

### **Japanese Herbal Medicine Kampo**

“Kampo is a unique, ancient system of herbal medicine that has been reborn in modern Japan. Kampo is the synthesis of Eastern and Western healing traditions, equally understandable in terms of anatomy, chemistry and physiology as it is in terms of vital energy, energy channels and symbolic organ systems. Kampo is a person-orientated system that prescribes herbs and herbal combinations to address specific symptoms and symptom patterns”

--Robert Rister, 'Japanese Herbal Medicine, the Healing Art of

## Kampo'

The word kampo is the Japanese pronunciation for the combination of the Chinese characters Kan (han) meaning “from China” and po (ho) meaning the “way”. Thus, kampo is the Japanese version of traditional Chinese medicine. In addition to herbal treatments, Kampo practitioners these days may also administer acupuncture, moxibustion, and manipulative therapy.

Japanese medicine, like all-early medicines around the world, once relied on prayers, incantations, herbs, and shamanistic practices. Although purification practices, seem to be especially unique to early Japanese Medicine. Early on, physical uncleanliness was seen as tempting the wrath evil spirits, and divine retribution (and from our public health perspective of today, avoided epidemics and much suffering and). Personal and communal purification became an important prevention and treatment. It's easy to see from these roots, where the importance of bathing arose for Japanese culture. Early contact with Japan and China is still shrouded in myth, one such tale is told in the Chinese tradition about the first Chinese Emperor (221-210 B.C.) who is said to have sent envoys on a search throughout the Eastern Seas, to search for the herb of immortality; it is said that they returned from Japan with Reishi mushroom (*ganoderma lucidum*).

As the Empress Suiko (*AD 593–628.*) took the throne in A.D. 593, Japanese armies were sent to invade Korea. Reports came back from this war of Chinese medicine's successes there, so impressed was the empress, that she sent two envoys to China to study Traditional Chinese Medicine. This would begin a three hundred years old tradition of sending emissaries to study in China. Practice of Kampo Medicine was restricted to court scholars, treating the aristocracy. Around beginning of Empress Suiko's *reign*, Buddhism was adopted as the state religion, and centuries what would become Kampo, would spread to the treatment of the poor, through the Buddhist monasteries. The Empress Komyo (701-760 A.D.) established a dispensary to supply free medicine to the needy in 730 A.D using local herbs with Chinese Principles. Yet



it was the religious convictions of the Buddhist monks, to alleviate suffering, led them to treat the poor for free. Two innovations to Kampo came from the Buddhist experience, of the need to simplify the ingredients called for, in the very complex formulas of the time. One came from, the Buddhist preference to eliminate the vast array of animal products from Chinese medicine (since Buddhism forbade the taking of life,) coupled with the Japanese general distaste for animal by-products, the choice of ingredients was simplified to mainly vegetarian. The second came from the Japanese need to find Japanese alternate herbs for the expensive Chinese imports, thus reducing the general pool available, to be formulated with. Over the centuries this was made even more important, due to imposed trading isolation during the Tokugawa era (1603-1867), when trade with other countries almost cut out completely leaving Japan a secluded society. These were some of the forces acting on the Japanese to focus and simplify traditional Chinese Medicine into Japanese Kampo Medicine.

Herbs and other treasures brought back from early Chinese expeditions were stored at the storehouse complex built in the 8th century by the Emperor Shomu. known as the Shoso-in at the Todaiji Temple near Nara, famous for its giant statue of the Buddha. The herbal samples had been kept for 1,200 years, at one of Japan's most famous historical monuments. Amazingly these samples are still preserved today; they incredibly escaped both natural and man-made disasters, in one of the oldest structures in Japan. Even more remarkably is that these herbs, according to a recent study still had some active ingredients. They included basic herbs, such as rhubarb (*Rheum palmatum*), Licorice (*Glycyrrhiza glabra*) and ginseng (*Panax ginseng*), which are still commonly used today in modern Kampo practice.

Written in 918AD. The Honzo Wamyo 'The Japanese Names of Drugs' described 1,025 different herbs. Japan's oldest existing medical work, the Ishimpo, 'Prescriptions at the Heart of Medicine' compiled by Yasuyori Tamba in 982, is consisted almost entirely of excerpts from Chinese medical texts. However, the selection of material and the structure clearly mark the

beginnings of a uniquely Japanese interpretation. From this period Japan had started putting drastic limits on foreign contact. Medical teaching was in the hands of a few families and would only teach the old ways. As the medicine at court was descending into a stagnant age, dominated by magic and superstition Buddhism was flourishing. Priests were able to travel to Asia, unimpeded by the travel restriction of the Court. This allowed access to new medical ideas and brought new books and incited renewed interest to improve Japanese medicine. The founder of the Zen Rinzai sect Eisei (1144-1215AD) traveled to China and wrote the Kissa Yojoki 'Guide to Good Health through Drinking tea' He expounded the health benefits of tea. Today of course we just now appreciating the anti-aging compounds that protect us against cancer and virus's know as polyphenols in green tea. Over the history of the course of 1200 years, the masters of Japanese herbalism have simplified the principles of Oriental medicine; Kampo theory is built entirely around how to choose the formula for the patient rather than figuring out a complex diagnosis. Dropping 16,834 formulas in favor 365. They included 120 'Upper Class Medicine' remedies designed to increase longevity and could be taken over a long period of time, with no side-effects. There were 120 'Middle Class Medicine', formulas designed to renew energy and keep the body healthy. These formulas and herbs sometimes produced side effects and were to be used with caution. Finally there were 125 'Lower Class Medicine', remedies for very serious ailments that often produced side effects, and these were for short-term usage. From early on, Kampo's quest was to focus and simplify formulas to heal effectively with the fewest side effects. As with Traditional Chinese Medicine during the period of the late 19th and early 20th Kampo fell into disfavor, yet still continued practice and research. Today Kampo has 148 approved formulas for reimbursement by the State. The role of Kampo in the Japanese healthcare system has become widely acknowledged with 70% of physicians using some form of herbal Medicine in their practice. In 1991 the Japan Society for Oriental Medicine was recognized as a branch of the Japan Association of Medical Sciences. Japan

is becoming an example of integrating Conventional and Herbal Medicine, its research accomplishments into Herbal Medicine, are an example for the rest of the world to follow. Japan is continuing to balance ancient and traditional Kampo while pushing the ultramodern research and practice.

