the Amazon Conservation Team

The Amazonian Travels of Richard Evans Schultes

Chapter III. Apaporis: Workshop of the Gods

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April 8, 2019

The following text is from the interactive map available at the link:

banrepcultural.org/schultes

Schultes makes a daring descent of the uncharted Apaporis River by first climbing the spectacular “Lost World” mountains of Chiribiquete, finding striking vestiges of a disappeared ancient peoples. After navigating a series of treacherous rapids and enormous waterfalls, Schultes encounters an area of incredible cultural diversity, with indigenous groups practicing elaborate ritual ceremonies.

Stone Statues of San Agustín

On January 1, 1943, Schultes ascended the rainforested hills in the outskirts of San Agustín, a small, pastoral village in the mountainous headwaters of the Magdalena, an enormous river in central Colombia (Schultes, Field notebook 1943, p. 13).

Among the patchwork of fields and vegetation surrounding San Agustín, Schultes encountered terrifying stone faces looking out with bulging eyes, flared nostrils and grinning, fanged oversized mouths. The compact bodies and short legs made the statues appear crouched and ready to pounce. These feline motifs depicted human beings turning into mythical beasts, including various stages of human-jaguar transformations.

[Caption] Statue at San Agustín

The works display vivid scenes: in one statue, a woman cradles an infant in her arms, overseen by two monstrous beings with grinning, fanged mouths. Another depicts menacing warriors clutching huge war clubs while beastly creatures hang from their backs (Reichel-Dolmatoff, 1972, p. 45).

Near these statues lay many large, circular burial mounds connected by paths and terraces. Within the tombs, eerie, long stone corridors led to rectangular subterranean chambers constructed of immense stone slabs (Reichel-Dolmatoff, 1972, p. 41). Inside these tombs lay giant stone sarcophagi and elaborate carvings depicting supernatural beings (Reichel-Dolmatoff, 1972, p. 41).

[Caption] San Agustín carving design

Schultes found himself surrounded by the largest collection of religious megalithic monuments in all of South America, comprising hundreds of statues spread over an area of at least 500 square kilometers (190 square miles) in more than forty sites. The prehistoric works were first seen by

European eyes in 1758, by a Franciscan priest who believed the Devil had created the statues (Reichel-Dolmatoff, 1972, p. 24).

It is believed that these works were the creations of a northern Andean culture that flourished from the 1st to the 8th century, likely abandoned around 1350 AD ("San Agustin Archaeological Park", UNESCO World Heritage Centre). Colombia had a rich mosaic of pre-Columbian civilizations, and this region of South America was likely the first corner of the continent settled by prehistoric groups migrating south from Panama, both along the coast and overland.

[View Map of Pre-Columbian Civilizations in Colombia]

[Caption] San Agustín statue with jaguar motif

The recurrent jaguar symbolism invoked in San Agustín shows a link to modern Amazonian cultures, whose shamans are closely associated with jaguar spirits (Reichel-Dolmatoff, 1972, p. 92). Some Amazonian shamans believe that that they can turn themselves into the big cats and roam the rainforest at night. Others claim that postmortem, they can transform into a jaguar, still able to walk among the living.

[Caption] San Agustín statue with jaguar motif

While the stone carvings of ancient Andean civilizations remain lasting monuments on the landscape, all traces of Amazonian civilizations disappeared within the tropical rainforests, where organic remains decompose rapidly. While experts debate over exact numbers, the Amazon basin certainly contained several complex and sophisticated civilizations that remain a mystery.

In early 1943, in search of rubber trees, Schultes passed through San Agustín on his way to the Villalobos River in the upper Caquetá watershed, with the objective of reaching the Inga village of Yunguillo on the Caquetá River (Davis, 1996, p. 309). After leaving San Agustín, the expedition struggled through the rugged Andes along the Villalobos River, finding the area badly deforested by rubber and cinchona exploitation in previous decades (Schultes, Field notebook, 1943, seq. 20).

[View Map of the Caquetá watershed]

Turning back before ever arriving at the Caquetá River, Schultes next set his sights on a remote and uncharted northern tributary of the Caquetá: the Apaporis River. The Apaporis is a long, exceptionally winding river that begins at the almost inaccessible confluence of the Ajajú and Macaya rivers and flows southeast before reaching the mighty Caquetá River near the border between Brazil and Colombia.

[View Map of the Apaporis River]

At the time, the Apaporis was an extremely inaccessible and largely unexplored river thought to be flanked by extensive stands of wild rubber trees. Little did Schultes know that his mission to the Apaporis would lead him to one of the most spectacular landscapes in the Amazon basin,

where he would encounter striking remnants of prehistoric peoples while living among isolated cultures with ancient lineages.

Chiribiquete: Workshop of the Gods

On March 3, 1943, Schultes arrived at Miraflores, a newly created rubber station on the upper Vaupés River in southeast Colombia. The expedition began inauspiciously: many supplies were severely delayed or never arrived (Davis, 1996, p. 313). A local chief in Puerto Nare warned of treacherous rapids on the Apaporis that Schultes soon saw for himself on an overflight of the Apaporis in a military plane. (Davis, 1996, p. 314).

Schultes assembled a small scouting team and ascended the Vaupés River to the confluence of the Unilla and Itilla rivers, a location known to local rubber as Puerto Trinidad (Davis, 1996, p. 316). From Puerto Trinidad, the team spent fourteen hours hacking their way through dense forests overland until finally reaching the Macaya River at a series of rapids (Davis, 1996, p. 316).

[Caption] The Macaya River

That same evening, a young expedition team member attempted to swim across the river, but was caught in the current and pulled into and under the twisting rapids (Davis, 1996, p. 316). His body was never recovered. The next day, Schultes returned to Miraflores to report the death. To commemorate this tragedy, the rapids were named *Cachivera del Diablo*—the "Devil's Cataract".

After a quick trip to Bogotá, Schultes returned to Miraflores on April 18, 1943 (Davis, 1996, p. 317). There, he and Everett Vinton, a field technician working for the Rubber Reserve Company, assembled an expedition team of 28 men and set to work establishing a twenty-mile supply trail from Miraflores to Puerto Trinidad and then on to the Macaya (Davis, 1996, p. 317).

