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 Bronfelsia grandiflora, Cyperus spp., Diploloeperys cebrenana, Heliconia stricta, Hernania spp., and flex guayusa.

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

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Table I
The location of the Untsuri Shuar and linguistically related groups.

<table>
<thead>
<tr>
<th>Regional name</th>
<th>Shuar Federation name</th>
<th>Meaning</th>
<th>Location</th>
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<td>Untsuri Shuar</td>
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<td>Montane Shuar</td>
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<td>Achuar</td>
<td>Achua Shuar</td>
<td>Shuar of the achu palm region</td>
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<td>Huambisa</td>
<td>Wampis Shuar or</td>
<td>Lower river Shuar</td>
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<td>Tsmú Shuar</td>
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<td>Aguaruna</td>
<td>Awajún</td>
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<td>Mayna</td>
<td>Shiwiar or</td>
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<td>Patukmai</td>
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<td>Candoshi</td>
<td>Kantuash</td>
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<td>Peru</td>
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* From Seymour-Smith (1988).
* Name used commonly in the literature.
* Name proposed by the Shuar Federation.

In this paper, I discuss hallucinogens used by the Shuar and related Jivaroan 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 Jivaroan 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 Jivarnero 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 (and congeners) are used by the Quichua, Secoya-Siona, Cofan, Achuar, and Waoani. The Aguaruna and Shiwiar of Peru also use the same species (Table II). Ecuador’s Waoani, 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 Maria 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.
<table>
<thead>
<tr>
<th>Taxon</th>
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<th>Aguaruna a</th>
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<td>Indet. 2</td>
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<td>tipuru</td>
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a Data from Bennett et al. (in press).

b Data from Stirling (1938) and Harner (1972).

c Data from Descota (1986).

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.) H. Bates, *Herrania sp.*., *Ilex guayusa* Loes., *Heliconia stricta* Huber and *mukuyasuk* (an unidentified Malpighiaceae). He boils the mixture until most of the water evaporates and the solution has a syrupy consistency.

*Natém* 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 (*tsaiak*) 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
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 Ruiz & 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 (harmane, harmaline, and tetrahydroharmaline), 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, mukuyasiku, is an unidentified Malpighiaceae.

Wilbert (1987) noted that Jivaroan consumption of tobacco (tsaank) includes chewing, drinking, sniffing, and smoking. He wrote, "... the Jivaro ... 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 sniffing. 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 aruam (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 tsaanik 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 called tsentsem (pronounced both as "tsentsem" and as "tsentsem"). 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 Jivaroan groups is Brunfelsia granidentora D. Don (Fig. 8). The Shuar name for this plant is chinikiasi, derived from the Quichua chiri caspi, 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 *Bromeliopsis caapi* mixtures and also are employed as a stimulant or an emetic tea.

Reports from the Shuar (Stirling, 1938), the Aguaruna (Brown, 1981), and Achuar (Descola, 1988) mentioned the use of aej (Zingiber officinale Roscoe) as a hallucinogenic, but this species has no known hallucinogenic principals. The Carina 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 piri piri 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 paraparà. 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. Tipuru is a common name for Croton sp. in Peru (Schookup, 1970). Some Croton species produce morphine-like alkaloids (Schultes & Raffauf, 1990). Tipuru, therefore, may be a Croton species.

Comparison with other Jivarish 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 tsacak (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 grandi flora (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 grandi flora (Bennett et al., in press). Tipuru and tse tse sem (or tsen tse sem) are mentioned only in Harner’s (1972) monograph. If tsen tse sem is a species of Pepsorina, 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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Literature Cited


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, ay-
**Aquifoliaceae**

*Ilex guayusa* Loes.  
Centros Pimpints and Yukutais. Tree of medium height, protected in agricultural fields or planted in house gardens.

*waïs* [from Quichua: “guayusa” for *Ilex guayusa*]—Bennett 3659 (Informants: GS, DA & AA; MK & RN); Kasen 4 (Informant: PWK).

**Hallucinogenic Additive**. The Shuar add *waïs* 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. roliicus* Humb. & Kunth).  
Centros Kankaím, Tiink, and Yukutais, and Misión Salesiano Bomboza. Herb planted in house gardens.

*pirípi* [Cyperus]—Gómez 484 (Informant: MK).  
*pirípi de bruyo* [Shuar/Spanish: C. de bruyo “of the witch”]—Gómez 326 (Informant: MK); Intasí pirípi [“hair” / C.]—Shiki 176 (Informant: DS).  
*napi pirípi* [“snake” / C.]—Uititai 23 (Informant: AU); *uchi pirípi* [“small child” / C.]—Shiki 316 (Informant: DS); *Uititai* 21 (Informant: AU); *uchi achitii maku* [“small child” / unknown / maku typically refers only to *Brugmansia* sp. but used here for *Cyperus*]—Puiput 1013 (Informant: JP).

**Hallucinogenic**. The Shuar, Achuar, and Aguaruna employ *pirípi* 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 *tsentsas* 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 *pirípi* are used to treat headaches, colic, and snake bites and are used as galactagogues and tranquillizers.