### **My First Arrival in Japan**

After my Father's sudden death, the year before my arrival in Japan I was still plagued by conscious and unconscious questions regarding what was health, true, vibrant, and optimum health, and not the conventional definition of absence of disease. The whole experience of the Oki Yoga Dojo, I see now, was answering the deep koan-like questions in my soul, what was health? and how to cultivate it? I came to realize about this time that through my over-concentration on the hard, "Yang like" Karate would only make me harder and more "contracted" physically, emotionally, and spiritually, to a point that my body might create a "Yin" disease to balance and compensate. At that time, balance was to be found for me by my cultivating gentleness, softness of heart, it would be found in the cultivation of my compassion. This led me away from Karate and as the martial arts started to fall away from me, I realized I was beginning my path as a healer. With these unconscious questions, bouncing around somewhere in the back of my mind, I arrived in Mishima on the Izu peninsula of Japan at the Oki Yoga Dojo. I needed to know what health was and how to maintain it naturally.

Life at the Yoga dojo was a complete shock to me physically and culturally, so much was reversed. (I will never forget my first Japanese bath at the yoga dojo, as my fellow 'joukoses' looked on completely stunned and horrified, as I lathered up with soap and washed down in the bath!) Although I considered myself to be quite fit, the daunting schedule was a physical shock to my body. Up at 5am for a run and cold bath, then, to my shock and horror, a tiny breakfast of miso soup for fuel. After a full morning of strengthening exercises and yoga, a tiny lunch, followed by a busy afternoon of exercising, then, to my

dismay....a very small dinner! Although I underwent a mental shock, absorbing the cultural shift, physical challenges, and the challenge of joining the routine of a 400-member dojo, most of whom I could not speak to.... I loved it. I was right where I was meant to be I was studying my answers to what is health, though I didn't quite know it at the time! Most people would come to the yoga dojo for a short two-week period, and some people would stay for a much longer time. However, both groups were there basically for two reasons: 1) to get healthier, or 2) because they were sick and were looking for recovery. The schedule was designed to provide the opportunity for recovery, from the decreased input of food, the increased vital life-force of whole food, to the exercise that cleansed strengthened and created such deep healing sleep, to the therapies of the yoga dojo themselves. At the end of a very rigorous day, hundreds of people would be given acupuncture. Master Oki, or one of his assistants, would go from person to person, giving instructions, putting acupuncture needles in, then other assistants would following-up, warming them with moxabustion. The air would be thick with the smell of moxa smoke and herbal remedies cooking in the kitchen, some people would be busy contorting themselves into "corrective yoga exercises". The 'whole food' philosophy meant that you could eat anything, as long as it was whole! so no meat or fish except for really tiny fish! The fasting was remarkable; some people would fast from 10 or 20 and even 30 days. Allowing their bodies to rejuvenate, cleanse very deep chronic illnesses from themselves. I even went through the challenge of a 10 day fast myself. I had been warned do not eat anything mid way through the fast as the wrong food may cause a blockage in the intestines. I was also warned do no drink ice cold drinks; this will chill the digestion and could lead to digestive problems. At the time I thought to myself "chance would be a fine thing" as the dojo served all my food and the kitchen knew I was fasting and that definitely meant 'no food' as for the cold drinks, there was never any cold drinks, so that one was ruled out. I was on the morning run with some friends who stopped off at a shop and bought some orange popsicles, and by chance I found some money in my track

suit and bought one too, it was exquisite, the best I'd ever tasted it must be a specialty of the Japanese I thought. Well! After six days into a fast mud would taste good too. One led to two then four, what harm could it do? I certainly found out, after spending two day either running too or hanging out in the toilet, I received Herbal and Acupuncture treatments yet I had losted too much fluid, so it was off the hospital to get I.V. fluids. I learned a valuable lesson; do not break fasts with iced orange juice.

I entered rhythm of the dojo slowly, day by day, each day exactly the same as the other, not recognizing any holiday and much to my chagrin not even Christmas. I had asked for and recieved permission to go into town to study Aiado. This was the one routine that that broke the dojo-life rhythm, my weekly Aiado class.

One of my classic Japanese moments happened one winter, on the way back from this class. I would put on my 'Hakama' a wide Japanese trousers / skirt worn for some martial arts. Put an a Japanese wide brimmed hat and I would run into my Aido class into the outskirts of Mishima, my teacher was a remarkable 7th Dan in Kendo (Japanese fencing ), he had a huge dojo for teaching mainly children. After class along with his only two adult students, he showed me swords that had been in his Samurai family since the ninth century, when most Samurai's were carrying wooden swords, and only pretended to carry metal ones, as they were so expensive. So sensitive was this metal, that we had to shield our breathe, from the blade as the touch of the condensation from our breathe would mark the blade. With the blade glinting its hammered folds of metal in the dim light. He took one hair from his full head of jet-black hair and let it fall, it descended slowly across the sword. After twelve centuries it was still kept razor sharp, the hair parted into two. After receiving this honor I would tie my Aiado sword over my shoulder (it had a blunt blade, so I or my fellow students would not lose any limbs of fingers in my practice sessions) and run back to the dojo. It was had started to snow, as I ran up the hill I could see the welcoming light, glowing through the falling quite snow, of the Japanese bar/

inn up on the hill ahead of me. It was a scene right out of a 'wood block print'. As I ran closer I could smell the food steaming in the 'Unabe pots' (CHECK THIS TERM) and the delicious warmth inside. I could not resist, I walked in shook off the snow, placed my sword beside my table, and to the shock of all in the bar took off my hat to reveal a 'foreigner'. I sat there drinking hot sake, looking out on the snow covered rice paddies from within the cozy Japanese Inn, and a stirring within me, felt at home, It could have been any century since my teachers sword was made.

Another most welcomed break to the Dojo routine were the parties, every so often there would be parties with food and beer, there were parties for the whole dojo and there were staff parties. We had a lot of fun, and if you know the right table to sit at, maybe you could actually drink more than one beer, and we often did. Then we would have to find a place to hide-out in the morning, from the regular 5am routine of run and cold bath. If I was lucky I might even be invited to sit at Master Oki's table where whiskey was served, with his guests, it might be some good-looking model, or a visiting Westerner and one night it was a Zen Roshi (teacher). One such night, I was invited and got to spend a boisterous night with my friend Andy, Okuda Roshi and Master Oki. Zen had always interested me, and my few meetings with Okuda Roshi had attracted me even more, he was real, there was no piousness, holier-than-thou attitude that priests of many denominations, often emanate, he had a lion energy about him coupled with a 'joi-de-vivre'. I asked him in the middle of the party how could I study Zen? He responded by telling me if I wanted to know Zen I should do a ten-day meditation intensive called a Seishin and until I could do one, he invited me to his temple. As soon as I could get away from the dojo I was there in Shomioji, Okuda Roshi's Temple, still one of the most picturesque examples of clean classic Zen design I have ever been too. Each time I would go, there would be some festival going on. On one of these visits, one morning after Zazen meditation in the Zendo, an old, wild looking gentleman with long gray haired would come and with the Roshi's permission practice Kendo fencing, I would

watch mesmerized by his skills. I would often ask him questions in my poor Japanese, only to be smilingly rebuffed. He had a playful energy, and I always felt he was kidding me about many things. I had heard much later from others he had been a high ranking intelligence officer during the war and spoke perfect English, I could never draw him out.

