

FROM THE HERO'S BONES:
THREE AGUARUNA HALLUCINOGENS
AND THEIR USES

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The Jivaroan tribes of Ecuador and Peru have, since their first contact with Europeans, attracted attention for their bellicosity and unwillingness to accept foreign domination. Later research, most notably the work of Michael J. Harner among the *untsuri shuar* or Jívaro proper of Ecuador, has given us an appreciation of Jivaroan peoples' intensely religious view of the world. In Jivaroan thought, the normally invisible world of spirits parallels the visible world in that both are populated by beings which can be hostile or friendly. To insure individual prosperity, and even one's very survival, it is necessary to gain access to the spiritual world through the use of hallucinogenic plants.

In the present article, I wish to describe the varied uses of three hallucinogens which are cultivated by the Aguaruna Jívaro of the Upper Mayo River, Peru. These three plants, all of which are apparently members of the solanaceous genus *Datura* (some species of which are now classified as *Brugmansia* by some taxonomists), form a discrete unit in Aguaruna thought, yet they are attributed widely varying and even contradictory properties. By examining the wealth of detail surrounding the mythical origin, ethno-taxonomy, and uses of these species, which in themselves form only a segment of the inventory of hallucinogens known to the Aguaruna, I hope to draw attention to some general principles regarding the relationship between men and hallucinogenic plants in the Aguaruna scheme of things, as well as provide an example of the fine distinctions which a native people can make between varieties of culturally important plants. Finally, it seems appropriate

to make some general observations about the changing role of hallucinogens in contemporary Aguaruna society. My interest in these problems is in many ways a result of contact with Professor Volney Jones, whose pioneering research on North American Indian hallucinogens—for example, his study of the so-called redbean, *Sophora secundiflora*, of the central and southern plains—has served as an inspiration to at least two generations of students at the University of Michigan.

GENERAL BACKGROUND

Approximately 1000 Aguaruna Jívaro live along the Upper Mayo River and its tributaries in the Department of San Martín, Peru. This population represents the result of continuous emigration from tributaries of the Marañón River which began 30-35 years ago. Like their relatives in the Marañón, the Mayo River Aguaruna are sweet manioc cultivators, hunters, and fishermen who live in relatively dispersed communities. The Aguaruna have received general ethnographic treatment in several works (for example, Stirling 1938; Tessman 1930) and bear a strong cultural similarity to the Jívaro proper (Harner 1972).

The major agent of culture change for the Mayo River communities has been the bilingual schools, which were first established by the Summer Institute of Linguistics in 1972 and which are now controlled by the Peruvian Ministry of Education. The establishment of permanent schools had a profound effect on the use of hallucinogenic plants, and though the present account is written in the ethnographic present, certain practices were terminated soon after 1972. These practices are well remembered, however, and are still a frequent topic of conversation.

The Aguaruna Jívaro, like many indigenous groups of South America, utilize psychoactive or hallucinogenic plants for various ends usually associated with curing, bewitching, and the acquisition of visions. While I have never been able to discover an Aguaruna word which is equivalent to our cover term "hallucinogens" one can formulate a question like "What plants are there which cause visions?" in the Aguaruna language and elicit a list of the various psychoactive plants. This suggests that there is a clear concept of vision-inducing plants even if they are not linguistically marked. In Aguaruna, the verb *nampét*, "to be intoxicated," is used to describe the effects of both manioc beer and hallucinogenic plants. Though both kinds of intoxication are seen to have certain similarities, I have never heard of a case of a person having a vision while drunk with manioc beer. Fermented beverages have predominantly a secular significance; their preparation and consumption is a primary expression of sociability in Aguaruna society. In contrast, intoxication by hallucinogens is rarely considered pleasurable but rather a necessary means to a sacred or, in some cases, magical end.

In free speech, the verb *kahamát* "to dream," may denote dreaming during sleep or while intoxicated by an hallucinogenic plant. In Aguaruna thought, the dreams of sleep and the visions of tobacco, ayahuasca, or *baikuá* (*Datura* sp.) have many elements in common. Both can be omens of success in hunting, victory in battle, or impending danger. However, the dreams of sleep are given less significance than the dreams of hallucinogenic plants because they lack the element of intentionality. Only by the effort of will required to drink the strong-smelling juice of tobacco or *baikuá* and by the suffering associated with prolonged fasting and sexual abstinence, can one acquire a powerful and significant vision.

When asked why a given plant induces visions, an Aguaruna is likely to say that it has this effect because it is "bitter" or "strong" or even "foul-smelling." The association of strong smells or tastes with medicinal or psychoactive properties is an important element in Aguaruna plant use in general. E. A. Berlin (1977:10) suggests that the dominance of a single introduced plant, ginger (*Zingiber officinale*) in the contemporary Aguaruna pharmacopoeia may be due to its exceptional astringent properties. Evidence from the Mayo River tends to support this view and may explain the unexpected inclusion of ginger in the list of hallucinogens provided by some informants, especially since to my knowledge there is no published evidence that ginger has psychoactive properties.

