

From: Wade Davis. 1996. One River: Exploration and Discovery in the Amazon Rain Forest. New York: Simon & Schuster.

In the early 1950s the isolation that enveloped the Kofán also insulated the other indigenous peoples of the Oriente. To the north of the Río Napo lived the Siona-Secoya. In the south of the country, beyond the Pastaza and on both sides of the Cordillera de la Cutucú, were the Shuar and Atshuar, two related but antagonistic Jivaroan peoples notorious for shrinking the heads of their enemies. Along the flank of the Andes were two Quichua-speaking cultures, the Quijos Quichua and, farther south, the Canelos Quichua. With a population of more than thirty thousand, the Quichua were and are by far the most numerous Indians of the Oriente. They call themselves Runa, "the people," and address each other as Alaj, meaning "mythic brother." Living at the foot of the mountains, with a long history of sporadic contact with the Spanish, the Quichua have historically been a conduit for the flow of trade goods and information from the highlands to the more remote tribes living in the forests farther to the east. For the most part the interactions have been peaceful, with one notable exception.

Only sixty miles to the northeast of Shell-Mera lived an unknown people whom the Quichua called Auca, a pejorative word meaning "savage" or "barbarian." No one knew how many they were or exactly where they lived, but the Auca controlled eight thousand square miles of forest, some 7 percent of the national territory, and were the most feared Indian group in Ecuador. Traders and adventurers who drifted into their land often did not return. In 1947 a disastrous attempt by a Swedish explorer, Rolf Blomberg, to contact the tribe ended in a bloody ambush. Five years earlier Auca men had speared to death three oil workers at Arajuno, one of Shell's exploration camps. A year after that eight other employees were killed. The death of three more workers, again by spearing, and the ensuing panic among the local *mestizo* and Quichua population provided one of the incentives for the company to

pull out of Ecuador in 1949. As late as 1957 there had never been a peaceful contact between the Auca and the outside world.

Even before Shell abandoned the Oriente, American missionaries—many of them former servicemen searching for new adventure—had set up shop in the company's facilities. By 1954 there were twenty-five evangelists working out of nine stations, all interconnected by short-wave radio and supplied by air by the pilots of the Missionary Aviation Fellowship. Founded by Nate Saint, an ex-Army Air Corps mechanic, and based at the old company airstrip along the Río Pastaza at Shell-Mera, the M.A.F. had achieved a certain notoriety in Ecuador by refusing to allow Roman Catholic clergy the use of its planes and services. The rivalry between the Italian and American missionaries in particular had led one official to question whether any of them realized that the war in Europe had ended.

For the Americans a beacon of light in the Oriente was an old Englishman, Wilfred Tidmarsh, who with his wife had been "in the fields of the Lord" in Ecuador for twelve years. In September 1951, with his wife seriously ill, Tidmarsh received a letter from Pete Fleming, a twenty-three-year-old aspiring evangelist associated with the Plymouth Brethren. Fleming, and his friend Jim Elliot, a recent graduate of Wheaton College, a Bible school outside of Chicago, proposed to reopen the mission station among the Quichua that Tidmarsh had been forced to abandon because of his wife's condition. The motives of the young missionaries were simple. "I dare not," Elliot confided in a letter to his parents, "stay home while Quichuas perish." Elliot had grown frustrated by his "sterile days" on the evangelical circuit in the United States: youth rallies in southern Illinois that provoked at best a tepid response. "I do not understand," he wrote, "why I have never seen in America what missionaries write of—that sense of swords being drawn, the smell of war with demon powers." Tidmarsh accepted their offer, and late in the summer of 1952, after several months of language training in Quito, Elliot and Fleming found themselves living among the Quichua at Shandia on the banks of the Río Napo, thirty miles to the north of Shell-Mera.

The decision by Elliot and Fleming to devote themselves to the Quichua was a small part of a wave of evangelical fervor that swept over the Oriente. Nate Saint and his wife, Marj, had arrived at Shell-Mera to establish the Missionary Aviation Fellowship in 1948. The Summer Institute of Linguistics, the field arm of the Wycliffe Bible Translators, came in 1952. In 1953 the Gospel Missionary Union penetrated the territory of the Shuar. A year later one of its members, Roger Youderian,

a twenty-nine-year-old former paratrooper, successfully contacted the Arshuar and established a station at the abandoned oil camp at Wam-bini. At Dos Rios there was a group called the Christian and Missionary Alliance. Other evangelists represented the Moody Bible Institute, the American Bible Society, Christian Missions in Many Lands, and HCB, a Christian radio station based in Quito. In 1954 the contingent of the Plymouth Brethren was reinforced by the arrival at Shandia of Ed McCully, a college friend of Jim Elliot's from Wheaton.

The most potent of the new evangelical forces was the Summer Institute of Linguistics. Founded in 1936 by former Bible salesman William Cameron Townsend, with the goal of translating the New Testament into every language, the S.I.L. was on its way to becoming the most extensive linguistic organization in the world. By the 1970s it had 4,300 missionaries at work in more than seven hundred cultures, with a new language being embraced every eight days.

In 1952 the S.I.L.'s first representative in the Oriente was Rachel Saint, sister of the pilot Nate Saint and arguably the most formidable missionary of the forests of eastern Ecuador would ever see. As a young woman of eighteen, Rachel had a vision of living with a tribe in a green jungle. She later spent twelve years drying out drunks in a mission in New Jersey before joining Wycliffe in 1949 at age thirty-five. They sent her to Peru, where she lived for two and a half years among the Piro and later the Shapra Indians. Periodically she would travel north to Ecuador to visit her brother, and it was on one of these trips that she first heard of the Auca. The very idea of an uncontacted people so fierce that even her brother admitted flying around and not over their territory sparked not only evangelical zeal but a quiescent sibling rivalry that in the end left one of them dead. Even before Wycliffe was established in Ecuador, Rachel Saint had decided that the Auca would be her tribe.

The others were not so sure. After many months in the field even the most ardent of the missionaries were becoming disillusioned by the resistance of the Indians to the word of God. In two and a half years among the Shuar and Arshuar, Roger Youderian had made so little headway that he had fallen into a spiritual crisis and was ready to go home. At Shandia and the other Quichua mission at Puyupunga, Jim Elliot and the others had come to regard the Quichua as children, constantly playing off the Protestants against the Catholics. After two years of concerted evangelical effort, the Quichua still considered their dreams a source of inspiration, still maintained that learning involved both knowledge of the outer world and understanding of inner realms revealed in visions by sacred plants. Their shamans were still strong. Even those who did convert, who volunteered their labor to the church,

dressed in western clothing, recited Christian prayers, and sang on Sunday, reverted to their former ways as soon as they returned to the forest.

Increasingly frustrated by their efforts among the Quichua, the missionaries were drawn to the pure challenge presented by the Auca, "an unreachable people," as Pete Fleming put it in his journal, "who murder and kill with extreme hatred." The desire to lead such a savage group out of the darkness rekindled their faith in the simplicity of the world. By September 1955, Ed McCully and his wife, Marlow, had moved to Arajuno, an abandoned oil camp located on the edge of Auca territory twenty minutes by air from Shell-Mera. Jim and Betty Elliot were at Shandia, Pete and Olive Fleming at Puyupunga. The Youderians, Roger and Barbara, were still in Shuar territory at Macuma. Nate and Mari Saint maintained the communications base at Shell-Mera.

Life for the McCullys was especially tense. It was at Arajuno that the Auca had speared three Shell employees in 1942. The mission Quichua were so afraid of another attack that they never spent a night by the airstrip on the Auca side of the river. When Nate Saint flew in with supplies, Ed McCully and the Indians gathered to unload the plane with guns drawn. To relieve the pressure, the missionary families often gathered at Nate and Mari Saint's house at Shell-Mera. There they chatted and prayed, and on evenings when the wind blew the clouds off the mountains, they watched awestruck from the deck as streamers of red light exploded like fireworks from the summit of Sangay, an active volcano forty miles away. On one such evening, in October 1955, as they drank hot chocolate and studied maps spread on the living room floor, Nate Saint, Ed McCully, and Jim Elliot decided to initiate what they called Operation Auca, the first peaceful attempt to contact the unknown tribe.

The idea had been on their minds for some time. On September 19, Ed McCully and Nate Saint had flown over the Nushño river and located an Auca clearing fifty miles to the east of Arajuno. Ten days later Saint, flying with Elliot and Fleming, came upon several large Auca houses fifteen minutes by air from the McCullys' home. They swore each other to secrecy and code-named the site Terminal City.

Their plan was to initiate a gift exchange by using a clever drop technique pioneered by Nate Saint. He had found that if you let out 1,500 feet of rope with a canvas bucket attached to the end and then put the plane into a tight turn, the drag of the rope would overcome the centrifugal force tending to throw the bucket outward. As the Piper Cruiser described a slow circle in the air, the bucket moved to the center, eventually hanging motionless at the bottom of the vortex.

While circling far above the forest canopy, Saint could drop a bucket at the foot of a man standing more than 1,000 feet below. By substituting a telephone line for rope and concealing a speaker in the bucket, they could have a conversation. On October 6, 1955, Saint placed a small aluminum kettle, a bag of salt, and twenty brightly colored buttons on the ground at Terminal City.

Between October and December, Nate Saint made fourteen additional drops at the clearing. On October 14 the missionaries saw their first Auca: half a dozen agitated and naked men gathered around a gift-machete. On the fourth flight they rigged a battery-powered loud-speaker in the basket, and Saint flew low to the ground as Jim Elliot shouted the few words of Auca he had picked up from the Quichua: "I like you! I am your friend! I like you!" On the sixth drop the Auca responded, tying to the line a basket containing a feathered headdress. After that there was an exchange of goods on every flight, the missionaries giving clothes, machetes, pots, ax heads, and the Auca returning cooked fish, live parrots, and monkey meat. At each exchange the Auca, Elliot put it, acted like "women at a bargain counter."

By this time events were moving quickly. At Terminal City the Auca had cleared land, built platforms to direct the plane, and placed a three-foot model of it on top of one of the shelters. Jim Elliot returned from one of the flights certain that they had waved at him, beckoning him to land. He was ready for ground contact. "God, send me soon to the Auca!" he exclaimed that night in his journal. The pressure was indeed on. The Quichua at Arajuno were no fools. On November 26 they confronted the missionaries, demanding to know why the Americans were giving to the Auca what they had to work for. On the next flight Nate Saint reported seeing Quichua strip off their clothes and prance around with long sticks, hoping that the missionaries would drop some gifts on them. Clearly it would not be long before word of the attempted contact spread throughout the Oriente. It was not just interference from the Ecuadorian military that the missionaries dreaded. Their bigger concern was Rachel Saint.