After slowly accumulating the necessary supplies, the team cleared a high piece of land at the confluence of the Macaya and Ajajú and built a rustic camp with a kitchen, dining hall, storerooms, sleeping quarters for thirty men, and a rough landing strip on the opposite bank of the Macaya (Davis, 1996, p. 317-318). They named the camp *Puerto Hevea* because of the high concentration of rubber trees in the area. This locale can still be seen as a clearing in recent satellite imagery.

[Caption] Cerro Chiribiquete

On May 14, while the expedition crew was clearing the forest and setting up camp, Schultes set off across the Macaya to explore the immense sandstone mountain that had loomed in the distance for many weeks, now known as Cerro Chiribiquete (Schultes, Field notebook 1943 April-May, p. 30). As he climbed, the dense forests gave way to a rocky savannah. Arriving at the broad summit, a spectacular landscape was revealed.

[Caption] Satellite images of Cerro Chiribiquete

Schultes described what he saw in his 1944 paper, "Glimpses of the Little-Known Apaporis":

> Flat, table top mountains with shelves, knob, or dome shaped elevations with perpendicular cliffs on all sides, often grotesquely eroded and often with deep fissures and faults...mountains range between 800 – 1200 feet above the forest floor… [The] quartzite of these mountains, with its general red-brown or yellow-brown hue, varied here and there with brilliant streaks of red and green, presents a pleasing picture. The traveler can often see from great distances, slender and ribbon-like against the coloured cliffs, graceful cascades. These mountains, which arising abruptly out of the vast carpet of unbroken jungle in irregular fashion, are suggestive of scenic reconstruction of long-gone geologic ages (Schultes, 1945, p. 124).

The sober-minded Schultes—never a man given to poetic flights of fancy—was deeply impacted by this landscape. He would later say that these rock formations seemed like giant sculptures left over from God's workshop: "It was from these first tentative experiments," Schultes mused, "that He had gone out and built a world" (Davis, 1996, p. 318).

On top of Cerro Chiribiquete, Schultes gathered the first-ever botanical collections from the region. In his book One River, Wade Davis describes Schultes' experience on Cerro Chiribiquete:

> What Schultes found on the summit was a grassland interspersed with dense brush of low gnarled shrubs, an island of savannah perched a thousand feet above a tropical rain forest. Adapted to the dry conditions, the plants were reduced in size, and many bore glossy leathery leaves, often coated with heavy waxes or dense pubescence. Their bark was either thick and corky, or thin and coated with wax. Epiphytes had exaggerated pseudobulbs for water storage, and many plants grew low to the ground and had dense rosettes of leaves. The roots were especially well developed, penetrating the cracks and fissures in the rock, reaching like veins across the face of cliffs. The growth forms were exceedingly strange, the overall aspect of the flora elfin and bizarre (Davis, 1996, p.319).

Schultes found several new species that day, including the "curious" *Vellozia phantasmagoria*, a ghostly herb with lily-like flowers from a small genus found in northern South America and adjacent Panama (Schultes, 1945, p. 127).

[Caption] ***Vellozia phantasmagoria***

[Graphic] Schultes' specimen of *Vellozia phantasmagoria*

As he cut through the forest, his clothes became covered with a sticky latex (Davis 1996, p. 319), leading to the discovery of a new rubber plants *Hevea nitidia* var. *toxicondendroides,* a dwarf species of Hevea (Schultes, 1945, p. 127). Showing a high degree of blight-resistance, Schultes believed this variety could provide valuable genetic traits to rubber crossbreeding efforts (Schultes, 1945, p. 12).

[Caption] ***Hevea nitidia* var*. toxicondendroides***

On Cerro Chiribiquete, Schultes also found a novel species first collected by the German botanist explorer Carl Friedrich Philipp von Martius in Araracuara to the south more than a century before (*Bombax coriaceum*) (Schultes, 1945, p. 127). Related to large forest trees, this low shrub grows in abundance on the most sterile sandy and rocky exposures (Schultes, 1945, p. 127).

[Caption] The Ajaju River

On May 31, 1943, Schultes and a small crew paddled their way up along the sweeping curves of the Ajajú River, surrounded on both banks by majestic tabletop mountains. After several days on the water, they passed the narrows of Macuje and made camp above the rapids before continuing upstream to the Yaya-Ayaya River (Schultes, 1943 report, p. 2). Finding the Yaya-Ayaya blocked with rapids and the headwaters of the Ajajú less suitable for rubber trees, the expedition turned back down the Ajajú (Davis, 1996, p. 320).

From Puerto Hevea, Schultes explored the mountains south of the Apaporis River, briefly paddling up Caño Iglesia before climbing the nearby Cerro Gigante (Schultes plant list 1943, p. 66). There, at the base of a large waterfall cascading down the sandstone cliffs, Schultes found a greenish brown orchid with brilliant white highlights growing on a tree before turning back north towards the Ajajú (Schultes, Field notebook 1943 April-May, p. 66).

[Caption] Cerro Castillo

Later in June, Schultes clambered up and through deep canyons full of ferns on the flank of Cerro Castillo before reaching the summit some 1,000 feet above the forest floor (Schultes, 1943, Field notebook, pp. 9-11). There, he found an unusual bromeliad growing in the dry, rocky soil that would later be named in his honor.

> El Castillo yielded the grotesque *Navia Schultesiana*, which grows in dense and sometimes rather extensive clumps or cushions. The leaves are awl-shaped and finely toothed, and, from a distance, the plants give the impression of closely packed clumps of large mosses (Schultes, 1955, p. 124).

[Caption] *Navia schultesiana*

The Chiribiquete highlands held unusual relatives of plants downstream, leading Schultes to muse on the origins of species and the important role of these mountains as plant refuges:

> It is my belief that these hills are repositories for a number of primitive plants. Many species of Amazonian plants are known to have been extended by water and to have had their origins on or near the highlands at the headwaters of the important affluents. It is striking to follow the distribution of various species by river systems (Schultes, 1945, pp. 125-126).

