

BETWEEN THE CANOPY AND THE FOREST FLOOR

It is just after dawn and already the jungle is steaming. Mist hangs in the air, trailing the wild orchids up the tree trunks they cling to, into the emerald canopy 100 feet overhead. The air is thick with the mixed smells of fresh forest growth and pungent rotting vegetation. Ten yards ahead of us, almost invisible in the thick foliage, is my old friend Pablo, a Matses Indian headman dressed in an old madras shirt and Adidas shorts. He is looking for medicinal plants to give to a young Matses woman who is having problems with her menstruation. He moves in the peculiar style of the Indians of the area, half-walking, half-jogging, his head darting from side to side, scanning the plants along the narrow hunting trail. When Pablo comes on one of the plants he wants the woman to use, he pulls several broad waxen leaves from the shrub's branches and hands them to the woman's husband, Coi-andash;ya, to hold. Coi-andash;ya takes one of the leaves, examines it closely, breaks it open and tastes the resin. The remainder he ties in a bundle he hangs around his neck with a bit of vine. We continue for an hour, during which Pablo points out several other plants for Coi-andash;ya's wife to use. I think we're finished when suddenly Pablo turns off the path and begins to make his way up a small root-tangled hill. Though it is nearly vertical, both he and Coi-andash;ya climb it effortlessly; my partner and I labor furiously to keep from sliding back to the hill's base at the path. When we reach the hilltop Pablo points at a natural clearing in the jungle surrounded by short trees. "Bastante remedios," he says excitedly. "A lot of medicines here." How many? I ask. Pablo sharpens his focus like a hunter who's heard an animal. He points to a vine. "Wangana remedio," he says, wild boar medicine. And then he points to a small tree: "Short-tailed parrot medicine." And then, suddenly he's flying, pointing around him at trees and vines and shrubs and flowers and crawlers and snapping out words like a soldier. "Macaw medicine! Dog medicine! Ocelot medicine! Wild turkey medicine! Crocodile medicine! Worm medicine! Large stinging ant medicine! Tarantula medicine!" We'd evidently come on a "Diablo Chakra," a devil's garden, the name given to a jungle clearing filled with useful plants. Like a dervish, Pablo turns and points at the plants, naming animals he associates with the medicines he finds in them, and when a new vine or flower or fruit catches his eye he jumps up and down, points it out, names it, and acts out the illness it treats. He dances madly for those that treat nervousness and insanity; clutches his groin for venereal infections; mimes vomiting and stomach cramps for ulcer treatments; hobbles on one foot for snake-bite remedies. He keeps it up until he counts off more than three dozen of his plants and the problems they treat. When he finally stops he lets out a laugh. "Bastante remedios!" he says. "Bastante!" And then we start back to the village. On the way he asks me how much of his medicine I've learned. I tell him a little. He looks at me like a disappointed teacher. He's pointed things out and showed me characteristics, torn off leaves had had me smell or chew them for years now, and I've only learned a little? How much more do I need? I need a lifetime, really, though that isn't a thought I can express. I laugh and tell him it isn't easy to learn, that he knows a lot of plants. "Miles," he says. "Thousands." MODERN BOTANY, ANCIENT SHAMANISM Botany, the study of plants, dates back thousands of years. But it wasn't until 1753 that Carolus Linnaeus, a Swedish naturalist, produced the first comprehensive system of plant classification and nomenclature in his book *Species Plantarum*, thus beginning the era of modern botany. Linnaeus attempted to classify most of the world's flora, which he estimated at 10,000 species. But in 1847, after a century of exploration and colonization of the Western hemisphere, British botanist John Lindley recalculated the number of species in the Plant Kingdom to be nearly 100,000. The subsequent exploration of the flora of the world's rainforests have increased that number by increments to today's 750,000. Of those, botanist Wade Davis—whose book *The Serpent and the Rainbow* deals with his search for the plant compound used in Haitian Voodoo to zombify people—estimates that about 10 percent, roughly 75,000, are considered edible. Of those, only 150 have entered world commerce, and only 20, mostly domesticated cereals and tubers, stand between the human race and starvation. In addition to foods, several thousands of plants have been used by different peoples as medicines. Those include the nearly 150 still in use today—mostly in religious or spiritual healing contexts—which have varying degrees of hallucinogenic properties. Natural hallucinogens are found in the flora—and in a few members of the Animal Kingdom as well—of every continent but Antarctica. According to famed Harvard botanist Richard Schultes (see Interview, pg.58), they have been used at some point in the development of most cultures to one extent or another. In the preface to their book *Plants of the Gods*, authors Schultes and Albert Hofmann (McGraw-Hill, New York, 1979) suggest that these plants "have been known and employed in human experience since earliest man's experimentation with his ambient vegetation.... They have long played an important role in the religious rites of early civilizations and are still held in veneration and awe as sacred elements by certain peoples who have continued to live... bound to ancient traditions and ways of life. How could man in primitive societies better contact the spirit world than through the use of plants with psychic effects enabling the partaker to communicate with supernatural realms?" Our own society's fascination with the use of these substances is fairly recent, but many traditional societies continue to rely on the use of hallucinogens. In Africa, Iboga, from the dogbane family, is still widely employed in Gabon, and cannabis use remains vital throughout the northern region of the continent. In Asia, cannabis, *Datura* and *amanita muscaria*, the Fly Agraric mushroom (which Schultes calls "the most spectacular Asiatic hallucinogen") continue to hold an important place in several cultures. In southeast Asia, particularly New Guinea, a number of plants, like the bark of a large tree called the *Agara*, are utilized to produce visions. While European society has largely abandoned psychedelic plantlore in recent centuries, in medieval times, Thorn Apple, Mandrake, Henbane and Belladonna, all belonging to the Nightshade family, were widely employed in witchcraft. There was some unintentional, and often fatal hallucinogen use in Europe, when, according to Schultes, "the fungus Ergot [from which Hofmann synthesized LSD], a parasite on rye, frequently poisoned entire regions if accidentally milled into the flour.... The plague was called St. Anthony's Fire." The majority of indigenous plant hallucinogen use, however, occurs in the western hemisphere. Of the 150 or so hallucinogens still employed, nearly 120 occur in the Americas. According to Schultes, Mexico "represents without a doubt the world's

