ATW-27
The Green and the White - II. Green Stuff

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Mr. Richard H. Nolte
Institute of Current World Affairs
535 Fifth Avenue
New York, New York 10017

Dear Mr. Nolte:

The coca shrub, Erythroxylon coca, is widely cultivated in eastern Peru and Bolivia, its probable area of origin. It grows there in the lush, green valleys of the eastern slopes of the Andes -- a region known as the montaña -- often at altitudes well above 5000 feet. It is also cultivated, though less extensively, in northern Chile, Ecuador, southern Colombia, throughout the Amazon basin, and in many parts of the Old World, principally Java and Ceylon.

I first saw living coca while traveling by car in Bolivia nine years ago. Steep hillsides were planted with the neat shrubs, most of them about three feet tall. And in La Paz, the Bolivian capital, whole sections of the open Indian markets were given over to coca vendors. In these markets, rows of Indian women sat in identical postures, each before a mountain of dried coca leaves on a blanket. Each woman had a balance and a supply of large plastic bags, and for about 25 cents one could buy a great bagful of coca. Also set out on the blanket were dark-gray, molded shapes of highly alkaline substances that must be used with the leaves. The alkaloids of coca are not released from the leaf except in an alkaline solution; Indians in different parts of South America have come up with different ways of alkalinizing their saliva.

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In some places quicklime is used; in others, powdered seashells rich in lime or the ashes of various plants. In Bolivia, most commonly, stalks of the quinoa plant, a local grain, are burned to ashes, mixed to a paste with water, then molded into shapes and dried. Sometimes this material is called lejía, the Spanish word for "lye," and it must be used with care because it is highly caustic. The first time I bought coca in the La Paz market, the woman who sold it to me showed me how to put a handful of dried leaves into my mouth, moisten them into a wad, then bite off a tiny chunk of lejía and mix it thoroughly with the wet leaves to avoid having it come into direct contact with my tongue. (I still got a few minor burns before mastering the technique.) The alkalinizing substances differ in strength and flavor from region to region. In parts of Colombia, coca-chewing Indians carry small gourds of white powder (called simply cal, "lime"), which they spread on their quid of wet leaves with a stick. At times I have found it easier to use pinches of ordinary baking soda than the more powerful types of Indian "lye."

The flavor of coca is quite delicious, especially mixed with a bit of cal, lejía, or baking soda, all of which add a nice saltiness. Most plants that contain alkaloids are bitter, and many leaves contain astringent tannins, but coca, especially when freshly dried, has a pleasing taste that most people like right from the first. In chewing coca the idea is to build up a chaw of leaves about the size of a walnut and to maintain that between the cheek and gums, letting the juices trickle down the throat. The leaves are not swallowed. After 45 minutes or so, all the active material is extracted, and one can spit out the remains.

During the time that I stayed in La Paz it was very cold in the mornings, and the lack of hot water where I was living made it an ordeal to get out of bed. I found that a morning chew of coca made it easier to start the day. I had never tried

cocaine then and had no particular expectations of the leaves except that I had read a number of testimonials about them. I enjoyed the taste and the novel sensation of numbness in the mouth and throat, but I was disappointed that I did not feel high. At that time I did not realize that the high of coca is subtle, that it requires learning to appreciate, and that set and setting play a great role in shaping it.

I brought a bag of coca leaves and a bar of lejía back to the States from that trip and kept them around as curiosities. I remember that during my second-year pharmacology course in medical school, I shared them with several of my classmates and showed them how to chew. All of us experienced anesthesia in the mouth and liked chewing the leaves, but, again, none of us noticed that we were high. Thereafter, I lost interest in my bag of leaves and eventually threw them out.

I did not come across coca again until a number of years later in the Colombian state of Cauca. Cauca is a mountainous region of southwest Colombia, and many of the Indians who live there are coqueros. But in Colombia, unlike Bolivia, coca is technically illegal. The leaves are not sold publicly except in small quantities by vendors of herbal medicines. In Popayán, the state capital, one can buy cocaine with ease, because the city is on the Pan American Highway. Much of the cocaine extracted in illicit laboratories in the Andes makes its way through Popayán en route to Bogotá and points north. But to get coca leaves in Cauca one must go to the hinterlands where Indians raise the shrub for their own use.

On one of my visits to Cauca I got some leaves from friends and chewed them with a bit of cal. That time I noticed the high, and the experience left me eager to find out how to use the plant for best effect. Soon after, I met some Americans who were living in a remote valley, several hours hike over difficult terrain from the nearest village. They told me that coca made it possible for them to hike back and forth when they

needed supplies.

