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Hallucinogenic plants of the Shuar and related indigenous groups in Amazonian Ecuador and Peru

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Bennett, Bradley C. (Institute of Economic Botany, The New York Botanical Garden, Bronx, NY 10458-5126, U.S.A.). Hallucinogenic plants of the Shuar and related indigenous groups in Amazonian Ecuador and Peru. Brittonia 44: 483–493. 1992.—*Banisteriopsis caapi, Brugmansia suaveolens,* and *Nicotiana tabacum* are the principal hallucinogens used by the Shuar and related ethnic groups in Amazonian Ecuador and Peru. These three species are common hallucinogens throughout northwestern Amazonia. *Banisteriopsis caapi* (*natem*) is the hallucinogen most frequently employed by the Shuar. The Shuar drink the juice of *N. tabacum* during *natem* healing ceremonies. They also believe that smoke from *N. tabacum* cigarettes repel evil spirits. *Brugmansia suaveolens* is the strongest Shuar hallucinogen. Considered very dangerous, it sometimes is added to *natem* mixtures or it may be taken alone. Other plants used in hallucinogens or in narcotic beverages include *Brunfelsia grandiflora, Cyperus* spp., *Diplopterys cabrerana, Heliconia stricta, Herrania* spp., and *Ilex guayusa.*

Key words: Shuar hallucinogens, Amazonian Ecuador, *Banisteriopsis caapi, Brugmansia suaveolens, Nicotiana tabacum.*

Five related indigenous groups live in the eastern montane region of Ecuador and Peru: the Achuar or Achual, Huambisa, Aguaruna, Mayna, and Untsuri Shuar (Harner, 1972). Descola (1988) considered these Shuaran groups, with a combined population of 80,000, the most important indigenous nation in the Amazon Basin. The Untsuri Shuar, previously known as the Jívaro, reside in Ecuador; the Achuar in Ecuador and in Peru, where they are known as Achual; and the Huambisa and Aguaruna in Amazonian Peru. The Mayna probably are no longer extant, though the Candoshi and Shapra may be their living descendants (Brown, 1981). Seymour-Smith (1988) classified the Mayna as Shiwiar (Table I).

Shuar shamans (*uwishin*) drink hallucinogenic beverages to communicate with the spirit world, diagnose illnesses, determine guilt, and see the future. The Shuar believe that witchcraft or sorcery causes most diseases (Harner, 1972). Bewitching shamans send magical darts (*tsentsaks*) that cause illness or death. Healing shamans can see and remove the harmful projectiles.

Shamans see spirit visions while under the influence of *natem* (*Banisteriopsis caapi* (Spruce ex Griseb.) Morton). According to several shamans, these spirits take the form of boas, frogs, tigers, dogs, and trees. Harner (1972) discussed other uses of hallucinogens by the Shuar. Parents give their new-born babies a mild hallucinogen to see a spirit vision (*arutam*). Young girls drink the same hallucinogen to contact *arutam.* Young boys drink juice from green *Nicotiana tabacum* L. leaves or juice from *Brugmansia suaveolens* (Humb. & Bonpl. ex Willd.) Bercht & Presl stems for the same purpose.

The use of hallucinogens is very circumscribed among the Shuar. They drink narcotic beverages only to communicate with the spirit world. The casual Western uses of hallucinogens for escape, relaxation, or experimentation are foreign to them.

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TABLE I
THE LOCATION OF THE UNTSURI SHUAR AND LINGUISTICALLY RELATED GROUPS.[a]

Regional name[b]	Shuar Federation name[c]	Meaning	Location
Untsuri Shuar	Muráya Shuar	Montane Shuar	Ecuador
Achuar	Achua Shuar	Shuar of the achu palm region	Ecuador & Peru
Huambisa	Wampis Shuar or Tsumú Shuar	Lower river Shuar	Peru
Aguaruna	Awajún	Water people	Peru
Mayna	Shiwiar or Patukmai	—	Peru
Candoshi	Kantuash	—	Peru

[a] From Seymour-Smith (1988).
[b] Name used commonly in the literature.
[c] Name proposed by the Shuar Federation.

