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RICHARD SPRUCE: AN EARLY ETHNOBOTANIST AND EXPLORER OF THE NORTHWEST AMAZON AND NORTHERN ANDES

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ABSTRACT.—Although Richard Spruce, a pioneer botanical explorer of the northwest Amazon and the northern Andes in the middle of the last century, made numerous important ethnobotanical discoveries, he missed the opportunity of delving deeply into the ethnopharmacological lore of the area. Part of this deficiency was due not certainly to his scientific curiosity but to his inability to associate closely with unacculturated natives, the incredible intensity of his floristic and taxonomic studies, and possibly to his illness. Yet his research set the stage for recent ethnobotanical investigations of this very species-rich region.

INTRODUCTION

The Indians of the northwest Amazon, especially those of the Brazilian and Colombian region of the Río Vaupés, have a rich ethnopharmacological lore. This wealth of knowledge of the presumed medicinal properties of plants, however, is just coming to the fore—and most certainly not too soon with its disappearance in the face of advancing acculturation and the inroads of civilization.

Richard Spruce (Fig. 1), the British plant-explorer who opened up this region to science between 1851 and 1854, must be counted amongst the greatest naturalists ever to have engaged in collecting and studies anywhere in virgin tropical American territories. As a result of his meticulous observation and insatiable curiosity, a basis for our understanding of great areas of the Amazon Valley and of the northern Andes was early and most firmly laid. Not only did Spruce advance taxonomy and floristics, but he also made many important observations in ethnology, linguistics and geology. Some of the most significant discoveries in connection with the hallucinogens derived from *Banisteriopsis Caapi* (Fig. 2) and *Anadenanthera (Piptadenia) peregrina* (Fig. 3-5) are due to his first-hand field observations. And he was particularly interested in ethnobotanical lore concerning the palms.

ETHNOBOTANICAL OBSERVATIONS AND CONTRIBUTIONS BY RICHARD SPRUCE

It has always been difficult for me to understand how several very important ethnobotanical discoveries eluded such a perspicaceous scientist who spent four years on the Rio Negro and its tributaries. The use of *Virola* in the preparation of an hallucinogenic snuff provides a good example. Spruce gave special attention to this myristicaceous genus and collected the material on which at least nine new species were described. Although he was definitely interested in and had personal contact with several hallucinogenic plants, he failed to learn that the Indians employed the red bark-"resin" of *Virola* in elaborating a snuff used by medicine men and, in some tribes, by the whole male population.

Another curious aspect of Spruce's ethnobotanical observations was his failure to discover "simples" that were employed medicinally by Indians of the northwest Amazon. "The Indians," he says, "have a few household remedies, but by far the greater portion of these have come into use since the advent of the white man from Europe and the negro

FIG. 1.—Richard Spruce. Drawn by Elmer W. Smith from a photograph in the Gray Herbarium, Harvard University, taken before Spruce left for South America.

from Africa. Von Martius remarks nearly the same thing in the introduction to his Systema Materiae Medicae Vegetabilis Brasiliensis (1843, p. xvii).

> . . . Of external applications, I have seen only the following. For a wound or bruise or swelling, the milky juice of some tree is spread thick on the skin, where it hardens into a sort of plaster, and is allowed to remain on until it falls of itself. Almost any milky tree may serve, if the juice be not acrid; but the Heveas (India-rubbers), Sapotads, and some Clusias are preferred. Such a plaster has sometimes an excellent effect in protecting the injured part from the external air.

This experience of Spruce's is difficult to reconcile with my own observations during the past 40 or more years amongst the many tribes along the Colombian Ríos Vaupés, Apaporis and Caquetá and their tributaries—a region with a flora estimated at 80,000 species—where I collected large numbers of plants reputedly valuable alone or in prescriptions for treating a variety of common diseases.