Cerro Chiribiquete is part of the larger Chiribiquete mountain range that runs for more than 240 kilometers starting at La Chorrera to the south. The Chiribiquete range can be divided into five distinct parts: the Chiribiquete, Cuñaré, Yarí and Araracuara ranges, and the Mesa de Iguaje (Franco, 2002, p. 41).

[Caption] Map of the Chiribiquete Mountain Range

In 1943, Schultes was the first Western scientist to study the plants of the remote Chiribiquete highlands, an endeavor not repeated until the 1990s. Following his return from the field, Schultes strongly advocated for the protection of the Chiribiquete highlands, and the authority of his research was instrumental in the eventual creation of the Serranía de Chiribiquete National Park in 1989. After successive park expansions in 2013 and 2017, Chiribiquete is now the largest tropical rainforest protected area in the world, encompassing more than 17,000 square miles (43,000 km^2) in the heart of the Colombian Amazon.

Cerro Campana: The Bell Mountain

On June 5, 1943, as Schultes and his crew floated down the Ajajú River, they turned north to paddle up the black waters of a tranquil creek lined with white sand beaches (Schultes, Field notebook 1943 April-May, p. 27). Soon, a jagged rock shelf cut the calm waters into a series of angular rapids, forcing the team to disembark and continue overland (Schultes, Field notebook 1943 April-May, p. 58).

[Caption] Cerro Campana

In front of them loomed an imposing series of gigantic domed rocks and soaring peaks, known as Cerro Campana—the "Bell Mountain". The team clambered up the steep forested slopes, through unusually dense stands of the resinous *Senefelderopsis chiribiquetensis* (Schultes, 1945, p. 127), a latex-bearing relative of balata. Pulling himself onto a large shelf partway up the mountain, Schultes saw before him dark-red cave paintings covering the enormous rock walls.

[Caption] Chiribiquete rock art designs

The designs depicted chaotic mosaics of animals, shamans, hunters, and dancers. Jaguars with intricate spot patterns leapt through the air. Shamans held long staffs and palm fronds above their heads while hunters stood alert with barbed spears, ready to be launched. Abstract spiral designs emerged from the torso of animal-human hybrids as the creature underwent a mysterious spiritual transformation. Hundreds of red handprints are the only remaining signatures of a people who created this ancient artwork before disappearing into the jungle.

Search map of Chiribiquete for cave paintings

Schultes explored the elevated shelves around the base of Cerro Campana, finding shallow caves with paintings on the walls and potshards and charred sticks strewn across the ground (Schultes, 1988, p. 30). Continuing to climb the steep slopes, Schultes emerged on a rocky, domed peak with sparse vegetation that revealed a spectacular vista of towering, sheer-faced mountains.

[Caption] Schultes on top of Cerro Campana, June 5, 1943

Schultes described Cerro Campana in his book Where the Gods Reign:

> …the isolated quartzitic mountains of [Chiribiquete] are sentinels of a mysterious past. The Cerro de la Campana…is so strikingly awesome that it is wrapped in legend in the Indian mind. All Indians believe that fierce thunderstorms and torrents can be caused by beating upon a thinly eroded slab near the summit. When struck with another stone, it sends forth a bell-like tone (Schultes, 1988, p. 32).

Schultes was one of the first scientific explorers to observe cave paintings in this region in what would turn out to be one of the largest concentrations of pre-Columbian rock art in all of Amazonia. Later research found more than 50 sites some with as many as 8,500 paintings on a single wall (Castaño-Uribe, 1998, p. 21). To this day, the region remains largely unexplored, with

experts having little idea of the total number of cave paintings, their date of creation, or their precise origin.

Carijonas of Chiribiquete

Schultes' guide throughout the Chiribiquete highlands was Barrera, a young Carijona he had met along the Vaupés River (Davis, 1996, p. 315). Barrera had taught the ethnobotanist about the mythological importance of Cerro Campana as well as the uses of various plants by the Carijona people.

[Caption] A Carijona indian, Jules Crévaux, 1883

The Carijona had dominated the Chiribiquete region for more than four hundred years. Historical accounts describe the Carijona as a warlike and fiercely independent tribe, believed to have invaded the Chiribiquete region from distant lands to the northeast at the end of the 16th century (Franco, 2002, p. 18). They were feared by surrounding tribes, who told of violent Carijona raids descending from the inaccessible Chiribiquete highlands (Schultes, 1988, p. 30).

[Caption] Carijona Indians, Jules Crévaux, 1883

Early historical accounts described the Karijona people decorating their bodies with red paint and adorning their pierced nasal septa with animal bones (Franco, 2002, 109). They sometimes wore corsets made of tree bark wrapped tightly around their torso with forest lianas (Franco, 2002, 109). At times, these vestments were so large and cumbersome—reaching from the upper thigh to the lower chest—that it made it difficult to sit. The Karijona were known for their distinctive practice of rowing while standing, and for the toxicity of their curare, a highly sought-after trade item throughout the northwest Amazon.

[Caption] Hianakoto Indians (Carijona) by Theodor Koch-Grünberg, 1904.

The Carijona suffered a precipitous population decline at the end of the 18th century, caused by disease, intertribal conflict and enslavement by rubber traders (Franco, 2002, p. 129-132). Surrounded on all sides by brutal rubber traders and rival tribes, fiercely resistant Carijona groups withdrew farther into the castle-like refuge of the rugged and remote Chiribiquete Mountains (Franco, 2002, p. 133).

At the time of Schultes' arrival in the 1940s, there were 1,500 Carijonas who had abandoned the forests of their traditional territory and settled in three isolated Carijona communities: Puerto Nare on the Apaporis River, La Pedrera on the Caquetá River, and a small community on the lower Orteguaza River (Franco, 2002, p. 56; Franco, 2002, p. 132).

Carijona Plant Use

As he traveled through the former heart of Carijona territory, Schultes recognized that he was in a race against time to record important ethnobotanical information from some of the last members of this disappearing tribe that would soon cease to exist as an intact cultural entity.