Convinced that it was her destiny to contact the Auca, Rachel Saint had been living since February 1955 at Hacienda Ila, a farm carved out of the forest within a day's walk of the mission at Shandia. The land belonged to Don Carlos Sevilla, a legendary figure in the Oriente and a man with more personal experience of the Auca than any living Ecuadorian. In twenty-six years he had been speared six times. In 1914 the Auca killed eight of his workers on the Río Curaray. Five years later fifteen of his rubber tappers were speared on the Tzapino. In 1925 Sevilla himself was attacked twice in four months. The worst encounter

occurred at an ambush on the Río Nushño. Five Quichua died immediately. Sevilla and one other fought their way through a hail of spears, killing two attackers before being severely wounded. Eight days later he crawled onto his hacienda at the Ansuc River. Yet another attack in 1934 finally drove him out of Auca territory.

What brought Rachel Saint to Hacienda Ila was the opportunity to learn the Auca language from a young captive woman named Dayuma who had fled her homeland in the summer of 1947. Christened Catherine by a Catholic missionary, she had worked for eight years as a field hand in exchange for her food. Pregnant by one of Sevilla's sons, she was hooked up with a Quichua named Padilla and sent off to another farm. When that husband died, she returned to Hacienda Ila, where she continued to work as a slave for her patron, the grandfather of her son. The boy's name was Ignacio Padilla, but not for long. Ignacio was far too Catholic a name for a boy Rachel Saint intended to convert. She insisted it be changed to Sam and in due course it was.

Rachel Saint knew nothing about Operation Auca. Had she, reports Betty Elliot in her memoirs, "she would have put in so many obstacles that it would have been impossible." She was, Elliot continues, "very possessive." In the fall of 1955 while Rachel was away on leave, Jim Elliot went to Hacienda Ila and obtained a copy of Rachel's Auca word list from Dayuma. Meanwhile, the flights continued. On December 10, Nate Saint identified "Palm Beach," a stretch of sand four and a half miles from Terminal City where he could land his plane. That same day the missionaries dropped from the air four large photographs of themselves, each bearing the insignia of the operation and a drawing of a small yellow airplane. The gestures and smiles appeared, by our standards, friendly and benign. In his journal Nate Saint wrote, "What wouldn't we have given to see those boys studying our pictures and see their reactions." Had he been able to do so, he might have been less enthusiastic. Living in the forest, the Auca had never seen anything two-dimensional in their lives. They held the photographs and looked behind them to try to find the form of the image. Seeing nothing, they concluded that the portraits were calling cards from the devil.

By mid-December the missionaries knew that it was now or never. The Quichua were on to them. The Auca, doing a little scouting of their own, had turned up at the mission at Arajuno. One violent confrontation could ruin the entire operation. Within the month floodwaters of the rainy season would wash over Palm Beach and eliminate access by plane. The ideal time for "the establishment of their beachhead in Auca territory" would be early January during the full moon. Nate Saint spent a melancholy Christmas saddened by "these two hundred silent

generations who have gone to their pagan graves without a knowledge of the Lord Jesus Christ. . . . These have no Christmas! . . . May we who know Christ hear the cry of the damned as they hurtle headlong into the Christless night without ever a chance!" Writing home to his parents, he spoke of their desire to "charge the enemy with all our energies in the name of Christ."

Every aspect of the operation, including the rhetoric, was conceived in military terms. In recommending Roger Youderian to the group, Nate Saint described him as a true soldier of Christ. "He knows the importance of unswerving conformity to the will of his Captain. Obedience is not a momentary option; it is a diecast decision made beforehand. He was a disciplined paratrooper. He gave Uncle Sam his best in that battle and now he is determined that the Lord Jesus Christ shall not get less than his best. Everything that made him a good soldier has been consecrated to Christ, his new Captain!" Once recruited, Youderian did indeed organize the team with military precision, assigning specific responsibilities to each member, breaking down the operation into hourly and daily objectives, determining code words for each phase of the process.

On January 3—D-day, as they called it—each man checked his equipment on the airstrip at Arajuno. They pulled straws to see who would be left alone at Palm Beach following the initial flight. The families then ate breakfast and prayed. At 8:02 A.M., Nate Saint and Ed McCully were airborne. Fifteen minutes later they landed on the sand by the Curaray. There was no sign of the Auca. Five flights later all the gear was in place, and work was under way on the prefabricated tree house where they would sleep. On the last flight Nate Saint passed over Terminal City and with a loudspeaker invited the Auca to "come tomorrow to the Curaray."

The next day was antilimatic. Alone on the sand, the men fished and made lunch, cleared a few trees at the end of the runway, drank lemonade, and ate hamburgers. Wearing shorts and a pith helmet, Nate Saint spent much of the afternoon in the river reading *Time* magazine. Jim Elliot wandered up and down the beach preaching to the forest. On Thursday the men reported by radio, "All's quiet at Palm Beach." It was not until the next morning, Friday, January 6, that the missionaries heard a booming voice in the forest. Jim Elliot waded across the river and met an Auca man, a young girl, and an older woman. They immediately nicknamed the man George, the young girl Dellah.

George was naked, save for a G-string that tied his penis up against his belly. His hair, cut across the forehead in bangs, hung past his shoulders. He had no eyebrows, and in the lobes of his ears were large

bright white disks of balsa wood. The hair of the women was cut in the same style. All three jabbered away in Auca, quite unaware that none of the missionaries could speak the language. Gifts were given and photographs taken. The Indians were introduced to balloons and yo-yos. Dellah looked at the pictures in *Time*. George ate hamburgers and had his back doused with insect repellent. He was given a shirt and late in the day, after Dellah had rubbed her body up against the fabric of the plane and imitated its movements through the air, he was invited for a flight. While Nate Saint banked the plane over Terminal City, George leaned out the door, fearlessly imitating the gestures of the missionaries he had studied so carefully from the ground.

Once back at Palm Beach, the missionaries knelt in prayer, arms uplifted to the sky. George was not impressed. He wanted another ride. Dellah followed Jim Elliot to the tree house and returned disappointed. She appeared petulant and stalked off down the beach. George followed her into the forest. The older woman remained by the cooking fire, talking nonstop at Youderian. When he finally retired to the tree house, she spoke to the stars.

That night Nate Saint and Pete Fleming flew back to a quiet celebration at Arajuno. Rachel Saint was by then at Shandia, still unaware of the operation. The next day there were no Auca visitors to Palm Beach, but on an afternoon flight Nate Saint spotted George back at Terminal City. From the air he appeared agitated. On Sunday morning, January 8, Saint and Fleming left Arajuno with a special treat of blueberry muffins and ice cream for the men. Passing over Terminal City they saw no sign of the Auca. Certain that the Indians were on their way to Palm Beach, Nate Saint glanced at his watch and radioed Shell-Mera. It was 12:30 P.M. "Looks like they'll be here for the early afternoon service. Pray for us. This is the day! Will contact at four-thirty." At 3:12 P.M. the watch was smashed by a stone and the hands stopped moving as the body that wore it slipped beneath the muddy water of the Río Curaray.

The first corpse was seen from the air three days later, a quarter-mile downriver from the beach. A second was spotted in the sand about two hundred feet from the camp. The fabric covering the plane was torn off, the wings reduced to a metal frame. When the search party reached the site late on Thursday, they found another victim caught under the branches of a fallen tree, with only a gray foot protruding above the surface of the water. The remains of four of the missionaries were identified. Each had been speared. The body of the fifth, Ed McCully, had been found the day before by the Quichua.

Word of the killings flashed around the world. *Life* magazine had Cornell Capa on the scene by Friday, just in time for him to photograph

the discovery of the bodies. Wrapped around one of the spears taken from Nate Saint's body was a Gospel tract that he had dropped from the air on Terminal City. His camera was found at the bottom of the river and the film was developed; it revealed that the last photograph taken was a portrait of Delilah. In one hand she clasps a number of gifts, and in the other a large paper cup, no doubt containing lemonade.

When word of her brother's death reached Rachel Saint, her first reaction, by all accounts, was not grief but anger at the thought that he had dared to contact the Auca without her. Her eight-year-old nephew Stevie had a different response. In a radio broadcast he explained, "I know why Daddy got to heaven before we did—because he loved the Lord more than we did."

Seven years after Tim and I met Alberto in Mera, I traveled alone to the land of the Auca to see what two decades of contact had brought. By then Tim had moved from Harvard to the Field Museum in Chicago. I had become a graduate student under Schultes, and the Oriente had become transformed in ways that even Tim and I could not have anticipated in 1974. Lago Agrio had become a major commercial center, with three flights a day to the capital and buses leaving every three hours for Conejo, the Kofán village on the Sucumbios that had so impressed Schultes in 1942. Throughout the lowlands, land that belonged to Indians was being given away to colonists for the price of a survey.

Within an hour of arriving at the sprawling missionary base of Limoncocha I had transferred my gear to a small Cessna and was once again airborne, heading southwest, across the oil-stained Napo River and over the traditional territory of the Auca, a tribe I now knew by its proper name, Waorani, meaning "the people." As the plane rose above the heat, falling through rolling banks of clouds, dipping and darting like a dragonfly, the pilot, a garrulous fellow from Kansas, called out the names of the rivers—Indillana, Tiputini, Tivacuño, Cononaco. North of the Napo the forest is relatively flat. To the south the palm swamps give way to a series of broken ridges and hills that run up against the Andes and fall away to the east, running parallel to one another and rising six hundred feet or more above the floodplains of the rivers. From the air, the land and forest appear formidable.

"Nushinól!" the pilot shouted above the noise of the engine. "Tzapino coming up. Means fish river."

The names were becoming familiar. I glanced at the map spread across my knees. The Curaray was next. I looked to the west and saw the flank of the Andes.

"Can't make out anything now," the pilot said. "River's too high. But that's where they died. Just around that turn."

The bend in the river looked like any other, a brown meandering stream overhung with vegetation.

"Where's Tiwaeno?" I asked. The pilot pointed over his shoulder to the east. Tiwaeno was both a river and a Waorani settlement, the place where the first peaceful contact was established in 1958. It was made by Betty Elliot, widow of one of the martyrs, and Rachel Saint—two women who in character and temperament could not have been more different.

In the wake of the massacre Rachel Saint never forgave her brother Nate and his companions, but she did come to view their deaths as part of God's plan. The unmarked graves, she wrote to her parents, "were five grains of wheat planted way down the Curaray River in Auca soil." The harvest would be the Bible translated into their language, a task to which she set herself with all her considerable energy and ambition.

The key was Dayuma, the only "real Auca in captivity." When Carlos Sevilla realized that he had an international celebrity in his midst, he elevated her from field hand to domestic servant. Dressed in calico, she was taken to Quito, where the missionaries worked with her on Waorani language and grammar. Then, in the spring of 1957, Cameron Townsend instructed Rachel Saint to bring Dayuma to the United States, ostensibly to continue the work at the Summer Institute of Linguistics' language school at the University of Oklahoma. Townsend's real purpose was to drag the pair of them through a bizarre series of public appearances designed to promote the national image of the Wycliffe Bible Translators. On June 5, 1957, Dayuma appeared before 30 million television viewers on *This Is Your Life*. Later that summer Billy Graham introduced her at Madison Square Garden in New York. Before appearing on the podium, a nervous Dayuma was advised by Rachel, "Think of all those people out there as the turkeys you saw on a farm recently, and you'll feel better."