In this paper, I discuss hallucinogens used by the Shuar and related Jívaroan groups in Peru and Ecuador. Several ethnological accounts discuss ritualistic drug use by Shuaran groups (e.g., Stirling, 1938; Harner, 1972; Brown, 1981; Descola, 1988), but none cite botanical vouchers. A comprehensive monograph on Shuar ethnobotany is in press (Bennett et al.). Descola (1988) mentioned plants used by Ecuadorian Achuar. Berlin (1976, 1977, 1978) published ethnobotanical data from the Aguaruna from Peru. Lewis published ethnobotanical accounts of other Jívaroan groups in Peru (Lewis & Elvin-Lewis, 1984; Lewis et al., 1987, 1988).

Methods and Materials

During an ethnobotanical study of the Shuar, Ecuadorian colleagues and I collected plants used to prepare hallucinogenic beverages (Fig. 1). We worked in 12 principal sites in Ecuador's Morona-Santiago Province (Bennett et al., in press). Most Shuar informants spoke Spanish and Shuar-Chicham. Young adults helped question the older, more knowledgeable informants who were mostly monolingual. Ethnobotanical vouchers are deposited in the National Herbarium in Quito (QCNE) and the herbarium of the New York Botanical Garden (NY).

I compiled data on other Jívaroan hallucinogens from Stirling (1938), Harner (1972), Brown (1981) and Descola (1988). These anthropological accounts contain excellent ethnographic data but none cite botanical vouchers. Nevertheless, most hallucinogens mentioned could be identified based on plant descriptions, methods of use, or linguistic data.

Results and Discussion

Principal hallucinogens.—As in many other western Amazonian groups, *Banisteriopsis caapi, Brugmansia suaveolens,* and *Nicotiana tabacum* are the principal hallucinogens of the Shuar. In Amazonian Ecuador, these species (or congenerics) are used by the Quichua, Secoya-Siona, Cofan, Achuar, and Waorani. The Aguaruna and Shiwiar of Peru also use the same species (Table II). Ecuador's Waorani, a small isolated group, use *Banisteriopsis muricata* (Cav.) Cuatrec. instead of *B. caapi* (Davis & Yost, 1983). The Secoya-Siona use *Brugmansia* × *insignis* (Barb.Rodr.) Lockwood ex R.E. Schultes instead of *B. suaveolens* (Vickers & Plowman, 1984). Ethnobotanical descriptions of Shuar hallucinogens appear in Appendix I.

Banisteriopsis caapi (*natem*) is the most

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FIGS. 1–3. 1. Efrain Freire and Patricia Gómez discussing plant names and uses with Pedro Kunkumas, a Shuar shaman, his wife María and his nephew Pedro. 2. *Banisteriopsis caapi* vine growing in secondary forest near the house of a shaman. 3. Young *Banisteriopsis caapi* vine planted at the base of a tree.


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TABLE II

COMMON NAMES OF TAXA USED IN HALLUCINOGENIC BEVERAGES BY THE SHUAR AND RELATED GROUPS.

Taxon	Ethnic group				
	Shuar[a]	Shuar[b]	Achuar[c]	Aguaruna[d]	Shiwiar[e]
Banisteriopsis caapi	*natem*	*natem*	*natem*	*natem*	*natem*
	—	—	—	*datem*	—
Brugmansia suaveolens	*maikua*	*maikua*	*maikua*	*baikua*	*maikua*
	—	—	—	*bikut*	—
	—	—	—	*tsuak*	—
Brunfelsia grandiflora	*chinikiasip*	—	—	—	—
Cyperus spp.	*piripiri*	*piripiri*	*piripiri*	*karian*	—
	—	—	—	*pihiping*	—
Diplopterys cabrerana	*yaji*	*yaji*	*yaji*	*yaji*	—
Heliconia spp.	*winchu*	—	—	—	—
Herrania spp.	*kushiniap*	—	—	—	—
Ilex guayusa	*wais*	—	—	—	—
Nicotiana tabacum	*tsaank*	*tsaank*	*tsaank*	*tsang*	*tsaan*
Peperomia sp.	—	*tsentsem*	—	—	—
Zingiber officinale	—	*ajej*	*ajej*	*tunchi*	—
	—	—	—	*ajeng*	—
Malpighiaceae	*mukuyasku*	—	—	—	—
Indet. 1	—	*parapara*	*parapara*	—	—
Indet. 2	—	*tipuru*	—	—	—