One time I arrived at the Temple to find out that Okuda Roshi would be inaugurated as a Roshi, over the next 3 days but also as the head of the Obaku Zen School. It was the most amazing three day event. I was honored to be invited to participate in, and I was told would be the first Westerner initiated into Obaku-Zen, along with my friend David. For three or four days we sat Zazen meditation along with other rites and ritual and thousands of prostrations culminating in the final day, the temple was packed with other Roshis, old and new, monks, and lay people. Roshi's formal questioning by his teacher, was in the Hondo, if he answered correctly he would be come a Roshi and leader of Obaku, If not I was told by my friend the wily old Kendo master in perfect English "he would be thrown-out kicked and punched from the ceremony, never to return to this beautiful temple or Obaku Zen again" I sat mesmerized by this vocal duel that everyone was straining forward to hear. In high ceremonial 'kabuki-like tones' questions were thrown out by the teacher only to be batted back by the Roshi. Finally it was over the Roshi was head of Obaku Zen School and would shortly move out of Shomio-ji to become the Roshi-of-all-Roshis and Master of Mumpuka-ji Temple complex, in Kyoto and keeper of it's 60,000 nationally designated treasures of art, yet more importantly, the keeper and guardian of Obaku's lineage and its spirit, and dharma.

The formalities and ceremonies were over and in true Japanese fashion the party began. Sectioned off from the lay people was the Master's party. In attendance was every living Zen Master of the Obaku tradition, some were in ancient Chinese/Tibetan looking robes others curiously were in suits, and all had a priest in attendance. The noise started gently and by evenings end, after drinking and eating the noise was booming, and a lot of the Roshis were getting

quite drunk, some not drinking at all, and still others, ancient looking gray haired Roshis with long Chinese whiskers and classic Chinese looking robes were actually being carried-out by their attendant priests. I asked my wily Old Kendo master, “So how come Zen Buddhists can drink? when other Buddhists are held by the precept not to ‘partake of wine?’” He smiled at me wryly “ In Zen, its true they have to take that precept, but they add two words, that make all the difference. They add that they shall not partake of wine ‘of illusion’!!” Okuda Roshi drink or no drink, would be in the Zendo for Zazen meditation at 4.30am clear-as the bell he would ring to begin Zazen, and I always had to be there too, in his temple there was no place to hide!

### **Leaving the Oki Yoga Dojo after one year**

It was an exciting, yet sad day for me when I left the yoga dojo after one year. The juxtaposition and contrast of the gentle rural Mishima to the Tokyo metropolis, from the large yoga dojo to a tiny one, from the sheltered dojo life to the big world again was intense and fun and beckoning me. Once established in Tokyo in a house with other foreign friends and a job teaching English, I started to study acupuncture and shiatsu exploring how to help people establish themselves in health. I also came into real meaningful contact with Zen, (I remember after my first lecture on Zen, in the train on the way home, I was so engrossed by the philosophy, I vowed right there and then, always to be alert! Always to be ‘in the moment’! always to maintain perfect awareness! Then I realized to my shock and horror I had missed my station stop!! That’s when I realized, this Zen-thing was not going to be easy. The questions of how to stay healthy, mentally and spiritually were starting to swirl around inside me.

### **Zen Seishin**

Before I left Japan, Okuda Roshi had instructed me to do a 10-day meditation intensive. It was with great trepidation that I arrived at his temple, to complete this instruction before I left Japan. He and his wife took me to



Mampuka-ji's cultural center. In my mind, since the invitation to do a 10-day intensive at the Oki Yoga Dojo, I had an idealized image of sitting with a handful of monks in an ancient Zendo, within an ancient Temple. So, as with all expectations I suffered, when he walked me into a gleaming new cultural center with 300 other civilians Japanese and Western, all milling around waiting for this 10 day to start. Suddenly I wasn't special, my preconceptions met reality and I was upset. I went to the Roshi and whined about it not being what I expected. Suddenly the lion roared, he grabbed me by the scruff-of-the-neck and whisked me off, to the Mampuka-ji temple. Even as I knew my audacity, might be getting me in-over-my-head, we were whisking through the dark of night through ancient door ways, passed huge statues of the Buddha, passed a whole Zendo of crazy looking statues of past masters, as we whisked through the large complex, darting through watchmen's houses, I had the strange feeling of intense familiarity swirl-over me, this seemed like a 'known place' to me, yet I had never been here before, as we moved with monks appearing from here and there, opening locked doors and the Roshi barking orders it seemed like a scene from ancient Japan, and it felt uncannily like I knew where I was going and that I belonged in that ancient scene. It felt to me that if I had a sword at my side protecting the Roshi, one step behind his authority, I would have truly belonged in that ancient scene. Before I could muse further we were led to the Zendo, to the beating heart of every Zen Temple, the place where national-monuments, national-treasures, national heritage and the museum stops.... and the living Dharma begins..... the Zendo. It was just as I had pictured in my imaginings, the air thick with incense, a handful of monks, no westerners one other non priest and a huge statue of the Buddha dominating the ancient Zendo. It was a cold, full moon December night, the Roshi introduced me to the Roshi-in-charge of the Seishin and left. My clothes and my luggage were nowhere to be seen. The night wore on, Zazen in at-least a 'half lotus position for 40 minutes followed by Dozen, walking Zen and then back to Zazen, it was freezing cold, and feet had to be bare. I had only a shirt on thin sweater on, the rest of my warm gear

was in my luggage, somewhere across town with the Roshi. The night wore on, I was beginning to wonder about sleep, finally they closed the flap of the Zendo the material unrolled down from the top of the massive open doorway into the Zendo, but it reached two feet from the floor, the wind whipped under and this Zendo was freezing. Finally, I was told from 11pm until 4.00am we will sit Zazen outside in the grounds around the Zendo Wait a minute I asked what about sleep?? “ I was told this is the Rohatsu Sieshin there will be no sleep”

I could not believe it! It seems the priests would sit one or two Sieshins every month for a year, with sleep, yet every December for the Rohatsu Sieshin they really go-for-it and try to achieve enlightenment with every effort they can muster, even forgoing sleep. I thought to my self and this happens to be the one I had the audacity to ask the Roshi for, just my karma and as it turned out it was.