Near the *Cachivera del Diablo*, Schultes and Barrera found a liana with yellow, bitter fruits previously utilized by the Carijona to create arrow poisons (*Curarea tecunarum*) (Schultes, 1980, p. 11). Schultes also learned of an epiphytic vine with red flowers used by the Carijona for mystical ceremonies and separately consumed with farina to expel intestinal parasites (*Markea coccinea)* (Schultes, 1980, p. 36).

Near the confluence of the Unilla and Itilla rivers, Schultes collected a plant with orange-red seeds used by the Carijona to stop bleeding of the gums (*Mayna longifolia)* (Schultes, 1980, p. 27). The Carijona also knew and used herbal remedies to treat fevers, fungal skin infections, and ringworm, and to relieve the symptoms of malaria.

Carijona healers traveled to the Chiribiquete highlands to gather the pungent leaves and stems of a species later named by Western science in Schultes' honor: *Piper schultesii* (Schultes, 1980, p. 9). The Carijona soaked these plants parts in water or fermented them to treat elderly patients with dementia "who sit without talking all day" (Schultes, 1980, p. 9). The leaves were also used to make a tea that was used to relieve coughs and chest infections, especially tuberculosis (Schultes, 1980, p. 9).

Earlier reports noted that the Carijona painted their bodies red with a mixture of the fruits of *achiote (Bixa orellana)* and the fat from the *charapa* river turtle (Franco, 2002, p. 109)

Carib Language

While traveling with Barrera, Schultes wrote down extensive notes on the Carijona language, part of the Carib language family found mostly in northern South America from Colombia east to French Guiana, a territory once called "caribana", a Carib word from which "Caribbean" is derived (Franco, 2002, p. 18).

The Carijona in central Colombia were the westernmost Carib-speaking group, likely migrating there from northeast South America through the Orinoco basin or by travelling south over the Guiana Shield and then following the main branch of the Amazon River to the east (Franco, 2002, p. 18).

View Map of Carib Language Family

Schultes added to these Carijona language notes as he encountered scattered members of the Carijona tribe throughout his travels. These notes now provide important documentation on this highly endangered language.

View Schultes' language notes

The Little-known Apaporis River

The expedition's next goal was to descend the 1,350-mile Apaporis, one of the most isolated and least known of rivers in the Amazon Basin. Schultes knew this task would not be easy: on a previous overflight in a small military plane, he had counted more than a dozen daunting rapids, including an enormous waterfall followed by a mile-long canyon that nearly obscured the river running through it (Davis, 1996, p. 314).

[Caption] Aerial photo of the Apaporis River

Setting off down the Apaporis, they encountered a series of rapids known collectively as the *Cachivera de Chiribiquete* that nearly capsized the canoe (Davis, 1996, p. 320). Barely reaching the shore, they were forced to haul the boat ashore and hike back to Puerto Hevea overland through the trackless rainforest, all the while carrying an injured man (Schultes, 1943 report, p. 2).

Nearly a week later, they once again continued down the Apaporis. Although slowed by a rainstorm that damaged many of their supplies, they were eventually able to advance nearly fifty miles through many treacherous rapids before once again deciding to return to Puerto Hevea by land, this time leaving the canoe behind (Davis, 1996, pp. 320-321).

After a brief interval in Villavicencio and Bogotá to recover from a blood infection that nearly killed him (the doctor who treated him turned out to be a veterinarian), the undaunted Schultes returned to Miraflores on August 25, 1943 (Davis, 1996, pp. 321-322). His next expedition would be to cross overland on a trail from Puerto Nare to the Apaporis, below the rapids that had halted their progress down the river two months before.

[Caption] Overland portage from Puerto Nare to the Apaporis River

It was a difficult journey, and the team struggled to carry an extraordinarily heavy, sixteen-meter-long boat overland across the thirty-six-mile-long trail they had hacked through the forest. It was backbreaking work over fourteen days that left the men exhausted and demoralized (Davis, 1996, p. 323).

Beginning below the final rapids of Chiribiquete, Schultes was finally able to continue his descent of the Apaporis, which from that point remained unbroken by rapids for nearly three hundred miles. As they floated downstream, Schultes counted mature and harvestable *Hevea* trees along the bank of the river. This was ideal rubber territory, with abundant trees of at least five species (*Hevea guianensis*, *Hevea lutea*, *Hevea viridis* and *Hevea Benthamiana*) (Schultes, 1945, p. 127).

[Caption] Early morning silhouette, Rio Apaporis

After two weeks descending the Apaporis, Schultes and his crew observed a ridge rising in the distance. Arriving at the mouth of the Kananarí—a blackwater river that empties into the

Apaporis—they encountered a Taiwano Indian busy fishing for his dinner, the first local they had encountered since leaving Puerto Nare six months before (Davis, 1996, p. 325).

[Caption] Cerro Isibukuri from the Rio Kananarí

[Caption] Forests at the base of Cerro Isibukuri, Rio Kananarí

They ascended the Kananarí River, with the massive sandstone plateau known as Cerro Isibukuri rising abruptly out of the forest to their right, adorned by ribbon-like waterfalls cascading from the summit.

[Caption] Cliffs near the summit of Cerro Isibukiri

Along the river, they passed giant boulders engraved with highly stylized figures of unknown ancient origins. Arriving at Caño Paco, they spent the night in a Kubuyarí Indian *maloca* (longhouse) with similar designs painted on the walls using yellow, red and black paints, said to represent *yagé* (ayahuasca) visions (Davis, 1996, p. 325).

[Caption] Maloca on the Rio Kananarí

[Caption] Schultes in the maloca on the Kananarí River.

Tree of the Spider Web

At dawn, Schultes emerged from the *maloca* and went to bathe in the river. Through the early morning mists, he noticed the graceful silhouette of a stand of palm trees growing on the nearby rapids (Davis, 1996, p. 326). The Makuna called the tree *bö-pö-ma*—the tree of the spider web—due to the resemblance of the crown to gigantic spider webs as one looks upwards through the canopy from a canoe (Schultes, 1974, p. 12).

