✦ CHAPTER 4 ✦

Ayahuasca, La Medicina

Perhaps you are brand new to ayahuasca. Or perhaps you have drunk previously, but still have questions and seek a better understanding. Wherever you are in this process, my first job here is to provide information on the brew. Following, you will find a lot of information that has been condensed down from a great many sources. This chapter gives you the essentials about ayahuasca. Once you understand this information, then we can move on to shamans, healing, and more.

Ayahuasca, a fluid, plant-based psychoactive potion indigenous to the Amazon rainforest, is the only combinatory vision-inducing agent in the world. That is to say, it takes more than just one plant to make the brew. Prepared from the vine *Banisteriopsis caapi* (often called *caapi*) and, most commonly, the leaf *Psychotria viridis* (known as *chakruna*), ayahuasca is a healing agent, a portal to the spirit world, and an enigma that has baffled and intrigued scientists and anthropologists for centuries. The use of ayahuasca among Amazonian native people likely dates back over two thousand years, according to ancient artifacts and ceramics found in Ecuador.

Because there is no written historical record in the Amazon, there is no good way to pinpoint exactly how far back the use of ayahuasca goes. Additionally, there is very little stone in the Amazon. Rather, almost all building is accomplished with wood and other plant materials, which eventually decompose and leave little or no trace. So, unlike in early Egypt, Rome, or Greece, where columns and coliseums still stand, there are scant Amazonian ruins to carbon date. For all we know, integrated into soil that is composed of centuries of decayed matter, degraded remnants of ayahuasca from even farther back than we suspect may be part of the complex mix. It may have been employed for considerably longer than the few remaining artifacts reveal, bubbling away in clay pots since antiquity, over fires scattered throughout the vast Amazon. Perhaps ancestral Amazonian natives drank ayahuasca thousands of years ago, and spent their nights hooting and howling and gasping at phantasms in the lush verdant forest, shaking bows and drums in the air. This will likely remain a mystery. However long ayahuasca has been employed, it is firmly rooted in the cultural traditions of many native groups throughout Amazonia, and among mestizo people, who are of native and European ancestry. Without question, ayahuasca endures as an ingenious example of ancient chemistry and pharmacology.

Ayahuasca, traditionally administered in special healing ceremonies by highly trained shamans known as *ayahuasceros* or *curanderos*, is often referred to in modernity

as a hallucinogen. But I beg to differ—for while a hallucinogen is typically defined as an agent that produces visual phenomena manifesting from the individual psyche, ayahuasca opens up portals to the spirit world, and the drinker/participant bears witness to that landscape. The difference is significant. So in my opinion, ayahuasca is a sacred plant medicine. Among those with whom the ceremonial healing use of ayahuasca is a way of life, the brew is referred to as "La Medicina," *the* medicine. As I will discuss further on, the healing power of ayahuasca is deep, vast, and very powerful. In my estimation, there is no other medicine that compares.

In nature, a number of plants and fungi are known for their vision-inducing effects. Peyote, San Pedro cactus, iboga, and psilocybin mushrooms are all used in traditional ceremonies to gain access to the spirit world, and to effect healing. But unlike all of these single-species agents, ayahuasca is combinatory—made up of at least two plants—and there the mystery is radically compounded.

Ayahuasca in Amazonia

In the Amazon rainforest, approximately eighty thousand higher plants (plants of complex or advanced characteristics) grow in that diverse, splendid environment. This estimation is according to legendary Harvard ethnobotanist Richard Evans Schultes, whose pioneering work in the

world's greatest rainforest, investigating native people and their plant medicines, has made a major contribution to our understanding of what he referred to as "The Healing Forest."

The Amazon rainforest stretches from the eastern slopes of the Andes, on its western border, to the Atlantic Ocean on its eastern border. No description, however exquisitely crafted, captures the grandeur and majesty of the Amazon. Covering over a billion acres, the area of Amazonia occupies parts of Colombia, Ecuador, Peru, Venezuela, Brazil, Suriname, and the Guianas. The Amazon River basin holds approximately 20 percent of the world's fresh water, and produces approximately 20 percent of the plant's oxygen. Prior to invasion and conquest by Europeans around six hundred years ago, the Amazon was home to an estimated ten million native people. Today that number has dwindled dramatically, to fewer than three quarters of a million native people. The greatest majority of these people currently struggle to survive in a rapidly changing world in which they have few advantages.

Of all places on earth, the Amazon is the most biodiverse, home to more plants, animals, and insects than anywhere. Sadly, the Amazon is being destroyed at a rapid and calamitous rate, for timber, petro-exploration, the cultivation of toxic GMO crops, mining, and the charcoal industry. Just imagine cutting down gigantic, old-growth trees for charcoal! Animals in Amazonia are being systematically

wiped out for the illegal animal trade and for the fisheries and fashion industries; waters are being polluted by gold mining and petroleum waste; native people are shot and hounded off their lands; and the leaders of the world are standing mute in the face of this epic global disaster. The steady, heartless destruction of the Amazon represents one of the most violent and wrongheaded campaigns in all of human history. With the deforestation of the greatest rainforest on earth, money talks and character walks.