**Halluciniomae**

*Heliconia stricta* Huber.  
Centro Yukutais. Common herb to 2.5 m, in open areas.

*winchù* [Heliconia sp.]—Bennett 3678 (Informant: AA).

**Hallucinogenic Additive**. The Shuar add *winchù* leaves to *natem* mixtures.

**Malpighiaceae**

*Banisteriopsis caapi* (Spruce & Griseb.) Morton.  
Misión Salesiano Bomboza; Centros Chiar Entsa and Pimpints. Woody vine found in primary-forests and cultivated in house gardens.

*natèm* [Banisteriopsis caapi]—Anunach 160 (Informant: LA); ayahuasca [Quichua: aya “spirit” / huacca “vine”]

**Hallucinogenic**. All *Iryanac* groups use *B. caapi*.  
The stem is peeled, split, broken into small pieces, then placed in several liters of water. *Yaji* leaves (*Diplopterys calderana*) and *kushínay* fruit husks (*Herertia* 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*, *kushínay*, *waïs* (*Ilex guayusa*), *winchù* (*Heliconia* sp.), and *mukawisk* (a unidentified species of *Malpighiaceae*).

*Diplopterys calderana* (Cuatrec.) B. Gates.  
Misión Salesiano Bomboza and Centro Nyanmak.  
Woody vine of primary-forest and house gardens.

*yaji* [hallucinogenic species of Malpighiaceae]—Puiput 1045 (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.

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

**Hallucinogenic Additive**. The Shuar add the leaves to *natem* mixtures.

**Piperaceae**

*Peperomia sp.*  
Centros Kankaím and Yukutais. Epiphyte in montane forest.

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

**Hallucinogenic**. The Shuar give masticated *tseñtseñ* 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 Papeetonia, but no voucher specimens were collected.

**Sterculiaceae**

**Herrania sp.**
Centros Tuutia Entsa and Yukuatais. Small tree, 2-5 m tall of montane forest, protected in agricultural fields.

**kushiniap** [probably derived from kushiskiam for caesal]—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 naimi mixtures.

**Solanaceae**

**Brugmansia suaveolens** (Flumb. & Bonpl. ex Willd.) Bercht. & Presl.
Misión Salesiano Bombouza; Centros Kankaim, Pampants, Pimpints, Tiink, and Tuutia Entsa. Shrub to 2 m, cultivated in house gardens.

**maikua** [Brugmansia sp.]—Bennett 3312 (Informant: JCA); Kunkumur 131 (Informant: PK); Warush 32 (Informant: AW).

**tsakwa maikua** ["medicine" / B.]—Shiki 317 (Informant: DS).

**tukta maikua** [derived from the Spanish word "doctor" / B.]—Kasen 36 (Informant: WK).

**wiktu tukta maikua** ["small child" / unknown / B.]—Shiki 284 (Informant: DS).

**ukam maikua** ["bone" / B.]—Utilat 7 (Informant: AU).

**walumatai maikua** ["to have a beneficial encounter" / B.]—Pajumper 1028 (Informant: JF).

**yako maikua** ["dog" / B.]—Kasen 43 (Informant: WK); Shiki 333 (Informant: DS).

**Hallucinogen.** All Jivarana groups use B. suaveolens. It is considered very dangerous. Juice from the stems is taken to "become brave". The Shuar take wsamatai maikua to see the future (Brosegiani & Prucci, 1986). Hallucinations caused by this plant last up to 3 days. This allows the recipient to find his arutam or ancient spirit soul (Harner, 1972). Children who mishandle 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.

**BUTEOMASIA GLANDIFLORA D. DON**
Centros Chiar, Entsa, Kankaim, Tuutia Entsa and Yukuatais. Cultivated shrub, 3 m tall.

**chinkiazip** [derived from Quichoia: chu = "fever" / caspi = "tree"]—Gómez 409 (Informant: AA); Shiki 149 (Informant: DS).

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

**Nicotiana tabacum L.**
Centros Pampants, Pimpints and Yukuatais. Cultivated in house gardens. Native to tropical America.

**Lisaank** ["tobacco"]—Bennett 3396 (Informant: MK).

**Hallucinogen.** All Jivarana 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 nayem 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 lisaank 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**

**Gerum indet. (possibly Rincsara sp.).**
Centros Tuutia 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 ROSEO.**

**ajel** ["ginger"]—Gómez 483, 503 (Informant: MK).

**kaw ajel** ["rotten" or "disinfected" / g.]—Kasen 11 (Informant: WK); Utilat 3 (Informant: AU).

**napi ajel** ["make" / g.]—Kasen 9 (Informant: WK); Warush 25 (Informant: AW).

**penke ajel** ["real" or "genuine" / g.]—Warush 22 (Informant: AW).

**seeka ajel** [unknown / g.]—Utilat 25 (Informant: AU).

**jerzibre** [Spanish: "ginger"]—Gómez 483 & 503 (Informant: MN).

**Hallucinogen.** The Shuar, Achuar, and Aguaruna use ajel as a hallucinogen. Brosegiani and Prucci (1986) reported that shamans take ajel to gain power.