Chewing coca to hike in the mountains is one of the most traditional uses of the leaves. Ancient Inca runners relied on coca to cover great distances in the high sierra, and their modern descendants still measure the length of journeys in terms of the cocada -- the period of time that one chew of coca will sustain them. There are many reports of Indians being able to endure great physical hardship with little food as long as they have adequate supplies of coca. Here, for example, is a description from 1913 of the endurance of Indian porters near Popayán:

> After eating a simple breakfast of ground corn porridge, they would start with their heavy packs, weighing from 75 to more than 100 pounds, strapped to their backs. All day long they traveled at a rapid gait over steep mountain spurs and across mucky swamps at an altitude that to us, without any load whatever, was most exhausting. On these trips the Indians neither rested anywhere nor ate at noon, but sucked their wads of coca throughout the entire day. These Indians we found very pleasant, always cheerful, happy, and good natured, in spite of the fact that their daily toil subjected them to the severest of hardships and the most frugal fare.

(J.T. Lloyd, A Treatise on Coca. Drug Treatise XXVII. Cincinnati, Ohio. Lloyd Brothers, 1913. pp. 12-13.)

First-hand reports about Indian uses of coca usually emphasize that regular chewing of the leaf is consistent with good health, high social productivity, and long life. Moreover, much of the literature on coca talks about the therapeutic virtues of the leaf: not only is it not harmful, it is said to provide nourishment for the body and to be useful in the treatment of many kinds of illnesses. On the other hand, some authorities who have no first-hand knowledge of Indians condemn coca-chewing as a destructive habit.

To get more information on coca I decided to visit some Indians who use it regularly. I also decided not to do that in the Andes, where cocaine has become so prominent. On the advice

of a Colombian botanist friend, I flew from Bogotá to Mitú, the tiny administrative capital of the huge territory of Vaupés, a stretch of the Amazon basin that borders on Brazil. Mitú's main street runs a few blocks from the unpaved airstrip at one edge of town to the bank of the broad Río Vaupés at the other. In Mitú I found two Cubeo Indian boys who took me in a motored canoe up the Vaupés to the Río Cuduyarí, one of its tributaries, and then up the Cuduyarí several hours to a tiny village of Cubeos. I was assured that the Cubeos use coca constantly and are amenable to visits.

I arrived near midday on a brilliantly sunny Saturday last January in the midst of Amazonian "summer" -- the dry, hot season when the rivers are low and clear and tranquil. It was a steep climb up the river bank to the village, a rectangular layout of ten thatched houses surrounded by forest. No one was outside; the sun was too intense. I had a note of introduction from the Catholic priest at Mitú to the schoolteacher of the village, but when I found his house, he was out fishing, and his wife spoke only a few words of Spanish. The boys explained whoI was, and she indicated that I was welcome to wait. She offered me a large gourd of chicha, a natural, fermented beer made from yuca (tapioca root), and a large chunk of casave, the bread made from the same root. There was a gourd of fiery hot sauce, made from chili peppers and fish, for dipping the casave. As I ate and drank, the schoolteacher's wife went back to the cooking area and resumed her work of grating bitter yuca tubers -- one step of the long process needed to remove their poisonous juices.

The house was spacious, dark, and unfurnished except for one table, a hammock, and a number of low, carved stools. An open fire burned low in one corner. I sat on one of the stools, looking out the door, relaxed by the rhythmic sound of grating. Outside, the sun was blazing. A few scruffy dogs lay in patches of shade, gnawing on fish bones. In the middle of the rectangular "plaza" of the village was an unfinished structure, the

largest building of all, built of sturdy beams. I learned later it was to serve as a school and assembly house.

Before long the schoolteacher appeared with a mess of river fish. He was a short, intense man in a bathing suit and flowered shirt who spoke good Spanish. I addressed him as maestro and presented him with my note. He told me I was welcome in the village but would need the permission of the chief (El Capitán) to stay. I told him of my interest in coca and he said there would be no problem in learning about it if I stayed. Then he told his wife to bring me another gourd of chicha, gave her the fish to cook, and played with his small children.

El Capitán was an older man, very warm and thoughtful, who told me I could stay as long as I wanted. I assured him that I would pay for anything I needed and had brought with me sufficient gasoline for the return trip. (The boys who brought me had left for Mitú, but the village had a communal motor.) He showed me to one of the thatched houses, which was unoccupied, and said I could string up my hammock there. As I unpacked, he told me that it was a quiet time for him. Some of the people had gone off for several months to cut rubber, and only about thirty persons were now living in the village. Besides, it was puro verano ("pure summer"); he gestured to the brilliant blue sky and puffy white clouds. That meant an abundance of fish, safe travel on the rivers, and a time of good health. I explained to the chief that I was interested in learning how his people cultivated plants, especially coca, and how they prepared them for use. He said he would be happy to take me to his own fields to show me.