Ayahuasca through Time

In the Amazon rainforest, ceremonial use of the potion ayahuasca has long been part of the traditions of numerous tribal peoples. To confuse things just a little, both the brew containing two or more plants and the vine alone are commonly referred to as ayahuasca. Distributed and used in parts of Colombia, Peru, Ecuador, and Brazil, the ayahuasca vine and the prepared brew go by many native names, including *ayahuasca, caapi, dapa, natema, pindé, yajé, mi-hi, oo-fa,* and dozens of other tribal monikers. Over time, the name *ayahuasca,* which is Quechua in origin and means "vine of the soul," has stuck and now is most commonly used. Native people recognize many wild types or varieties of the vine, though today *Banisteriopsis caapi* is considered one species, with variations in color and morphology. For many people, wild caapi is preferable, the

older and bigger the vine the better. But with the great demand for large volumes of caapi, due to the popularity of the brew, there is now a lot of cultivation of the vine. I have been to many villages where caapi grows profusely. The twisting vines are pretty to look at, and cultivating them provides supplemental income for native Amazonian people.

The earliest known non-native account of ayahuasca is attributed to Manuel Villavicencio, a Peruvian midshipman on the frigate *Apurimac,* on which he explored the Ecuadorian Amazon in the 1850s and '60s. Villavicencio described divinatory purposes of use for a vine (caapi) used by the Zaparos, Angateros, Mazanes, and other tribes of the Rio Napo basin: "to foresee and to answer accurately in difficult cases, be it to reply opportunely to ambassadors from other tribes in a question of war; to decipher plans of the enemy through the medium of this magic drink and take proper steps for attack and defense; to ascertain, when a relative is sick, what sorcerer has put a curse; to carry out a friendly visit to other tribes; to welcome foreign travellers or, at last, to make sure of the love of their womenfolk." Basically, ayahuasca was a forest sorcerer's best friend.

In his book *Geography of the Republic of Ecuador* (1858), Villavicencio described his own experience drinking ayahuasca among natives of the Ecuadorian Rio Napo. "When I have partaken of aya-huasca, my head has immediately begun to swim, then I have seemed to enter on an aerial

voyage, wherein I thought I saw the most charming landscapes, great cities, lofty towers, beautiful parks, and other delightful things." Villavicencio eventually went on to become Peru's Commander of the Navy, Chief of the Naval Academy, and Minister of War and Navy. Perhaps partaking of the mysterious vision-producing brew contributed to his great military success.

At the very same time, the great English botanist and Amazon explorer Richard Spruce observed use of the ayahuasca vine among natives in Brazil. Richard Spruce was one of the great Victorian-era explorers, and spent fifteen years investigating native flora in the Amazon and Andes between 1849 and 1864. In 1851, among Tukanoan natives east of Brazil's Rio Negro, Spruce observed an ayahuasca ritual. Offered ayahuasca by his native hosts, Spruce consumed some of the brew. In his rather comical account of the ceremony, Spruce wrote, "I had gone with the full intention of experimenting with the caapi myself, but I had scarcely dispatched one cup of the nauseous beverage, which is but half the dose, when the ruler of the feast . . . came up with a woman bearing a large calabash of caxiri [cassava beer], of which I must needs take a copious draught, and as I know the mode of its preparation, it was gulped down with secret loathing. Scarcely had I accomplished this feat, when a large cigar 2 feet long and as thick as the wrist, was put lighted into my hand, and etiquette demanded that I should take a few whiffs of it—I, who had never in my life smoked a

cigar or a pipe of tobacco. Above all this, I must drink a large cup of palm-wine, and it will readily be understood that the effect of such a complex dose was a strong inclination to vomit, which was only overcome by lying down in a hammock and drinking a cup of coffee. . . ."

Given a dose of caxiri, a fermented alcoholic drink made with the staple starch food manioc and copious amounts of native spit, along with strong mapacho tobacco, alcoholic palm wine, and psychedelic ayahuasca, Spruce must indeed have found himself in a rocky altered state. Anybody would likely seek safe harbor to swoon in an available hammock after such a calamitous binge. Spruce eventually named the caapi vine *Banisteriopsis caapi*. His notes on the topic were brought to public light in the 1908 publication "Notes of a Botanist on the Amazon and Andes," published by London's Macmillan Press. He subsequently commented, "This is all I have seen and learnt of caapi or ayahuasca. . . . Some traveller who may follow my steps with greater resources at his command will, it is hoped, be able to bring away materials adequate for the complete analysis of this curious plant."

Spruce eventually returned home with good specimens of *Banisteriopsis caapi*, which were reputedly stored in somewhat subpar conditions at London's famous Kew Gardens, without question the greatest of all botanical gardens in the world. The vine samples were subsequently analyzed using gas chromatography after sitting around for 115 years, and

were shown to contain the beta-carboline alkaloid harmine. This sample batch of caapi was the first to visit Europe.