Keeping the tension just right in the Zendo, was the Jikijitsu the head monk. He sat Zazen like a stone statue of the Buddha, he also had training in Kendo for the kyosatsu a flat paddle-like stick about 3inches wide and 3 feet long with a handle. Every so often through exhaustion, with a knotted back muscles from long hours of meditation, concentration of the my mind would spiral out of control. The Jikijitsu would some how sense this and patrol up and down the Zendo black long monk robes rustling, bold shaven head gleaming, calm even expression on his face. Then monks meditating on raised platforms 2 feet above the floor would bow, the Jikijitsu would stop and bow in reply, the monk would lean forward almost to prostration . The Jikijitsu would take perfect aim and then POW!...POW!...POW! hitting the kyosatsu along side of the spine on each side. The noise would echo through the Zendo, the concentration in the Zendo would go up a notch.

I thought my gosh that poor monk must have moved or did something wrong. Thats whe the Jikijitsu stopped in front of me and pow!...pow!...pow! along side of my spine, it seemed my muscle spasms had dissolved, the drowsiness had left my mind and sharper concentration was back. I even started to ask for it on occasion.

Every early evening there would be a formal encouraging discourse from

the Master in charge, unfortunately I could not understand any of it. One night I was fighting drowsiness and mild conscious dreaming that occurs when the barriers between consciousness and unconsciousness breaks down though no-sleep and meditation. Suddenly the wooden building with its shoji started to rattle violently it was as if a giant had picked up the building and was rattling it like a toy house. The monks after four days of meditation for evenness of mind, had panic in their eyes, I did too, only the Zen Master and the Jikijitsu were completely unperturbed, un-shaken, the Roshi never missed a beat with his discourse and it looked as though the Jikijitsu never missed even a split second of his concentration of his breathe. Within minutes the violent earthquake had gone as fast as it had arrived. Leaving only myself and the monks shaken inside.



In another cold night spent amongst the shrubs and bushes of the manicured grounds. I would meditate until I would literally keel-over in half-lotus position and fall fast to sleep, If I had found a particularly cunning hidden-spot, this peculiarly positioned sleep might last until I would be awakened by discomfort. However, if not and the Jikijitsu would find me, clearly looking in need of his kyosaku, I would be awakeded by POW!...POW!...POW!...along my spine. Eventually by day four the Okuda Roshi's wife brought my luggage and finally I was able to stay at least partially warm with extra clothes, although curiously with –out the ever present cold biting at me I found my meditation deteriorated

more. I could be more easily claimed by the dream-life which was now, ever present imposing itself on me more and more . Eventually I finished and the Roshi's wife cooked me such a meal and the Roshi and I forgot that we could not communicate well and spoke all ate and drank until I fell into a sleep of all contented sleeps. The Sieshin was one of the most remarkable ways to leave Japan. It felt like six months or so before I returned to my regular consciousness, I am extremely grateful for the experience that started my regular practice of meditation, I now do an intensive 10 meditation every year, yet thankfully these intensives allow sleep. I left Japan, to study Oriental Medicine in my native tongue. I would be forever changed.

### **Return to Japan**

In April of 2002 my wife and I were invited to return to Japan. Our trip to Japan, was to give an herbal seminar in modern metropolis of Tokyo, yet it began with a reunion of Ancient Japan and with one of my old teachers. I had not seen Okuda Roshi since his visit to my home-town in Bristol England, where I had organized a Sieshin for him to teach, 22 years earlier. Upon arrival we immediately went to his temple, Jukoku-ji, a few hours away from the ancient capital of Japan, Kyoto. When I had left Japan he was just inaugurated as the Head of the Obaku School of Zen and Master of it's head temple Mampuka-ji, a large temple complex in Kyoto. After all this time, I was returning with my wife, and I wanted pay my respects to him, upon landing in Japan. He was now recently retired, to the small temple he was born in Kukoku-ji. It was an emotional reunion with a man and his wife, who had basically changed the course of my life as a young man, with my intense introduction to meditation. He reminded me that I had the knack of showing up at his temple, on the days when there would be important festivals, and to our surprise he announced tomorrow would be no different. Tomorrow there would be the festival for the 'Buddha of Medicine'. It was uncanny really, after all these years apart, that the day I arrive back would be the festival for the 'Buddha of Medicine'. After a

24 year separation, when I return, I return as a Herbalist and Doctor of Oriental Medicine and at the shrine, one of only 2 in the whole of Japan with a 1,300 year old sculpture of this 'Buddha of herbal medicine'. I was given the honor of starting off the festival, by the ringing of a large ancient bell in the bell tower.

### **The Buddha of Medicine**

The Buddha of Medicine is entwined with herbal medicine throughout Asia. Bhaisajyaguru (Sanskrit) or Yakushi Nyorai (Japanese) or Sangs-ryas (Tibetan) better known as 'Medicine Buddha'. Some times portrayed **with his right hand is in the abhaya mudra - a gesture of reassurance and loving-kindness.**

**Nearly always holding a medicine bowl.** In Tibetan images of the Medicine Buddha, the left hand typically holds a blooming myrobalan plant. Terminalia chebula, is the third ingredient in the famous Ayurvedic formula Triphala. It is a small round fruit, historically used as a rejuvenator helping to normalize the general balance of the body. The Buddha of Healing, is believed to have the power to see the true cause of any affliction, whether spiritual, physical or psychological, and who does whatever is necessary to alleviate it. Artistic depictions of Buddha of Medicine often show a deity whose skin is the color of lapis lazuli, similar to the Ayurvedic diety Dhanvantari Lord of Ayurvedic Healing. The Medicine Buddha offers medicine to people suffering from illness, and grants nourishment to the mind and body.

During the festival a group of older women gathered around holding a photograph and started to point at me it was a photograph of 24 years earlier at the Roshi inauguration, they were laughing at how much older we all were. If you look closely in the bottom right hand corner you'll see a young foreigner third from the right front row.