Later in the day I spoke again with the teacher. He told me that coca, in the Cubeo language, is patu. Patu was the first Cubeo word I learned. As we talked about life in the village, a distant thumping started up. The maestro stopped talking. "Let's go next door," he said, "They're preparing some patu now." We walked to the next house, where the sound was coming from. Its

source was a tall wooden mortar, about eight inches in diameter and three feet high. The woman of the house was vigorously and rhythmically pounding a large wooden pestle. She spoke a few words to a young girl, who promptly served me a gourd of chicha. I was coming to like the tangy drink.

After a few minutes the woman stopped her work and poured the contents of the mortar into a large gourd. What came out was a fine, bright green powder. She then reached into a pile of fluffy, gray ashes near the fire, scooped up a big handful, and added it to the powder, mixing with her hand until the color became a uniform, rich gray-green. Then she stopped as the maestro introduced me and explained that I was interested in coca.

"Would you like to try some?" the man of the house asked. I said yes. He took a metal can off the shelf, opened it, and extracted a heaping spoon of the same gray-green powder, offering it to me.

"I don't know how to use it," I said. I had never seen coca prepared this way, although I had read that Amazonian Indians use powdered leaves mixed with ashes that supply the alkalinity. The man indicated that I should dump the whole spoonful into my mouth. I did so, and in the next instant fell on the floor choking.

¡Cuidado! Es peligroso, the maestro exclaimed. ("Careful! It's dangerous.") The powder was so fine that it created a miniature dust storm in my mouth. Inhaling before the dust settled was not advisable, it seemed. After a few difficult minutes, I recovered my ability to breathe and concentrated on masticating the coca powder into a workable mass. From time to time I breathed out green "smoke," but soon all the powder was moistened. I now had a large pasty lump in my mouth that I tucked to one side between cheek and teeth. Once the danger was over I was able to concentrate on the excellent flavor of this Amazonian coca preparation. It was truly sabroso , as I told my hosts -- a rich, toasted green taste, slightly smoky. Within a few minutes I felt

a pleasant tingling and numbness spread through my mouth and down my throat. Soon after, I felt a warm, satisfying glow in my stomach. And then, little by little, my mood brightened, and I found myself exchanging warm smiles with the people in the house. They were all delighted that I enjoyed their patu.

I maintained the gob of paste in my mouth for about an hour, swallowing the juices that accumulated and occasionally licking off a dab and rolling it around my mouth. One advantage of this preparation is that it all dissolves eventually, leaving nothing behind to spit out. The good feeling it gave me lasted for some time after I had nothing more in my mouth; in fact, it never really ended but simply trailed off imperceptibly. By then the sun was setting, a lovely sight, and soon afterward a magnificently clear, starry sky was overhead.

The days I spent in the Cubeo village were long and placid. Each morning people went off to tend their fields, the women were forever working yuca into casave or chicha, and at all hours of day and night men would go off in canoes to fish. The basic diet of the village was river fish grilled over open fires, casave, and chicha, with occasional ears of maize, dry-roasted. Hot chili peppers and limes were available and delicious pineapples as well. The other staple was pupuña, a starchy, orange-colored palm fruit that was boiled, mashed, and fermented into another kind of chicha. The people looked well-fed and in good health, although all of the children appeared to have gastrointestinal parasites. The most distressing environmental hardship was sandflies that abounded in great numbers and inflicted very irritating bites.

On the third day of my stay, the capitán took me with him in the morning to see his fields. I followed him along a trail through the forest for about half an hour until we came to a huge clearing planted with yuca of all sizes. Pineapples grew haphazardly among the yuca, along with a few pepper plants. I stumbled across giant fallen trees to keep up with the chief

as he led me to his coca patch. "Patu," he said, gesturing to the little bushes. There were perhaps fifty plants, all about three feet tall, which looked as if they were being harvested continually. I rubbed some of the glossy-green oval leaves between my fingers. "And every household grows its own coca?" I asked. "Yes," the chief replied.

"Have the Cubeos always used coca?"

"Not always," he told me. "The old people say it was brought here a long time ago, but no one remembers how." He pointed to a large Cecropia tree. "Yarumo," he said.

"What do you use yarumo for?" I asked.

"For the ashes," he explained. Cecropias are common denizens of the Amazon forest. They have very large compound leaves with five leaflets arranged like the fingers of a hand.

"That's yarumo blanco," the chief went on, showing me that the underside of the leaves was silvery-white. "It makes the best ashes to mix with coca." I told him I hoped I would have a chance to prepare some coca with him from start to finish. He said we could do that soon.