As Richard Spruce had presciently suggested, another subsequent traveler did follow in Spruce's botanical footsteps. That man, Harvard botany professor Richard Evans Schultes, first began to explore the Amazon in 1941, and went on to become the most prolific chronicler of that region's plants to date. Influenced by German-American psychologist Heinrick Kluver to pursue an active interest in psychoactive plants, Schultes eventually became the world's foremost expert on the topic, and made numerous important discoveries in this field. Schultes drank ayahuasca on several occasions, and remarked, "My own experiences from participation in many Amazonian *Banisteriopsis* rituals might be summarized by saying that the intoxication began with a feeling of giddiness and nervousness, soon followed by nausea, occasional vomiting and profuse perspiration. Occasionally, the vision was disturbed by flashes of light and, upon closing the eyes, a bluish haze sometimes appeared. A period of abnormal lassitude then set in during which colours increased in intensity. Sooner or later a deep sleep interrupted by dream-like sequences began. The only uncomfortable after-effect noted was intestinal upset and diarrhea on the following day. At no time was movement of the limbs adversely affected. In fact, amongst many Amazonian Indians, dancing forms part of the caapi-ritual."

Schultes wrote numerous important and groundbreaking books, among them *The Healing Forest, Hallucinogenic Plants: A Golden Guide,* and *Plants of the Gods,* which he coauthored with friend and LSD discoverer Albert Hofmann. His book *The Lost Amazon,* of photographs taken during his years in the Amazon rainforest, was edited by his student Wade Davis, whose beautifully crafted paean to Schultes, entitled *One River,* recounts with fascinating detail the years Schultes spent working in the Amazon. Of all those who have gone before or since, Schultes was the fountainhead of psychedelic knowledge. His grasp of the subject was broad, deep, and global. He knew the psychoactive plants of the world, their origins, the compounds in them, their biological activity, the societies who used them, their methods of preparation, and their effects. Unlike many field researchers, Schultes enthusiastically and without hesitation swallowed, smoked, snorted, and otherwise consumed a plethora of psychoactive agents throughout his life and career, to understand their effects. His written materials on the topic stand as enduring foundational works. He encouraged his Harvard students to become personally familiar with the effects of psychoactive plants, and reputedly left a bucket of peyote buttons outside his Harvard office door, with a note exhorting students to partake of them "for further study."

They don't make the same class of hard-as-nails Amazon explorers these days. Schultes's written works on ayahuasca influenced many others, including Harvard-educated Amer-

ican novelist and self-described junkie William Burroughs, who upon reading accounts of ayahuasca by Schultes journeyed to the Amazon for seven months in 1953, in search of "the ultimate fix." The quirky and adventurous Burroughs corresponded with then unknown poet Allen Ginsberg, who subsequently journeyed to Amazonia in 1960. Burroughs's 1963 work *The Yage Letters,* written in collaboration with Ginsberg, provide a narrative of his experiences with ayahuasca. The popular, galvanic Burroughs and eventually famous Ginsberg inspired greater awareness of, and interest in, ayahuasca outside of the academic sphere. Word of the mysterious psychoactive jungle potion began to leak out of the dense green forest from which it originated. Whispers about the plant grew louder over time, into today's cacophony of hyper-energized ayahuasca conversation.

To all the tribal people in Amazonia, regardless of what name they use for it, ayahuasca is a medicine. Thus, ayahuasca is commonly referred to simply as "La Medicina." It is not just *a* medicine. To native people, it is *THE* medicine. No herb, no remedy, no doctor, no healer, no prescription, no route of treatment compares with the vast healing power of ayahuasca. The plant, when used properly, gives access to the spirit world, where information about disease and imbalance can be gleaned, and from which healing forces are unleashed. Visions gained by the use of ayahuasca provide knowledge, and this knowledge is used to heal. Ayahuasca not only gives the *ayahuascero* or *curandero* valuable insights,

it enables them to act as vessels for spirit forces that help to treat diseases of all types, physical, mental, emotional, and spiritual. I go into more detail about the healing aspects of ayahuasca later in the book.

The Ayahuasca Enigma

Perhaps as many as ten thousand Amazonian plants are vines. Virtually all of the plants in the Amazon have leaves. And yet, somehow, somebody figured out to use one particular species of vine (*Banisteriopsis caapi*), and one species of leaf (*Psychotria viridis*), to make a ceremonial, psychoactive brew. The odds of selecting these two plants from all the others is a multi-billion to one long shot. Here, the so-called trial-and-error theory dissolves like sugar in water. Neither the vine nor the leaf is especially distinguished in appearance. There is simply nothing morphological to suggest that either one, or the two together, would in any way be more suitable for the making of a psychoactive healing brew than any other plants. So how did this take place? The shamans will soberly explain that the plants originally told people. They say that this knowledge was communicated directly by the plant spirits. Balk, scoff, or bristle at the notion—this is the world of ayahuasca shamanism, and this is what the shamans say. It is not a metaphor. They mean it.

How do you wrap your mind around this kind of answer? Before you throw your hands up in despair at the

seemingly fantastic nature of this idea, consider that many people possess highly unusual talents. A fine perfumer can identify thousands of aromas when blindfolded. Can you do that? Natives I know can climb tall palm trees in seconds, as fast as you and I can walk on dry pavement. Expert birders can identify hundreds of bird calls. Seafaring navigational experts can accurately predict weather by observing the texture of water. Can you do these things? I would submit to you that plants and people have been in conversation since the beginning of history, and that we are currently so out of touch with nature, most people have lost that skill. But shamans, either native or mestizo (a combination of native and European descent), learn to tune into plant spirits, to glean knowledge from them, and to work with these spirits as allies. The plant spirits are conscious, and work with and through the shaman via a direct transmission of knowledge or information.