The plants to which the Aguaruna attribute the power to induce visions are listed below.

COMMON NAME	AGUARUNA NAME	SCIENTIFIC NAME ¹
tobacco	tsáng	<i>Nicotiana tabacum</i> L.
ayahuasca	yáhi	<i>Banisteriopsis cabrerana</i> Cuatr.
ayahuasca	datém	<i>Banisteriopsis caapi</i> (Spruce ex Grisebach) Morton
---	baikuá	<i>Datura</i> sp. (probably <i>Datura sanguinea</i> R & P.)
---	mamabaikua	<i>Datura</i> sp. (probably <i>D. suaveolens</i> H. & B. ex Willd.
---	bikut	or <i>D. candida</i> [Pers.] Safford)
---	tsuák	

Also mentioned by some informants but by no means all, were a variety of ginger, *tunchi ajéng* (*Zingiber officinale*), and two herbs *karián pihipíng* (probably a species of *Carex* or *Cyperus*) and *chúchka* (unidentified), specimens of which could not be obtained. *Tunchi ajéng* is reported to be used to cure witchcraft-induced illness, while the latter two are said to be used by people who wish to become witches. The peculiar property of these plants

¹The plant identifications were made by Drs. W. R. Anderson and B. Gates of the University of Michigan Herbarium, to whom I would like to express my thanks.

is that while they are said to make one "drunk," they are not supposed to cause visions.

Michael J. Harner's works on the Jívaro vividly portray the importance attached to the search for a vision with which to defeat one's enemies (Harner 1972, 1973). His analysis of the Jívaro case holds largely for the Aguaruna as well, with some minor differences. As an Aguaruna youth nears puberty, he is encouraged to begin taking infusions made from the juice of tobacco, *datém*, or *baikuá*. This is done individually or with a group of young men from the same neighborhood. After taking one of these infusions, the youths retire to a shelter in the forest to await their dreams. Principally, they hope for the appearance of an *ahútap*, a fearsome being associated with the spirit of a deceased warrior. Aguaruna accounts of the appearance of the *ahútap* vary greatly; the spirit may come in the form of an old warrior, a fox, a cave bird, a jaguar, or a comet-like flash of red light. The spirit speaks to the dreamer, telling him of his future feats in battle and how he will kill a specific enemy.

Unlike the Jívaro, the Aguaruna do not believe that they acquire an *ahútap* soul. The *ahútap* is an independent entity which returns to the sky after appearing to the dreamer. It is said that the *ahútap* imparts a dream which then becomes an almost physical presence inside the body of the dreamer. A person who has obtained one of these visions is said to be *káhin-tin* "owner of a dream," or *wáimaku*, which can be loosely translated as "one who has had a vision." The *wáimaku* vision is preeminently associated with death and warfare. It is a dream which is eternal and transcends the life of its owner, since soon after his death it will leave his body and ascend into the sky to become an *ahútap*. While the *wáimaku* vision, through its transformation to an *ahútap*, has some of the properties of a soul, it is never confused with the two "true" souls—one lodged in the eye and the other residing in one's shadow—which each person is said to possess from birth until death.

Closely related to the *wáimaku* or killing vision, but distinguished from it, is the vision called *niimangbau*, a term apparently derived from the verb meaning "to see." Often, instead of seeing the *ahútap*, a vision seeker sees a vision of his own future life. These *niimangbau* visions are invested with all the symbols of domestic tranquility: an attractive spouse, many healthy children, abundant chickens and pigs, and fine hunting dogs. By having a *niimangbau* vision, one is assured of prosperity and long life. This kind of dream is obtained by drinking an infusion of tobacco juice or the liquid expressed from the stem of *bikut*. It is not eternal, however, and it disappears after the death of its owner. But the *wáimaku* and *niimangbau* visions need to be periodically renewed during a person's life.

While the desire to acquire visions is particularly associated with young men, women sometimes participate and may even acquire a killing vision.

A female *waimaku* may take a prominent role in the festivities before a vengeance raid by urging men into a killing frenzy, or she may aid her faction by acting as a spy during a social visit to an enemy's house. More commonly, though, women seek life-giving *nimangbau* visions that insure their success in gardening and in raising domestic animals.

Besides the desire for specific visions, the Aguaruna associate hallucinogen use with right or "straight" thinking in general. This is clearly seen in the origin myths of some of the hallucinogens, to be discussed shortly, and in the practice of forcing intransigent children to drink *baikuá* so that they will respect their parents (cf. Harner 1972:90).