[a] Data from Bennett et al. (in press).
[b] Data from Stirling (1938) and Harner (1972).
[c] Data from Descola (1988).
[d] Data from Brown (1981).
[e] Data from Seymour-Smith (1988).

commonly employed Shuar hallucinogen (Figs. 2 & 3). Pedro Kunkumas, a Shuar shaman, prepares the *natem* beverage by first splitting a 1 to 2 m length of *B. caapi* stem into small fragments (Fig. 4). He places these in a pot with several liters of water and then adds leaves of *Diplopterys cabrerana* (Cuatrec.) B. Gates, *Herrania* sp., *Ilex guayusa* Loes., *Heliconia stricta* Huber and *mukuyasku* (an unidentified Malpighiaceae). He boils the mixture until most of the water evaporates and the solution has a syrupy consistency.

Natem ceremonies always are held at night for two reasons: 1) The alkaloids in *Banisteriopsis caapi* induce photosensitivity. Candlelight or even moonlight can irritate the shaman's eyes while under *natem*'s influence. 2) Healing shamans begin their work a few hours after dusk to counter the power of bewitching shamans who work at the same time.

In addition to drinking *Banisteriopsis caapi*, the Shuar drink alcohol and smoke tobacco (*tsaank*) cigarettes during *natem* ceremonies. Cigarette smoke helps protect the participants from evil spirits. Grain or sugar cane alcohol has replaced *chicha*, a traditional alcoholic drink made from fermented tubers of *Manihot esculenta* Crantz.

Only the shaman and his patient drink *natem*. Women and other male participants ordinarily do not consume the beverage. One person in the ceremony maintains a supply of cigarettes and matches and helps the shaman dispense the *natem* drink. The effects

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FIGS. 4–7. **4.** Pieces of *Banisteriopsis caapi* stem used to make the hallucinogenic *natem* beverage. **5.** Pedro Kunkumas, a Shuar shaman, showing *Diplopterys cabrerana*, one admixture to *Banisteriopsis caapi*. **6.** *Herrania* sp. leaves, shown here, are added to *Banisteriopsis caapi* mixtures by some shamans. **7.** *Brugmansia suaveolens*, considered the most potent hallucinogen, is used less frequently than *Banisteriopsis caapi*.


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of the hallucinogen begin 10 to 20 minutes after consumption, at first causing rapid breathing. The shaman often begins to sing or chant at the same time. Ceremonies last 3 to 6 hours or until the hallucinogen's effects diminish.

Schultes and Raffauf (1990) noted that at least 20 species may be added to preparations of *Banisteriopsis caapi*. Two are common: *Diplopterys cabrerana* (Fig. 5), used by the Shuar, Achuar, and Aguaruna, and *Psychotria viridis* Ruíz & Pavón. Both species contain N, N-dimethyltryptamine (DMT), the alkaloid most likely producing the hallucinogenic effects in *B. caapi* mixtures (Luna, 1986). *Banisteriopsis caapi* contains beta-carboline alkaloids (harmine, harmaline, and tetrahydroharmine), but the amounts in normal dosages are insufficient for hallucinogenic activity. Beta-carboline alkaloids, however, may inhibit monoamine oxidases, substances that render DMT inactive (McKenna et al., 1984; Luna, 1986).

No hallucinogenic principals have been reported from two of the additives: *Herrania* sp. (Fig. 6) and *Heliconia* sp. Another constituent, *Ilex guayusa* (Fig. 9), is a common stimulant in northwestern Amazonia. The Shuar often prepare a caffeine-rich beverage from this plant. Schultes (1972, 1979) gave more details on the Shuar's use of *I. guayusa*. The final additive, *mukuyasku*, is an unidentified Malpighiaceae.

Wilbert (1987) noted that Jívaroan consumption of tobacco (tsaank) includes chewing, drinking, snuffing, and smoking. He wrote, ". . . the Jívaro . . . have institutionalized tobacco drinking to a degree unparalleled in South America." Wilbert's accounts are drawn from several anthropological treatises. Much has changed since they were written. Smoking seems to have replaced chewing and snuffing. Drinking tobacco juice, however, is still common. Young Shuar men consume juice from steeped tobacco leaves at the age of six to help them see *arutam* (Harner, 1972). Tobacco juice is the first hallucinogen taken by apprentice shamans. After becoming acclimated to tobacco, they drink the stronger hallucinogens *natem* and *maikua*.