richest area in diversity and use of hallucinogens in aboriginal societies...Without any question the Peyote cactus is the most important sacred hallucinogen....Of almost equal religious importance in early Mexico and still surviving in religious rituals are mushrooms, known to the Aztecs as Teonanacatl. At least 24 species of these fungi are employed at the present time in southern Mexico. Ololiuqui, the seeds of Morning Glories, represents another hallucinogen of great importance in Aztec religion and is still employed....” Peyote remains a vital part of the religion and medicine of Native Americans throughout the southwest US as well. Next to Mexico, the richest diversity of hallucinogens is found in the Andean highlands and Amazon basin of South America. Andean cultures employ half-a-dozen species of Brugmansias (*Datura*); the San Pedro and Luna cacti; some species of Piri-Piri, a highland grass, to name but a few. Many are so commonly used that they can be purchased at markets throughout Ecuador, Peru and Bolivia. But of all the cultures which continue to employ hallucinogens, it is for those in the remote areas of the Amazon basin that they are the most integral to physical survival. There, in the lowland swamps and jungles, a variety of hallucinogenic snuffs, teas, and even animal substances are part of the daily regimen of hunters and gatherers who rely on the visions these substances produce to communicate with the animate spirits of the world in which they live. ETHNOBOTANICAL ADVENTURES IN THE AMAZON I was travelling through the Peruvian jungle with a botanist from a small experimental pharmaceutical firm which hopes to market medicines derived from natural rainforest products. Our assignment was to collect plant medicines from the indigenous peoples of the Yivari river, the border between Peru and Brazil. Once a center of the western Amazon's rubber trade, the region has been largely ignored since the demise of the rubber boom nearly a century ago. Most of the Indians who once crowded the Yivari and its tributaries are gone: many died during epidemics that raged during the boom, or in the enslavement and warfare that accompanied it; others were long ago converted and moved to the cities at the river's mouth, where they integrated into the local mestizo —mixed blood—communities. There remain only a dozen-and-a-half indigenous communities from three tribes spread out over the 500-mile length of the river. Most of them are made up of fewer than 100 people. Of the tribals who have vanished from the river, each took with them a history, a language, and the accumulated knowledge their people had of the jungle in which they lived. For the people of these remote regions of the Amazon, plants have traditionally provided housing, weapons, tools, food, means of transportation, trade goods, medicine and spiritual aids. And though hundreds of years of irregular contact with river traders, missionaries, rubber tappers, loggers, the military and the odd tourist have introduced everything from shotguns and metal tools to western clothing and an occasional outboard motor, plants continue to directly provide the bulk of indigenous needs. The study of those plants utilized by specific cultures is called ethnobotany. Unlike the professionals in the field, who spend their graduate years hitting the books and their post-doctoral years travelling from one remote culture to another collecting and drying leaves and plant parts for future study at universities, I stumbled upon the science by accident. In 1984, I was in Peru with two friends, and we had the opportunity to spend several days with a guide named Moises Torres Vienna, a former military specialist in jungle survival who by then was taking tourists out on unconventional trips. Among the things Moises introduced us to were several edible plants and insects, a variety of medicinal plants, and the hallucinogenic tea, ayahuasca. Though we took the drug out of curiosity and psychedelic interest—and I found the experience extraordinary (See Ayahuasca: Mindbending Drug of the Amazon, HT, June 1986)—I knew nothing about it at the time. But on a subsequent trip to the jungle the following year, I used ayahuasca again, and learned that its primary function among the people who live in remote regions was as a curative. Curanderos, jungle doctors, drink ayahuasca to give them the ability to “see” (in the visionary aspect of the word) into their patients, to discover what is ailing them and what plant medicines they should use to treat them. The patient may or may not also drink the ayahuasca. On that second trip to the Peruvian Amazon I watched the curandero, Don Julio Jerena, successfully save the leg of a man who had been repeatedly bitten by a bushmaster, the largest venomous snake in the western hemisphere—after the well-stocked military hospital in the city of Iquitos had said it would have to be amputated. The cure involved a diet and regular exercise prescribed by Don Julio, treatment with a variety of plant medicines, and the regular drinking of ayahuasca. When asked if it was his standard treatment for bushmaster bites, Don Julio said no, it was a specific treatment for this particular patient. He had seen it while under the influence of ayahuasca the first time he was with the man. He had “seen” the sick man healthy again, provided he stuck exactly to the regimen he'squo;d also “seen.” WHERE THE MODERN & ANCIENT MEET While everyone who lives in the Amazon has a knowledge of the plants they need for survival, those with the most refined knowledge of plants are those westerners call shaman—curanderos, healers, medicine men and women. In the little mestizo river village of Auchyako, Don Julio is the local curandero. On the tributary of the Yivari on which most of the Matses live, Pablo and his cousin Wilfredo are the healers. And despite never having met them, what Don Julio has in common with Pablo and Wilfredo is that they all view plants as sentient beings. Though a strange concept to the western mind, it is common among plant healers throughout the world. That belief is the point at which the science of ethnobotany meets the spiritualism of the shaman. For Don Julio, who spent several years apprenticing to a healer, access to the intelligence of plant life—among other things—is gained through ayahuasca. For Pablo and Wilfredo, those portals are crossed by dreaming. According to Wilfredo, the two of them “studied plant medicines every day for two years with an old man at Buenas Lomas, a big Matses village. The old man is dead now, but Pablo and I know the plants.” After their initial studies they learned to dream. According to both, dreaming involves long hours of attention to specific plants, learning to identify them by the insects and animals which associate with them, learning their reproductive cycles, and finally by physically sleeping near them until the plants allow you to dream them. Pablo and Wilfredo say the plant gives you permission to use it as a curative by allowing you to dream the illnesses it treats, and the method of treatment. Once again, to westerners this is a foreign concept. With our awareness of chemical composition and physical reaction, it'squo;s difficult to accept that a plant that is used to treat a foot fungus in one village by Pablo will not treat the same fungus in another village by Wilfredo. Yet in several medicinal plant collecting trips with both of them, I saw few of the same plants used to treat similar illnesses, a testimony to their different dreams. Both acknowledge that the plants themselves have the capability of treating illnesses, but say