Hallucinogens also play a major role in Aguaruna shamanism and witchcraft. The Aguaruna believe that some men, voluntarily and occasionally involuntarily, acquire the power to cure or bewitch others by supernatural means. In the Upper Mayo River, two kinds of shamans are said to exist, publicly recognized shamans, who can cure and bewitch, and hidden shamans, who only bewitch. Hallucinogens play a key role in obtaining witchcraft power, particularly in the acquisition of a saliva-like substance which is the medium for invisible killing darts held in the mouth and upper torso of the shaman. Bewitching conventionally involves sending these darts to one's enemies, causing their illness or death. Curing usually consists of the removal of the offending darts. The hallucinogens tobacco, *datém*, and *yáhi* are used for curing seances and, reportedly, for bewitching.

For curing sessions, most shamans in the Upper Mayo use either tobacco juice or a mixture of *yáhi* or *datém* to arrive at the state of intoxication required for them to see the magical darts inside the patient's body. Even though the leaves of *yáhi* are mixed with the pounded stem of *datém* for curing seances, the mixture is usually referred to as *yáhi*. This reflects the fact that most of the power of the mixture is attributed to *yáhi*, not *datém*. *Yáhi* has no uses other than curing or bewitching, and many people in the Upper Mayo say that a non-shaman who takes *yáhi* will not even become intoxicated, since he does not possess magical darts. So close is the connection between *yáhi* and witchcraft that I found it hard to collect specimens since no one cared to admit that he knew of its whereabouts, nor could anyone imagine why I would want it unless it were to engage in the black arts.

In certain cases of illness for which a shaman is not available, a sick person may drink the juice expressed from the stem of *tsúak*. During the ensuing vision, the "soul" of the plant appears to the dreamer and effects a cure by throwing out witchcraft substance or, in another typical case, by setting a broken bone. The few informants who mentioned ginger as an hallucinogen say that an infusion of a special variety of ginger produces a dream in which doctors appear and render the patient healthy through their ministrations. It is perhaps significant that this use of ginger is reportedly limited to two isolated villages which have no publicly recognized shaman.

Ingestion of tobacco juice or smoke is held to be essential to the acquisition and use of magical songs which guarantee success in courtship, hunting, gardening, and the care of domestic animals. These songs incorporate esoteric language that is said to be impossible to memorize without first consuming tobacco juice. Similarly, such songs can only be "heard" by the intended recipient if the singer is intoxicated by tobacco.

The various uses of hallucinogens in Aguaruna society can be seen as a way of projecting one's will into what I will, for lack of a better word, call a non-ordinary plane or, in some cases, in making oneself receptive to powerful forces which are found in this non-ordinary domain. While I have found few Aguaruna who agree with the Jívaro's statement that the ordinary world is a "lie," and the world of hallucinogens "the real world" (Harner 1972: 134), there is no doubt that the non-ordinary world of hallucinogens is an important component of Aguaruna reality.

FROM THE HERO'S BONES: BAIKUÁ, BÍKUT AND TSÚAK

I would now like to turn my attention to three solanaceous plants which are closely related both in the western botanical sense and in Aguaruna ethnotaxonomy: *baikuá*, *bikut*, and *tsúak*. These three plants are members of the genus *Datura* and are morphologically similar in that they have shrub-like or tree-like growth habits, simple ovate leaves, and prominent, elongated flowers which bloom frequently throughout the year (see Fig. 2). *Baikuá*, *bikut*, and *tsúak* are cultivated in manioc gardens, hidden forest plots, or sometimes adjacent to houses so that they will be readily available when needed. The outer layers of stem tissue of all three plants yield a dark green, strong-smelling liquid which, when taken in sufficient quantities, produce intoxication and hallucinations. The juice is said to be *tsupaú*, "bitter," or *seéseng*, a nauseating smell associated with such things as raw fish or fresh blood. The Aguaruna consider these to be the strongest hallucinogens and potentially dangerous because of their unpredictable effects, but their power makes them indispensable for the acquisition of killing or healing visions.

The taxa *baikuá*, *bikut*, and *tsúak* seem to correspond to the generic rank in Aguaruna plant taxonomy as described by Brent Berlin (1976). The folk genera *baikuá* and *tsúak* are further subdivided into several folk species (see Fig. 3). One of these species, *mamabaikua*, is worthy of special consideration because of its importance in the origin myth of the three genera. *Mamabaikua*, as distinct from the other varieties of *baikuá* is not cultivated. It grows only in the wild, most frequently in damp, sandy soils near rivers and streams. While it is rarely used as an hallucinogen, the Aguaruna state