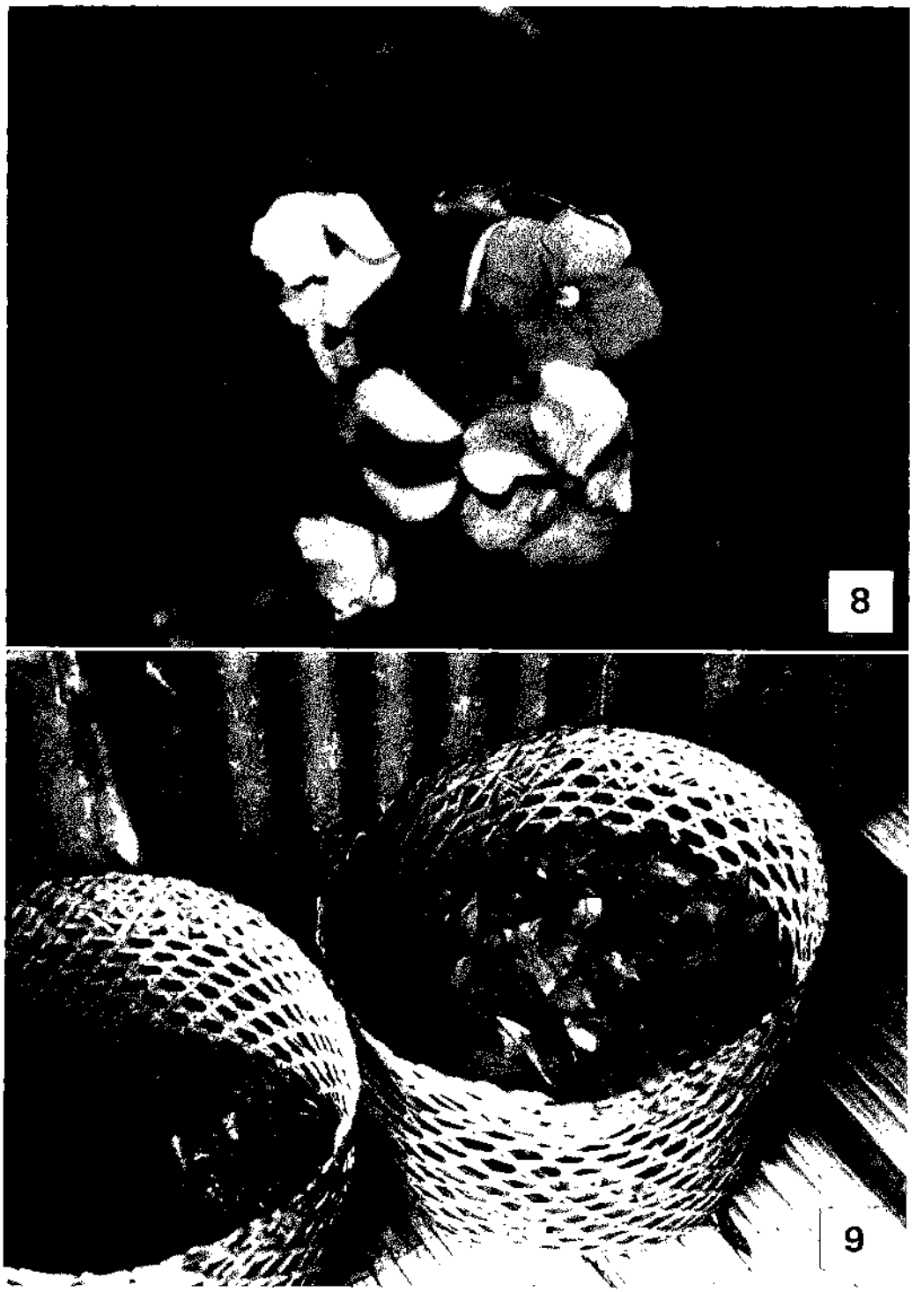
Shuar shamans drink the juice from boiled tobacco leaves during *natem* ceremonies. They sometimes add alcohol to the boiled tobacco leaves after drinking the liquid. The alcohol-tobacco mixture also is drunk and it is poured on *tumanks*, single-stringed bows, before they are used. Shamans play simple melodies on *tumanks* while under the influence of *tsaank* or *natem*.