## **The Botanical Gardens, University of Tokyo.**

One of the highlights of my recent trip was to visit with some old friends I had never actually met. The many plants of Traditional Chinese Medicine that do not grow in the West, even though I use them each week in my practice, I have never had the pleasure of meeting them personally. At the Botanical Gardens, Faculty of Science, University of Tokyo I was able to finally meet them. They have facilities and wild plant collections for botanical education and research. The Botanical Gardens, located in midtown of Tokyo, are open to the public and are sometimes referred to as the Koishikawa Botanical Garden. The Botanical Gardens originated as the 'Koishikawa Medicinal Herb Garden', which was established in 1684 by the Tokugawa Shogunate. There are many historic plants and ruins that reflect the long history of the Botanical Gardens. The Botanical Gardens were the birthplace of modern scientific research in botany in Japan after the Meiji Restoration. Field studies are carried out in Japan and abroad, including east and southeast Asia and collections are brought back to the gardens. Besides the living plant collection, connected to the Botanical Gardens are a herbarium with 1.4 million specimens (including those of the associated University Museum) and a library of 20,000 books and journals. The main collections contain wild collected species of higher plants from eastern Asia (e.g. Japan, Korea, Taiwan, and China) and many species collected from various other regions of the world. The 4,000 species of plants in the living collection comprise 1,400 hardy woody species, 1,500 hardy herbaceous species, and 1,100 tropical and subtropical species. What a treat! Right in the middle of urban Tokyo.

## **The Bio Electromagnetic Energy of Living Things**

“It may be said that the electrical structure of the human body must have an architecture as precise and important as the biochemical structure, between which there is continuous interdependence. We must not forget we all are composed of electrically charged particles.”

-- Ionescu-Tirgouiste. ‘Measurement of acupuncture injury potentials’

Can this precise architecture be an electromagnetic energy body? It may well resemble a hologram, a truly three-dimensional energy body interfacing with the biochemical body in all living things on the planet! This is what modern research may be beginning to suggest. A Kirlian photograph on the wall of my office, pictures a leaf with the top part cut off and thrown away. The photograph captures the “corona discharge” that represents millions of electrons streaming from the leaf. The upper portion of the leaf is cut off yet one can clearly see the “phantom leaf” or “energy body” that remains. All living organisms must have an attending energy body interfacing with the physical body. All plants possess an energy body with its own unique vibrational frequency.

### **Bio-Energetic Research**

In a series of experiments done in 1920, Elmer J. Lund demonstrated how the energy potentials of the body of a hydra could be reversed changing the biochemical structure. He found that he could control the energy architecture of the hydra’s body by passing small direct currents through the animal’s body and could cause the head to sprout out of the tail and vice versa. Dr. Robert O. Becker pioneered research that developed Lund’s early work. Dr. Becker was also inspired by early Russian research in to tomato plants. This research showed that when the tomato plants were damaged, they would release what would be called later “currents of injury”. These Russian researchers

demonstrated if they interfered with these “currents of injury”, the healing of the plant would take much longer. Yet what astonished the researchers, were if they aided these subtle currents, the plant would heal much faster. Dr. Becker’s own research revealed how minute electrical currents (millionths of an amp) could stimulate bone and tissue repair and regeneration. He studied the way the body utilized minute currents to stimulate biochemical repair and rejuvenation — a phenomenon now known as the “current of injury.” During his early research on salamanders, his data suggested that when a salamander’s leg was amputated, it generated measurements at the stump that initiated a non-differentiated cell-guk (blastema), possibly generating an ‘electromagnetic phantom limb’ or energy body that then coded the cells into fulfilling the growth of a new limb. One stage up the evolutionary scale, Dr. Becker also worked with frogs, which cannot regenerate new limbs. His experiments suggested that the difference between frogs and salamanders was that the frog didn’t have the energy, at the end of the process, to generate a strong enough negative potential. In the laboratory, Becker then added the missing element and remarkably, the frog grew a new leg. Adding the missing negative potential facilitating energy flows seems to have boosted the energy body and empowered the physical body to re-grow the leg.

Humans also lack the power to regenerate limbs, but not completely!

Studies have also shown that children up to age 11 can re-grow the first phalange of a finger that has been cut off. English surgeon, Dr. C. M. Illingworth fostered these studies and discovered that, as in salamanders, if the wound isn’t covered surgically by a skin flap, the non-differentiated cell guk (blastema) forms (and I believe is coded and empowered to fulfill the energy body’s phantom limb.) and the finger regenerates itself. Dr. Illingworth has since measured a negative current of injury off the end of the stump, as was found in salamanders.

Many decades ago, Burr proposed that “Life-Fields” extended out from the body, like a hologram, and provided a field into which the biochemical body could grow. Standing on this research, Becker, and more recently, Dr. Andrew Bassett, have produced electromagnetic devices that stimulate healing



of fractures. The devices are no longer implanted but placed outside in the cast. They produce external applications of weak electro-magnetic fields across the site. Non-union fractures have been healing in a remarkably short amount of time, even after several years of non-union. Dr. Becker had reservations about such devices giving constantly stimulation 24 hours a day might excite any cancer cells that may be in the area into growth also.

Dr. Becker was not the first to stumble on these ideas of exciting our own currents of injury to heal bones. In his book, *Body Electric*, Becker relates that a Dr. Hall of Pennsylvania used electro-acupuncture to stimulate bone repair in the mid-1800's. Benjamin Franklin also used electrotherapy to heal a friend's frozen shoulder. These ideas are not new. From ancient China, to India and Greece, many traditions believe that humans have an energy body, and that stimulation of energy flow within this body facilitates healing. One of the basic tenets of ancient Chinese and Japanese medicine is that Energy = Matter, and that by stimulating energy, matter is affected. It is this same foundation of thought that Einstein proved to scientists, that energy and matter are dual expressions of the same universal substance, with his equation,  $E=mc^2$ . That universal substance, "Qi", is a primal energy or vibration. Therefore, it is possible to attempt to heal the body with 'energetic medicine', by manipulating the basic vibrational or energetic architecture of the body, which I believe Acupuncture, Homeopathy and Herbal medicine does.

Medical science has been using energy concepts to create insights or windows into the body with imagery equipment, from x-rays, CAT scans, EEG, ECG, PET, to the MRI (Magnetic Resonance Imagery) that is able to visualize a tumor inside the body. The MRI stimulates atoms by stimulation of the transfer of energy of a specific frequency. All of these remarkable diagnostic tools provide glimpses into the body at different energetic frequencies — a glimpse into matter at the energy level. The truth is we are both chemical and electrical. Modern scientists can detect and catalogue human biofields using SQUIDS (Superconducting Quantum Interferometric Devices.) SQUIDS are ultra

sensitive magnetic fields detectors. These tests show us how we generate AC electromagnetic fields around our nerves and muscles, and DC electromagnetic fields around our brain. When the body's energy becomes imbalanced, organic problems and disease follows. Cancer tissue and healthy tissue have different electrical capacities. Research by Dr. Nordenstrom has found a "negative potential" electrical reading in the vicinity of cancerous tumors. He has reported some tumor remissions by the insertion of electrodes in the tumor and on its surface and then applying a current between the two. This technique normalizes the abnormal current of injury, perhaps righting the energetic imbalance or "hole" in the energy system. Astounding results in recent scientific inquiry has spawned a renewed interest in the subtler working and circuitry of the body's bio-electromagnetic energy. Scientists are already manipulating the body's own incredibly small currents for healing of tissue, nerve, bones and cancers. They are discovering trigger points and acupoints in the same locations. The possibility of subtle measurement is now available. We already know that acupoints have a precise location on the body's surface that can be measured. Classic acupoints identified thousands of years ago by the ancients are measured today using scientific means and indeed show a precise decrease in electrical resistance.