that without the plant's expressed approval through the dream, the results will be considerably less effective. To aid the dreaming, the Matses use a psychoactive snuff they call nu-nu. Similar to the virola snuffs used by indigenous peoples throughout northwestern Amazonia, nu-nu is made by mixing the dried and pulverized leaves of an as-yet-unclassified wild tobacco, with the ashes of the soft inner bark of a tree in the Macao family; occasionally, other leaves are added as well. The result, a bright green snuff, is blown with force through a hollow reed tube by one man into the nostrils of another. On occasion, as many as 20 half-gram "blows" may be administered. When it hits, nu-nu hurts. It feels as though it will take the back of your head off, and leads to sometimes violent coughing and spitting up of dark green phlegm. But in moments, a pervasive calm comes over the user, and fleeting visions of extreme clarity occur. The visions are often of good places to hunt, or new areas in the forest where medicines can be found. Following the visions, the user is generally giddy for a short time, and then back to normal. Though the Matses most often use nu-nu for hunting visions (See *The Dream of Hunters*; HT, Dec. '86), it is also a vital element in plant dreaming. According to Pablo, nu-nu helps make the plants receptive to those who wish to communicate with them. The first time the notion of plant communication was presented to me, I didn't know what to make of it: I was out with Pablo, on the way to making an animal trap. I had a headache, and he noticed it. Moments later he pulled two leaves off a vine growing up a tree trunk and rubbed them vigorously into my temples. He actually rubbed the skin raw enough to draw a little blood, then had me hold the leaves in place there. In minutes the headache vanished. His cure worked so well that I asked if he had others. He laughed and said he did, and began to point things out as we walked. As I later learned was typical for him, he would act out the infirmity as he discussed the treatment. Aware I'd stumbled on a great chance, I collected leaves, flowers and bark from the plants he discussed. Back at his village after the trap was set, I laid out all of the plants on the tree bark floor of his large hut, then got my tape recorder and camera ready. There was a mestizo woman in the camp who spoke Matses and agreed to act as my translator. I asked her to ask Pablo to begin discussing the plants again, which she did. Pablo was silent for a minute then broke into a wide grin and responded. I asked my translator what he'd said. "He says he introduced you to the plants, but now you have to make your own friends with them." I asked her what he was talking about; she relayed the message. "He says you should go sleep with them. Make friends with them and dream them. Then you won't need him to explain what they are for." SHAMANIC VINES, PSYCHEDELIC FROGS