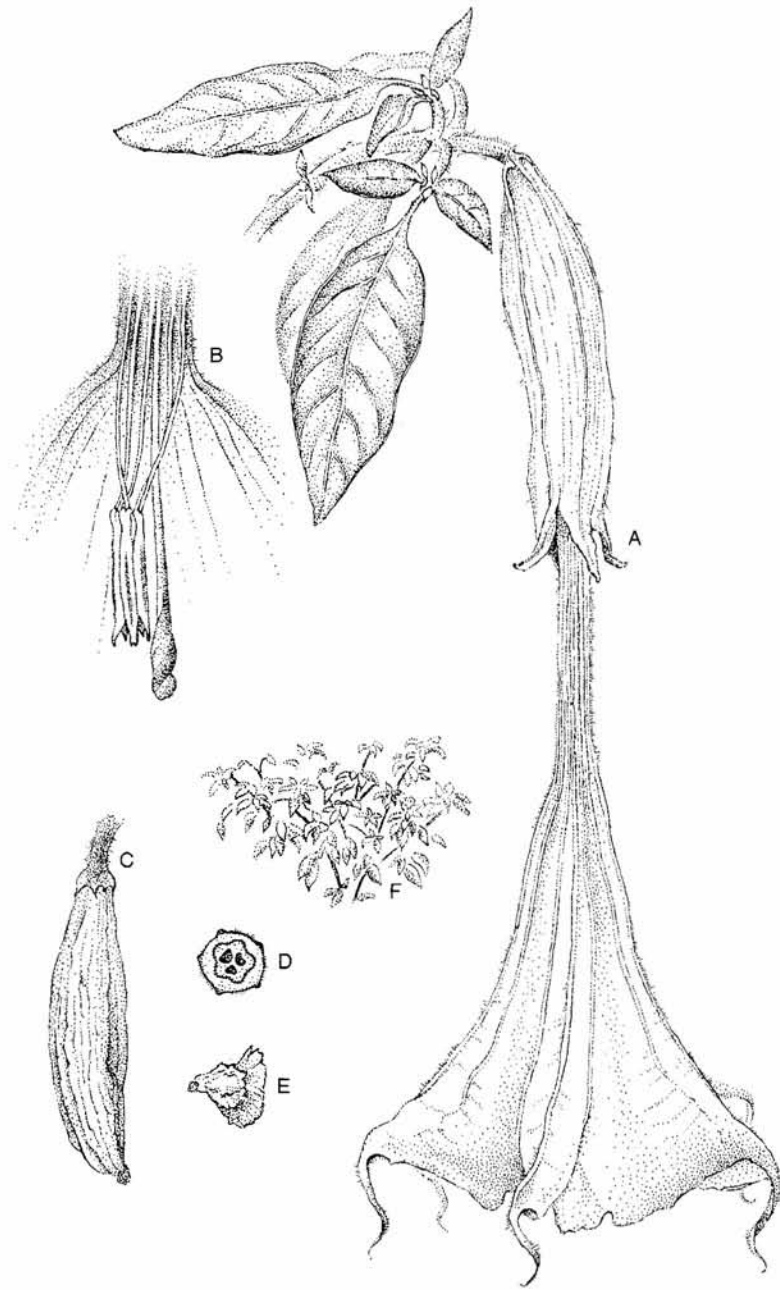


Fig. 2. *Tsúak*, *Datura suaveolens* H. & B. ex Willd. or *D. candida* (Pers.) Safford. A, flowering branch ca. x 1/3; B, segment of flower, expanded, ca. x 1/2; C, fruit, ca. x 1/4; D, ovary, cross section, ca. x 1; E, seed, ca. x 3/4; F, plant, ca. x 1/60.

that its properties are essentially the same as the other kinds of *baikuá*, and that it can be consumed if cultivated *baikuá* is not available.²

The close ethnotaxonomic relationship between *baikuá*, *bikut*, and *tsúak*, as well as the wild folk species *mamabaikua*, is expressed in their common myth of origin, a variant of which I recorded as follows:

Long ago, a young man became very hungry while returning from a hunting trip. He stopped to eat fruits of *mamabaikua*, not knowing the plant, and soon fell into a deep sleep as if dead. He was found by his family, who brought him to his house. After a long time, he woke up and told of the visions he had seen. He was now a *wáimaku*. Other youths began to plant *mamabaikua* so that they could seek the dreams that would make them *wáimaku*.

Another youth [named *Bikut* in most versions of the myth] who had never had sexual intercourse or contact with a woman, drank the juice of *mamabaikua* twenty times. After taking *mamabaikua* so many times, he could see things like a shaman. If a woman left the house to commit adultery, he saw it and cut her head with a machete. He could tell if a man had come to eat after defecating without washing his hands. He saw if a man had committed incest, and always killed such a person with his lance saying to the others "Can't you see that this was an evil person who had just had intercourse with his sister or someone else in his family? He comes here with his clothing covered with worms. A brave man who eats with him becomes a coward," he said. He killed many people, and was bound with ropes by the others.³

During this time, there was a war with those from downriver [Huambisa]. They killed many Aguaruna. The youth *Bikut* was untied and given his lance so that he could fight. He bathed, tied back his hair, and dressed. Then he went to meet his enemies. Because his dream was so strong, he killed many Huambisa.

One of those from downriver went to a shelter in the forest to seek a vision equal to that of *Bikut*'s. He obtained a vision, and wounded

²One informant suggested that *mamabaikua* was created when *Núngkui*, the mythological giver of manioc and other cultivated plants, transformed many cultivated plants into useless but similar wild species. See Brent Berlin (1977) for an interesting analysis of this aspect of the *Núngkui* myth.