Work by Dr. Darras and Professor DeVernijoul prove some interesting results. Testing the validity of energy transportation along the meridian channels, the doctors injected a radioactive tracer (Tegg) at the acupoint and with the help of a gamma-ray camera, found that the radioactivity traveled along the acupuncture meridian at the speed of 3-5 cm/minute, (this being in the order of 25 circulations per day or night). The flow was slower for diseased organs. They discounted that the flow was of the lymphatic or blood system. The speed of this flow quickened when an acupoint was stimulated. The flow was at a rate suggestive of the flow of Qi or energy through the meridians common to Traditional Chinese and Japanese Medicine.

Dr. Smith, in his book, *Electromagnetic Man*, states that this flow was

suggestive of an electromagnetically rotating field, maintaining a pressure in the direction of the target organ. Dr. Nakatiani, and Dr. Voll have conducted extensive research into measuring the end or beginning acupoints electrically as being reflective of the associated organ. High readings indicate inflammation, with low readings indicating degenerative disease. Any needle inserted in an acupoint will set up an electrical contact potential. After all of his groundbreaking research, Dr. Becker believes that “One of the main lessons of [the] effects of bio-electromagnetism, so far, is that less is often more.” These electrical contact potentials may help regulate the energy body, and thus the physical body.

I believe the ancient Chinese discovered by trial and error, over hundreds of generations, what modern scientists are confirming today — that the subtle manipulation of the body’s currents provides great healing. I believe that within the experience of Chinese medicine there lie the keys, to future advances in many areas of subtle healing energy work. The manipulation of bio-electromagnetic energy for healing is still at a crude stage compared with the lineage of Traditional Chinese Medicine and the experiential truths contained therein.

### **Plants also have their own ‘energy body’**

The plant’s unique and individual ‘electromagnetic signatures’ or frequencies of these fields, are a major factor in our healing processes with medicinal plants. This Bio-energetic factor has yet to be explored from a scientific viewpoint. Yet from 5,000 years of intuitive and experiential viewpoint of Traditional Chinese and Japanese Medicine’s viewpoint, a huge body of evidence has been accumulated within its framework of the Herbs energetic qualities, which energy meridian the herb enters, which organ system it has an energetic ‘affinity’ with, which tissues it is drawn to. Modern research is just beginning to verify so many herbs. One example is Bupleurum, Chai Hu a Chinese herb that has been described by TCM as entering the liver and gall bladder organ/meridian systems. This herb has been well studied by Japanese

researchers showing it does, in fact have an amazingly ‘liver-protective’ ingredient, and they named ‘Saikosaponin’. It is a major herb in a formula to protect against Hepatitis, ‘Minor Bupleurum’ Xiao Chai Hu Tang. This formula has been shown to lower incidence of liver cancer among those with Cirrhosis of the Liver by 50% and lower the incidence of Cirrhosis among those with Hepatitis B and C. Remarkably this formula also was shown to promote the clearance of Hepatitis B antigen from the blood of 14 chronically ill children. The Chinese had an energetic personality of this herb developed since the 2nd Century AD. Guiding such usage, promoting its ‘affinity’ with the liver. Another System of healing with plants is based solely upon the Bio-Energetic framework is Homeopathy. Homeopathy originating in 17th century England uses microdoses, or minute dilutions of natural substances from the plant, mineral, and animal kingdoms. Studies show they are so diluted, that they do not even contain one existing molecule of the original plant. There’s no chemistry involved in homeopathy. A healing response can propagate through your body within seconds after taking a homeopathic remedy. This is much faster than any known physiological or chemical mechanisms can explain. The plant’s ‘electromagnetic signature’ or ‘energetic frequency’ is believed to be carried through the water dilution. This bio-energetic medicine has baffled scientists and out-performed placebo’s. It has thousands and thousands of medical practitioners and a patient following of millions throughout Europe and India. Disease, from the homeopathic perspective, is an expression of the life process, not a separate entity or an isolated target. A disease is the manifestation of a constitutional weakness coming through the weakest point in the body. Homeopathy like all Bio-Energetic medicine looks to raise-up the energetic frequency of the diseased process through resonance on a vibrational level. Resonance works on the principle that like attracts like. When the C string of a harp or piano is struck, all the other octave strings of C begin to vibrate. They are in resonance with one another. The different aspects of our physical, emotional, mental and spiritual being resonant to various frequencies of vibration. An analogy for this would

be the Shaman in the Amazon who explained to me from an ‘altered state of conscious’ he would capture the song (vibration) of the patients illness he would go into the forest and sing the song until the rain-forest would answer, with the medicinal plant to be used (vibrational resonance?)

Bio-Energetic medicine gently coaxes or invites ‘stuck energy’ to move or vibrate again, or over-stimulated energy to sedate and calm itself. The analogy for this might be healthy energy as water and disease as congealed lowered frequency of matter Ice. The right resonance is called for by the body to assist it to raise its frequency or warms the frequency of the ice. Healing is achieved when all is the same vibrational level.

Over time, the system finds balance between the two, it wants to come back into its inherent state..... balance. New Physics mingling with Modern Homeopathic theory believes that all medicinal plant’s have a specific vibrational frequency, that our subtle bio-chemical and bio-energetic receptors respond to. The correct plant or formula of plants, will gently, healingly stimulate the body-mind balance itself

## **Medicinal Plants Straddle both the Bio-Energetic and the Bio-Chemical Worlds**

Acupuncture as I have presented is purely Bio-energetic working solely from a scientifically unexplained basis. Homeopathy using medicinal plants also is in the same position. Vitamins, minerals and amino acids are energetically inert and also work from the solely Bio-Chemical basis. They provide the body with preventative nutritional bio-chemical nutrients, which are often deficient due to modern diet and lifestyle. These substances are gentle restorative nutrients for the most part well received by the body.

Pharmaceutical are on the extreme end of the Bio-Chemical scale, these bio-chemicals overwhelm receptor sites in an overpowering way. The extreme of ‘Bio-Chemical Herbal Medicine’ is fixated on understand Medicinal plants and their healing compounds reduced to solely to the recognizable ‘active

ingredients'. The extreme of 'Bio-Energetic Herbal Medicine' is the Shamanistic view of 'plant spirit medicine' impacting us on a deep spirit level. Either way both potentials exist. Herbal Medicine is able to straddle between these two worlds, not as overwhelming on a bio-chemical level, not damaging the eco-systems of ourselves or Gaia's. Moderately enough placed to get results and be effective as the best of both worlds.