It is true that, in this whole region, the "medicines" *par excellence*—and those which are administered not to the patient but usually to the medicine-man—are the hallucinogens. The "medicine" with psychic properties that enables the medicine-man easily through hallucinations to see or converse with malevolent spirits from whom come all illness and death are usually far more important in native cultures than those medicines

FIG. 2.–Cultivated vine of the caapi plant, *Banisteriopsis Caapi,* identified by Richard Spruce as the source of an hallucinogenic drink prepared throughout the western part of the Amazon Valley in Brazil, Colombia, Ecuador and Peru. Photograph: R. E. Schultes.

with purely physical properties. It is, however, most certainly untrue that the Indians of the northwest Amazon denegrate or do not possess those medicinal plants which have properties physically to reduce pain or suffering, lessen uncomfortable symptoms of illness or even apparently cure pathological conditions. They have many such medicinal plants and are willing to share their knowledge with the serious, enquiring visitor. It is not only I who has found these people to possess a deep knowledge of medicinal plants; other botanists and several anthropologists have likewise been impressed with the wealth of native medical folk lore in the region.

Spruce's surprising statements concerning the lack of knowledge and use of medicinal plants in the northwest Amazon may be explained by his difficulty in spending long periods of time with aboriginal peoples. We must always remember that Spruce was at work well over a century ago. He wrote:

> I have never been so fortunate as to see a genuine payé (medicine-man) at work. Among the civilized Indians, the Christian padre has supplanted the pagan payé . . . With the native and still unchristianized tribes, I have for the most part held only passing intercourse during some of my

FIG. 3.—Tree of *Anadenanthera peregrina*. Photograph: R. E. Schultes.

> voyages, Once I lived for seven months at a time among them, on the river Uaupés, but even there I failed to catch a payé. When I was exploring the Jauarité cataracts on that river, and was the guest of Uiaca, the venerable chief of the Tucano nation, news came . . . that a famous payé . . . would arrive that night and remain until next day, and I congratulated myself on so fine a chance of getting to know some of the secrets of his 'medicine' . . . When he learnt that there was a white payé (meaning myself) in the village, he and his attendants immediately threw back into the canoe his goods, which they had begun to disembark, and resumed their dangerous voyage down the river in the night-time. I was told he had with him several palm-leaf boxes, containing his apparatus . . . I could only regret that his dread of a supposed rival had prevented the interview which to me would have been full of interest; the more so as I was prepared to barter with him for the whole of his materia medica, if my stock-in-trade would have sufficed.

It is amply clear from this statement, from Spruce's reports (Fig. 6) of other ethnobotanical observations and from the rich collections of artifacts which he collected and sent to the Economic Botany Museum of the Royal Botanic Gardens at Kew (Fig. 7) that he was not—as have been so many modern botanists working in South America's tropical regions—prejudiced against aboriginal uses of and beliefs about plants. He was certainly far from being a prejudiced man. An explanation of his failure to note the rich ethnopharmacological lore of this region may have several facets. Spruce may truly have been too busy and, much of the time, too ill to delve into this specialized field so tangential to floristic and taxonomic studies and collections.

FIG. 4.—Fruiting branch of *Anadenanthera peregrina*. Photograph: R. E. Schultes.

Even today, with modern transportation and other amenities not available a century ago, botanists engaged in floristic or taxonomic studies usually do not have the time available for ethnobotanical research. The great Amazon specialist, the late Dr. Adolpho Ducke, whose lifetime of collecting made him undoubtedly the modern master of the flora of this region, especially of the genus *Hevea*, wrote to me in a letter dated February 14, 1956, the indigenous use of *Hevea* seeds as food:

> I received your letter of Jan. 12 and the manuscript of your article on *Hevea* and Indians. I read the article which is certainly interesting, but unfortunately I am incompetent in matters of primitive Indians with whom I have never been in contact. All my collecting work was done in the civilized parts of the region.

And the late Dr. B.A. Krukoff, who carried out so many successful botanical expeditions to the Brazilian Amazon, once informed me personally that "an Indian is of no interest to me; I consider him an impediment to my work."