Substances like ayahuasca and hallucinogenic snuffs have until recently engendered less interest from the medical community than they have from psychedelic pioneers. Neo-psychedelic guru Terence McKenna sees hallucinogenic mushrooms as the probable basis for the human race's self-cognition and the birth of language, and his biologist brother Dennis views psychedelic plants as "the cognitive representatives of the Plant Kingdom." But science often views these plants as little more than intoxicants which produce "magico-religious" visions for aboriginal cultures. It is simply too difficult for most western scientists to accept that there may be other realms beyond the world as we see it—realms in which plants communicate with man, realms which are accessible through "plant spirit aids." Today, some scientists are beginning to recognize that their assumptions may have to be reconsidered. After 20 years of telling anyone he could that Ibogaine, the hallucinogen used in initiation rites among the Bwiti in Gabon, stopped his heroin addiction cold, Howard Lotsof finally convinced the National Institute of Drug Abuse to begin testing it as an addiction-interrupter. Similar studies of ayahuasca in connection with alcoholism are currently taking place through the French government in Peru, and the rainforest conservation group Botanical Dimensions recently sponsored Dr. Charles Grob and Dennis McKenna's Huasca Project in conjunction with the Brazilian Uniao de Vegetal, to study the medical aspects of ayahuasca. One of the most unusual psychoactives currently undergoing study in both France and the US is a substance extracted from a small green tree frog, the phyllomedusa bicolor, which the Matses use for a variety of reasons. Like Pablo's plant medicine, I came on it unexpectedly. It was the morning after a hunt. I was sitting with Pablo in the hut of one of his wives, pointing to objects and asking the Matses word for them. I made notes, writing down the phonetic spelling of things like bow, arrow, spear, and hammock. Pablo was bored with the exercise until I pointed to a small leaf bag that hung over a cooking fire. "Sapo," he said, his eyes brightening. From the bag he pulled a piece of split bamboo, the size and shape of a doctor's tongue depressor. It was covered with what looked like a thick coat of aging varnish. "Sapo," he repeated, scraping a little of the material from the stick and mixing it with saliva. When he was finished, it had the consistency and color of green mustard. Then he pulled a smoldering twig from the fire, grabbed my left wrist and burned the inside of my forearm. I pulled away, but he held my wrist tightly and burned me again. The burn marks were about the size and shape of a matchhead. He scraped away the burned skin and dabbed a little of the sapo onto the exposed areas. Instantly my body began to heat up. In seconds I was burning from the inside and regretted allowing him to give me a medicine I knew nothing about. I began to sweat. My blood began to race. My heart pounded. I became acutely aware of every vein and artery in my body and could feel them opening to allow for the fantastic pulse of my blood. My stomach cramped and I vomited violently. I lost control of my bodily functions and began to urinate and defecate. I fell to the ground. Then, unexpectedly, I found myself growling and moving about on all fours. I felt as though animals were passing through me, trying to express themselves through my body. It was a fantastic feeling, but it passed quickly and I could think of nothing but the rushing of my blood, a sensation so intense that I thought my heart would burst. The rushing got faster and faster. I was in agony. I gasped for breath. I wished I could simply die to get it over with. But slowly, over the course of the next few minutes, the pounding became more steady and rhythmic, and then it finally receded to a normal rate. I realized I wasn't going to die. I was overcome with exhaustion and slept where I was. When I awoke a few hours later, I heard voices in the camp. But as I came to my senses I realized I was alone. I looked around and saw that I had been washed off and put into my hammock. I stood and walked to the edge of the hut's unwallled platform floor and realized that the conversation I was overhearing was between two of Pablo's wives who were standing nearly 20 yards away. I didn't understand their dialect, but I was surprised to even hear them at that distance. I walked over to the other side of the platform and looked out into the jungle; it's noises too were clearer than usual.