## **Quality of Herbs**

Considering Medicinal Plants from both the energy perspective and the chemical perspective, the therapeutic effect of the plants, are only as good as the ability of the plant to contain the chemical compounds to help our bodies heal, it is only good as it's abilities to hold its energetic qualities intact. I always consider these two perspectives in my selection of herbs for formulas. Is it a sub-grade plant, I'm sure we have all seen examples of plants that have struggled all their life, a rose that never blooms versus a rose in full bloom healthy with hundreds of flowerers, the quality between the two rose plants is enormous, its aroma, its colour every aspect of its chemistries and energies are effected, you can see the difference smell the difference, chemically and energetically. The environment the plant grows within effects it enormously, is it wildcrafted? taken from its natural eco-system that it has grown within for millions of years, or if its been cultivated is it organically grown? from soil filled with all the ingredients to support the plant naturally. Plants suck all of the natural ingredients, from their roots into the plant its often that the plant is good only if the soil is good. Has it been processed with out chemical herbicides, pesticides or gassed? The sad fact is that the majority all-medicinal plants are gassed with carcinogenic gasses so it may keep longer in storage. Has it been irradiated? for better preservation in storage, irradiation destroys the plants energy? All these are just some of the factors that bring to you the best quality herbs, to give your body the best possible opportunity to help it heal itself. Especially if you take into account thousands of years of TCM's experiential wisdom, these

perspectives will guide manufacturers to produce the best quality products they can.

### **Three Remarkable Healing Japanese Mushrooms:**

Energetically: Oriental Medicine believes that healing Mushrooms, remove dead decaying matter from the forest floors, just as in the energy fields of our own body-minds. Mushrooms such as Reishi, Shiitake and Maitake are the stars of the mushroom realm, they also convert our own metabolic and psychic wastes, transforming our stagnant or festering emotions and negative feelings, offering the opportunity to raising the spirit and freeing the mind toward more spiritual pursuits. Just see what they have been proven to do bio-chemically and hope fully you'll be inspired to add them to your 'Wellness Supplement Plan' or at least regularly to your diet.

### **Reishi Mushroom (*Ganoderma lucidum*)**

This mushroom has been much sought after in the East for the last four thousand years. It was fervently looked for because of its 'Elixir of Life' qualities. It has also been known under various other names: holy mushroom, herb of spiritual potency, herb of deathlessness, and shaman's tree fungus. This mushroom was held in such high esteem by the Daoists of ancient China as the 'Supreme Tonic' ever since the first Chinese Emperor (221-210 B.C.) is said to have sent envoys on a search throughout the Eastern Seas, to search for the herb of immortality, and they returned from Japan with Reishi mushroom. It would have been a tough search then as now, for in Japan one mushroom is said to be found on 10,000 Japanese plum trees. Extremely rare, until the cultivation of this mushroom. In the 1980s, a Japanese researcher Shigeaki Mori developed an intricate and effective method of cultivating them, which has made them widely available and affordable. Today they can even purchased in most health food markets for cooking. Its classified by TCM as sweet in taste, neutral leaning to gently warming. I often use this herb in formulas to 'Calm the Spirit' (It has demonstrated the ability to calm caffeine jitters) strengthen immunity,

strengthening heart, lungs and liver. This mushroom is used as a general health tonic and as folk medicine for liver problems, heart conditions, asthma, cancer, high blood pressure, and arthritis. Reishi is central to Fu Zheng therapy of Traditional Chinese medicine, Fu Zheng is a class of herbs that Chinese herbalists believe are the most powerful herbs for all-around strength and health, these herbs are often formulated together for cancer and other chronic illnesses. Reishi has been well researched and tested, mostly in China and Japan. Scientists have researched several ingredients in them that have pharmacological (medicinal) effects on the body. Reishi mushrooms contain compounds called polysaccharides, which have been shown to help the body fight cancerous tumors and also stimulate the immune system to combat infections and viruses. In studies on mice, reishi mushrooms have shown very strong results against cancerous tumors. Other substances, called triterpenes, have been found in Reishi mushrooms that have demonstrated to lower blood pressure and improve circulation, that may account for its success for age related intellectual decline in dementia and pre-Alzheimer's conditions and the increased circulation need to resist Altitude sickness. (I have used Reishi, Siberian Ginseng and Ginkgo for remarkable success for altitude sickness and jet lag.) Reishi mushrooms contain sterols, which may influence the hormonal system, and natural anti-histamines, which reduce allergic reactions and inflammation in the body. Some studies have shown to increase white blood cell count, reduce allergic reactions, and have a calming effect on the central nervous system. Because of its neutral classification by TCM its considered safe for everyone to use as an immune tonic, this is especially important to consider when using a tonic for someone with auto-immune disorder, immune stimulation herbs such as echinacea are not well tolerated by this group. Reishi helps build-up the immunity without revving-up immune responses, that would only be further aggravating to already overactive auto-immune responses, such as Lupus, Chron's Disease, etc. It can be used as the gentlest of herbs that are called for in such extreme food allergies of leaky gut syndrome, where the body can generate an allergic



response to anything ingested. It helps to calm and generate antihistamines to switch-off and block the inflammatory responses of allergic response. Reishi's antihistamines compounds also block the inflammation and swelling so often associated with respiratory allergies and asthma. They prevent the constriction of airways within the lungs that make breathing so difficult. Reishi is use with AIDS patients and has demonstrated its ability to help raise T cell levels. I have used it successfully with Chronic Fatigue Syndrome where it is possible to raise up immune responses and energy levels in general over a long period of time. Reishi has been shown to inhibit bacteria and viruses, especially useful for trying to build-up energy deficient people only to see them get knocked-back to where they were, by an opportunistic infection. It's compounds stimulate the maturation of immune cells known as macrophages which engulf and digest infectious bacteria. Reish is exceptional useful for stress situations, where Reishi helps the body to adapt, while nourishing the nervous system and providing immune support at the same time. Under this stress the cardio-protective qualities are also especially important. Reishi has demonstrated blood pressure lowering qualities and cholesterol lowering properties that help prevent atherosclerotic changes in the blood vessel walls. A recent study of chronic bronchitis in China showed 2,000 patients experienced form 60% to90% improvement using Reishi. One of the areas I have used Reishi a lot in recent years, has been for the treatment of Hepatitis. Used for Liver diseases in Chinese and Japanese herbalism, where Reishi was thought generally to release 'stuck emotions' which would aggravate the 'free flowing' health of the liver This would allow the patient more opportunity to turn to spiritual pursuits. Reishi is said to elevate the spirit, it's a mood-elevating substance. Traditionally, reishi is believed to help transform the individual into a more spiritual being. Just as mushrooms transform decayed material on the forest floor, into life-giving nourishment, so Reishi converts our own metabolic and psychic waster our hostility and other negative feelings, offering the opportunity to raising the spirit and freeing the mind toward more spiritual pursuits. I have proven to myself