Spruce may, furthermore, perhaps have erred in assuming that all "medicinal" knowledge resided with the payé or medicine-man. I have consistently found that the payé, insofar as plants are concerned, often knows relatively little about plants in general, and usually manipulates "sacred" plants, usually the hallucinogens or other psychoactive species, such as coca and tobacco, and employes them "medicinally" in magical ways. Most tribes have what we might term "regular doctors", chiefs or "curacas", who do not normally use magic and who are well provided with a general knowledge of the curative

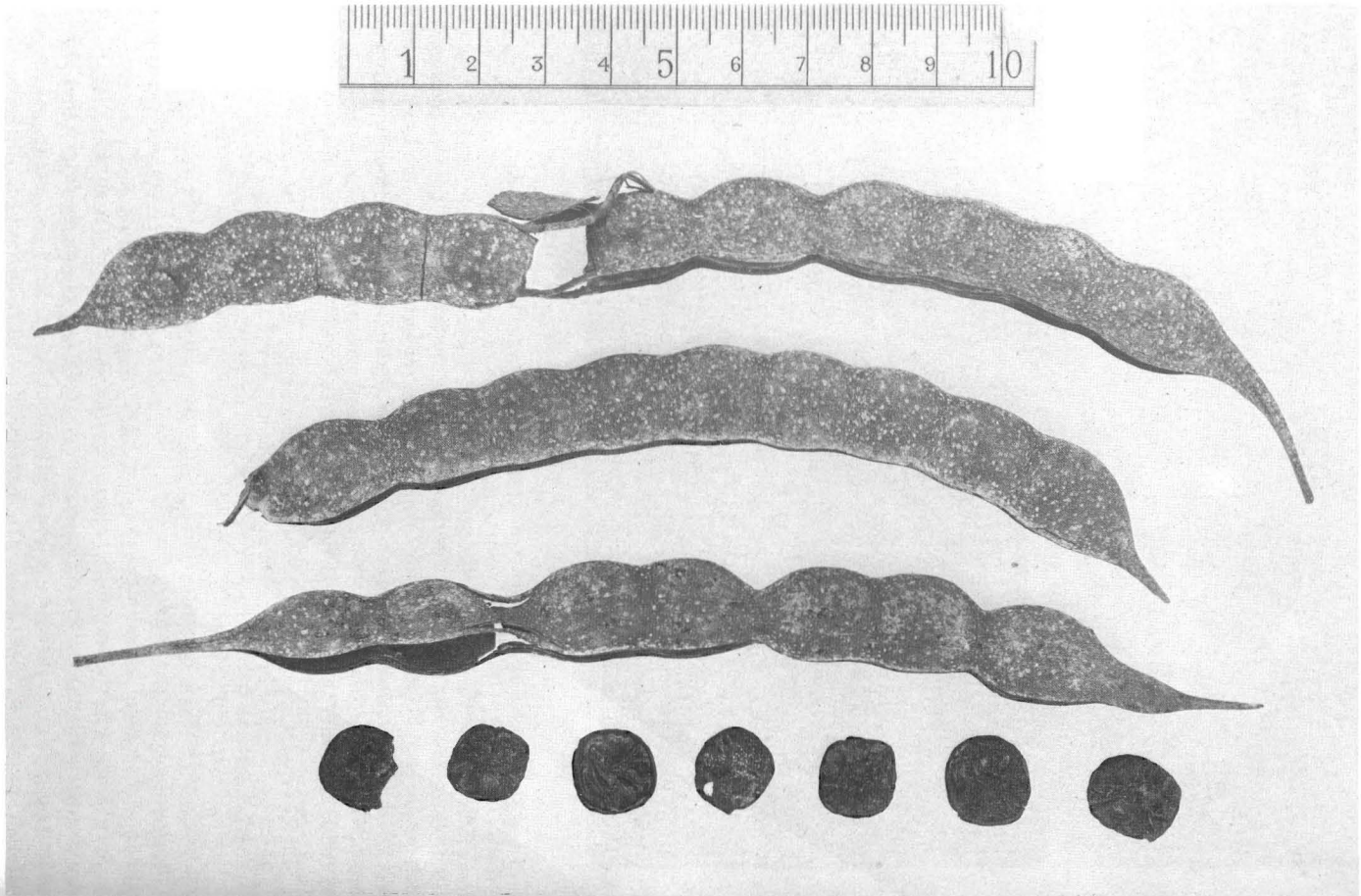
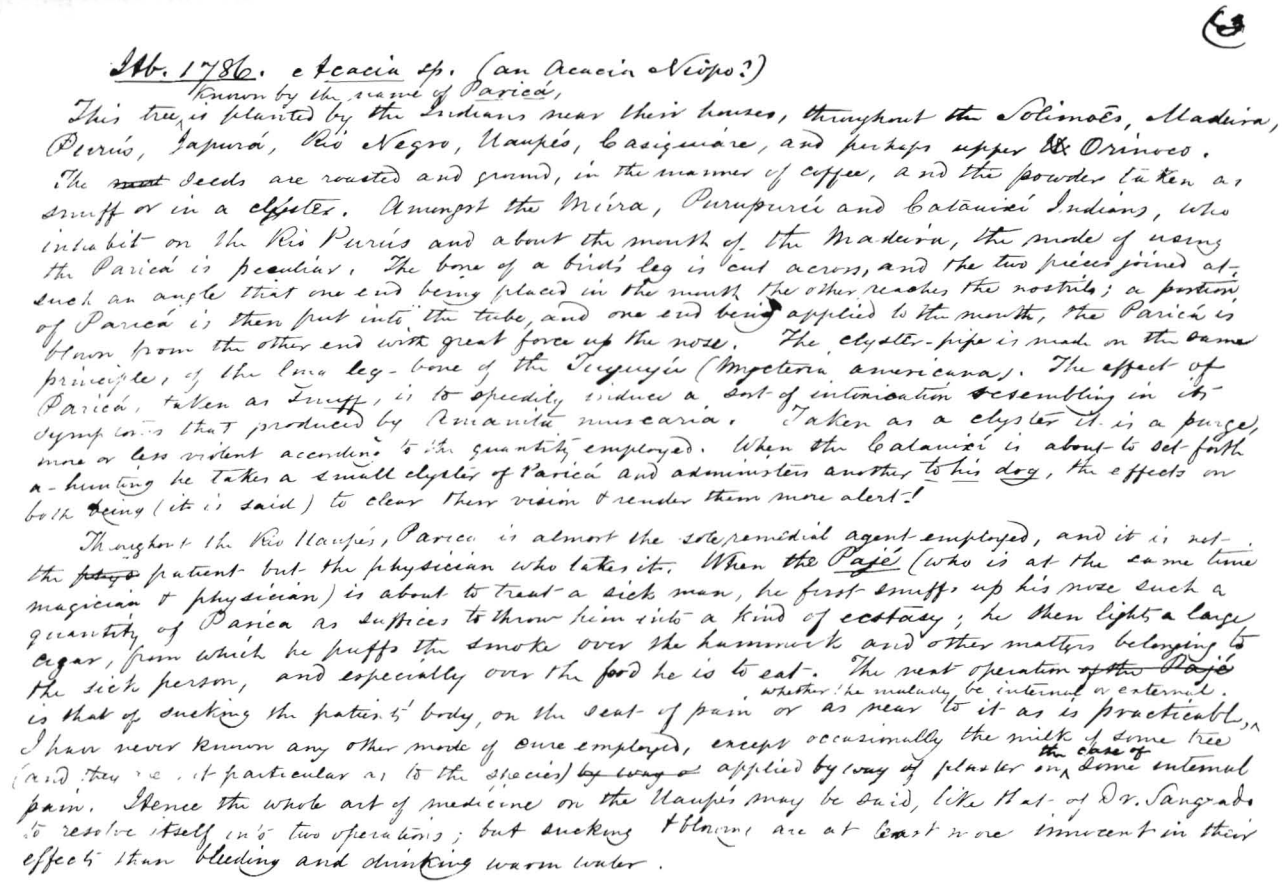


FIG. 5.—Pods and beans of *Anadenanthera peregrina* collected on the Orinoco River in 1854 by Richard Spruce. Courtesy of the Royal Botanic Gardens, Kew.