The physiological effects of tobacco are biphasic. Small doses stimulate the central nervous system, depress hunger and thirst, and relieve pain. Large doses can produce catatonia, diarrhea, nausea, respiratory failure, visions, and trance (Lewis & Elvin-Lewis, 1977; Wilbert, 1987). Tobacco's physiological effects are due to nicotine, the predominant alkaloid, and to nornicotine.

The Shuar consider *maikua* (*Brugmansia suaveolens*) to be the most powerful and the most dangerous hallucinogen (Fig. 7). In describing its use, one Shuar informant said, "This is not a joke." The Shuar believe that repeated use of *maikua* leads to insanity (Harner, 1972). Though I commonly found *B. suaveolens* in Shuar communities, I never saw a shaman use *maikua* except as an admixture to *natem*. Harner (1972) reported that the Shuar drink raw juice from the green bark of *maikua* and described elaborate precautions used when taking this hallucinogen. *Brugmansia* contains several alkaloids including atropine, hyoscyamine, and the highly psychoactive hyoscine (Lockwood, 1979).

Minor hallucinogens.—Harner (1972) mentioned an unidentified, mild hallucinogen called *tsentsem*. Bennett et al. (in press) collected two *Peperomia* species call *tsemtsem* (pronounced both as "tsentsem" and as "tsemtsem"). The Shuar we questioned used both as medicines but not as hallucinogens. Although there are no reports of the hallucinogenic use of *Peperomia*, some species contain alkaloids (Schultes & Raffauf, 1990).

One Shuar hallucinogen not reported from other Jívaroan groups is *Brunfelsia grandiflora* D. Don (Fig. 8). The Shuar name for this plant is *chinikiasip*, derived from the Quichua *chiricaspi*, meaning fever or cold tree. Informants reported that drinking an infusion made from the plant produces fevers or chills. The Secoya-Siona and Quijos



FIGS. 8–9. **8.** *Brunfelsia grandiflora*, a Shuar hallucinogen probably adopted from the Quichua. **9.** Dried *Ilex guayusa* leaves. These are added to *Banisteriopsis caapi* mixtures and also are employed as a stimulant or an emetic tea.

Quichua use the plant similarly as do other indigenous Amazonian people (Marles, 1988; Plowman, 1977; Vickers & Plowman, 1984). The chemical constituents of *Brunfelsia* are poorly known (Lewis & Elvin-Lewis, 1977; Plowman, 1977; Schultes & Raffauf, 1990).

Reports from the Shuar (Stirling, 1938), the Aguaruna (Brown, 1981), and Achuar (Descola, 1988) mentioned the use of *ajej* (*Zingiber officinale* Roscoe) as a hallucinogen, but this species has no known hallucinogenic principals. The Cariña apply a mixture of tobacco and *Z. officinale* to the eyes of apprentice shamans so that they can see spirits (Wilbert, 1987). Extracts from ginger have a depressant effect on the central nervous system (Schultes & Raffauf, 1990) and large doses may be hallucinogenic (Lewis & Elvin-Lewis, 1977). Although it is one of their most important medicinal plants (Bennett et al., in press), I found no hallucinogenic uses of ginger among the Shuar.

The Shuar, Achuar, and Aguaruna use several *Cyperus* species (*piripiri*) as hallucinogens (Table II). According to one Shuar informant, some shamans drink a tea made from the plant's roots for the same purpose as *natem* (see Appendix I). The chemical constituents of Cyperaceae are poorly known (Schultes & Raffauf, 1990). Species of *Cyperus* known as *piripiri* are used to induce childbirth, regulate menstruation, remove evil spirits, and treat other infirmities throughout northwestern Amazonia (e.g., Vickers & Plowman, 1984; Cipolletti, 1988).

Two hallucinogenic additives remain unidentified, *parapara* and *tipuru*. Harner (1972) and Descola (1988) mention the use of a plant called *parapara*. We collected an unidentified species of Violaceae with the similar name *parapra*. A name used by the Secoya-Siona for *Rinorea viridiflora* Rusby (Violaceae) is *ayahuasca*, the name used by the Quichua for *Banisteriopsis caapi* (Schultes & Raffauf, 1990). *Parapara*, perhaps, is a species of *Rinorea*. *Tipu* is a common name for *Croton* sp. in Peru (Soukup, 1970). Some *Croton* species produce morphine-like alkaloids (Schultes & Raffauf, 1990). *Tipuru*, therefore, may be a *Croton* species.