[Caption] Feathery palms along a rapids, Rio Kananarí

The Makuna say the palm was planted before man came to earth, in a primordial era when the "spirit of the sun" threw fishing nets (the aforementioned spider web) from the sky onto the lands below, indicating where the Makuna should settle and build their *malocas* (longhouses) (Schultes, 1974, p. 12).

Schultes observed that the palm is found only on rocky riverbanks near rapids and nowhere else in the jungle, and similarly, most Makuna settlements are found near rapids (Schultes, 1974, p. 12). Also known throughout the northwest Amazon as *caranaí*, the palm would be a species new to science: *Mauritiella cataractarum* (Schultes, 1974, p. 12).

As they descended the Kananarí, the Kubuyarí chief warned Schultes of the perilous rapids that lay ahead (Davis, 1996, p. 326). He claimed these were dangerous places inhabited by the spirits of the dead who manifested themselves in faces on the cliff walls (Davis, 1996, p. 326).

Schultes' orders had been to return up the Apaporis, but he knew this would be utterly impossible with a barely functioning outboard motor, dwindling supplies, and little chance of successful hunting (Davis, 1996, p. 327).

Schultes was an aficionado of the classics, often travelling with The *Iliad* or the *Odyssey*, which he would translate from the ancient Greek when he spent endless days in Indian longhouses waiting for the rains to cease during the wet season. After such a risky and hazardous journey down the Apaporis, he may have recalled the famous lines from Virgil's *Aeneid*:

The gates of hell are open night and day;
Smooth the descent, and easy is the way:
But to return, and view the cheerful skies,
In this the task and mighty labor lies.

Jirijirimo Falls: Ancient Ramparts

At the beginning of October 1943, with a return upstream ruled out of the question, Schultes and his small crew had no other choice but to continue down the Apaporis. Setting off at dawn, the river quickly narrowed and increased in speed. Schultes could hear a distant rumble and see a plume of mist in the distance. Huge sandstone slabs emerged from the river, churning the water. The crew navigated over to the right bank against the strengthening force of the river. Although tired from the long journey, they slowly carried the boat along an overland trail.

[Caption] The approach to Jirijirimo at dawn

Schultes had arrived at one of the great natural wonders of Colombia: the falls at Jirijirimo. For much of its lower course, the Apaporis is broad and meandering, measuring 5,000 feet (1,500 meters) in width before arriving at an ancient mass of hard, metamorphosed rock that violently forces the powerful river through a chasm just 130 feet (40 meters) wide (Schultes, Field notebook 1952, p .11).

View satellite imagery of Jirijirimo Falls

Preceded by nearly a kilometer of rapids, the falls itself begins with several giant rock steps before the water tumbles over a vertical drop some 30 meters high (Schultes. Field notebook 1952, p. 9). During the rainy season, the high water almost completely covers the rocks with churning

whitewater; in the dry season, the water is barely visible as it falls between the boulders (Schultes, Field notebook 1952, p. 9-11).

[Caption] Beginning of Jirijirimo

As his crew rested, Schultes carefully picked his way along the side of the gorge against the perpetual mists and deafening roar of the falls. There, Schultes noticed an unusual plant with alga-like leaves clinging to the rocks. Unfortunately, he was travelling without his plant-collecting equipment for the first time of his career, due to the difficulty of the current journey and the many overland portages. He vowed to return to study this plant, which he did eight years later in 1951.

[Caption] River weeds covering rocks, Jirijirimo Falls

From a family of aquatic plants, the plant has developed remarkable adaptations to the difficult riverine habitat:

> The *podostemonaceous* plants have tough, alga-like leaves that come out at the height of the rainy season and clothe the rocks where the flood will reach its fullest. The tiny white flowers have blossomed in time to set ripe fruit for the fullest sweep of the waters. (Rhyncholacis nobilis, Podostemaceae) (Schultes, 1988, p. 98).

Schultes learned that local Makuna Indians called the plant *moo-á*, and they used it as a form of table salt by reducing its leaves to ashes (Schultes, 1988, p. 98). Sodium chloride, the basis of salt common to most of the world, does not exist in the Amazon, and for centuries, indigenous communities throughout the Amazon have used the potassium-rich ashes of river weeds to flavor their food.

After hauling the canoe overland around the falls, they resumed their journey down the Apaporis through a mysterious chasm.

[Caption] The canyon after Jirijirimo Falls, Where the Gods Reign, p 56

> The mighty Apaporis, after it tumbles over the Falls of Jirijirimo, enters a long and narrow chasm walled in by high vertical cliffs. At one point the whole river disappears into a tunnel, flowing tranquilly and deep through the curious fault. This is a place of awful mystery to the Indians of the area who, except for the medicine-men, never travel through the chasm, and the tunnel is known to them only through hearsay (Schultes, 1988, p. 56).

Yayacopi Falls

[Caption] Yayacopi falls

After emerging from the Jirijirmo canyon, the Apaporis resumed its tranquil path for another 5 miles, until arriving at a massive horseshoe-shaped falls known as Yayacopi. Schultes later wrote that "the thundering falls of Yayacopi strike awe into the hearts of the Indians of the region, accustomed as they are to the titanic forces of angry waters everywhere in the Apaporis basin." (Schultes, 1988, p. 62).

[Caption] Makuna youths recall origin stories at Yayacopi

The rapids of the Apaporis—of which Yayacopi and Jirijirimo are the largest—have strong spiritual significance to the indigenous groups of the lower Apaporis. Huddled below a rock outcrop to avoid a sudden rainstorm, Schultes listened to the mythical origins of the thunderous waterfalls told to him by his indigenous companions.

[Caption] Schultes and Makuna youths take shelter in an overhang near Yayacopi falls

Local indigenous groups say that in ancient times a fierce tribe inhabited the headwaters of the Apaporis River. This warlike tribe attacked the neighboring groups, at one point nearly annihilating them. A primordial shaman determined to protect his people took *yagé* (ayahuasca) for seven days, allowing him to commune with friendly spirits. Together, they raised a series of mountains across the Apaporis, forming treacherous and impassable rapids imbued with magical spells that have protected the tribes of the lower Apaporis ever since (Schultes, 1988, p. 62).