The term "plant spirits" throws a lot of people off. Think of it this way. Everything is energy. In fact, nobody has ever been able to find even a single particle of anything solid, what we would call matter. The deeper you go into supposed matter, the more particles of energy you find, whipping around one another at fast speeds. And when you get deep into those particles of energy, you find more particles of energy also speeding around one another at high speeds. So far, all anybody has ever been able to find is energy everywhere. Plants are energy, just

as we are. And every living creature has its own energetic signature, just as every snowflake is unique and every fingerprint is one-of-a-kind. Is it that farfetched to think that plant energy mingles with our own energy? It's not farfetched at all, especially when you reflect on the fact that it's impossible to determine where we begin or end. In truth, we commingle energetically with absolutely everything. Could the energy of plants influence what we think? Why not? When the shamans say that the plants tell them something, they are describing a process by which inherent information carried by one energetic life form is transferred to another energetic life form—us. In the infinite and unlimited cosmic ocean of energy and pure consciousness, all things can be known at any point in space, at any point in time.

In his popular book *The Cosmic Serpent*, anthropologist and psychedelic celebrity Jeremy Narby hypothesizes that DNA, which contains all information about all life throughout all history, basically communicates with itself, through low-level energetic emissions. According to this intriguing idea, the billions of miles of DNA within our bodies are communicating on an ongoing basis with the incalculable trillions of miles of DNA in all other living things. Following this notion further, a shaman is trained to consciously apprehend some of this intergenetic information, much as a perfumer can identify a smell based on sniffing a single molecule of it. So a shaman could gain

specific information from a plant, and sort it into comprehensible knowledge.

While you don't have to accept the plant spirit explanation to drink ayahuasca, it is indeed mind-expanding to consider this possibility. In 1997 I was introduced to a female shaman in the Brazilian Amazon named Edna. She lived in a small, dilapidated shack on the Amazon River, and had no modern conveniences of any kind. I was investigating shamans and their knowledge of plants, and was brought to Edna by somebody who had heard of her. Edna had never met me before. She had been told nothing about me. She was a loud, funny, disheveled woman with a partly toothless grin and a lot of energy. When I told her that I was visiting shamans, she got very excited. It was occasion for something special.

"Wait for me," she said. "I'm going to go get a little plant."

After a quick dash into her back yard, Edna returned with a tiny vassourinha (*Scoparia dulcis*) plant. She sat me down, and touched me all over the head and neck and shoulders with the plant. When she was finished doing that, she looked at me and said, "There are two people. They want to hurt you in business. They sit with you at the same table, but they are not your friends."

Edna described to me in some detail two people who were, in fact, causing me trouble in my business in the United States. Nobody present at the time knew

anything about this. I asked Edna how she knew. "Oh, I don't know it! The plant knows it. See how the vassourinha still has its roots? When I touch you, the plant receives the knowledge. Then the information goes here," she said, pointing to her heart, "and then it goes here," she said, pointing to her head. "The plant tells me. Now do you understand?"

I assured Edna that I understood, as she seemed so enthusiastic about ensuring that I grasped her explanation. But in truth, I didn't understand from personal knowledge. Intellectually I grasped what she was telling me, but I wasn't having her experience. She was obtaining comprehensible information from a small plant. Her ability to interact with plants was, in fact, utterly different from my own.

This same situation would be repeated subsequently with other shamans, all of whom touched me with a plant that still had its roots. And while I am unable to do the same thing myself (or scoot up a sixty-foot palm with ease, for that matter), the talent impressed me. Since that time I have come to know a number of people for whom communication with plants is an everyday event. Why not? It's a great big world.

> There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy. —William Shakespeare, in *Hamlet*

With regard to the ayahuasca enigma, we face two choices. One is that out of billions of possibilities, someone arrived at the random notion to throw pounded *Banisteriopsis caapi* vine and a pile of *Psychotria viridis* leaves into a pot and cook that mixture with water until it was reduced to a concentrated, viscous brew, which they then drank. That idea is massively, laughably farfetched.

The other possibility is that through direct communication with the plant spirits, someone learned which plants to use for the making of the ayahuasca brew, and there the tradition started. Whatever the origin, ayahuasca was made somehow. And despite the brain-teasing aspects of the ayahuasca enigma, it is not necessary to irrefutably settle the matter, or to choose one explanation over another, in order to drink. Many people are very insistent on the trial-and-error theory, insisting that this is the only reasonable explanation for how ayahuasca came about. This gives them a sense of assuredness about what they take to be real. Others are equally insistent with regard to the notion of direct plant communication. I personally dwell in the direct plant communication camp. It's a wonderful topic to toss into a lull at a party. People become highly animated, with lots of gesticulation. It's quite amusing. As an ideological fragmentation grenade, it definitely stirs up the room.

Ayahuasca—the Vine

The "vine of the soul," *Banisteriopsis caapi,* is a liana, a woody tropical vine. The genus Banisteriopsis is comprised of over a hundred species of vines, all of which grow throughout Central and South America. Of all these, caapi has attracted the most attention, due to its use in ayahuasca.