That afternoon, nearly everyone in the village gathered in the shade of the unfinished school building to drink chicha, talk, and smoke the cigarettes I had brought as presents. Before long, several of the young men began playing reed flutes, and soon someone brought out the coca can and took it around, offering some to everyone. Most of the men helped themselves to generous amounts, but the adolescents and women generally declined. I took a spoonful and got it into a workable lump with only a few coughs. The impromptu party continued till sunset, interrupted only by a refreshing swim in the river. Great pots of chicha were served up throughout the afternoon, and the coca made another round. Chicha is mildly alcoholic, of course, but it does not seem possible to get anywhere near drunk on it. I discovered that it was possible to drink from a gourd of chicha without disturbing the lump of coca in my cheek, letting it dissolve at its own rate.

My friend the schoolteacher became quite mellow after a number of gourds of chicha and began to tell me how proud the Cubeos were of their heritage as indígenas, natives of the Vaupés. Some of the men began dancing while playing their reed flutes, and in the fading light the rhythm of their fast steps and the curious melody put me into a trance-like state. I recalled that the Kogis of northern Colombia use coca to induce meditative states in religious ceremonies.

"Tomorrow, we'll go to cut trees." It was the chief speaking to me.

"Cut trees?" I asked.

"To make more fields," he explained. "We'll leave early."

"Early" meant just as the sun was coming up. The men of the village painted their faces with a dark red pigment and assembled at the house of one family, armed with machetes and axes. Then we all drank chicha, fortified ourselves with good doses of coca, and marched off into the forest. By now I had learned how to put the green powder into my mouth without difficulty, and I found myself marching along in the column of Cubeos, swinging my machete, humming a tune, and feeling increasingly happy. The coca seemed stronger at this hour of the morning. Its warm glow spread from my stomach throughout my body. I felt a subtle vibrational energy in my muscles. My step became light, and there was nothing I wanted to do more than just what I was doing.

After a long, brisk walk we arrived at the area to be cleared and spread out to tackle the trees. The Indians were very protective of me and took great pains to keep me at a distance when a giant tree was about to crash down. We worked for about three hours until a large section of forest had been cleared of trees and we were all tired, thirsty, and hot. The men explained that in a short while the area would be burned out, then eventually planted with yuca. We walked back to the village where the women awaited us with chicha and casave, then

went to the river to bathe. It had been a good morning's work.

The following day, the chief took me out with one of his young daughters to gather coca from his fields. We picked leaves from each plant, being careful not to remove the topmost. It took us about an hour to fill a large basket. The sun was so hot that I was glad when we finished our harvesting and started back. On the way we paused to collect a bunch of Cecropia leaves to burn to ashes.

Back at the chief's house, the basket stuffed full of coca leaves was emptied into a large earthenware cooking pan, about four feet in diameter and eight inches deep. Made of baked river mud, it was usually used for cooking casave. The chief's wife placed the pan over an open fire, adding more wood to build up a good heat. Then, using her hands and a large paddle woven of reeds, she kept the leaves in constant motion, tossing and rolling them so that they would toast uniformly. She did this for about a half hour until the leaves were crisp and dry, retaining their bright green color.

I put some of the toasted leaves in a plastic bag to take back to Bogotá. The rest were placed in one of the tall wooden mortars I had seen in use on the day of my arrival, and the chief and I and an old man who joined us took turns pounding them into powder. Meanwhile the Cecropia leaves were placed over the fire to burn. When the coca had been reduced to a brilliant green powder, the chief examined some for fineness and then added ashes until the color darkened to his satisfaction. He next placed this mixture into a fine muslin sack and shook it vigorously inside a can; only the finest dust sifted through. When the flow of dust through the sack began to ebb, he poured the remaining powder back in the mortar -- it was now bright green again -- added more ashes, and resumed pounding. We repeated this operation five times, helping ourselves to the finished product to make the work go faster. At the end of the fifth sifting, all that was left in the sack was some fiber; the can was full of gray-green patu, just the same as that in every

household in the village. The experience of working with coca in this long and natural way, starting from the living plant, intensified my appreciation of the prepared material.

During the time that I lived with the Cubeos I saw coca used only at the start of communal work parties and at fiestas, when it was consumed in moderation, mainly by men, always accompanied by chicha and music. Although every house had a supply of prepared coca, I saw no one dip into the supplies except in the company of others for purposes of work or recreation. Young people rarely used it. I took coca almost every day and each time found it tasty and pleasantly stimulating. I developed no craving for it, no desire to increase the dose, and no sense of becoming tolerant to the effect. I saw no evidence among these Indians that coca use was addictive or dependence-producing, nor that it was injurious to health. Some old men in the tribe had used coca all their lives and still were satisfied with the occasional consumption of ordinary doses.

When I finally left the village to go back to Mitú and thence to Bogotá, I carried with me my can of powder and bag of toasted leaves. I was eager to tell people about the virtues I sensed in this plant and to explore its possible uses in modern medicine.

Sincerely yours,

Andrew T. Weil

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Received in New York on March 21, 1974.