Schultes noted that local shamans would make pilgrimages to perform elaborate incantations at the foot of Yayacopi and fish in the richly stocked whirlpools at the base of the falls. However, they never willingly traveled above the rapids, leaving the upper Apaporis uninhabited for many decades. (Schultes, 1988, p. 62)

> In view of the natural beauty and complexity of this waterfall there can be little wonder why the Indians ascribe a supernatural origin to it (Richard Evans Schultes, 1988, p. 86).

The Lower Apaporis: Heart of the World

[Main Stage: Map of the Lower Apaporis Cultural Groups]

[Caption] Schultes inspecting plants with a Makuna boy

Below the great falls of Jirijirimo and Yayacopi, Schultes observed a dramatic change in the character of the Apaporis River. Whereas the upper courses of the river had been completely abandoned, the lower Apaporis region—extending from Jirijirimo to the rapids at La Libertad,

including its major tributaries, the Pira Piraná and Popeyacá rivers—was heavily populated with indigenous peoples living in enormous circular and rectangular *malocas* (communal houses).

The lower Apaporis is a region of remarkable cultural diversity, home to a myriad of indigenous groups including the Makuna, Barasana, Taiwano, Tayuta, Tanimuka, Cubeo, Tairano, and Letuama. These groups have maintained their cultural traditions to a degree unprecedented in most of the Amazon and express their vibrant customs through complex oral histories and shamanic and ceremonial activities that embrace a world of powerful spirits and deified ancestors (Århem, 1998, p. 12).

While on the lower Apaporis, Schultes often worked with the Makuna, an indigenous group with a population of about 1,000 people that mostly reside on the lower courses of the Pira Piraná River and its tributaries (Århem, 1998, p. 2). The Makuna organize themselves in 12-15 patrilineal clans, believing each clan to descend from specific mythical ancestors that were present at the creation of the world. The Makuna also identify two internal social groups: the "Water People" (*Ide Masa*) and "Land People" (*Yiba Masa*) (Århem, 1998, p. 23).

Fascinatingly, because the Makuna do not perceive separation between human beings and the natural world, they have no word for nature (Cayón, 2013, p. 231). According to the anthropologist Philippe Descola, "The Makuna classify human beings, plants, and animals all as 'people' (masa) whose major attributes---mortality, social and ceremonial life, intentionality, and knowledge—are in every way identical" (Descola, 2015, p. 8).

[Caption] Schultes with Makuna colleagues on the Pira Paraná River

Schultes found this culturally and linguistically diverse territory to be an exceedingly interesting area for research, as each ethnic group had distinct medicinal uses and oral histories for local plants.

Tucano Languages

The Makuna, Barasana, Tanimuka, Cubeo, Tairano and Letuama languages are part of the Tucano language family that spans Colombia, Ecuador, Brazil and Peru. Members of a western group of Tucano speakers—the Coreguaje, Siona, and Secoya tribes—are completely isolated from the eastern group, believed to have been divided from the groups in the Apaporis region by the Carijona invasion of the 1500s.

[Caption] Map of the Tukano Language Distribution

The lower Apaporis and adjacent Vaupés region is considered one of the most complex linguistic areas in the Amazon, if not the world. Interestingly, in some of these cultural groups, community members are expected to marry someone of a different language group and learn their language, resulting in remarkable multilingualism among much of the population.

However, the complex linguistic traditions often made it difficult for him to communicate, especially with tribal elders who spoke little or no Spanish. Schultes responded by learning the basics of the local languages, and took extensive notes on the Makuna language.

[Caption] View Schultes' Vocabulary Notes

The Rock of Nyi and the Origins of the World

Although low on supplies, Schultes turned north from the Apaporis to explore the Pira Piraná River, a blackwater tributary that begins in the rocky highlands between the Apaporis and Vaupés rivers. After a day of paddling, at the river's edge, they encountered an immense, stylized, anthropomorphic design carved into a giant granite boulder.

Schultes had arrived at the "Rock of Nyi", one of the most elaborate rock carvings in the entire northwest Amazon. The design measures five and a half feet tall and is cut half an inch deep into the hard rock.

[Caption] Rocky of Nyi

Schultes learned the rock is revered by local indigenous groups. For them, this petroglyph honors the Ayawa—four mythical cultural heroes that created order from a chaotic primordial era.

Wade Davis describes this story in his book *The Wayfinders*:

> The Ayawa, also known as the primordial ancestors or the Thunders — came up the Milk River from the east, passing through the Water Door, pushing before them as ploughs the sacred trumpets of the Yurupari, creating valleys and waterfalls. Rivers were born of their saliva. Slivers of wood broken off by the effort gave rise to the first ritual artifacts and musical instruments. As the Ayawa journeyed toward the centre of the world, the notes of the trumpets brought into being the mountains and uplands, the posts and walls of the cosmic maloca (Davis, 2009, p. 107).
>
> At every turn, the Ayawa confronted greedy demonic forces, avaricious spirits that thrived on destruction and coveted the world. Outwitting the monsters, casting them into stone, the Ayawa brought order to the universe, causing the essence and energy of the natural world to be released for the benefit of all sentient creatures and every form of life (Davis, 2009, p. 107).

The Rock of Nyi depicts one of the evil spirits that was cast into stone, and is said to be dangerous to look upon for more than a glance. Mythological places mentioned in this story have physical correlates: the "River of Milk" is the Amazon River and the "Water Door" is the mouth of the Amazon, the original *maloca* (longhouse) from which life emanated.

In this story, after creating the rivers and mountains, the Ayawa fertilized the Ancestral Woman Shaman, before rising into the heavens to become thunder and lightning (Davis, 2009, p. 107). "Realizing that she was pregnant, Woman Shaman went downriver to the Water Door of the East, where she gave birth to the ancestral anaconda" (Davis, 2009, p. 107).