Comparison with other Jivaroan groups.—The Shuar, Achuar, and Shiwiar share the same names for their hallucinogens and most Aguaruna names are identical or linguistically similar (Table II). One name that differs is *tsuak* (meaning medicine), used by the Aguaruna for *Brugmansia suaveolens*. The many shared names of these species demonstrate the extent of inter-ethnic trade in Amazonia. This exchange continues today as shown by the Shuar use of the Quichua-derived name for *Brunfelsia grandiflora* (*chinikiasip*). The Shuar probably learned about the plant from the Canelos Quichua who live north of the Río Pastaza.

Some minor hallucinogens are used by a single ethnic group. Only the Shuar use *Brunfelsia grandiflora* (Bennett et al., in press). *Tipuru* and *tsentsem* (or *tsemtsem*) are mentioned only in Harner's (1972) monograph. If *tsentsem* is a species of *Peperomia*, it would represent the first hallucinogenic use of a species in this large genus. Its use by children is especially intriguing (Appendix I). The active chemical constituents of the principal Shuar hallucinogens are well known. The chemistry of the additives and minor hallucinogens awaits investigation.

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Appendix I

Plants used in Shuar hallucinogenic beverages

Hallucinogenic plants are arranged alphabetically by family. Each treatment begins with the scientific name. The first paragraph lists the collection sites and provides a brief description of the plant. The second paragraph gives the Shuar or Spanish common names, followed within brackets by a translation (in quotes) of the common name or when no direct translation is available, by the Latin name of the corresponding taxon. If the name is derived from a language other than Shuar, this language is listed preceding the translation. Translations of the roots of compound names within brackets are separated by a slash. For example, *aya-*

huasca has a direct translation in Quichua and appears as: [Quichua: *aya* "spirit"/*huasca* "vine"]. *Natem* has no literal translation, but the name corresponds to *B. caapi*, and it thus appears as: [*Banisteriopsis caapi*]. For each taxon, the translation of the folk generic root is given once, and subsequent entries are abbreviated. For example, since *piripiri* was previously translated as *Cyperus*, *uchi piripiri* is given as: ["small child"/*C.*]. The voucher specimens (collector and number) and initials of informants who provided the information about the specimen follows. Informants worked in groups. Their initials are arranged accordingly with a semicolon separating each group. Details on the study sites and informants appear in Bennett et al. (in press). The final paragraph begins with a classification of the hallucinogenic use (additive or hallucinogenic principal) and continues with a description of the use.

Aquifoliaceae

ILEX GUAYUSA Loes.
Centros Pimpints and Yukutais. Tree of medium height, protected in agricultural fields or planted in house gardens.

wais [from Quichua: "*guayusa*" for *Ilex guayusa*]—*Bennett 3659* (Informants: GS, DA & AA; MK & RN); *Kasent 4* (Informant: PWK).

HALLUCINOGENIC ADDITIVE. The Shuar add *wais* leaves to *natem* mixtures. A tea made from the leaves is used as a stimulant and an emetic.

Cyperaceae

CYPERUS spp. (including *C. articulatus* L., *C. odoratus* L. & *C. prolixus* Humb. & Kunth).
Centros Kankaim, Tiink, and Yukutais, and Misión Salesiano Bomboiza. Herb planted in house gardens.

piripiri [*Cyperus*]—*Gómez 484* (Informant: MK).
piripiri de brujo [Shuar/Spanish: *C. / de brujo* "of the witch"]—*Gómez 526* (Informant: MK).
intiash piripiri ["hair" / *C.*]—*Shiki 170* (Informant: DS).
napi piripiri ["snake" / *C.*]—*Utitiaj 23* (Informant: AU).
uchi piripiri ["small child" / *C.*]—*Shiki 316* (Informant: DS); *Utitiaj 21* (Informant: AU).
uchi achitiai maikua ["small child" / unknown / *maikua* typically refers only to *Brugmansia* sp. but used here for *Cyperus*]—*Pujupet 1013* (Informant: JP).