And it wasn't just my hearing that had been improved. My vision, my sense of smell—all my senses seemed sharper, and my body felt immensely strong. When I found Pablo and indicated to him what I was feeling he smiled. "Sapo. Fuerte." The toad is strong. (In fact, the "toad" is a frog, but Pablo's command of Spanish is limited.) During the next several days my feeling of strength didn't diminish. I could go whole days without being hungry or thirsty, and moved through the jungle for hours without tiring. Every sense I possessed was heightened and in tune with the environment, as though I was on an adrenal drip. I later learned the Matses use sapo for both physical and spiritual reasons. It is used to sharpen the senses and increase stamina on long hunting trips when carrying food and water are difficult. As a medicine, it serves as both a tonic to cleanse and strengthen the body, and as a toxin purge for those with the gripe, or flu. Matses women say they use it to determine whether they are pregnant, and to establish the health and sex of a fetus. In large doses it acts as an abortive. On the spiritual side, Pablo claims that in massive doses (certainly lethal in those not accustomed to it), it allows him to project his spirit as an animal to communicate with other animals. By chance, my reports of sapo reached the hands of an Italian scientist, Vittorio Erspamer, at the University of Rome. Erspamer had studied the phyllomedusa bicolor's chemicals, but said there were no reports of the use of its secretions by humans. Reapplying himself to the work with samples of the material I was lucky enough to get, he determined that the secretions were a powerful chemical cocktail with potential medical applications. Based on Erspamer's work, two pharmaceutical houses have begun investigating the material for possible use in producing painkillers, natural abortives, adrenal gland stimulators, and heart medications. But despite these various and important steps by a few investigators, most of the hallucinogens in the world's pharmacopoeia continue to be ignored by western science.