what Chinese herbalists have found for centuries, that Reishi is especially useful for hepatitis patients who have not suffered severe loss of liver function or those whose conditions are not complicated by emotional stress, especially anger and frustration. According to TCM, especially shut-down and stagnant the Liver energy, makes it more difficult to respond to Reishi healing messages. It is also useful for conditions where fatty deposits are left with in the liver that may be irritated by alcohol or excessive fatty foods.

This is probably the most useful medicinal mushroom in the world, it most definitely should be in all our bathroom cabinets as a most useful ‘wellness tool’.

### **Shiitake. (*Lentinula edodes*)**

Shiitake, comes from the Japanese Shii, which means oak and take which means mushroom. The Shiitake mushroom is the most widely cultivated gourmet mushroom in the world and is both a prized medicine and culinary delight. Production dramatically increased in the late 1940’s after the development of modern cultivation techniques by the Japanese. Shiitake is a primary wood decomposer, it degrades the lignin and other components of wood and extracts the nutrients to feed itself. Shiitake has antifungal, anti-tumor, and antiviral effects. Scientists today are finding that shiitake can help the body combat heart disease, cancer, and viruses.

In the 1970’s and 1980’s there was a major research effort in Japan to understand the medicinal properties of the mushroom Shiitake and these efforts develop patentable medicines, Shiitake is often used in the Japanese diet and its cultivation dates back to the 13th century in China. By the 1980’s it had become one of the top agricultural crops in Japan. In 1970, Dr. Goro Chihara, of the National Cancer Center Research Institute in Tokyo, isolated and purified polysaccharide compounds from shiitake that exhibited strong antitumor activities. The most active of these compounds he called lentinan. Lentinan is an extract of Shiitake which is the name given a highly purified polysaccharide

fraction extracted from Shiitake mushrooms, it is an approved drug in Japan. It is generally administered by injection and has been used as an agent to prolong survival of patients in conventional cancer therapy as well as in AIDS research. LEM is another extract from Shiitake. This protien-bound sugar is solubule in water and has been the subject of intense research. In Japan, mushroom extracts like LEM and Lenitan have become the leading prescription treatment for cancer

Shiitake has been revered in Japan and China as both a food and medicinal herb for thousands of years. Around the year 200AD. it was offered to the Japanese emporer Chuai, by the Kyusuyu people of Japan. In China Wu Ri, a physician from the Fourteenth century noted its ability to increase energy, dispelled hunger, cure colds, eliminate worms and nourished the blood circulatory system. Wu-Rui described shiitake as a food that activates “Qi”. Activating the circulating life force, a which helps protect the immune system.

▲[Top](#) Shiitake’s antiviral effects are believed to be caused by Shiitake’s ability to produce interferon. Researchers have also reported that consumption of Shiitake mushrooms lowers blood cholesterol levels by as much as 45 percent especially in those already on a high fat diet. The most dramatic results occurred when high-cholesterol foods were eaten simultaneously with Shiitake it seemed to block or counter the cholesterol uptake. Research conducted in Japan identified a specific amino acid in shiitake that helps speed up the processing of cholesterol in the liver The active principle is an amino acid named eritadenine, lowers all lipid components of serum lipoproteins in both animals and man. Shiitake has also shown the capacity to lower high blood pressure in laboratory. One study reported that Shiitake was able to reduce weight when taken by women over a 6 week period without changing their diet. An interesting point to report is that that this mushroom blocks the formation of cancer causing nitrates, chemicals found in meats and many preserved products, it would seem shiitake mushrooms should be included in the menu’s to counter balance these carcinogenic substances.

## **Maitake (*Grifola frondosa*)**

Maitake (*Grifola frondosa*) means ‘dancing mushroom’ in Japanese. Supposedly named in ancient Japan, because those who found it knew they would be paid the mushrooms weight in silver, and then they would celebrate by dancing! Many doctors in Japan also must be dancing because of maitake use to lower blood pressure and blood lipids, key risk factors in cardiovascular disease, without having to resort to powerful pharmaceuticals. Yet maitake may best be known for its cancer-fighting properties. One study in post operative bladder cancer patients showed reduced rates of reoccurrence after surgery 65% down to 33%. Researchers have also discovered that Maitake when taken with mitomycin a chemotherapy inhibits the growth of breast cancer cells, even after the tumors are well formed, preventing the spread of cancer to the liver. These anti cancer compounds are believed to be Maitake D-fraction. Used for Stomach, colorectal, liver, lung cancers or leukemia by Chinese doctors.

Some studies also show Maitake’s liver protective qualities for Hepatitis B even clearing antigens in 40% of those in one study. It is used in Japan to protect the liver from drug-induced Hepatitis. It contains grifolan, an important beta-glucan polysaccharide (molecule composed of many sugar molecules linked together). Grifolan has been shown to activate macrophages, a type of cell consider the “heavy artillery”: of the immune system, explains Larry A. Walker, Ph.D., R.D., author of “Natural products update,” published in *Drug Topics*, June 1997. D-fraction, one of the polysaccharides in maitake, also energized the cellular immune system.

People with non-insulin-dependent diabetes mellitus (NIDDM) may also benefit from maitake, according to researchers Hiroaki Nanba and Keiko Kubo, authors of “Mushroom biology and mushroom products”. Researchers investigated a specific, high-molecular polysaccharide in maitake called the X-fraction. They found that mice given maitake had an increased ability to recognize glucose, and the control group had higher blood glucose levels. The researchers suggested that maitake can reduce insulin resistance, thereby

increasing insulin sensitivity.

# Dedications:

To those who seek to perceive *the nature of nature*.

Urdhvam Jigatu Bhesajam; Sanno astu dwipathe; Sanchtushpathe  
OM Shanti ! Shanti!! Shantihi!!!

Let Medicinal plants grow sky wards

Let Two Legged and four legged

(Living beings) Prosper!

· OM Peace! Peace!! Peace!!!

· (in thought) (in word) (in deed)

-“Taitriya Upanishad”

“ God has not given us any disease for which he has not Provided  
Remedies”

Paracelsus

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