Caapi contains a group of compounds called beta-carboline alkaloids. The earliest phytochemical work on ayahuasca was conducted by a Colombian, Guillermo Fischer Cárdenas, who, in 1923, isolated alkaloidal crystals that he called "telepathine." (Another alkaloid was discovered in 1928 by German pharmacologist and psychoactive drug expert Lewis Lewin, which he called "banisterine.") The name "telepathine" being given to one of the alkaloids was an acknowledgement that many people in ceremony see the same things, in effect shared visions. (I personally have experienced this very thing with several people.) The assumption, initially, was that compounds in the vine caused this unusual phenomenon. Subsequent investigation into the alkaloids in *Banisteriopsis caapi* revealed that in fact telepathine was identical to harmine, a previously discovered compound identified in Syrian Rue, or *Peganum harmala.* Syrian Rue, a plant native to Iran and India and now naturalized in the western United States, produces a natural red dye known as "Turkey red." The seeds of Syrian Rue can be used to produce an ayahuasca "analogue,"

substituting for the caapi vine. Today we know that *Banisteriopsis caapi* contains the alkaloids harmine, harmaline, and tetrahydroharmine.

The beta-carbolines in caapi are MAO inhibitors. They block the activity of certain naturally occurring enzymes in our bodies, called "monoamine oxidases." MAOs also prevent some psychoactive substances from locking on to receptors in the brain and causing mischief; they break down the neurotransmitters serotonin, noradrenaline, adrenaline, dopamine, tyramine, and tryptamine. It is the breaking down of the latter agent in the brain, tryptamine, that concerns us here. The big psychedelic agent in the companion plant used in ayahuasca, *Psychotria viridis*, is DMT, or *N,N*-Dimethyltryptamine, the world's most potent known hallucinogenic substance. When the body's MAO activity is intact, DMT is orally useless. You can eat a handful of pure DMT and nothing will happen. But if you first consume an MAO inhibitor, like the combined beta-carbolines in caapi, then DMT is highly orally active for a time: Chinese New Year in your head, with fireworks, confetti, undulating dragons, and clanging cymbals.

We'll get to *Psychotria viridis* shortly, but to stick with caapi, this vine sets up the brain's receptors for high activity of oral DMT. You can think of the MAOs as doormen at a nightclub. They decide who gets in, and who stays out, to keep the club swinging just the way they want. Psychoactive compounds dressed in punk outfits, notably the potent

vision-inducing agent DMT, want to get into the club and attach themselves to your brain's receptors. But the implacable MAO doormen prevent this from happening. They stand before the door with their arms crossed, shaking their heads no. However, the harmala alkaloids in *Banisteriopsis caapi* change the situation. These inhibiting compounds tell the MAO doormen to take a nice, long coffee break. The MAO doormen split the scene for a while, and the DMT bursts into the club. All heaven breaks loose.

This is the utter ingenuity of ayahuasca as a combinatory psychoactive brew. The beta-carboline-rich caapi is needed for the DMT-rich *Psychotria viridis* to deliver its potent psychedelic DMT payload to receptors in the brain. Once the DMT gets to its target receptors, the ayahuasca journey begins in earnest. This, at least, is the chemical explanation. One plant without the other doesn't do the trick.

Yet there is more to *Banisteriopsis caapi* than MAO inhibition. Compounds in the vine are also CNS-stimulating, antibacterial, antimalarial, and help to fight the development of Parkinson's disease. At least in some samples of *Banisteriopsis caapi,* researchers have detected the presence of the powerful vision-inducing psychedelic agent 5-Methoxy-*N,N*-Dimethyltryptamine. This may explain cases in which people have drunk highly concentrated potions made solely from the vine, and have had visions. It is also possible, though, that the beta-carbolines in a caapi-only brew activate the body's own naturally produced DMT. For the most

part, those who have drunk a caapi-only brew have not had classic ayahuasca experiences with full visions.

Ayahuasca—the Leaf

In the world of ayahuasca, the vine caapi gets most of the attention. But the admixture leaf from the plant *Psychotria viridis* is an essential ingredient in the brew. Deriving from a shrub native to wet lowland tropical forest areas in Central and South America, the leaf contains the psychoactive alkaloid DMT (N,N Dimethyl Tryptamine). DMT is the most potent vision-inducing agent known. And oddly, DMT is not only found in many hundreds of plants all around the world, it is also manufactured in our own bodies. But thanks to our previously described hardworking MAOs, we do not trip on DMT all day long. This is probably a very good thing.

Psychotria viridis, or chakruna, is widely used throughout Peru, Colombia, Brazil, and Ecuador, and is the most commonly employed DMT-containing admixture plant in Amazonian ayahuasca. However it is not the only possible DMT-containing plant for making ayahuasca in the Amazon. Some native people also employ other DMT-containing plants as well. When I first began to investigate ayahuasca in the Brazilian Amazon in 1997, a shopkeeper on the Rio Negro took me out into the forest and harvested for me a purported DMT-rich vine that people in that area used

in ayahuasca in place of chakruna. But for the most part, chakruna is it.

As is the case with all known plant species that grow in and among disparate tribal groups with unique languages, *Psychotria viridis* goes by several names. It is known variously as *yajé, chakruna, tupamaqui, rami-appani,* and *kawa-kui.* I spend most of my ceremonial time in the Peruvian Amazon, where *Psychotria viridis* goes by the name "chakruna." This moniker seems to have stuck in most of the conversation and written materials on ayahuasca, and is the name I prefer to use.