THE COMING REVOLUTION IN PLANT MEDICINE

And it is not only the hallucinogens which are being ignored. According to Roberto Root-Bernstein, a physiologist at Michigan State University, most traditional medicines are dismissed. In a recent issue of Omni magazine, he observes, "Our high-tech medical establishment pooh-poohs primitive cures as superstitious nonsense." The scope of industrial civilization's invisible genocide against indigenous peoples is dizzying. Nearly 300 distinct cultures have been lost to acculturation, disease, or loss of traditional lands worldwide since the turn of the century—nearly one per year in the Amazon alone. But despite the expansion of the western medical model and the rapid erosion of traditional knowledge, plant medicines remain the primary form of medical treatment for an estimated 75 percent of the world's population, including most of Africa, Latin America and Asia. And even in our own western pharmacopoeia, nearly half the medicines we use contain plant material or synthetics derived from them—including aspirin, atropine, digitalis, quinine, morphine, and the majority of our anti-tumor medications. Outspoken pharmacognocist Norman Farnsworth, believes that somewhere in the plant kingdom there is a remedy for every ailment known to humanity. Unfortunately, most pharmaceutical houses don't agree with him. Most view the medicine-plant successes already on the market as either dumb luck or quaint anachronism, and since the 1950s have preferred to work at purely synthetic drug development, ignoring the vast potential of the world's flora. In fact, the World Wildlife Fund estimates that less than two percent of the flora of the Amazon has been investigated for potential medical use in even the most cursory fashion. And even as western pharmaceutical houses have started recently reinvestigating plant materials for possible medical applications, the screening method is generally to make large and haphazard plant collections, rather than talking to the curanderos who use the plants. Which doesn't mean that the large houses won't get involved when the chance at a profit shows itself: Eli Lilly jumped on the rosy periwinkle of Madagascar once independent consultants discovered it had promising therapeutic potential. The result of their investigation led to the development of vincristine, the chemotherapeutic agent now used in the treatment of childhood leukemia. Fortunately, a few smaller companies have recently decided that it is precisely the curanderos to whom they should be talking. The most notable among them is the California-based Shaman Pharmaceuticals, which has botanists and doctors working with curanderos in dozens of countries worldwide. Their success or failure may determine whether other companies go the same route. Aside from Shaman, there are several small consort working with individual plants. Among the traditional medicines of Central and South America being studied most closely is a plant—of which there are several species—called the Una de Gato, the Cat's Claw, commonly used as a tonic and blood cleanser. Scientists are studying it as a possible AIDS treatment. For several years, the city of Iquitos, Peru's gateway to the Amazon, has been the site of a clandestine operation involving physicians from several countries. Deathly ill AIDS patients are flown in secretly and whisked out to the jungle for intense Una de Gato therapy. Though their results remain closely guarded, the very fact that it is AIDS which is being treated has led to the marketing of dozens of Una de Gato medicines, teas, and powders throughout western South America. So much interest has been generated in the plant that Peru has recently outlawed its export. The new interest in plant medicines, however, has brought fewer scientists and ethnobotanists into the jungle than it has psychedelic trippers looking for an unusual high. And the tourist presence in many areas of Amazonia has done much to corrupt what remains of the traditional plant knowledge. Several Indian and mestizo curanderos are regularly flown to the States, where they give ayahuasca sessions to high-paying New Agers—to the detriment of the Amazon locals who depend upon them. Dozens of others have left their communities to work at tourist camps specializing in the shamanic experience.