[Graphic] Drawing of the Ancestral Anaconda and sacred artefacts (image from: Hee Yaia Godo ~Bakari. El Territorio de los Jaguares de Yurupari

In the myth's conclusion, a great noise sent the anacondas fleeing the *maloca*, scattering them out into the ocean. Supernatural "creators" gathered them, and then the Ancestral Anacondas emerged from the Water Door to migrate up the Amazon River, retracing the paths of the Ayawa. As they swam, they stopped to provide gifts of knowledge and sacred plants, in the process creating a multitude of sacred sites imbued with powerful cosmic energy. At the end of their journey, the anacondas arrived at the Apaporis River, where they came onto land and transformed into people at locations known as "waking up houses", now considered by indigenous groups to be the birthplaces of the various clans that still inhabit the region (Århem, 1998, p. 23).

[Graphic] Map of the of the Path of the Ancestral Anacondas

These sacred sites have tangible physical locations that are roughly circular in form, about one square kilometer in size, and often have many smaller sacred sites embedded within (Cayón, 2013, p. 242). To the everyday eye, these sites appear to be rocks, rapids, rivers, mountains, and salt licks, but local shamans report that they see an invisible realm with huge, beautifully decorated *malocas* full of men adorned with intricate ceremonial regalia (Århem, 1998, p. 23-24).

Indigenous groups of the Apaporis groups believe the sacred sites are important locations from which the vitality of the universe emanates, and are repositories of traditional knowledge (Cayón, 2013, p. 242). They believe the sites to be alive, interconnected, and imbued with an invisible power known as "*ketioka*" (Cayón, 2013, p. 241). Each site has its own origin myths and a connection with a specific aspect of indigenous life, including animals, ceremonial dances, warfare, medicinal plants and curing rites (Cayón, 2013, pp. 241-242).

The health of these sacred sites is vital for the well-being and prosperity of the surrounding peoples and forests. Following cultural traditions, each locale has distinct rules for its maintenance. Some sites require a local shaman's permission or guidance for visits or for extractive activities like hunting and fishing. Local indigenous people make pilgrimages to some sites to perform rites that they believe help maintain equilibrium between people and nature. Some sites, including the Rock of Nyi, are said to cause illness if observed directly, and thus many local indigenous people avert their gaze as they pass by in canoes.

[Caption] Petroglyphs on the Pira Paraná

Nyi is just one of many petroglyphs Schultes encountered on the Pira Paraná River, that Schultes noted was flanked by more carvings than any neighboring river, usually located in inaccessible locations near rapids or waterfalls (Schultes, 1988, p. 74).

[Caption] Petroglyphs on the Pira Paraná

[Caption] Petroglyphs on the Pira Paraná

The Jaguar Shaman of the Yuruparí

The Tucano-speaking groups of the Apaporis and Vaupés region practice elaborate ceremonies in accordance with annual harvest calendars, which they believe maintain spiritual balance and prosperity within their territories. Makuna ceremonies are governed by powerful shamans, of which there are two types: protective (*kumau*) and curing (*yaia*) shamans, the latter known as "Jaguar Shamans" (Århem, 1998, p. 18).

[Caption] Makuna shaman with student

One of the most important ceremonies is the festival of the *Yuruparí,* which celebrates the creation of the universe and serves as a rite of passage for young men. During these ceremonies, the men play elaborate bark horns—instruments that represent deified ancestors of the clan and form an important part of the communities' collective sense of identity (Århem, 1998, p. 19). The women are forbidden to see the horns and flee into the forests at the first sound of the instruments (Schultes, 1994, p. 173).

> The horns are hidden between the dances, oftentimes in the sandy bottoms of brooks from which the payés [shaman] remove them when needed. The older men open boxes of feather ornaments to decorate the horns whilst they are in use. The youngest initiants...are shown where the trumpets are hidden and, with this ritual, are separated from boyhood and become men (Schultes, 1992, p. 173).

[Caption] Yurupari horn collected by Richard Spruce, Rio Uaupes.

Throughout the ceremonies, the Jaguar Shaman administer yagé (ayahuasca), coca, tobacco, and chicha (a fermented beverage). The *malocas* resound with rhythmic chanting punctuated by a chorus of rattles and horn blasts.

[Caption] Makuna shaman under the effects of yage.

In their chants, the shaman recite the names of sacred sites imbued with *ketioka*, following a certain order similar to letters in an alphabet known as "Thought Paths" (Cayón, 2013, p. 262). As the powerful psychoactive plant medicines take effect, the shamans enter a trance. They

report undertaking vast spiritual journeys along these "Thought Paths," visiting the distant sacred sites on a spiritual plane.

The sacred sites visited by the Jaguar Shaman—particularly the rocky, mountainous peaks that loom above the forest canopy—are considered pillars that support an enormous invisible "Cosmic Maloca," in which the sky is the roof (Cayón, 2013, p. 235). The Cosmic Maloca is described as existing at various scales embedded within each other, first comprising the entire Amazon rainforest, then the lower Apaporis-Vaupés region, then individual sacred sites, and so on (Cayón, 2013, p. 234). Each scale has the same structure, with a "Water Door" to the east connected to a "Western Door Where the Sun Hides" by a primordial aquatic axis or the "River of Milk" (the Amazon and Apaporis Rivers at their respective scales) (Cayón, 2013, p. 235).

[Caption] Map of Spiritual Thought Lines in the Cosmic Maloca

During the ceremonies, the Jaguar Shamans recreate the formation of the Universe as they journey through the Cosmic Maloca, following the spiritual thought lines through air and water (Cayón, 2013, p. 235). They first emerge to the surface of the world from the underworld at the "Water Door" (the mouth of the Amazon or the *La Libertad* rapids on the Apaporis), traveling up the "River of Milk" (the Amazon or Apaporis River), before descending back to underworld through the "Western Door" (the Andes or Jirijirimo rapids) (Cayón, 2013, p. 234). As they travel, they perform spiritual cleaning rites that sustain the Cosmic Maloca and promote spiritual well-being within their communities by preventing sickness and hunger.

Musical Instruments of the Ceremonies

[Caption] Makuna boys playing pan pipes

The instruments used to help induce shamanic trances are an essential part of the ceremonies, and music is considered necessary for much shamanistic activity throughout the northwest Amazon. Schultes observed how the sacred instruments were made from locally available plants.