In the spring of 1958, in a highly publicized baptism at Wheaton Evangelical Free Church, Dayuma was proclaimed the first Auca Christian. No one noted that her confession of faith had come in the midst of a near fatal bout of Asian flu. Nor did they know that in quiet moments she still spoke of jaguars wandering through her dreams. Above all, the participants at the ceremony happily ignored the fact that Dayuma had already been baptized years before in Ecuador by Padre Cesar Ricci, a Catholic priest and arch foe of the Protestant evangelists.

While Rachel Saint and Dayuma were promoting the missionary

cause in the United States, events in Ecuador were moving ahead without them. Following the death of her husband, Jim, Betty Elliot had remained at Shandia, witnessing to the Quichua and hoping that one day she might be able to bring the Word to the Auca. Her opportunity came in November 1957 when two Waorani women unexpectedly wandered out of the forest. Their names were Mankamu and Mintaka, and they were looking for their niece Dayuma. Elliot rushed to meet them at Arajuno and soon discovered that one of them, Mintaka, was the older woman who, along with George and Delilah, had first met her husband on Palm Beach. Elliot perceived the hand of the Lord at work.

After several weeks of language study, Betty Elliot and the two women moved cautiously into Waorani territory with the hope of building a mission on the banks of the Curaray. The expedition collapsed on the first night when the body of one of the Quichua porters was found stuck with eighteen Waorani spears. Bound around one of them were pages ripped out of the New Testament. Unfazed, Elliot and her party returned to Arajuno and continued to work on the language. By May 1958, when the S.I.L. finally brought Dayuma back to Ecuador, Betty Elliot had learned in six months as much Waorani as Saint had mastered in three and a half years.

Once Dayuma met Mankamu and Mintaka, she decided to go home. On September 8 the three women headed into the forest, became lost, and then eventually made their way to the Curaray and beyond to the Tiwaeno. As they walked, Dayuma grew frightened. Never had she forgotten the spearing raid eleven years before that had killed her family and forced her to flee to the outside. From her youth she remembered young children being buried alive to accompany their dead fathers. From her aunts she had learned of a recent incident: A solitary white explorer, besieged by the Waorani, went mad, and shot his gun randomly into the trees until finally, on the fifth day, he took his own life. The Waorani speared him anyway and took the teeth from his jaw.

Dayuma dealt with her fear by sharing her new faith with her aunts. By now she knew that there was no snake guarding the approaches to heaven, that spirits did not rush through the air in the wind, that those who failed to enter heaven did not fall into oblivion, become termites, and die. No. They fall into great fires that rage beneath the earth, and they live, burning but never dying, in mortal agony forever.

On September 28, after just two weeks in the forest, Dayuma returned to Arajuno with seven Waorani women, all of them singing "Jesus Loves Me" in English. The Indians invited Rachel Saint and Betty Elliot to visit their relatives. Saint wanted to go alone. The S.I.L. insisted

they enter as a team. On October 6 they set off, accompanied by ten Waorani, dozens of Quichua, and three-year-old Valerie Elliot. Their route carried them overland to the Río Oglán, down the Curaray, up the Añangua, and then overland once more across a high ridge to the Río Tiwaeno. Betty Elliot carried fifteen pounds of gear for her and the child. She had no idea how long they would be in the forest, or what fate awaited them. Late in the day on October 8, 1958, she entered an encampment of some fifty-six Waorani, including many of those who had speared her husband.

"It's coming up pretty soon," the pilot said. "Quiwa's river." The plane dropped over a ridge and came in low over a broad stream, scattering a pair of macaws from the crown of an immense tree. The pilot pointed to his left, and suddenly we were roaring across a small clearing.

"Quiwado!" he shouted as he pulled the aircraft into a steep climb. Behind us on the ground, a dozen or more children were running along the riverbank and through a cluster of thatch houses toward a grass runway carved into the forest just beyond the edge of the settlement. By the time we had turned back into the wind, most of the village appeared to be waiting on the grass. Among them was an American anthropologist, Jim Yost, a linguist with the S.I.L. who had been living with his family among the Waorani for seven years. One of a handful of outsiders to speak the language fluently, Jim was eager to learn more about their use of plants, just as I wanted to know more about their life in the forest. We had corresponded for some months and met once before in Quito where we had planned our collaboration. As the plane landed and taxied toward the village, the thought crossed my mind that I would probably never again have the opportunity to study the ethnobotany of a people who but a generation ago had lived in almost complete isolation.

I stepped out of the plane and was immediately accosted by an old Waorani man. Unlike the others who were clothed in an odd assortment of dresses, shirts, and gym shorts, he was naked except for a cotton G-string. His hair was cut in the traditional style: bangs in front, long down the back, and shaved above the ears. A scarlet feather pierced his septum, and there were large balsa disks in his earlobes. Dangling from a cord strung around his neck was the jaw of a piranha. He held a blowgun in one arm, and a dart quiver hung over the opposite shoulder. He seemed incredibly fit for someone who revealed only a pair of teeth as he spoke. I couldn't understand a word he was saying.

"He just gave you the name of his dead brother." I turned and shook

hands with Jim. A slight man with fair skin and a thin red beard, he was wearing cut-off shorts, sandals, and a broad straw hat. "Now he wants an ax," he said with a grin. "You'll have to give him one. He's a little concerned. He can't believe I've invited you to stay in my house with my kids and we're not related. He thinks you may try to kill us."

I glanced at the old man and attempted a smile, which appeared only to confirm his suspicions. Jim spoke briefly with the pilot while several of the younger Waorani gathered my gear and the supplies for the mission. Then we all watched as the plane taxied and took off. The Waorani stared as if witnessing the spectacle for the first time. I had seen that same look on other Indian faces. Pedro Juajibioy once told me that when an airplane first flew over Sibundoy, the Kamsá thought it was a great crucifix with a priest floating in the sky. When the Waorani saw Nate Saint's plane flying over Terminal City, they discussed endlessly what it might be. Initially, because of the drone of the engine, they thought it was a giant wood bee. But since bees don't have people inside, they decided it was a devil with devil cubs within, a conclusion that provided part of the reason for the massacre.

After the plane disappeared over the forest, we walked single file toward the village. The old Waorani, whom I later knew as Kowe, stayed close by my side, talking incessantly.

"He came out of the forest only a year ago," Jim explained. "He still thinks that everyone speaks Wao. It's all he's ever known. Their word for hearing is the same as for understanding. He calls outsiders the earless ones. When he met me, he was surprised, as he put it, that I had 'holes in my ears' and could understand him."

Jim spoke directly to Kowe, calming him down. I was curious about what he had said.

"I told him that you would give him an ax and that you had taken the name of his older brother. I asked him what more he could possibly want."

"What's the name?"

Jim waited until the others were a few steps away. "Eweme," he said quietly. "Normally it's not a good idea to ask someone's name. For them it's an act of aggression. Here one is known or one is not known. If the person is a stranger, it's best to find out his name before he knows yours. The name reveals the kin ties. If he turns out not to be related, you may have to spear him."

"That's why the old man—"

"Right. That's why he named you. Otherwise you'd be an enemy. Plus, since you now are related and since you are white and have more than he does, you'll bring him goods."

"The ax."

"Perhaps more."

"What happened to his brother?"

"He was even older. We don't know how much. They have no measure of age in our sense. But I figure he was at least in his early eighties when he died."

"Speared?"

"Actually there's not much of that anymore—at least not here. No, he was gathering fruit. He fell out of the top of a palm tree."

The village was not unlike most lowland Indian settlements: a scattering of thatch huts, mostly elevated on stilts, surrounded by informal, even chaotic gardens. Even before contact the Waorani had begun to build their houses like the Quichua. Their traditional dwellings, of which there was only one in the village, were large A-frame structures roughly fifty feet long, twenty feet wide, and twice the height of a man. With bamboo ridge poles, rafters of *caña brava* bound by lianas, and a roof of palm fronds split down the middle and lashed to the reed rafters, they could be built by a man in a day. With fire smoke leaving a thick coating of soot and tar on the interior thatch, protecting it from insects, the shelters might stand for a year, about as long as the Waorani ever expected to remain in one place.

Jim's small hut was at the edge of the village, close to the river. By the time we reached it, the crowd from the airstrip had melted away. There was little of the frenzy that usually marks one's entry into an isolated village. Once I arrived, and after the flurry of activity at the airstrip, there was dead calm. It was as if I had always been there. Jim's wife, Kathy, whom I had met previously in Quito, was standing at the head of their ladder. After saying hello, I mentioned how unusual the arrival had seemed. She was a lovely woman from Iowa, thin and, like her three young children, blond and fair.

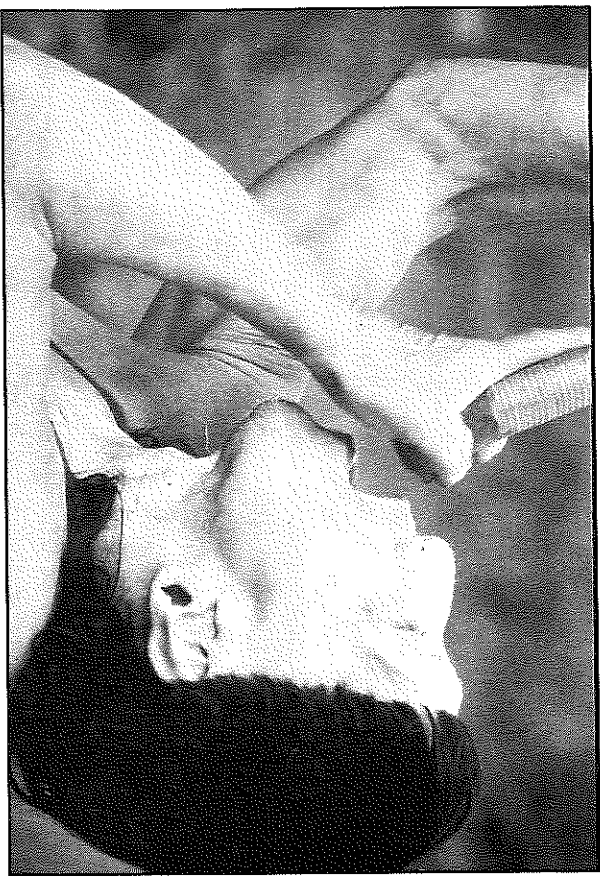
"It used to unnerve me," she said, "so little sense of personal space. People always around yet in a way strangely invisible. Everyone arriving and leaving without ever saying hello or good-bye. The words don't even exist for them. Then I finally understood."