Work conducted by Dennis McKenna, J. C. Callaway, and Charles Grob shows that DMT concentration in chakruna ranges from 0.1 to 0.66 percent dry weight. According to studies conducted by Ralph Metzner, DMT content of chakruna varies according to time of day, with the highest concentration at dawn and the lowest concentration at midnight. This suggests that to obtain the highest psychoactivity from chakruna, it will ideally be harvested in the early morning. According to Metzner, by 10 a.m. the DMT value of chakruna has declined.

DMT—the Spirit Molecule

There is a significant difference between substances that are simply psychoactive and those that are also psychedelic. Coffee, for example, is psychoactive. It alters mental state quickly, producing alertness. Beer is psychoactive. In

small amounts it is a stimulant, and in larger amounts it is a sedative hypnotic. The world's most beloved confection, chocolate, is made from cocoa, a psychoactive food that alters neurochemicals in the brain and produces a feeling of well-being. Many people self-medicate with chocolate.

Psychedelic substances are of another order. The term "psychedelic" was first coined by British psychiatrist Humphrey Osmond in 1957, and means "mind-manifesting." This name refers to visionary agents, also known as hallucinogens. The psychedelic drugs include LSD, mescaline, psilocybin, DMT, San Pedro cactus, and other whole plants and fungus, including peyote, magic mushrooms, ayahuasca, salvinorin A, and other agents. Cannabis straddles both realms. Smoking cannabis produces a high that is clearly an altered state. Thus cannabis is psychoactive. But eating enough of the pure resin of cannabis will produce a powerful visionary trip that is appreciably more extreme. That's psychedelic. Yes, you can in fact trip your head off from eating cannabis.

Among the psychedelic agents, the compound regarded as the most potent of them all is DMT, or *N*,*N*-Dimethyltryptamine. This substance, found in chakruna, produces visions, often in a very lavish way. DMT unquestionably plays a key role in the activity of ayahuasca. As I've previously described, it's the DMT in chakruna that really kicks the ayahuasca journey into full gear. The fantastic visions that people experience are attributable to DMT. But DMT is

not ayahuasca. DMT is a single, crystalline substance found throughout the plant kingdom and in human blood, cerebrospinal fluid, and urine.

Whether DMT is manufactured in the brain is still a matter of ongoing investigation. DMT has been detected in the pineal gland and spinal cord of the rhesus macaque. This leads many to believe that it may also be produced in the human pineal gland as well. To date this has not been confirmed. We can assert, though, that DMT is both exogenous (from outside sources) and endogenous (from within). Medical doctor Rick Strassman, in his popular book *DMT: The Spirit Molecule,* hypothesizes that the human pineal gland may express a concentration of DMT at the time of death. This, he proposes, explains visual and other phenomena experienced during near-death experiences. A classic example of such a vision is that of traveling through a luminous spiral tunnel, and emerging into pure, brilliant white light. This phenomenon is similar to experiences occurring during DMT-related journeys with ayahuasca, pure DMT, and the DMT-containing snuffs.

Many people have said to me "Ayahuasca is DMT, right?" Definitely not. While DMT is an essential chemical constituent of the ayahuasca brew, it is not the whole thing. And I would say that while DMT plays a valuable role in ayahuasca, it is not the *source* of visions, but rather an agent that cracks open the mind, allowing interdimensional consciousness to occur more freely, with ensuing visions of all

types. I like to think of DMT as a key that opens locks in the mind, throwing open what Aldous Huxley referred to as "The Doors of Perception."

In its pure crystalline form, DMT is typically smoked. This produces a very rapid and intense psychedelic experience that lasts for a short period of time, about twenty minutes to half an hour. In the early 1970s, smoked DMT was referred to as "the businessman's trip," because it could be experienced during a lunch break. In ayahuasca, DMT takes more time to work. This allows the person in ceremony to move into the visionary state more gradually, rather than being abruptly rocketed off into the psychedelic stratosphere. That said, it's important to point out that on occasion ayahuasca does come on very quickly. This is not typically the case, but it does happen. The same amount of brew, from the same batch, on two different nights, can produce "lift-off" more quickly or more slowly. This is one of many mysterious aspects of ayahuasca.

Years ago, at a center in the Peruvian Amazon, shaman Ricardo Amaringo led ceremony, and there were only four of us drinking: three young women from New York City, and myself. The ceremony was probably my twentieth or so, but the very first for the women from New York. Ricardo was apparently up for a strong ceremony, and so he served us all full glasses of ayahuasca. I had drunk full glasses before, and I was comfortable with it.

What I wasn't up for was how alarmingly rapidly the ayahuasca came on. Typically when I drink, the brew comes on in about forty minutes. This time, I was ripping high, with the sensation of bobsledding into an abyss, after just seven or eight minutes. The ayahuasca, frighteningly strong, kept coming on with ever-greater intensity for over an hour, and remained at a shrieking peak. I spent the night shaking, feeling terribly lonely, and hanging on by a fingernail. The three women from New York, entirely unaccustomed to ayahuasca, also got off very quickly, and spent the evening physically clinging to one another like struggling shipwreck survivors in a wind-lashed gale. That ceremony was something of a psychedelic mishap.