Nov. 1786. Acacia sp. (an Acacia Vitis?)
Known by the name of Paricá,
This tree is planted by the Indians near their houses, throughout the Solimoës, Madeira, Purús, Japurá, Rio Negro, Uaupés, Casiquiare, and perhaps upper the Orinoco. The ~~nuts~~ seeds are roasted and ground, in the manner of coffee, and the powder taken as snuff or in a clysters. Amongst the Mura, Purupurú and Catauixi Indians, who inhabit on the Rio Purús and about the mouth of the Madeira, the mode of using the Paricá is peculiar. The bone of a bird's leg is cut across, and the two pieces joined at such an angle that one end being placed in the mouth, the other reaches the nostrils; a portion of Paricá is then put into the tube, and one end being applied to the mouth, the Paricá is blown from the other end with great force up the nose. The clyster-pipe is made on the same principle, of the long leg-bone of the Jacuguiz (Mycteria americana). The effect of Paricá, taken as snuff, is to speedily induce a sort of intoxication resembling in its symptoms that produced by Amanita muscaria. Taken as a clyster it is a purge, more or less violent according to the quantity employed. When the Catauixi is about to set forth a-hunting he takes a small clyster of Paricá and administers another to his dog, the effects on both being (it is said) to clear their vision & render them more alert!

Throughout the Rio Uaupés, Paricá is almost the sole remedial agent employed, and it is not the ~~patient~~ patient but the physician who takes it. When the Payé (who is at the same time magician & physician) is about to treat a sick man, he first snuffs up his nose such a quantity of Parica as suffices to throw him into a kind of ecstasy; he then lights a large cigar, from which he puffs the smoke over the hammock and other matters belonging to the sick person, and especially over the food he is to eat. The next operation ~~of the Payé~~ is that of sucking the patient's body, on the seat of pain or as near to it as is practicable, whether the malady be internal or external. I have never known any other mode of cure employed, except occasionally the milk of some tree (said they, ~~I~~ it particular as to the species) ~~by way of~~ applied by way of plaster in the case of some internal pain. Hence the whole art of medicine on the Uaupés may be said, like that of Dr. Sangrado, to resolve itself into two operations; but sucking & blowing are at least more innocent in their effects than bleeding and drinking warm water.

FIG. 6.—Spruce's field notes on the ethnobotany of yopo (*Anadenanthera peregrina*). Courtesy of the Royal Botanic Gardens, Kew.