"Just what you went through coming in," Jim added. "A person is either part of the social group or a threat, of the people or a *cowode*, a cannibal. Once Kowe gave the name and you offered the gift, you became part of this place."

I glanced at Kathy, who smiled.

"Jim," she said, "show him where he can string his hammock."

## Among the Waorani



strange and unfamiliar anonymity, I tried to reconcile the tranquility of the scene with the certain knowledge that there was not a woman over twenty-five who had not lost a parent or close relative to a spearing raid, or a man who had not been responsible for such a deed.

It was not until that evening after the storm had passed and the last of the visitors had returned to their homes that I learned from Jim something of the history of the Waorani. Sitting around the fire, chewing on the stringy flesh of a monkey killed that day, I felt as if transported through a looking glass that finally revealed the world as seen from the other side.

No one, including the Waorani, knows how long they have lived in the forest. For the Waorani experience and time cannot be divided into discrete elements. There are no abrupt transitions between night and day, between sleep and wakefulness. When the sun rises, mist envelops the morning, and the children move toward the warmth of the fire. Songs that begin and end with an explosive burst of air, two or three notes to a tune, the same words sustained over hundreds of repetitions, lead the darkness into the day. By night there is always movement, feet shifting the logs of a fire, voices discussing dreams or the memory of a raid, a man and woman coupling in a hammock.

There is a sense of the moon, its position in the sky, the ebb and flow of its shadow. Yet the year itself has no mathematical associations. All reference points are to the natural landscape, and the seasons, such as they are, are measures of the productivity of the forest. The year begins in our month of April when the fruiting cycle of the *chonta*, or peach palm, ends. May and June correspond roughly to the three phases of the fat season, the time when spider monkeys and howlers gorge on fruit, start to get fat, are fat, and begin to get lean. The summer is marked by the Atta ant season, a one-week period when the ants emerge to establish new colonies and the people gather to roast them as a delicacy. There follows a long unmarked gap in the Waorani year until the *chonta* season, which lasts six months, comes again in November.

For the Waorani the universe is a disk, an undulating surface surrounded by great waters and covered by a dome that lies just beyond the clouds. Below the earth is the underworld, a replica of this life, complete with trees, rivers, and hills but inhabited by *bahinade*, mouthless creatures that cannot speak or eat. Above are the heavens, the destiny of the dead. Each Waorani has a body and two souls. At death the flesh rots or is transformed into jungle animals. The soul that lives in the heart becomes a jaguar, the one lodged in the brain ascends to the sky where it meets a sacred boa at the base of the clouds. If and

THROUGHOUT THE REST of the afternoon, as we arranged equipment and made plans for the collecting, I continued to struggle with the symbols of a culture that had been so misunderstood by the outside world. Walking around Quiwado at dusk, as clouds gathered and cool winds heralded a coming storm, I saw a woman milking her breast to feed a baby monkey, children with jaguar teeth hanging from their necks, and young boys shooting darts at a captured bird. By the river I came upon Jim's eldest girl, Natasha, and several of her Waorani friends frolicking like seaside children in shallows that no doubt concealed several species of piranha. As I wandered about the village enjoying a



only if its nostrils have been pierced and decorated by the finest of feathers can the soul enter heaven. If turned away, it falls back to earth and is consumed by worms. Once accepted into heaven, the Waorani live as they always did, hunting, fishing, and spearing. The animals of heaven are themselves the souls of creatures that once inhabited the earth, and thus by killing in this life, a Waorani hunter ensures a good supply of food in the life to come. It is to accompany deceased elders on this perilous journey that the Waorani occasionally buried children alive.

Both in this life and the next, the Waorani perceive themselves as a people of the forest. In heaven as on earth, the rivers are the domain of the *cowode*, the outsiders, all of whom are cannibals. Traditionally, the Waorani lived on the ridge tops between the rivers, deliberately avoiding the valley floodplains. Fishing only in the small feeder streams of the upland forest, they tabooed catfish, most waterfowl, turtle eggs, and many sources of food commonly eaten by other Amazonian peoples. They did not swim, and they did not use paddles, rafts, or dugouts. So rudimentary was their knowledge of canoe building that Jim once met a Waorani elder who had cut down a hollow tree, hopping to avoid having to burn out the wood. It had not occurred to him that there might be a problem sealing both ends of the vessel.

Linguistic evidence suggests that at the time of contact the Waorani had been isolated in the forest for many generations. Once their language was understood, only two words were found that had been borrowed from surrounding tribes. Trade with the *cowode* was nonexistent. As late as 1957 the Waorani had yet to adopt metal tools.

If the Waorani were uncertain about the world beyond their borders, the people on the outside viewed the Waorani as savages, symbols of the demon heart of the wild. Although the tribe before contact never numbered more than five hundred, Ecuadorian officials regularly estimated a population of several thousand, partly because of the vastness of the Waorani lands and partly due to sheer hysteria. Waorani raiding parties regularly covered as much as forty miles a day through the forest. Within a week the same Indians might be responsible for incidents occurring two hundred miles apart, killings that the government attributed to different groups of raiders. What's more, each Waorani carried several spears and thrust more than one into a victim. No corpse was left with fewer than eight. In 1972 the body of a cook for an oil company was discovered struck with eight spears; the authorities suggested that twenty Waorani had been involved but, in fact, the killing was the work of only three.

In many ways the vast extent of the Waorani territory, roughly fifteen

square miles for every man, woman, and child, proved to be a curse for the people. At any one time they occupied but a small part of their land. Typically a settlement consisted of two or three houses built in a clearing cut from the forest. Thirty minutes away would be another house site, settled by closely related kin. A series of such settlements formed the community of extended kin with whom one interacted throughout life. At the time of contact there were four major neighborhood clusters—the Guiguetaidi, Baiwaidi, Niwaidi, and Wepeida—all of them mutually hostile, none of them certain where the others lived. They referred to each other simply as upriver people, downriver people, overland people, and people of the ridge. Cut off from the world outside by generations of conflict and buffered from one another by great stretches of forest, the Waorani, by their own accounts, lived in almost constant fear and suspicion, certain that at any moment an enemy might bear down on them.

The reasons for killing were many: the death of a child at the hands of a distant shaman, the birth of a deformed baby, frustration at the loss of a woman, the simple need to avenge earlier killings. On the eve of a raid the men prepared the spears, decorating each with a specific pattern, ensuring that the victims would know the identity of the killers. Then, in the morning of a night with no moon, in the wake of a thunderstorm with lightning to carry the souls of the intended victims to heaven, the raiders departed, traveling for days or even weeks through the forest. Upon reaching the enemy settlement, they watched for known relatives. If none were present, the attackers would remain hidden until dark, when their silhouettes could not be seen against the night sky. Approaching with stealth in the early hours of the morning, the raiding party would slip into the shelters and kill indiscriminately. Once the village was destroyed, the victorious raiders returned home, whereupon they beat their own young sons so that the boys would be certain to mature into powerful warriors.

This cycle of war and vendetta determined the settlement pattern of the tribe. For months following a raid attackers lived in fear of retaliation. Abandoning their old fields, they relocated to another clearing where they dwelt within barricaded walls, protected by harpy eagles and caracaras tethered as guard animals at the approaches to the settlement. Thus each extended family required several living sites, and the structure of the household units was constantly shifting as individual couples and their children moved about. This fluidity left little room for hierarchy. There were no chiefs. A Wao could be a leader for a specific act, but each man remained intensely independent, and the society as a whole was completely egalitarian.

Balancing the authority of the individual was the obligation of kinship. Marriage for the Waorani was a relatively simple affair, an arrangement between parents formalized at a public celebration. The two people to be wed were often the last to know. Without notice a mother or aunt would lead a young girl to a hammock. A boy would be eased to the front of a line of dancers and then taken to be seated next to the girl. A marriage song would seal the arrangement.

The rules of kinship, however, were far more complex. A Waorani child addressed his father and his father's brothers by the same term. Similarly, his mother and his mother's sisters fell into an identical kinship category; therefore, the brothers of one's father became the husbands of one's mother, and after a long journey it was common for a man to share his wife with a brother. The children of one's father's brothers and mother's sisters—what we call first cousins—were considered siblings by the Waorani. But the children of a mother's brothers and father's sisters—again to us first cousins—were not viewed as siblings but indeed as cousins, or *qui*. For the Waorani to marry any sibling was to commit incest. Yet to marry someone not *qui* was to have a "wild" union. All marriages were expected to be between what anthropologists call cross-cousins.

The result was an astonishingly tight network of relationships. Among the current population of 630, Jim had found that only 20 individuals could not trace their ancestry to some common source. Hence the importance of names. Knowing a person's lineage determined how one was expected to relate. Thus the first thing the Waorani discuss when they gather is genealogy, with the challenge being to discover the other's bloodline before he or she uncovers yours. It was by tracing kinship through time that Jim first understood the extent to which warfare had dominated the lives of the people. To his astonishment he learned that over the last five generations, no less than 54 percent of all Waorani men and 40 percent of the women died as the result of spearing raids. One in five was shot or kidnapped by outsiders. Over 5 percent of the mortality was due to individuals fleeing by their own volition to the lands of the *cowode*. Presumably they felt that life even among cannibals was preferable to the world they knew. In his seven years with the tribe Jim heard of only three instances of what we might consider natural death. For months the Waorani implied that the individuals in question had grown old and passed away. Then one day a young Wao inadvertently let slip that one of the men had indeed grown old, so old that the people decided to spear him anyway and throw his body into the river. The man, the youth explained, had "died becoming old."

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There was a half-moon, and I awoke to the sounds of the forest: cicadas and tree frogs, the piercing notes of a screech owl, the caw-caw-caw of bamboo rats. At one point I thought I heard a jaguar but wasn't sure. I looked about, saw smoke seeping out of the thatch of Kowe's house, heard soft voices and the swoosh of a feather fan bringing a fire to life. Someone was singing on the other side of the village, a far-off nasal chant, difficult to distinguish from the other sounds.

It was good to wake up in a house without walls. I glanced at Jim and Kathy's children, squirreled away in their hammocks, sleeping peacefully, and saw in the distance a woman in a calico dress walking to the forest, a burning ember in one hand, a pot in the other, an empty basket on her back. The forest on the other side of the clearing was still in shadow, but there was a thin streak of violet above the kapok trees and colors moving slowly in the east. The grasses and sedges by the river's edge had been flattened by the rain, the red clay glistened, and the canoes at the landing moved up and down slowly with each surge of the river. A hunter with a blowgun passed by just below my hammock.

