

South America

## *Travels and Adventures through the Amazing World of Medicinal Plants*

### **The Amazon**

Geoff D'Arcy, Lic. Ac. DOM.



It was the winter, 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 withstand 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 antiparasitic 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 17th 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.

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 inside 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 a 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 become 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 lifechanging 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!!!