HALLUCINOGEN. The Shuar, Achuar, and Aguaruna employ *piripiri* in hallucinogenic beverages. A tea made from the roots is consumed by a shaman during curing ceremonies. After drinking the liquid, the shaman goes into a trance and is able to communicate with the deceased and ask them questions. For the Shuar, the spirit world is the real world. Illnesses may be caused by spirit possession, soul loss, or magical darts called *tsentsaks* that are sent by bewitching shamans. While in a hallucinogenic trance the shaman can see the cause of his patient's ailments. Medicines made from *piripiri* are used to treat headaches, colic, and snake bites and are used as galactagogues and tranquilizers.

Heliconiaceae

HELICONIA STRICTA Huber.
Centro Yukutais. Common herb to 2.5 m, in open areas.

winchu [*Heliconia* sp.]—*Bennett 3578* (Informant: AA).

HALLUCINOGENIC ADDITIVE. The Shuar add *winchu* leaves to *natem* mixtures.

Malpighiaceae

BANISTERIOPSIS CAAPI (Spruce ex Griseb.) Morton.
Misión Salesiano Bomboiza; Centros Chiar Entsa and Pimpints. Woody vine found in primary-forests and cultivated in house gardens.

natem [*Banisteriopsis caapi*]—*Anananch 160* (Informant: LA).
ayahuasca [Quichua: *aya* "spirit" / *huasca* "vine"]

HALLUCINOGEN. All Jívaroan groups use *B. caapi*. The stem is peeled, split, broken into small pieces, then placed in several liters of water. *Yaji* leaves (*Diplopterys cabrerana*) and *kushiniap* fruit husks (*Herrania* sp.) are added and then the mixture is boiled until most of the water has evaporated. The final product has a viscous, slightly syrupy consistency and may be stored for 2 to 3 weeks. The mixture is taken by the shaman after dusk so that he may communicate with the spirit world. One Shuar shaman prepares *natem* with leaves of *yaji*, *kushiniap*, *wais* (*Ilex guayusa*), *winchu* (*Heliconia* sp.), and *mukuyasku* (unidentified species of Malpighiaceae).

DIPLOPTERYS CABRERANA (Cuatrec.) B. Gates.
Misión Salesiano Bomboiza and Centro Nayanmak. Woody vine of primary-forest and house gardens.

yaji [hallucinogenic species of Malpighiaceae]—*Pujupet 1048* (Informant: NOP).

HALLUCINOGENIC ADDITIVE. The leaves are added to *natem* mixtures, but they may contain the active principals responsible for the mixture's hallucinogenic effects (Luna, 1986).

Genus indet.
Centro Yukutais. Vine, cultivated in house gardens and in agricultural fields.

mukuyasku [unknown]—no collection (Informant: PK).

HALLUCINOGENIC ADDITIVE. The Shuar add the leaves to *natem* mixtures.

Piperaceae

PEPEROMIA sp.
Centros Kankaim and Yukutais. Epiphyte in montane forest.

tsemtsem [unknown]—*Bennett 3706* (Informant: AA).

HALLUCINOGEN. The Shuar give masticated *tsemtsem* leaves to babies when they are a few days old. Older children are given the plant, which acts as a mild

hallucinogen. This helps them see their *arutam* soul (Harner, 1972). Harner's *tsentsem* may be *Peperomia*, but no voucher specimens were collected.

Sterculiaceae

HERRANIA sp.
Centros Tuutin Entsa and Yukutais. Small tree, 2.5 m tall of montane forest; protected in agricultural fields.

kushiniap [probably derived from *kushiskiam* for cacao]—*Anananch 186* (Informant: LA); *Bennett 3819 & 4055* (Informants: DA; JA & JCA; MK & PK).

HALLUCINOGENIC ADDITIVE. The Shuar add the inner bark, exocarp, or leaves to *natem* mixtures.