PROTECTING TRADITIONAL KNOWLEDGE

With the loss of the world's rainforests, and the push of western civilization into more and more remote areas of the world, traditional plant knowledge becomes more endangered daily. Relatively few of the plant healers in Amazonia have apprentices. And in cultures which depend on an oral tradition passing knowledge from generation to generation, that knowledge can be easily lost. Wilfredo is one of the lucky plant healers who has an apprentice of his own to teach. But neither Pablo nor Don Julio do. And as more and more of the younger Indians and mestizos alike choose to forsake life in the jungle for the river cities, fewer and fewer curanderos will find apprentices. Fortunately, there are some groups working to save the endangered knowledge of these people. In Belize, Rosita Arvigo founded the Ix Chel Farm in 1987 to preserve the botanical knowledge of Don Elijo Panti, an old Mopan Maya Indian. Since then the farm, funded by the National Institutes of Health and the US Agency for International Development, has identified 2,800

potentially curative plant species from several local healers. They are slowly being catalogued by Michael Balick, director of the Institute of Economic Botany at the New York Botanical Garden. To ensure that the people whose medicines are being investigated will get a cut of any eventual pharmaceutical profits, Arvigo organized the Belize Association of Traditional Healers, and to ensure that the plants themselves won't be lost to deforestation, BATH established the Terra Nova Medicinal Plant Reserve on government-owned rainforest land. Shaman Pharmaceutical is one of the backers of the Terra Nova Reserve. (See Herbal Adventures in Belize, HT Sept. '94) Shaman already has its own program in place, The Healing Forest Conservancy, which not only documents the knowledge of the peoples from whom they collect, but also guarantees that a good part of any profits they eventually realize from traditional medicines will be returned to the peoples who contributed to their discoveries by keeping the herblore alive through countless generations. In Ecuador, a similar project, Plantas Medicinales del Campo, works to conserve the knowledge of the Andean healers, and has produced a book of traditional medicines. In southern India, the Irula Tribal Women's Society has begun collecting and documenting the medicinal knowledge of the local healers, and marketing some of the plant extracts. While an important element of all of these projects is to ensure that traditional plantlore is not lost, their most important principle is to generate continuing interest by the peoples themselves in their own cultural heritage. One of the first to realize the importance of such a step was ethnobotanist and author Dr. Mark Plotkin, who set up The Shaman's Apprentice program several years ago to return in written form to each Amazon tribe he worked with all the plant knowledge he learned from them—in the hopes that it would generate interest in the herblore among younger tribal members. MORNING IN THE JUNGLE We were out with Wilfredo, his apprentice, and several others in the lush jungle behind his village. We had cut a small tree into several one-meter lengths, and were rasping the bark—an extract of which Wilfredo used as a skin medicine—onto large leaves laid out on the ground. The work was tedious, as I needed several pounds of the thin bark for my collection. After he had done his share, Wilfredo handed the machete to me and walked off into the brush. When he returned, he was carrying the flowering top of a plant. "Pedro," he said, handing it to me. "Do you know this plant?" I told him I didn't. "I use this for women who can't carry babies. I make it a tea and they stop miscarrying." The tiny red flowers looked like little bells; the green leaves were so fine they were nearly translucent. It was a beautiful plant. "When we finish the plants you asked for should we collect this?" I told him that we might on the next trip, but that no one had asked me for that sort of remedy this time. "Then tell them to send you back quickly. There are a lot of plants you need to learn." Bastante.

About the Author

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