Another Waorani was standing at the foot of the ladder. I assumed he was Wepe, who was going to guide us into the forest. Our plans were straightforward. In the seven years that Jim had been living among the Wao he had recorded the name of every plant he had seen used. We would begin by working our way through his list, knowing that the process itself would elicit from the people additional information, other plant names and uses. My task—collecting voucher specimens and seeing that they were properly identified—promised to be relatively simple. The only challenge was to cross-reference the names and collections with Waorani men and women from each of the major dialects. For that Quiwado was an ideal locality, for living at the clearing were representatives from all regions of Waorani territory.

Wepe, I would learn, had killed at least fifteen enemies. His people had, within memory, lived north of the settlement at Tiwaeno, close to the site of the Palm Beach massacre. Long before that tragedy his group had been pushed out of the region by a raid from the north. Fleeing downriver toward the Tiputini and Yasuni rivers, they had met Kowe's people. The bands lived together peacefully until the early 1960s when Wepe's group raided one of Kowe's house sites. Wepe and his people then retreated deeper into the forest. Becoming known as the Ridge Waorani, they lived undisturbed until the early 1970s when Texaco thrust exploration roads across the Río Napo into the heart of their

land. There was a killing, and the government pressured the S.I.L. to pacify the Ridge Waorani and relocate them to Tiwaeno.

At the time, Wepe's half-brother Toño, whom he had never met, was living at the Tiwaeno mission. To draw Wepe and his people out of the forest, the S.I.L. equipped Toño with a radio and dispatched him to make contact. After a year of garbled radio messages, word reached Tiwaeno that Toño was dead. His mistake had been to arrive at Wepe's clearing wearing clothes. His ears were not pierced, further proof that he was *cowade*, an outsider. His fluency in the language had made no difference. As far as Wepe was concerned, all human beings spoke Waorani. Within hours of Toño's arrival, the Ridge Waorani killed him with an ax. The voice on the radio throughout the following months was that of a nephew, Kiwa, imitating Toño. When the S.I.L. arrived by military helicopter, Wepe said that the nephew was Toño, a lie soon exposed by Toño's widow. Wepe was then shown a map indicating the network of roads projected for his territory. Once he understood the implications, he fainted. When he came to, Wepe agreed to move.

None of this history showed on his face that morning as he led us into the forest. From time to time the narrow trails broke out onto an open beach, but for the most part they followed the ridges, dropping away only to cross streams and climb again into the forest. Unlike the cautious pace of most other lowland hunters, Wepe moved quickly along a trail, becoming more and more animated. Every sign of game—a broken twig, the pungent odor of a deer, scratchings of wild pigs in the mud—provoked memories that erupted into loud frantic monologues, certain to scatter any wildlife. Wepe's behavior, Jim noted, was typical. So abundant was game that the Waorani hunted less by stealth than movement, finding their prey purely by sound and smell. In the midst of the rain forest they could detect the scent of animal urine at forty paces and correctly identify the species from which it came.

Wepe, like all the Waorani I met, turned out to be not only a keen observer but an exceptionally skilled naturalist. He recognized such conceptually complex phenomena as pollination and fruit dispersal, and he understood and could accurately predict animal behavior. He could anticipate the flowering and fruiting cycles of all edible forest plants, list the preferred foods of most forest animals, and identify with precision the places where they slept. It was not just the sophistication of his interpretations of biological relationships that impressed me; it was the way he classified the natural world. He often could not give you the name of a plant, for every part—roots, fruit, leaves, bark—had its own name. Nor could he simply label a fruit tree without listing all the animals and birds that depended on it. His understanding of the forest

precluded the narrow confines of nomenclature. Every useful plant had not only an identity but a story: a pungent leaf used for fever, a poison capable of killing fish in half a mile of river, a solanum first planted by the jaguar, another employed as a treatment for scorpion bites.

Late in the day, just after we had feasted on the fruits of a wild cacao, we came upon a three-toed sloth climbing slowly through the upper branches of a cecropia tree. The two creatures, animal and plant, are in many ways the perfect symbols of the Amazon. Every species of cecropia has living within the hollow nodes of its trunk a distinct species of fire ant. The ants live on protein nodules secreted by the plant, and in exchange they protect the tree from its major predator, the *Atta* leaf-cutting ants.

The three-toed sloth is a gentle herbivore. Its slow movements, together with its cryptic coloration, protect it from its major predator, the harpy eagle. Viewed up close, the sloth appears as a hallucination, an ecosystem unto itself that softly vibrates with hundreds of exoparasites. The animals mottled appearance is due in part to a blue-green alga that lives symbiotically within its hollow hairs. A dozen varieties of arthropods burrow beneath its fur; a single sloth weighing a mere ten pounds may be home to over a thousand beetles. The life cycles of these insects are completely tied to the daily round of the sloth. With its excruciatingly slow metabolism, the sloth defecates only once a week. The animal climbs down from the canopy, excavates a small depression at the foot of the tree, voids its feces, and then returns back up. Mites, beetles, and even a species of moth leap off the sloth, deposit an egg in the dung, and climb back onto their host for a ride up the tree. The eggs germinate, and in one way or another, the young insects find another sloth to call home.

Why would this animal go down to the base of the tree, exposing itself to all forms of terrestrial predation, when it could just as easily defecate from the treeops? The answer provides an important clue to the immense complexity and subtlety of the Amazonian ecosystem. Biologists have suggested that in depositing the feces at the base, the sloth enhances the nutrient regime of the host tree. That such a small amount of nitrogenous material might actually make a difference suggests that this cornucopia of life is far more fragile than it appears. The tropical rain forest, though home to tens of thousands of species, is in a sense a counterfeit paradise, a castle of immense biological sophistication built quite literally on a foundation of sand.

Faced with the wonder of these creatures, I watched to see how Wepe would react. Without hesitation he blew a dart into the sloth. As soon as the poison took effect and the animal fell to the forest floor, he

borrowed a machete and cut down the tree. He called the cecropia fruit *mangimowe* and noted that it is eaten and dispersed by toucans and piping guans. He stripped the fruit from its stem and passed me a moist handful. It had the luscious taste of ripe figs.

In the evening we bathed with the children and then lay in the sand watching the lazy flight of herons against the soft light of the forest. Across the river and downstream, Kowe—the old Waorani I'd met on my first day in the village—and an old woman appeared, walking cautiously along the river's edge, stirring the water before them with a stick.

"Stingrays," Jim said. "It's about the only thing they're afraid of. You can't see them even in the clearest water. They lie just beneath the sand."

Something splashed along the bank—perhaps a turtle or caiman, maybe just a falling branch. Kowe glanced toward the sound and then continued to walk, poking the water as he went.

"But the current's too fast," I said. Jim nodded.

"I don't know why he's worried here. Maybe just an old habit."

"Do they get hit often?" I asked.

"Just look at their legs," Jim said. "It's a very serious wound, extremely painful. Even morphine won't do any good. The tail has a barbed spike like a saw tooth that drives right into your leg. The wound always gets infected. Even with antibiotics it can take weeks to heal. Without drugs, the wounds fester for months, leaving a hole a couple of inches across. It's about the only serious infection the Waorani ever get."

"How do they treat it?"

"They have a few plants. One's a big tree with enormous leaves. They call it *boymmo*. It means stingray leaf."

"Do they make a poultice?" I asked.

"No, they suck the fruits."

The next morning when we went looking for the plant, I found that it was the shape and size of the leaf, not the properties of the fruit, that mattered to the Waorani. Their logic was similar to that underlying the famous Doctrine of Signatures elaborated to such a high degree in medieval Europe. People believed that God in leaving his mark on creation had provided clues as to the medicinal properties of plants. Thus European monks treated liver ailments with hepatica because its leaf was shaped vaguely like the human liver. Although discredited by

Western medicine, this intuition appears often in folk traditions around the world.

As we moved through the forest, other Waorani notions of health and healing came into focus. With us was Geke, a youth who just three weeks before had been mauled by a wild boar. Evacuated by air to the hospital at Limoncocha, his spirit had collapsed, and physicians feared for his life. Once back with his family, however, his morale had soared. Younger and more enthusiastic than Wepe, he led us through the jungle, pointing out dozens of plants as he scrambled up trees with an agility and grace born of the wild. At one point he reached into a tangle of lianas and was almost struck by a poisonous viper. He leaped to my side and stood laughing as he pointed to a small scar on the back of his hand.

"He's been bitten before," Jim said, "just like everybody else."

There were, I discovered, no fewer than nine venomous snakes native to the Waorani lands. The most toxic but the least dangerous is the coral. Its fangs are at the back of the throat, and to inject the venom it must take hold of the prey and slowly gnaw the flesh. If struck, one always has time to tear the snake away.

"You have to fight to get bitten by a coral snake," Jim said, "and as for a bushmaster, it can only hurt a blind man. It's ten feet long and as fat as a fire hose."

The fer-de-lance was something else indeed. Just twenty inches long, quick and aggressive, it had struck over 95 percent of adult Waorani. Nearly half the men had been bitten twice. It was the highest rate of snakebite ever recorded for a human population. One death in twenty-five among the Waorani was caused by a serpent.

This talk of poison led back to plants and the various antidotes. Geke showed us four different species used to treat snakebite. Two were renealmias, tall, lush, and aromatic herbs in the ginger family. In each case the stems were pounded, mixed with water, and drunk each day until the victim was well. The stem and root of a *Phloldendron*, crushed in hot water and administered thrice daily, was employed specifically to treat the bites of a snake called *aynamo*. The fourth antidote was a stinging nettle. The botanical origins of these plants, together with the way in which they were used, suggested that their value was not based on pharmacology but on their magical resonance as perceived by the Waorani. As Geke explained, the strong scent of these plants, their inherent spirit power, repelled the symptoms, forcing them to leave the body.

The full significance of his comment did not become clear until later

in the day. By then we had collected a number of other medicinal plants. The Waorani used the sap of a tree fern as an anesthetic to soothe toothache. They dealt with botflies, a noxious parasite that burrows beneath the skin, by suffocating the larvae with a topical application of latex obtained from a forest tree. The bark of a tree in the bean family served as both a fish poison and a medicine to treat fungal infections. We also found *ouita*, *Curatua tecuarum*, the dart poison that provided the basis of the hunting technology. These collections revealed another side of Waorani knowledge: the ability both to identify pharmacologically active plants and to treat certain ailments symptomatically in a manner more or less consistent with the practices of modern scientific medicine.

Waorani medicine, in other words, operates on two quite different levels: the material and the immaterial. At the root of their system is a non-Western notion of the origin and nature of disease. For the Waorani, as for many indigenous peoples, good or bad health results not from the presence or absence of pathogens alone but from the proper or improper balance of the individual. Health is harmony, a coherent state of equilibrium between the physical and spiritual components of the individual. Sickness is disruption, imbalance, and the manifestation of malevolent forces in the flesh.