³The apparent contradiction between *Bikut*'s defense of the moral order and his being bound by vines was baffling until Manuel Garcia Renducles, who has made an exhaustive study of Aguaruna mythology, informed me that the binding of fierce warrior-heroes is a common theme in Aguaruna myths. The power of these super-warriors was felt to be so dangerous that they were bound to keep them from harming members of their family.

Bikut in battle. Finally, the enemies from downriver killed Bikut. They left his body on the ground, and it was buried by his family.

From the right femur of Bikut's body grew *shiwáng baikúa*, and from the left femur grew *tahímat bikut*. From his spine grew *muntúk tsúak*. From these plants, our ancestors took the plants we have today: *baikúa*, *bikut*, and *tsúak*.

While all myths are subject to a wide variety of interpretations, this particular one has several features which bear directly on the present discussion:

1) An historical relationship is suggested between a putative wild ancestor, *mamabaíkua*, and three closely related plants which are presently cultivated.

2) While the three cultivated plants have a common ancestor, the myth suggests that they might have opposing or at least different characteristics inasmuch as they are given different names and issue forth from different parts of the decaying body of the myth's hero.

3) There is a relationship of reciprocity between the hero of the myth and the plants mentioned. Bikut acquires his power through the use of *mamabaíkua*, and it is implied that the three descendants of *mamabaíkua* which come from his bones acquire their power by virtue of his exploits as visionary and warrior. He thus aids the plants by transforming them from a natural to a cultural state, and they reciprocate by transforming him from an ordinary person to a culture hero.⁴

It is difficult to assess the degree to which the botanical relationships expressed in the myth conform to Western taxonomic knowledge, especially since the classification of the species in question, *Datura sanguinea*, *D. candida*, and *D. suaveolens*, is undergoing a revision by taxonomic botanists. A further complication is that the use of these species as ornamentals has resulted in considerable hybridization among them. The group consisting of *baikúa*, *bikut* and *tsúak* does conform to Linnean taxonomy insofar as all three pertain to the same genus, *Datura*. The various species level folk taxa (e.g., *mamabaíkua*, *tahímat bikut*, etc.) are the subject of considerable disagreement among native informants, with some people even doubting the existence of some folk species which had been named by Aguaruna from other communities. Figure 3 represents the synthesis of all informants' statements with regard to the taxonomic relationships between *baikúa* and its relatives.

While all informants agreed that *baikúa*, *bikut*, and *tsúak* are "alike" or "friends" (cf. B. Berlin and E. A. Berlin 1977:8), there was a tendency to say that *baikúa* and *bikut* are "more alike" than *tsúak*. All three generic

⁴Bikut is said to be the source of knowledge about personal cleanliness and, according to some informants, knowledge of how to treat childhood illnesses caused by contact with certain species of animals and plants.

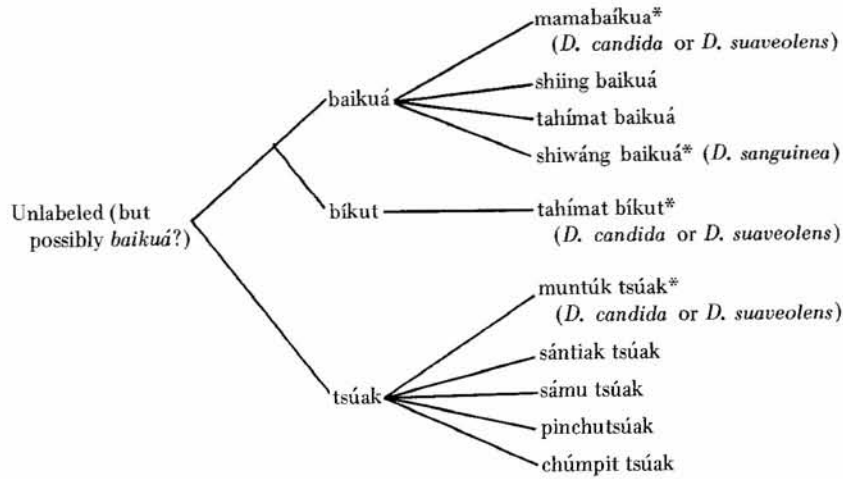


Fig. 3. Synthesis of all informants' statements regarding the taxonomic relationships between baikua and its relatives. Asterisk (*) indicates folk species for which specimens were collected.

level taxa are seen to be more like each other than they are to other hallucinogens such as tobacco and ayahuasca. The group consisting of *baikua*, *bikut*, and *tsuak* appears to have no name, though in free conversation I have heard people use *baikua* to refer to all three folk genera. This use of *baikua* as a general term for the three may result from the fact that many younger Aguaruna are now unable to distinguish between these plants. Thus they may mistakenly refer to a specimen as *baikua* when it is really *bikut* or *tsuak*.