The next day, Ricardo asked me how my ceremony was. I shook my head and said "fuerte," strong.

Ricardo repeated "fuerte" and walked off, laughing and shaking his head.

Previous full glasses of ayahuasca had produced strong effects, but not with such tremendous speed. I am not certain what accounted for the rapid nature of it that evening. This never happened again, thankfully, as I found the experience quite disorienting. But if you drink ayahuasca more than a few times, you are likely to experience significant differences in both the strength of the effects, and the speed with which the brew comes on. Caveat emptor—ayahuasca is a very powerful medicine.

DMT is present in hundreds of plants, including several species of acacia, the bark of *Mimosa hostilis*, chagropanga (*Diplopterys cabrerana*), phalaris grass, Anadenanthera, and the inner bark of several species of Virola trees. Possession, use, sale, and preparation of DMT-containing substances has been illegal in the U.S. since the 1970 passage of the Controlled Substances Act, and is illegal in some other countries including Canada, France, New Zealand, and the UK. In nature DMT is very broadly distributed in the plant kingdom. Common ornamentals like acacia trees and shrubs, for example, are found worldwide. This makes illegal possession of a DMT-containing substance a total joke, inasmuch as plants containing the psychedelic are sold at virtually every garden store. Sadly, policymakers who craft drug laws typically know very little about the substances they outlaw. In general, much drug policy is built on a solid foundation of spectacular ignorance, bolstered by lavish superstition and heavy doses of hearsay.

In the cases of Virola and Anadenanthera, Amazonian natives prepare potent psychedelic snuffs from these species. Like smoked DMT, these snuffs produce rapid mind-altering effects. The first known written account of use of a DMT-containing psychoactive agent is found in the 1496 book *An Account of the Antiquities of the Indians: Chronicles of the New World Encounter,* written by Spanish friar Ramone Pane of the Hieronymite Order, who journeyed with Columbus on his second voyage in 1494. In that book, Pane described

the use of a psychoactive snuff among Taino natives on the island of Hispaniola, which today is Haiti and the Dominican Republic. Subsequent explorers, including Prussian naturalist Alexander von Humboldt, who explored Amazonia in the early 1800s, also wrote about this practice. Harvard ethnobotanist Richard Evans Schultes chronicled the use of psychedelic snuffs among Amazonian tribes-people, and tried the snuffs himself, in addition to taking remarkable black and white photographs of native snuff rituals. Early traditional use of DMT-containing snuffs has been established in Chile, Colombia, Peru, Venezuela, and Hispaniola.

Canadian chemist Richard Helmuth Frederick Manske first synthesized DMT in 1931. In 1957, American chemists Anita Paradies and Francis Hochstein identified DMT in a fluid extract of a leaf commonly mixed with *Banisteriopsis caapi.* They described their finding in the *Journal of the American Chemical Society.*

The native people of Amazonia discovered several DMT-containing plants in different regions, and developed clever ways to make use of them for the purposes of divination and spiritual excursions. We may never know how native people identified these plants and figured out their various methods of preparation and use. But they became adept at doing so, and in the case of ayahuasca produced the longest-lasting, most profoundly potent DMT-containing preparation of any kind, of all time. For while the snuffs last a short while, ayahuasca can keep you going in a visionary

state for several hours. Though their chemistry may seem rudimentary to us, the natives of the Amazon established a formula for the world's most potent psychedelic. Ayahuasca is a master-stroke of native biochemical ingenuity. This feat was accomplished in the most complex living laboratory on earth—the Amazon rainforest.

Making Ayahuasca

Ayahuasca preparation is a labor-intensive and time-consuming process. To make about one liter of finished brew requires several kilograms of caapi, a very large pile of chakruna, a twenty-five-liter or larger pot, and lots of water. The first step involves pounding the vine. Caapi is fibrous and tough, much like thick hemp rope. For efficient brewing, the vine needs to be pounded, to break up the exterior bark and soften up the tough fiber. Forget Pilates. If you want to build strong, well-toned arms, pounding caapi is a superior regimen. Pounding is accomplished with either a heavy wooden mallet, or a piece of heavy pipe. One shaman I know who makes large quantities of ayahuasca at a time puts his caapi through a chipper-shredder, but many people dislike this approach because they feel that it doesn't honor the vine. Whatever method you choose, breaking up the caapi for a batch of ayahuasca will take an hour or more. It's a good meditation, and a wonderful group activity for those who are going to journey together later.

Once the caapi is well pounded, a portion of it is placed into a large cooking pot. Atop the pounded vine, a large quantity of chakruna (*Psychotria viridis*) leaves are added. Then another layer of pounded vine is added, then another layer of leaves. When the pot is filled with alternating layers of pounded vine and leaves, water is added, almost to the top of the pot. If the pot is large enough, as many as forty liters of water may be used. Then the mixture is cooked over a very hot fire for several hours.

For the first few hours, ayahuasca goes at a furious boil. The pot roils, bubbles, and gurgles, and the characteristic pungent aroma of the brew fills the air. Often the person making the brew will blow mapacho smoke into the pot, as a way of creating an even more sacred and protected space around the preparation. As the hours pass, the liquid in the pot begins to evaporate. Once the liquid is greatly reduced, the brew is strained, and just the liquid, minus the solid remains of the caapi and the chakruna, is placed back onto the fire. After several hours, perhaps eight or so, the ayahuasca is finished. What was a huge potful of tea-colored fluid is now a dark, viscous brew, sometimes as thick as molasses. The whole pot may yield just a liter (about thirty-three ounces) of this concentrate. This liquid is "La Medicina."