In general, physical ailments that can be treated with herbal remedies are considered less serious than the troubles that arise when the spiritual harmony of an individual is disturbed. In such cases it is the source of the disorder, not its particular manifestation, that must be challenged. For the Waorani the origin of all such evil and misfortune is the *ido*, dark shamans who invoke from the heavens the *wenae*, the malevolent spirit helpers who dispense the magic arrows of disease and death. The Waorani solution, and in a sense their ultimate medical act, is to seek out these rival shamans and spear them.

The means by which an *ido* elevates his spirit and enters the realm of death is a plant known as *mii*. With some reluctance and trepidation young Geke took us to a place at the edge of the forest where it grew. To my surprise it was *Banisteriopsis muricata*, a relative of *ayahuasca* never before reported as a hallucinogen in the Amazon. Geke explained that when he was a boy, his grandfather had taken the windpipe of a toucan and blown a small piece of wadded *mii* into his lungs, thus ensuring that he would grow up to become a great hunter. His grandfather, he added, had been a Snake Shaman, a healer capable of drawing a viper out of the forest to find out if it had left poison in a wound.

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Tomo was one of the Waorani hunters who could smell prey and know from the sound of a rustling leaf whether an animal was worth killing. As an infant he had impaled spiders with tiny pieces of broom straw. He had snared bumblebees, tethered them with a thin piece of fiber, and wandered about his village flying them like model airplanes. By the time he was five he could hit with a blowgun targets of hanging fruit at thirty paces. At ten he could shoot a small bird out of the air. Before he reached puberty he knew how to imitate the call of almost every bird in the forest. He understood nesting habits and breeding behaviors, anticipated feeding cycles, and could list the trees where each bird preferred to dwell. Before he married he had killed a wild pig with a twenty-foot palm lance, skewering the creature from a distance of 4 feet, pinning it to the ground with one arm while the other thrust a second and third spear into its flank. With a blowgun he could drive a dart clear through a squirrel at 40 feet, knock a hummingbird out of the air, and hit a monkey in the canopy 120 feet above the forest floor.

The day before the hunt, in Kowe's house, we had watched Tomo prepare curare, scraping the bark, placing the shavings into a funnel of palm leaves suspended between two spears, slowly percolating the water through, and collecting the drippings in a small clay vessel. He had then heated the dark liquid over a fire, slowly bringing it to a frothy boil, letting it cool, and then firing it again until a thin viscous scum formed on the surface.

All this time Kowe sat quietly on a wooden stool, his feet resting on a steel ax, as he twisted the stems of a vine into a large gathering basket. The ground around him was littered with fish bones, wads of cotton, dry leaves, and small bits of paper. Spears decorated with brilliant feathers hung in the black and smoky rafters.

Kowe had ignored Tomo. Then, just as the curare had congealed and the darts lay bare on the dirt, he moved to Tomo's side, displacing him by the fire as he reached for a dart and spun it in the liquid poison. He was, Jim had explained, a Jaguar shaman, the one best prepared to empower the darts. He was the one who could sing the forest into being, sliding his voice up and down, falling away into a chant that only the Jaguar mother had the power to translate for the world. One by one Kowe placed the poison darts in the earth by the fire. Slowly the tar hardened into a jet-black lacquer, ready to be used.

The next morning Tomo had these darts in his bamboo quiver. Hanging from his neck was the piranha jaw he would use to notch the tip of each one. This ensured that the poisoned tip would remain embedded in the flesh even if the rest of the dart was swatted away by the prey. Squatting by the fire, he drank a calabash of *tepaie*, the thick and mildly

fermented beverage prepared by the women from the masticated roots of manioc. Like most adult Waorani, Tomo would drink almost two gallons a day. Although *tepaie* is the major source of carbohydrate in the diet, no Waorani considers it food. No matter how they are consumed, all fruits, roots, and seeds are said to be drunk. Similarly, a garden is not harvested, it is drunk. Only meat is eaten, for it is the only true food in the forest.

From the rafters, Tomo selected a short blowgun, just over six feet long. Without a word or gesture to his family he led us out of the shelter and onto the narrow path that led away from the airstrip and into the forest. The sun was high but the air cool and still beneath the canopy. For an hour or so we walked slowly along a trail, effortlessly gathering useful plants. There were any number of fruits and edible seeds, several dye plants, a wild grass employed as a paintbrush, leaves that served as dishes and serving bowls. A number of palms provided food, thatch, and wood for blowguns and spears. Two different species of pipers were used to blacken teeth and prevent tooth decay; two other plants yielded latex that treated tooth decay once it had occurred. Finally, growing alongside the trail was a short bambazoid grass whose inner shoot yielded a razor-sharp knife. It was this plant that women sought when they were about to give birth.

When a woman was ready, Jim explained, she carried her wedding hammock into the forest and hung it between trees. Straddling a hole cut into its tough fibers, her feet firmly on the ground, she leaned forward and waited for the infant to drop on a mat of heliconia leaves spread beneath the hammock. After it was born, she sliced the umbilical cord with the bamboo shoot and then carefully examined the child. If deformed, unwanted, or a twin, she would bury the newborn alive in a shallow hole in the soil. If the baby was to be kept, she held the child to her breast, carried it to the river to wash, and placed it in the bark cloth sling that served both as blanket and diaper. Once the baby was accepted, it was never put down. Loved and cared for, it received all the mother's affection.

The trail opened into the harsh light of a clearing. The plantings rose over an undulating hill to a ridge of dead snags and peach palms and the distant wall of the forest. Tomo hesitated and then skirted the field to one side, avoiding the sun. Later we would return here with the schoolteacher Nange and his wife, Oncaye, and find among the chilies, yams, peanuts, plantains, and bananas no fewer than twenty varieties of manioc, many named for forest animals. The field, Tomo explained as we climbed through a tangle of deadfall, was almost exhausted. The family that owned it would already have begun to farm another site—

the men working in the shade of the trees, clearing the underbrush, planting cuttings, felling the largest trees, leaving the leaf litter on the ground to protect the soil from the rain and sun. It was slash and rot, as opposed to slash and burn. Rarely did the Waorani torch a field. Manioc grown in these soils matured in nine months, and the roots would remain in the ground without rotting for a year. Harvested once, the land would be abandoned and never used again.

We had barely entered the forest again when Tomo froze, dropped into an attack crouch, and slipped away from us, moving silently and steadily through a thicket of heliconia until stopping at the base of an enormous tree sixty feet from the trail. In a single gesture he had withdrawn a dart, notched its tip, deftly spun the kapok fiber around the base, and placed it in the mouth of the blowgun that now hovered motionless above his head. His cheeks suddenly puffed out with tremendous pressure, which was released in an instant. A moment later he was lunging through the vegetation, laughing and shouting. By the time we caught up, he held a rufous mot mot in his hand. The bird was still alive. Tomo had managed to reach it before the poison took effect. He dropped the frightened creature into his basket and placed the dart conspicuously in the notch of a tree so that all would know an animal had been taken.

As we continued along the trail, still amazed by the accuracy of the shot, Tomo snapped off a small branch, broke it open, and rubbed the inner cavity on the inside of his cheek. The plant was *Duroia hirsuta*, a common tree in the coffee family. Ants live within the stems, and the Waorani, it turned out, apply their concentrated pheromones topically to relieve the pain that sometimes results from using the blowgun too much.

"It's a macho thing," Jim smiled. "Often they don't really have to blow as hard as they do." He then explained that the volume of air in a typical blowgun is less than a tenth the capacity of the lungs. Thus it is not force but control that counts, judging the distance to the prey, the angle of ascent, the proper trajectory.

"The longer the blowgun, the greater the velocity of the dart. Up to a point. Then resistance takes over. Finding that perfect balance, the right length is something they're always looking for."

Though a gifted hunter with a dart, Tomo confessed that he, like most Waorani, preferred shotguns. It was something that had initially confused and concerned Jim. When he first arrived, the entire tribe possessed only three shotguns. Six years later one hunter in three owned one. For the most part they were miserable weapons: single-shot breechloaders cursed with weak firing springs that rarely lasted a year.

A small box of shells cost the equivalent of three blowguns, as much cash as a Waorani could earn in a week if there was work. To make the purchase required a journey of four days. It just didn't make any sense. At close range a shotgun was useful for large terrestrial animals, provided that it worked, but for birds and monkeys and anything that lived in the canopy, the blowgun was by far the superior weapon. One day it finally dawned on Jim that the Waorani affection for shotguns had little to do with efficiency. It was the intrinsic attraction of the object itself, the clicking mechanisms, the polished stock, the power of the explosion. As one Waorani hunter explained, "It makes such a beautiful noise."

The trail reached a small creek. As Tomo demonstrated the proper way of poisoning fish, smashing the liana on a log, placing the bark in a small pool of water, he noticed a footprint in the mud on the far bank. Moving to examine it closely, he named the person who had left it. Sure enough, a mile or two up the trail we heard shouting and came upon the man in question and his wife, standing over a collared peccary that he had run down and speared. He acted as if we had been expected. Swatting away the flies and sweat bees, the hunter launched into a full account of the kill, evidently sparing no detail, for it was fifteen minutes or more before we finally pushed on. By then Tomo was wired. The trail climbed high onto a ridge of boulders and moss and twisted lianas. Suddenly he began to shout.

"It was here. It was here that I speared it!" He then explained to Jim that he and two friends had once tracked a wild pig to these rocks. They had heard something just below them and in their excitement had jumped off the bluff, fully expecting to land just behind the pig, ready for the kill. Instead, they came down face-to-face with an immense jaguar. Each of them had three wooden spears. They had no choice but to try to kill it, which they did.

"Have you ever seen a jaguar up close?" Jim asked me.

"Once, but just for a second. Then it ran away."

"The teeth are sunk into an incredible jaw, perfectly designed for tearing flesh." We both looked at Tomo, who was still laughing at the memory.

Only later in the day did I realize that Tomo was as intensely interested in my world as I was in his. We had just collected *Jessenia batua*, a lovely palm known to the Waorani as *petowa*. Each part of the tree had a name and a separate use. One of Schuttes's students, Mike Balick, had studied the palm and discovered that the oil in the seed was, in terms of both taste and chemistry, indistinguishable from olive oil.

Single-handedly he had offered the Brazilian government the opportunity to reduce its annual trade deficit by hundreds of millions of dollars. It was hot, and we were resting. I was thinking of Mike when I realized Tomo was asking me a question.

"What was that?" I said.

"He wants to know how many brothers and sisters you have," Jim said.

"Two."

"So few." Tomo was laughing again. He spoke and Jim listened.

"He wants to know if you have to buy your wives."

"No, not that I know of."

"It's because the Quichua do. There's a bride price, and they tell the Waorani it's the civilized thing to do," Jim said, turning toward me. "You have to understand that every contact he's had with the outside has left him utterly perplexed."