Besides a common appearance, there are other characteristics which cause the Aguaruna to see *baikua*, *bikut*, and *tsuak* as a natural group. First, as was mentioned earlier, they are considered to be very strong and potentially dangerous if taken repeatedly. They are all prepared in the same fashion and the preparations have a similar taste and smell. They are also consistently attributed souls or, sometimes, "people" (*áents*). While any animate object, and some inanimate ones, may be attributed souls (which in the present context is simply defined as an enduring, spiritual component), no other plants are so consistently said to possess a soul. The appearance and importance of these souls vary among the taxa under consideration. The soul of *baikua*, for example, has the appearance of a tall, thin, man who appears to the person who has consumed *baikua* and whose state of intoxication is beginning to dissipate. This soul or person has no relation to the much sought after *ahútap*, and its appearance is considered to be

little more than a peculiar and unimportant side effect. The soul of *tsúak*, on the other hand, has a central role in the cures attributed to the plant. The *tsúak* soul appears in the form of a *wiakuch*—a person of European features dressed in fine clothes—or as one of the mestizo physicians which the Aguaruna have seen when visiting the hospital in Moyobamba. Alternatively, some people say that the soul of *tsúak* is that of the person from whom the plant was obtained. Whatever its appearance, this soul treats the illness of one who has taken *tsúak* and is therefore the key element in the power attributed to that particular hallucinogen.

While *baikúa*, *bikut*, and *tsúak* thus form a natural group in native thought, each has distinguishing properties that set it apart from the others. There are several morphological characteristics, including size and growth habit of plant, color of flower, and leaf shape, which some Aguaruna say can be used to distinguish between them to a certain extent. Younger informants are not always able to distinguish between them on this basis, but they insist that such morphological criteria do exist. In fact, the problem of identifying the plant rarely arises because the owner and cultivator of the plant will have learned its name from the person who gave or sold him the cutting. From the Aguaruna perspective, what principally distinguishes each plant are the powers attributed to it and its appropriate uses. These are summarized as follows.

Baikúa

All varieties of *baikúa*, but most especially *shiwáng* ("enemy") *baikúa*, are used for the acquisition of *wáimaku*, or killing visions. When the Aguaruna speak of *baikúa*, it is in the context of their attempts to see the *ahútap* during their adolescence. Besides taking the juice of *baikúa*, the consumption of which is in itself seen to be a form of suffering because of its bad taste and powerful narcotic effect, the youth searching for a killing vision has to be sexually pure. By fasting, sexual abstinence, and the continuous consumption of hallucinogens, the vision seeker attempts to arrive at a state of suffering so acute that an *ahútap* will take pity and appear in one of its many forms, thereby conferring to the supplicant the power to defeat his enemies.

The close connection between *baikua* and the killing vision is powerfully expressed in the words of a song which is sung by a man as he prepares *baikúa* for his son:

I am not cutting the stem of *baikúa*
 but the bones of my enemy.
 I am not scraping the bark of *baikúa*
 but the bones of my enemy.

I am transforming the enemy's heart.
 The vulture high above, takes the heart
 with its talons
 squeezing it, crushing it
 In the bowl is the enemy's blood
 The enemy's blood drips into the bowl.
 The vampire bat high above, folding
 back its wings
 descends to drink the enemy's blood.
 It drinks with great thirst.
 High above, the vampire bat never stops
 drinking blood.
 With great thirst, it drinks.

Besides causing powerful visions, the juice of *baikúá* is said to prevent sexual arousal for several months when applied to the penis. This secondary use can clearly be understood within the context of sexual abstinence associated with the search for an *ahútap*.

Bikut

Bikut emerged from the mythical hero's left side, and it takes on many characteristics which are opposed to *baikúá*, which came from the hero's right side. While *baikua* is associated with self-denial and the acquisition of *waimaku* visions, *bikut* usually is said to be a source of *niimangbau* or life-giving visions. Indeed, the name *tahimat bikut* that appears in the myth carries with it connotations of abundance, and good health. *Niimangbau* visions are omens of a successful sexual and family life, and the acquisition of wealth in the form of dogs, pigs, and other domestic animals. A *baikúá* vision deals with blood, vengeance, and the death of an enemy; a *bikut* vision deals with prosperity, long life, and good health.

Tsúak

Tsúak is, in many ways, the most enigmatic of this botanical trio. As was noted before, *tsúak*—which literally means “remedy”—is used by persons who are afflicted with various sorts of ailments and do not have access to a curing shaman. The two kinds of ailments most frequently treated by *tsúak* are witchcraft-induced illness and accidentally broken bones. In the case of witchcraft, the soul of *tsúak* appears to the patient, examines him, and then removes the intruding witchcraft substance. The patient recovers immediately after he has awakened from his intoxication. Similarly, in cases

of bone fracture the soul of *tsúak* is said to manipulate the bones, blow on them, and restore them to their proper location. Informants who have observed people intoxicated by *tsúak* report that the patients themselves are rubbing and blowing on the site of the fracture, but that in their intoxication they see the phantom curer doing the manipulation. Thus it may be that the intoxicating effect of *tsúak* allows the victim to endure the pain of arranging fractured bones for proper healing.