Solanaceae

BRUGMANSIA SUAVEOLENS (Humb. & Bonpl. ex Willd.) Bercht. & Presl.
Misión Salesiano Bomboiza; Centros Kankaim, Pampants, Pimpints, Tiink, and Tuutin Entsa. Shrub to 2 m, cultivated in house gardens.

maikua [*Brugmansia* sp.]—*Bennett 3312* (Informant: JCA); *Kunkumas 131* (Informant: PK); *Warush 32* (Informant: AW).
tsuakrutin maikua ["medicine" / *B.*]—*Shiki 317* (Informant: DS).
tuktur maikua [derived from the Spanish word "doctor" / *B.*]—*Kasent 36* (Informant: WK).
uchi tukutai maikua ["small child" / unknown / *B.*]—*Shiki 284* (Informant: DS).
ukunch maikua ["bone" / *B.*]—*Utitiaj 7* (Informant: AU).
waimiatai maikua ["to have a beneficial encounter" / *B.*]—*Pujupet 1028* (Informant: JP).
yawa maikua ["dog" / *B.*]—*Kasent 43* (Informant: WK); *Shiki 333* (Informant: DS).

HALLUCINOGEN. All Jívaroan groups use *B. suaveolens*. It is considered very dangerous. Juice from the stems is taken to "become brave". The Shuar take *waimiatai maikua* to see the future (Broseghini & Frucci, 1986). Hallucinations caused by this plant last up to 3 days. This allows the recipient to find his *arutam* or ancient specter soul (Harner, 1972). Children who misbehave are given *maikua* (Harner, 1972). While in a hallucinogenic trance, the children see the truth of their parents' ways and may also contact their *arutam* soul. Medicines made from the plant are used to treat menstrual pain, prevent weakness, and guard against infections.

BRUNFELSIA GRANDIFLORA D. Don
Centros Chiar Entsa, Kankaim, Tuutin Entsa and Yukutais. Cultivated shrub, 3 m tall.

chinikiasip [derived from Quichua: *chiri* "fever" / *caspi* "tree"]—*Gómez 400* (Informant: AA); *Shiki 349* (Informant: DS).

HALLUCINOGEN. The Shuar make a hallucinogenic beverage from an infusion of stems and leaves. Shamans "receive strong feelings" and they can easily cure infirmities after taking a tea made from the plant.

NICOTIANA TABACUM L.
Centros Pampants, Pimpints and Yukutais. Cultivated in house gardens. Native to tropical America.

tsaank ["tobacco"]—*Bennett 3596* (Informant: MK).

HALLUCINOGEN. All Jívaroan groups cultivate *N. tabacum* for its stimulant and hallucinogenic properties. The smoke is used to treat victims who have seen bad visions of the devil. Shuar shamans drink green tobacco juice during *natem* ceremonies (Bennett et al., in press). Tobacco is also used to "clean" young girls when they begin to menstruate. A puberty right for girls involves drinking juice of green tobacco leaves. This enables them to communicate with the spirit world which will help them in raising crops and animals. Boys also consume *tsaank* and *maikua* during puberty rites. The plants are believed to help the young men to find an *arutam* soul (Harner, 1972). Apprentice shamans are initiated with green tobacco juice before they take stronger hallucinogens. The leaves are applied externally to treat headaches.

Violaceae

Genus indet. (possibly *Rinorea* sp.).
Centro Tuutin Entsa. Primary-forest shrub, 1 m tall.

parapra [unknown]—*Anananch 151* (Informant: LA).

HALLUCINOGEN. Some Shuaran groups use an unidentified species called *parapra* as a hallucinogen. This may be the same species as *Anananch 151*.

Zingiberaceae

ZINGIBER OFFICINALE Roscoe.
Centros Pampants, Pimpints, Tiink, and Yukutais. Common, rhizomatous garden herb. Native to tropical, southeastern Asia.

ajej ["ginger"]—*Gómez 483, 503* (Informant: MK).
kaur ajej ["rotten" or "diarrhea" / g.]—*Kasent 11* (Informant: WK); *Utitiaj 3* (Informant: AU).
napi ajej ["snake" / g.]—*Kasent 9* (Informant: WK); *Warush 25* (Informant: AW).
penke ajej ["real" or "genuine" / g.]—*Warush 22* (Informant: AW).
seeka ajej [unknown / g.]—*Utitiaj 25* (Informant: AU).
jenjibre [Spanish: "ginger"]—*Gómez 483 & 503* (Informant: MN).

HALLUCINOGEN. The Shuar, Achuar, and Aguaruna use *ajej* as a hallucinogen. Broseghini and Frucci (1986) reported that shamans take *ajej* to gain power.