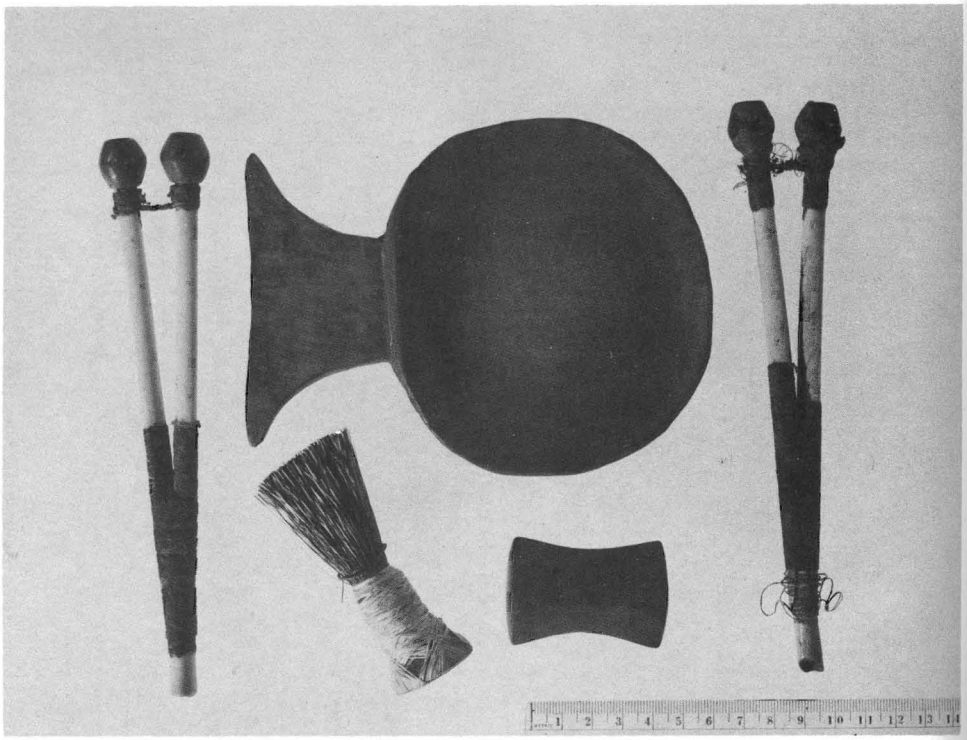


FIG. 7.—Snuffing tubes of bird bones and mortar and pestle for grinding roasted seeds of *Anadenanthera peregrina* and for mixing lime to prepare yopo snuff. Guayabero Indians, Río Orinoco, Venezuela. Courtesy of the Botanical Museum of Harvard University.

or presumed therapeutic value of plants—that is those plants with actual physically active constituents able to relieve or cure ills of the body. They could justly be termed the "botanists" of the societies. They work cooperatively with the payés or medicine-men, very frequently referring difficult or recalcitrant cases to these "specialists" who are generally considered to be practitioners of a higher rank. It is, naturally, with these "regular doctors" and their knowledge that the ethnopharmacologist or ethnobotanist must primarily be involved.

Whether or not in Spruce's time—a century and a quarter ago—such practitioners did not exist we cannot now state with certainty. It is, however, most probable that they did exist and did practice their skill, although perhaps not with so much freedom from control of the payés as today. Spruce's surmise that the few household remedies practiced amongst these peoples may have come in with Europeans or negroes is open to serious doubt, if only from the fact that the plants and uses characteristic of the household medicine of the northwest Amazon are so utterly different from those of Europe and Africa. And a century ago there was very little European and no African influence in the northwest Amazon.

In June 1855, Spruce wrote the following list of ethnobotanical artifacts which he sent to Kew:

> 177. Apparatus for making and taking Niopo snuff, procured from Guahibo Indians at the Cataracts of Maypures. The *Niopo* of Venezuela is the same as the *Paricá* of Brazil and is used on the Upper Orinoco, Guaviare, Vichada, Meta, Sipapo, etc. There is no doubt of its being prepared from *Acacia Niopo* Humb., which is perhaps not different from *Piptadenia peregrina* Benth. My specimens of the Paricá tree from the Barra are referred to the latter species by Mr. Bentham. I did not see the tree from which the Guahibos obtained their Niopo and which they told me was planted in their conucos (garden plots) near the head waters of the river Juparo; but the Paricá I

have seen on the Amazon and all the way up the Rio Negro, planted near the villages, belongs to but one species which, on passing the Venezuelan frontier, takes the name of Niopo.

One startling fact stands out stridently from Spruce's notes (Fig. 7) made 130 years ago: that this tree is "planted by the Indians near their houses throughout the Solimões, Madeira Purús, Japurá, Rio Negro, Uaupés, Casiquiare and perhaps upper Orinoco." Today, the plant is rare indeed in most of these localities. I have never seen it on the Solimões, nor on the Colombian sector of the Japurá (Caquetá in Colombia), nor on the Rio Negro nor Uaupés. Its extensive cultivation has apparently died out in most of these areas. G. Prance has found several trees of *Anadenanthera peregrina* cultivated on an affluent of the lower Rio Negro. Such a perspicacious botanist as Spruce, however, would hardly have confused this characteristic tree with any other; furthermore, he mentioned at great length the medicinal and narcotic use of the tree.

We are, consequently, left with the belief that—as with other cultivated plants, like guaraná *(Paullinia Cupana* HBK.)—the Rio Negro especially is far poorer in cultigens than it was more than a century ago.

Editor's note.—Assuming that others are as interested as I am in learning more about Richard Spruce, the pioneering ethnobotanist and explorer of northwest Amazonia, I suggest these selected references for further reading.

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