The peculiar property of *tsúak* is that while it is a formidable source of healing power, the Aguaruna say that by its use one inadvertently acquires the magical darts which shamans use to bewitch. In fact, *tsúak* is allegedly the major means by which hidden or bewitching shamans acquire killing powers without obtaining them from another person and thereby running the risk of discovery. By taking *tsúak* many times in succession, one can acquire sufficient darts to bewitch and kill. A person who wishes to use this plant strictly for curative purposes must rid himself of these bewitching darts after taking *tsúak* by exposing his body to the smoke of burning chili peppers. The strong smell of the peppers throws out the accumulating darts before they become dangerous.

Tsúak is considered to be an "enemy" of *baikuá* and *bikut* because it cannot be mixed with them without threatening the life of the person who drinks the mixture. *Bikut* and *baikuá* are "friends" because they are mixed in certain cases by someone very anxious to obtain a vision of either the *wáimaku* or *núimangbau* variety.

Reciprocity Between Man and Plant

For the Aguaruna, the power attributed to each of these three plants and their varieties is a kind of statistical norm which may or may not be realized in a given specimen under cultivation. This is a point which returns us to the notion of reciprocity between man and plant mentioned earlier in connection with the myth of *Bikut*. To retain and develop its inherent power, each plant needs special treatment by its owner. Ideally, he should fast before planting a stem cutting, avoid contact with the plant for several days after engaging in sexual intercourse, and cultivate it in a place where it will not be disturbed or soiled by children and domestic animals. The inherent power of the plant is further increased by frequent use, and its owner, in turn, acquires ever more powerful visions as his plant's strength grows. It is said that a person who wishes to cultivate *baikuá* will try to obtain a stem cutting from someone who is known to be *wáimaku*, possessor of a killing vision, and who has observed the proper precautions in the care and use of his *baikuá*. So close is the identification between a plant and its owner that, in the case of *tsúak* at least, a person who borrows some of another person's

plant for a cure may see the owner appear as the soul of the plant during his intoxication.

To review the preceding discussion, I have shown how the beliefs and practices associated with *baikuá*, *bikut*, and *tsúak* are reflected in their common myth of origin. They are seen as having a common ancestor and certain natural similarities, and that within this similarity there is remarkable diversity. *Baikuá* and *bikut* stand as paired opposites, the former associated with sexual abstinence, austerity, and death, while the latter is linked to sexual activity, prosperity, and life. Despite these differences, they are "friends" in that they can be mixed together and their use has a common goal, the acquisition of visions necessary to survive in the Aguaruna world. *Tsúak* stands apart as a kind of transforming agent which can change a person from sick to well or from non-shaman to witch. The power of each of these plants is only partially inherent, coming to fullest realization when they are correctly cultivated and used by man.

If the connection between myth and ethnographic reality is fairly clear in this case, there are other problems which are not so easily resolved. First, why is it that there is so much informant disagreement about the varieties of *baikuá* and *tsúak* and the morphological factors which distinguish them? Second, how is it that plants which are so closely related taxonomically can be attributed such different properties?

Informant disagreement is always difficult to assess, and I am willing to concede that it may have been caused by the failure of the ethnographer to ask the right questions. But one remark which I heard frequently in the course of this investigation was that the person who owns and cares for the plant is the only one who can provide a definitive identification of a given specimen, especially at the variety level. Medicinal plants, unlike other cultivars, are given individual treatment in the garden, and different varieties of the same species are usually planted separately so that they won't intermingle. Varieties of plants like sweet manioc, maize, or peanuts, on the other hand, are mixed together in the garden, so that to identify them one must have in mind certain readily observable characteristics such as leaf form, fruit shape and size, etc. The Aguaruna can consistently describe the defining characteristics of varieties of manioc, bananas, and various edible wild plants, but descriptions of the morphological characteristics of varieties of some medicinal plants such as *baikuá*, *tsúak*, and ginger varied significantly from person to person. The characteristics enumerated by older people and specialists (curing shamans) were found to be no more consistent than those of others. It should be restated that I am here speaking of *morphological* characteristics; once a given variety had been identified, people generally did agree about what the plant's medicinal or hallucinogenic properties were. To give a more specific example, Aguaruna women

invariably cultivate two or more varieties of ginger in their gardens, each of which has a different medicinal use.⁵ They say that the varieties look virtually identical and that one must carefully cultivate each one in a separate part of the garden, keeping in mind where it was planted so that the appropriate variety can be collected when needed. The knowledge of how each variety is to be used was obtained from the woman who originally sold or gave the cultivator her ginger. It thus seems possible that certain medicinal plants may be distinguished by what I would call, with some trepidation, non-observable factors, i.e., properties known only to the individual cultivator and not necessarily to anyone else. If this is the case, it is probably a direct result of the notion of reciprocity between man and plant mentioned earlier, in that only part of the plant's character is intrinsic, the rest being the product of the treatment which it receives from its owner. To put it another way, if the owner of a specific specimen of *shiwáng baikuá* says that his plant is *shiwáng baikuá*, and it is known that by using his plant he has successfully acquired *wáimaku* visions, it will hardly matter to someone else who might want to use this man's plant whether its morphological characteristics are similar to or different from, say, *tahimat baikuá*. The important thing is that the plant has been determined to be *shiwáng baikuá* by its owner, and that it has been shown to be powerful in producing visions.