The ayahuasca is left to cool. Most shamanic centers will prepare enough ayahuasca to last a couple of ceremonies. A standard dose is between one and two ounces. Ironi-

cally, most shamans and curanderos store their ayahuasca in plastic soda bottles. The favorite soda in much of South America is a wretched drink called Inca Kola, which looks like brilliant urine and smells like Juicy Fruit gum. In my years of drinking, I've seen ayahuasca stored in Inca Kola bottles more often than in any other vessel. Once in a while, you'll see ayahuasca stored in a Nalgene container, and on rare occasion in a ceramic jug. But for the most part, the Inca Kola soda bottle is it. Go figure.

Once made, ayahuasca can be stored in a variety of ways. Small batches of one or two liters can simply be placed in a container with a screw top and left unrefrigerated. The ayahuasca will get a bit tangy, but it won't go bad. When large batches are made, freezing is an effective way to preserve the brew. I know one shaman outside of Iquitos who makes enormous batches of ayahuasca, dozens of liters at a time, and stores the brew in a large oil drum with just a wooden lid placed on top. The ayahuasca keeps just fine.

Other Admixture Plants

Several other plants may be added to ayahuasca. While the basic brew is made from *Banisteriopsis caapi* and *Psychotria viridis,* many shamans, and various lineages, adhere to recipes of preparation that incorporate other plants. These recipes vary greatly. Like chefs, shamans have their specific variations on composition of the brew.

The Amazonian tobacco *mapacho* is often added to the brew in small amounts, as is *toé* or *Brugmansia.* Both are toxic in large amounts, so carefulness is critical. In the following section on Other Ceremonial Plants I describe these more fully.

Additional additives may include coca leaf, the caffeine-bearing Ecuadorian tea *Ilex guayusa,* and various tree barks presumed to impart the protective spirits of their hosts into the brew. A few shamans make very elaborate ayahuasca recipes. The most elaborate I have ever seen is made by Don Alberto Davila of Herrera, Peru, who is the maestro shaman at Blue Morpho Shamanic Center. His recipe requires fourteen different plants, including ten different tree barks. I have helped to prepare that brew on a couple of occasions, and have drunk it about ten times. It is very strong. However, I prefer the traditional, basic two-ingredient caapi and chakruna brew, such as is made by maestro shaman Ricardo Amaringo at my shamanic home, Nihue Rao Centro Espiritual, near the village of Llanchama, outside of Iquitos, Peru. To a great extent, it's a matter of what you prefer. The most important thing is that ayahuasca is made well and thoughtfully, and is going to provide an excellent journey without causing harm. More on this in Chapter 5.

Consistency of the Brew

The concentration and consistency of ayahuasca varies broadly, depending on who makes it. The longer it is cooked, the more water evaporates, and the more concentrated the brew becomes. It also becomes thicker with evaporation. The Brazilian-based Santo Daime Church, for example, makes a somewhat thin ayahuasca as their ceremonial sacrament. This makes the brew easier to drink, and less radical in its effects. There is probably no group that makes larger quantities of ayahuasca at one time than Santo Daime. They produce huge batches, and ship it to ceremonies all over the world.

At the shamanic centers where I have engaged in ceremonies, the ayahuasca has been thick and more concentrated. Sometimes the brew is as thick as honey. And because the vine contains starches, the honey-thick ayahuasca is often sweet, in addition to being horrendously bitter and tough to swallow. At Nihue Rao, for example, the ayahuasca is typically the consistency of honey, with a challenging flavor and a potent effect.

Sometimes you get blobs of more concentrated ayahuasca in a batch of brew. These blobs are like chewy jelly. They are even more concentrated than the somewhat more fluid brew in which they are found, and they produce powerful sensations when they dissolve in the digestive tract. Once I drank a small glass of ayahuasca that contained several

marble-size, jelly bean–like blobs. Throughout the night, the blobs dissolved, and as they did I had the sensation of small psychedelic depth charges going off inside of me.

The Flavor of Ayahuasca

I have yet to hear anybody remark, "Gosh, that's great-tasting ayahuasca." As a rule, ayahuasca flavor runs from bad to very bad. The brew is harshly bitter, often hard to swallow, and imparts a lingering flavor that most people do not savor in any way. It's typical for people to rinse their mouths out with a swish of water after drinking ayahuasca, and to spit out any residual taste. One shaman, Ronnie Wheelock, told me that after sixteen years of drinking ayahuasca, he finally did not mind the flavor. But delicious? Not ayahuasca.

Just the sight of a pot or bottle of ayahuasca provokes in me some of the early stage sensations of a journey. From sitting for many nights in ceremony for several years, I have learned that the brew will produce a night of strong experiences. For me, ayahuasca is a miraculous agent. It's clearly not for everybody. But for those who feel an affinity for it, ayahuasca is marvelous.

Now you have the basics about ayahuasca. Let's move on to additional plants, shamans, ceremonies, and other aspects of ayahuasca journeying. We have much territory to cover.