Tomo's first exposure, Jim explained, had occurred in 1975 during a shamans' war between two rival groups of lowland Quichua. Knowing that the Waorani were eager to establish trading relations, one side asked three Waorani men, including Tomo, to kill a rival shaman, assuring them that such a murder was acceptable among the Quichua. The only stipulation was that the deed be done with spears. Tomo agreed and was promised a radio, a pair of boots, a shotgun, and ongoing access to trade goods of all sorts. As soon as the shaman was dead, those who had contracted the murder betrayed the Waorani to the authorities. The military flew in by helicopter to the Quichua village where Tomo was staying. The soldiers landed, weapons in hand, firing indiscriminately into the tree-tops. Tomo was on the ground watching, but he soon fled and remained on the run for more than a year.

Undaunted by the experience, Tomo retained a genuine hunger for the outside world. Invariably his encounters were bitter, especially once he began, like so many of the Waorani, to work for the oil companies. Hired by an agent of Texaco to cut trail, he worked for three months, living on a diet of white bread; in the end he received no pay. It was only then that he denounced the *cowode* and returned to the forest.

Tomo's father had died at the hand of his own brother, Dabo. Now Dabo is Tomo's father, and Tomo addresses the killer of his natural father as father. Tomo's mother's sister is Meñemo. Four times in her life spearing raids had forced her to flee to the forest. When she was five, she survived three months alone in the forest. The insects were so terrible that she buried herself in the swamps to sleep. For food she ate clay. She lost all of her hair, but she lived. When she married, she once

again found herself on the run, this time with two children. One kept crying and had to be choked to death so that the other might live. It was a harsh world but one that Tomo at least understood.

Now Tomo himself was a father. He had six children, including a stepson whose real father, Nénkiwi, had been one of the Waorani who killed the missionaries in 1956. Nénkiwi was a boastful character, always threatening to spear people. Finally one day Giketa, a respected elder, asked, "Who is going to take care of this guy?" A Wao called Dyowe killed Nénkiwi with a spear, and Tomo married his widow. Thus Tomo's word had weight when he spoke to us that afternoon of the history of the massacre of the missionaries. It was all a terrible mistake, he explained. George, whose real name was Gimari, was angry and jealous that Delilah, or Naenkiwi, was flirting with the white strangers. He told the Waorani at Terminal City that the missionaries were evil. The women disagreed, but Gimari's opinion held. Thus, the entire time the five Americans waited on Palm Beach, there was never a doubt that they would be killed.

On Easter Sunday I awoke to soft voices and hymns sung in a gentle manner, innocent and pure. I looked up and saw Kathy and her children huddled by the fire. The morning was cold. Thick ground fog hung over the village. I fell back into my hammock and lifted the thin blanket over my shoulders. Drifting back to sleep, I heard other voices from the night before, the slow back-and-forth rhythm, the subtle tone shifts of the Waorani chants, songs so old the people no longer understand their meaning—like singing hymns in Middle English. For several hours we had danced at the house of a Waorani named Kento, forward and back, sweaty hands on one another's shoulders, feet flat on the ground lifting dust that mingled with the scent of the aromatic plants the Wao had crushed onto their skin. Then the songs had seemed to emerge from a trance. Now in the uncertainty of dawn, hymns did not seem out of place.

Breakfast brought me back to the forest: smoked meat, a calabash of thick banana drink, and beetle grubs roasted over the fire. The day before, Tomo had killed four monkeys and Kento bagged two. Jim figured they had each covered sixty miles of ground. They would have shot more, but they had broken taboo by drinking *chicha* the morning they made the poison.

"It's sort of like eating your cousin," Jim said, smiling, as I worked my way through the forearm of a howler monkey. By this time I had

eaten them all—capuchin, howler, woolly, spider—and I still couldn't tell the meat apart.

"There's a squirrel that lives on one kind of palm nut," Kathy said. "That's what the Wao really like. They roast the stomach in ashes and eat the whole thing."

"It's pretty good," Natasha added. I laughed. She was a sweet girl, strong and very brave. Two nights before she had been struck by a scorpion, and she didn't cry, not even when all the Wao gathered around her and the old lady had rubbed the solanum fruit on the wound.

After breakfast we wandered over to the small church the Waorani had built by the airport. Many of them were already inside—Tomo and Kento, Kowe, Geke, Wepe, and their families—all seated stiffly on the wooden benches, talking casually, apparently oblivious to the bossy young woman who paced back and forth in front, barking orders and dismissing them as savages. It was disconcerting to see the numb faces of the Waorani men enduring the taunts of this woman, dressed stiffly in a fresh cotton smock. She, too, was Wao, but her manner betrayed her. She was Wepe's daughter, and for the last two years she had lived outside, working as a maid for a *mezizo* family in Puyo. Throughout the Oriente, owning a Waorani is something of a status symbol. They speak no Spanish, are subject to rape, and after several months are dismissed, with perhaps a dress as payment. Wepe's daughter was wearing hers.

Jim and Kathy and their kids sat quietly on a bench at the back. I took a place beside young Natasha. It all seemed strange. I remembered Betty Elliott's accounts of the first Waorani church services, with Dayuma very much in the role of Wepe's daughter. Before dawn she would shout to the clearing, "Everyone come out. I am going to speak about God." The people would then gather. For them the idea of sitting and listening was ridiculous. Waorani speak when they have something to say. So Dayuma kept telling them all to shut up. Then, since there was no word for prayer in the language, she would announce that it was time for them all to sleep. "Close your eyes and sleep!" she would yell. For the Waorani, a church service meant having this odd woman wake you before dawn just to tell you to go back to sleep.

The humor of it was not lost on Betty Elliott, Jim Elliott's widow, who emerges from the pages of her memoirs as an amazing woman, possessed of a simple faith, tempered by tragedy. Rachel Saint, by contrast, was a zealot, informed by fear. Welcomed at the Waorani settlement at Tiwaeno in part because they were women and thus no threat to the Wao, Saint and Elliott—one a spinster, the other a young mother—had completely different experiences. Surrounded by men



singing love songs, young girls slipping into hammocks, guiltless love-making all around, Rachel Saint was soon writing home of the "scum of heathens" and the need of Christian marriage. Elliot saw the positive. Intoxication was unknown, men never beat their wives, criticism was public, and relations between husbands and wives were equitable. "Many of our civilized sins," she wrote, "were conspicuous by their absence. There is no gossip, vanity, personal pride, stinginess, or avarice. I was faced with the fact that socially I had nothing whatever to offer the Aucas."

Inevitably, Elliot and Saint would clash, and there was never a doubt who would come out on top. "Rachel," Elliot later wrote, "is 100 percent dogmatic. I couldn't discuss anything rationally with her. She simply would not give way on anything." The final split occurred over a trivial matter: whether or not the Waorani ought to be exposed to communion. Elliot maintained you could use grape juice, though the Bible specified wine. The very idea of introducing a Catholic ceremony deeply offended Saint. For Betty Elliot it was the final straw. Having lost her husband to the Waorani and raised her daughter among them, Betty Elliot left Tiwaeno in 1961. Perhaps more than anyone she understood the people. "The Aucas," she would later write, "has no form of religion. He knows nothing of prayer, sacrifice, worship, placating evil spirits, or adoring the good. He is not consciously seeking after anything."

With Elliot out of the way, Saint installed herself and Dayuma as power brokers, mediating not only the delivery of new religious ideas to the Waorani but, more important, the flow of goods from the outside. For the next decade, as more groups of Waorani were drawn to Tiwaeno, swelling its population to three hundred by 1969, virtually all contact with the Waorani filtered through Rachel Saint. In 1964, when the Ecuadorian government established a reserve for the tribe, an area of less than half of 1 percent of their former territory, it was officially known as "Dayuma's Aucas Protectorate." Journalists began to write of the Aucas queens, and the myth of the Aucas matriarchy was born. By the early 1970s, Saint had become almost psychotically attached to her tribe. She built a little empire in the forest, controlled by a select number of women whose power derived strictly from the Waorani hunger for goods and information about the world outside.

Saint's downfall began when Jim Yost, then a young anthropologist, issued a report criticizing Dayuma's monopoly and urging that the flow of trade goods be more carefully monitored. He also pointed out the danger of concentrating the Waorani in a single settlement, citing the polio epidemic that had swept through Tiwaeno in 1968, killing sixteen

and paralyzing six. Saint was livid. She had herself been stricken by the disease and knew it to be the judgment of God. Without her presence, she maintained, the Waorani would kill each other. Without her protection, they would kill Yost and his family. Jim called her bluff. The S.I.L. leadership backed him, and Saint was discreetly retired.

Wepe's daughter finally sat down, and in her place stood the school-teacher Nange. I tried to imagine what he was saying. Jim had explained how difficult the translation work had been. How do you give English words to a language so rich in onomatopoeia and punctuated with the sounds of the forest? How do you translate the Bible when nothing in it—places, names, objects, let alone themes—makes any sense? The Waorani had no words or reference points for rich people and poor, for specialized labor, hierarchy, prayer, buying and selling, towns, kingdoms, or nations. So coins become "fish scales." Paper and bread become "wasps' nest." But even if one can understand the sounds of Waorani and forge them into words, how do you translate the words into meaningful phrases? Take a basic Waorani sentence: *Bhó mamomi hemoi*. Literally it says, "You carrying in hand come give you take I you follow." What it means is simply, "Bring it to me." Add in the challenge of a tonal language, and you have, in Jim's own words, "Fellini in the forest."

I looked around at the congregation standing stiffly as they mouthed a melancholy hymn. Clearly, I thought, it had not been the promise of the afterlife that drew the Waorani to Christianity. They already believed they would go to paradise when they died, and their heaven had animals in it. As Jim had written, the magic of Christianity was its potential to break the vendetta and end the cycle of violence. And it had. Looking around this small gathering provided ample evidence. A generation ago Tomo would have had to avenge Toño's death by killing Wepe. Wepe's group had been raided by Kento's father, Nüwa. Wepe in turn had raided Kowe. None of them could be sitting together. Whatever else it had wrought, Christianity had stopped the spearing raids, the killing of innocent women, infanticide, and the live burial of children.

Christianity also provided a model for interacting with the world. Rachel Saint may have thought she was in control, but in many ways it was the Waorani. Even before contact they had been fascinated by the possessions of the *cowade*. Once they knew they could trade in peace, their hunger for goods and their insatiable curiosity drove the entire dynamic. Just the summer before while in the capital Jim had received

a phone call from the Presidential Guard at the National Palace. Three Waorani whom no one understood were sleeping on the sidewalk waiting, it turned out, to ask the whereabouts of a minor government official they had met in the forest.

When Jim had tried to encourage the Waorani to disperse, both to establish their inherent rights to the land and to stem the flood of goods that he thought threatened their way of life, the Waorani became furious. In 1975, when the S.I.L. did attempt to control the flow of radios, T-shirts, sunglasses, and baseball hats, the Waorani responded by seeking other trading contacts in the oil camps south of the Río Napo or among the tourists Dayuma was bringing in each year to see the "wild Auca savages." At Tzapino the Waorani cleared their own airstrip. They invented rituals, imitated the activities of an oil camp, and sang songs to the helicopters, with the hope that they would unleash a rain of gifts.