The second troublesome question is the different powers which are ascribed to plants which are so closely related botanically. Harner (1973: 146-47) has suggested that, for the Ecuadorian Jívaro, the difference in use between *Banisteriopsis*- and *Datura*-derived hallucinogens can be related to chemical differences between them, because the dissociating effects of the scopolamine, atropine, etc. present in *Datura* make it unsuitable for the sustained concentration demanded of the curing shaman. It is, however, doubtful that such significant differences exist in the chemical composition of *baikuá*, *bíkut*, and *tsúak* because they are so closely related botanically. One must therefore conclude that the expectations of the user contribute significantly to the sort of vision that he or she will have when consuming one of these plants.

The foregoing comments are not intended to imply that the Aguaruna are unscientific or illogical. The intensive ethnobiological research being carried out by Brent Berlin with the Aguaruna of the Department of Amazonas (see, for example, B. Berlin 1976) has given ample evidence that

⁵As is the case with the different kinds of *Datura*, certain varieties of ginger are sometimes attributed completely opposite effects. E. A. Berlin (1977:5-6) reports a variety of ginger (*uchigmátai ajég*), which assures conception, and another (*kága ajég*), which is said to prevent conception. Her observations are also valid for the Upper Mayo region.

their organization and classification of the natural world is systematic and closely resembles our own in its logical structure. I wish only to suggest that in certain classificatory domains, things may be distinguished according to factors which are not directly observable or even empirically verifiable.

HALLUCINOGENS AND THE PRESENT SITUATION OF THE UPPER MAYO AGUARUNA

Since the introduction of bilingual schools to communities of the Upper Mayo in 1972, Aguaruna opinions about the role of hallucinogens have begun to change significantly. While the use of hallucinogens by curing shamans continues undiminished, the systematic search for visions by adolescents has ceased completely, partly because of the objections of Aguaruna teachers trained by the Summer Institute of Linguistics. All older men, and most men and women over the age of 16, have had some experience with hallucinogens, but a new generation of adolescents is appearing which has had no direct contact with the traditional visionary experience.

One observable effect of this is that young men, who once postponed courtship and marriage to maintain the sexual purity needed to acquire *wáimaku* visions, are now inclined to marry at an earlier age than their parents. According to the Aguaruna, this has caused an increase in domestic strife, because early marriages are very unstable and changing economic realities create many hardships for couples who marry young. Older men often complain that young men are now inclined to do "crazy" things at drinking parties, such as fighting with close family members or attempting suicide. This is because their hearts are "soft" and full of clear water, unlike the heart of a *wáimaku* or vision possessor who has a hard, red heart. Various elders state that they intend to revive the preparation of *datém* for young boys so that they might acquire life-giving *níimangbau* visions. There is a vague feeling that *wáimaku* killing visions are bad because they encourage homicide, though it should be said that men who are known to be *wáimaku* are still greatly admired. It seems doubtful, in any case, that the desired revival of the vision quest will take place in the near future.

Several villages of the Upper Mayo River are strongly influenced by Aguaruna evangelists who have had some contact with Protestant missionary groups. Aguaruna Christians are supposed to reject intoxication by hallucinogenic plants as well as fermented beverages. Ironically, traditional theories of witchcraft do not conflict with the teachings of Aguaruna evangelists, and in fact may be reinforced by the new emphasis given to Satan and his omnipresence in the world. It is not possible to say whether witchcraft accusations have increased or declined in the present situation since comparable data from earlier periods are not available, but it is certain that

the continuing belief in witchcraft insures the survival of curing shamanism. The ever-growing patronage of Aguaruna curers by non-Indian patients also contributes to the survival of the traditional curing role, albeit in a slightly syncretized form.

We have seen that the relationship of the Aguaruna with vision-inducing plants is a complex matrix of beliefs and practices all directed toward participation in and manipulation of the non-ordinary world. While many New World societies have utilized hallucinogens for shamanistic or curative purposes, the Jivaroan groups can claim some uniqueness in the degree to which their use of hallucinogenic plants is linked to the very foundations of the moral order of society. For the Upper Mayo Aguaruna, the current perspective is one of a simplification and redefinition of their relationship with hallucinogenic plants. Nevertheless, through their use in shamanistic curing, these plants will continue to play an important role in the Aguaruna interpretation of the mysteries of an often confusing world.

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