[Caption] Making pan pipes from bamboo

Pan pipes, made from slender pieces of bamboo, are usually played by young boys who begin to learn music at an early age. The shaman often expresses his appreciation to the musicians, explaining that "the sounds that they make are pleasant to the supernatural realms to which the music ascends during the magico-religious rituals"" (Schultes, 2004, p. 166).

[Caption] Makuna boys dancing with rattles

During the ceremonies, hand rattles accompany the shaman's chanting as he recites mythological stories. The rattles are made from hollowed gourds, frequently adorned with painted designs similar to ancient rock engravings on the river's edge. Hard seeds are placed within the gourds to provide the rattling sound.

[Caption] Source of leg rattles

The dancers bind together clumps of hard-shelled fruits and attach them to their ankles to provide a light echoing sound as they dance. The rattles are made with fruits from several different plants, including one Schultes identified that was new to science: *Cayaponia kathematophora*—from the Greek term meaning "music-bearing" (Schultes, 2004, p. 170).

[Caption] Thumpsticks in a ceremony

> One of the curious musical instruments of the Indians of many parts of the Colombian Amazon is the thumping stick. It is a hollowed-out trunk of young guarumo trees (*Cecropia sp.*), beautifully painted. When these are rhythmically stamped with each footstep, the sound travels far and wide over the rivers and lends an air of reality to the music and accompanies the thuds and the singing (Schultes, 1988, p. 268).

[Caption] Making thumpsticks

[Caption] Thumpsticks collected by Schultes, now at the Peabody Museum

Mapping the Uncharted Apaporis River

Lost and Declared Missing

On his initial descent of the Apaporis River in 1943, Schultes had been declared missing after failing to return to Miraflores in the beginning of October and were presumed lost after a military plane sent from Villavicencio had flown the entire length of the Apaporis without locating them (Davis, 1996, p. 326).

[Caption] Jirijirimo viewed from the air

On October 15, 1943, after descending 600 miles down the Apaporis River, Schultes and his team arrived at the little jungle town of La Pedrera with less than a gallon of gas, just as the outboard motor sputtered and died. (Davis, 1996, pp. 328-329). A radio transmission was sent to Bogotá, but Schultes was forced to wait for several months before being airlifted out. As he waited for the plane to arrive, he was put to work painting the local church (Davis, 1996, p. 327).

[Caption] Schultes reviewing photographs

Later Research on the Apaporis

[Caption] Paddling up a tributary of the Pira Paraná River

Schultes returned to the lower Apaporis region in the early 1950s to establish rubber research stations at Jinogoje (near the mouth of the Pira Paraná) and Soratama (several miles upstream). From this base, Schultes was able to thoroughly survey the lower Apaporis region.

While on the lower Apaporis, Schultes made three ascents to the summit of Cerro Isibukuri, finding interesting plants on its summit. He also explored much of the Pira Paraná River, reaching a *maloca* located near the *Caño E-ree-ee-ko-mee-o-kee*, and exploring *Caño Teemeeña* (now known as *Caño El Lobo*) until its last navigable point in an attempt to find an overland route to the Rio Negro watershed. Schultes also flew to adjacent areas of the Vaupés River and the Rio Negro aboard amphibious aircraft in search of more and new species of *Hevea* rubber trees.

[Caption] Schultes collecting plants in front of maloca

Anthropologist Luis Cayón, who studied in the Lower Apaporis region in the 2000s, described stories he heard from local people about Schultes:

> "Many times, in different places and years, several old Makuna told me that, when they were children and they lived in the Popeyaka River, the first white person they saw in life was "Dr. Schultes". They said that the famous North American botanist Richard Evans Schultes was a very calm and respectful person with the natives and also gave them sweets and chocolates in exchange for flowers and plants that they collected in the jungle. "Dr. Schultes" participated in the rituals, ate coca and inhaled rape, did not make fun of his meals, did not release flatulence on those of coca and did not pursue the women. It is evident that the personality and attitudes of Schultes contrasted radically with the behavior of the other whites (gawa). Both the foremen and rubber tappers of the fathers of those old men during the second cycle of rubber…"(Cayón, 2013, pp. 74-75).

[Caption] Schultes with Makuna boys during a ceremony

Mapping the Apaporis

Throughout the course of Schultes' travels on the Apaporis in the 1940s and 1950s, he worked to map the uncharted river. One of his standard measuring techniques, a laborious process, provided accurate data. First, Schultes paced an estimated kilometer on the banks of a given river and marked each end with a white flag. Then, he clocked the time it took for his boat to drift from one marker to the next. This baseline allowed him to calculate their distance travelled as they floated downstream (Davis, 1996, p. 325).

[Caption] Schultes' notebook sketch

Meanwhile, Schultes used his compass to keep track of the boat's orientation, permitting him to plot the course of the river. Schultes' field notebook include sketches of the river, and he jotted down significant locations. Using all of this information, Schultes produced a map of the Apaporis River that would hold up for many years to come.

[Caption] Schultes' Map of the Apaporis

[Caption] Schultes in front of Yayacopi falls

After decade of exploration, Schultes would later summarize this great river:

> Solitary, uninhabited, meandering first through flat mesa-like grasslands, then twisting between grotesque mountains, finally scouring its way through flat, unbroken Amazonian jungle with many picturesque rapids and cascades ("cachiveras") and forming, in its last few kilometers, part of the Colombo-Brazilian boundary, the Apaporis is one of the mightiest and certainly the most majestic Colombian affluent of the Amazon (Schultes, 1954, p. 124).

The Amazonian Travels of Richard Evans Schultes

Chapter III. Apaporis: Workshop of the Gods

By Brian Hettler & Mark Plotkin

April 8th, 2019

The preceding text is from the interactive map available at the following link:

banrepcultural.org/schultes

This work is based on the writings, photographs and ethnobotanical records of Richard Evans Schultes. All photographs are property of the Schultes family unless otherwise indicated.

The Amazon Conservation Team would like to give a special thanks to Dr. Wade Davis, whose book One River was essential in reconstructing details of Schultes' travels for this map. For more information on Dr. Schultes, we highly recommend *One River* and *Lost Amazon: The Photographic Journey of Richard Evans Schultes* by Dr. Davis.

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