Finally, Jim realized that he could no more control the flow of goods than he could reverse the process begun so long before on Palm Beach. "As romantics," he told me, "we idealize a past we never experienced and deny those who knew that past from changing. We forget perhaps the most disturbing lesson of anthropology. As Lévi-Strauss said, 'The people for whom the term cultural relativism was invented, have rejected it.'"

It was at the end of my third week in the village that Jim and I noticed a peculiar pattern in our work. By then we had managed to collect at least 80 percent of the plants he had recorded over the years as well as many others. Some of these, including a new species of basidiolichen reputedly employed as a hallucinogen by shamans four generations ago, were exceedingly rare and had never been seen by Jim. But it was a very common plant that tipped us off—that plus a serendipitous visit from an old lady. The plant was *Brinjalisa grandiflora* ssp. *schultesii*, the admixture that had given Schultes such a headache at Conejo when he took *ayahuasca* with the Kofán and that Tim later named for him. Used by dozens of tribes to treat fever, it is one of the most prized medicinal plants of the Amazon. The Waorani agreed that it was useful but only as wood. It seemed incredible to me that a people who had such a profound knowledge of the forest would have failed to recognize the medicinal properties of the plant. When I later reviewed my notes, I discovered to my surprise that, out of all our collections, there were only thirty-five medicinal plants.

It was early evening, and Jim had been playing a tape of a group of

Waorani discussing a spearing raid. Several of the Quiwado people had gathered around and were arguing with the machine. One of them was a thin, elderly woman. Suddenly she exploded in rage, flung her arms in the air, and then lifted her blouse for all to see. There were two neat scars where the razor-sharp triangular spear had perforated her belly and emerged from her back. It had happened years before, Jim explained, when the woman was young. The raiders had left her for dead, but when her kin returned, they treated her. Because of the reversed barbs on the spear, they could not risk removing the weapon. Instead, they cut it off back and front and, leaving the remainder of the spear in her, plastered the wound with the standard treatment: mud from the watering hole of a peccary. They then carried the woman to her hammock, where she remained for a couple of weeks. As the tissue around the wound became necrotic, she felt well enough to return to work in the gardens. One day as she bent over to harvest manioc, the long spear fragment slipped out.

I asked the obvious question: "What about infection?"

"Wasn't any," Jim said. "She was lucky. No internal organs were hit. But I've heard similar stories. And I've seen lots of hunters accidentally skewer their feet on punji sticks on the trail."

"Again no infection?"

"No. They were a healthy people."

"How healthy?" I asked.

"Very. It's one of the few societies that we really know about."

Jim explained that not only had the Waorani access to Western medicine since their first sustained exposure to Western disease but a team of medical experts had compiled a complete profile of their health at the time of contact.

"I have copies of their papers here," he added. "I can dig them out for you."

Later that night I had a chance to read several of these reports, the most important of which had been written by James Larriek of Duke University Medical Center, Jon Kaplan of the University of New Mexico and Jim were coauthors. The results were astonishing. Among the Waorani the medical team had found no evidence of hypertension, heart disease, or cancer. There was no anemia. Hemoglobin values were equal to or better than North American standards. The common cold was absent. The Waorani ranked as one of the few populations in the world where blood pressure does not increase with age. The people had practically no internal parasites and virtually no secondary bacterial infections. They had never been exposed to polio or pneumonia, nor was there any evidence that smallpox, chicken pox, typhus, or typhoid

fever affected the tribe. There was no syphilis, tuberculosis, malaria, or serum hepatitis.

Although on the whole the Waorani were remarkably healthy, the medical researchers found a number of chronic ailments. Yellow fever was endemic, as was hepatitis A and herpes simplex. The Waorani also suffered from fungal infections and external parasites such as lice and scabies. They had terrible teeth. Naturally they experienced burns, wounds, and various bites, ranging in severity from that of a congo ant, which could paralyze an arm for a day, to a snakebite, which could kill.

With this information in hand, Jim and I had a closer look at our botanical collections. Of the thirty-five medicinal plants, thirty were used to treat one of six conditions: fungal infections, snake bite, dental problems, fevers, insect stings, pains and traumatic injuries such as animal bites, spear wounds, and broken bones. The remainder were valued for treating some idiosyncratic ailment. Two species of hot peppers, for example, were used by a shaman's wife to bring him down from a hallucinogenic intoxication. In each of the six conditions the Waorani had sought a set of medicinal plants representing many distinct botanical families. In other words, they had very carefully sampled their forest to find treatments for the ailments they suffered at the time of contact. In the end they had needed and come up with very few preparations.

This limited and highly selective use of medicinal plants stood in marked contrast to that of neighboring tribes such as the Canelos Qui-chua, a people who have been repeatedly exposed and ravaged by Western diseases for hundreds of years. The Quichua have hundreds of plants used for dozens of conditions, including such vague and possibly European concepts as "bad air," "kidneys," and "liver." The difference between the two tribes forced us to consider a basic question: Was the Waorani use of plants an anomaly, or might it represent the pre-contact state of affairs throughout the Amazon? I knew, and told Jim, that ethnobotanists working among the Yanomamo, another recently contacted group, had reported low numbers of medicinal plants. If the Waorani and other isolated groups are in fact indicative of the pre-contact era in regard to their use of medicinal plants, it would seem that the vast pharmacopoeias reported for the more acculturated tribes reflect, at least in part, the chaos of contact and the accelerated experimentation that took place in response to the arrival of Western diseases. This idea, while challenging the notion that indigenous knowledge of medicinal plants necessarily developed slowly, over hundreds of years, in no way denigrates native healing practices. On the contrary, it revealed native healers, including those of the Waorani, for what they

are: active scientific experimenters whose work reflects social needs and whose laboratory happens to be the rain forest.

On the day before I left Quiwado, Jim and I poled upriver with young Geke and Kento to collect bark cloth, a specimen of yam bean, and a number of other plants I had yet to find. Kento pointed out the places on the bank where animals had drunk that morning, and a clearing where an old man had died and been buried, accompanied by his three-year-old son, who was buried alive. We passed a youth fishing on the shore and watched as he lunged his spear into the water and then whipped it out, a bright fish spinning on the sharp tip. Around the next bend in the river we came upon a red caracara perched on a branch. Kento shot it with a dart.

"I thought you said they were taboo," I said to Jim.

"You're not allowed to eat them. That doesn't mean you can't kill them."

We passed a quiet eddy, and Geke wanted to fish. He reached into his fiber bag and pulled out a stick of dynamite. Jim told him to put it away. They argued. Jim prevailed, and Geke sulked the rest of the morning.

"They get it from the local officials," Jim explained, "a fuse connected to a blasting cap. Jam it into a stick of dynamite, tie it to a rock, light it, and let her rip. The concussion kills all the fish. The rivers around Tena are all wiped out. If it's not dynamite, it's DDT."

"What do you mean?"

"All the villages get sprayed. The World Health Organization gives it to the Ecuadorian government. Health officials bring it in for malaria, and then they sell it by the hundred-pound sack to the Waorani, who use it as fish poison."

"Don't the Indians know?"

"Know what?"

"Can't they see what it does to the rivers?"

"Sure. And I've asked them. I once asked Kowe if he had noticed anything about yields. 'Yes,' he said. 'When we first started using it, we got lots of fish. Now not so much.' What about your children? I asked. Without the slightest sign of remorse he calmly said, 'Oh, they won't have any fish, but we will.'"

"What does that tell you?" I asked.

"Do you remember when we got the honey?"

"Sure." I could still see the excitement on Tomo's face, his head and sweaty body covered by thousands of stingless bees, his hand uncov-

ering the red cone of cecropia seeds made solid by saliva and wax, the outer casing of the hive, the thick black wax prized by the Waorani as resin and glue. Then the massive comb itself, great cavities of thick honey, poured onto maranta leaves and carried home to the children.

"Tomo must have eaten a quart of it," I said.

"When he was in the middle of cutting down that tree, do you remember what he said?"

"I remember you saying something."

"Suddenly, in all his excitement, he turned to us and said, 'One time I killed a howler monkey, and it was no farther than from me to you.' Then he went right back to cutting the tree. There was this wild association between hunting and cutting the tree. It's what they most like to do."

"It wasn't just the honey."

"No, I don't think so. I've seen it so often. Nothing thrills the Waorani more than killing game and cutting down big trees. It's what so many people don't understand who haven't lived in the forest. You don't have to conserve what you don't have the power to destroy. Harming the forest is an impossible concept for them. The fact that they use every part of an animal has nothing to do with a conservation ethic, and everything to do with hunger."

"They don't know what it means to destroy."

"They have no capacity to understand. In a world of such abundance, the word 'scarcity' has no meaning. It's what makes them most vulnerable. It's the same with their culture. When you've lived in complete isolation, how can you understand what it means to lose a culture? It's not until it is almost gone and when people become educated that they realize what's being lost. By then the attractions of the new way are overpowering, and the only people who want the old ways are the ones who never lived it."

Late in the afternoon, just after we had returned to Quiwado, there was a Waorani visitor waiting for us. He had come from downriver, five hours away, not far from the military outpost on the Curaray. He wore wraparound shades, canary yellow trousers, a white polyester shirt, bright sneakers, and a hat emblazoned with the logo of a German company. The immaculate condition of his clothes revealed that he had changed at the edge of the clearing, just before entering Quiwado. He had a huge silver watch without hands and an Instamatic camera that didn't work. His name was Nénkiwi. He couldn't read and so had

no way of knowing that scrawled across his chest was the lettering AMOR-ECUADOR MILITARY POST # 5.

Nénkiwi had come because he had something to sell: a stone ax that Jim identified as Late Napo phase, A.D. 800-1200.

"Might as well buy it," Jim said. "Otherwise someone else will."

I bought it for a few dollars, and Nénkiwi was delighted.

That night I sat alone in my hammock and held the ax in my hands. It seemed incredible to me that just a generation before, during the years when Schultes lived and traveled in the Amazon, these Indians were still using such an implement to clear their land. I imagined a Waorani man standing in the shade of the forest and pulverizing the cambium of some tree. They did not even know how to carve stone. They found the ax heads in the jungle, gifts of their creator, *Wængongi*.

I thought of what Jim had told me and remembered that out beyond the mauritia swamps there were still Waorani who had yet to be contacted—a small band splintered from the people at Yasuni, running scared in the forest just three years before they had killed six oil workers, having given the intruders ample warning to get away from their land. By now they had speared or been speared by every other Waorani group. No one knows how many there are—perhaps just eight or ten, brothers and sisters, probably without children. In the moment, as I listened to the wind brush against the trees, I hoped only that somehow they would stay away.