

Research

Open Access

Traditional medicinal plant use in Loja province, Southern Ecuador

Rainer W Bussmann*¹ and Douglas Sharon²

Address: ¹University of Hawaii, Lyon Arboretum, 3860 Manoa Rd., Honolulu, HI 96822, USA and ²Phoebe Hearst Museum of Anthropology, University of California Berkeley, USA

Email: Rainer W Bussmann* - bussmann@hawaii.edu; Douglas Sharon - dsharon@berkeley.edu

* Corresponding author

Published: 10 October 2006

Received: 13 July 2006

Journal of Ethnobiology and Ethnomedicine 2006, **2**:44 doi:10.1186/1746-4269-2-44

Accepted: 10 October 2006

This article is available from: <http://www.ethnobiomed.com/content/2/1/44>

© 2006 Bussmann and Sharon; licensee BioMed Central Ltd.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

This paper examines the traditional use of medicinal plants in Loja province, Southern Ecuador.

Two hundred fifteen plant species were collected, identified and their vernacular names and traditional uses recorded. This number of species indicates that the healers, market vendors and members of the public interviewed still have a very high knowledge of plants in their surroundings, which can be seen as a reflection of the knowledge of the population in general. However, the area represents only an outlier of the larger Northern Peruvian cultural area, where more than 500 species of plants are used medicinally, indicating that in Ecuador much of the original plant knowledge has already been lost.

Most plant species registered are only used medicinally, and only a few species have any other use (construction, fodder, food). The highest number of species is used for the treatment of "magical" (psychosomatic) ailments (39 species), followed by respiratory disorders (34), problems of the urinary tract (28), Fever/Malaria (25), Rheumatism (23) and nervous system problems (20).

Background

Traditional medicine or ethnomedicine is a set of empirical practices embedded in the knowledge of a social group often transmitted orally from generation to generation with the intent to solve health problems. It is an alternative to Western medicine and is strongly linked to religious beliefs and practices of indigenous cultures. Medicinal plant lore or herbal medicine is a major component of traditional medicine.

In Latin American countries, herbal medicine is deeply rooted, practiced extensively by indigenous groups, and frequently used by a broad cross-section of the larger society. Often it is an economically inevitable alternative to expensive Western medicine.

Knowledge is transmitted from one generation to the next by traditional healers, shamans or curanderos, and has survived the rigors of the Spanish conquest and extensive mestizaje or racial intermixing. Herbal medicine is, however, a dynamic phenomenon in constant evolution and additional knowledge has been acquired by natural selection over the centuries.

The border region of Ecuador and Peru (Fig. 1) is one of the most biologically diverse areas in the world, and thus is a "biodiversity-hotspot" par excellence. Low passes in the Andean chain allow an easy exchange between the flora and fauna of the Amazon Basin and the Pacific lowlands. Additionally, the region is characterized by a rapid transition between the humid mountain forests of the

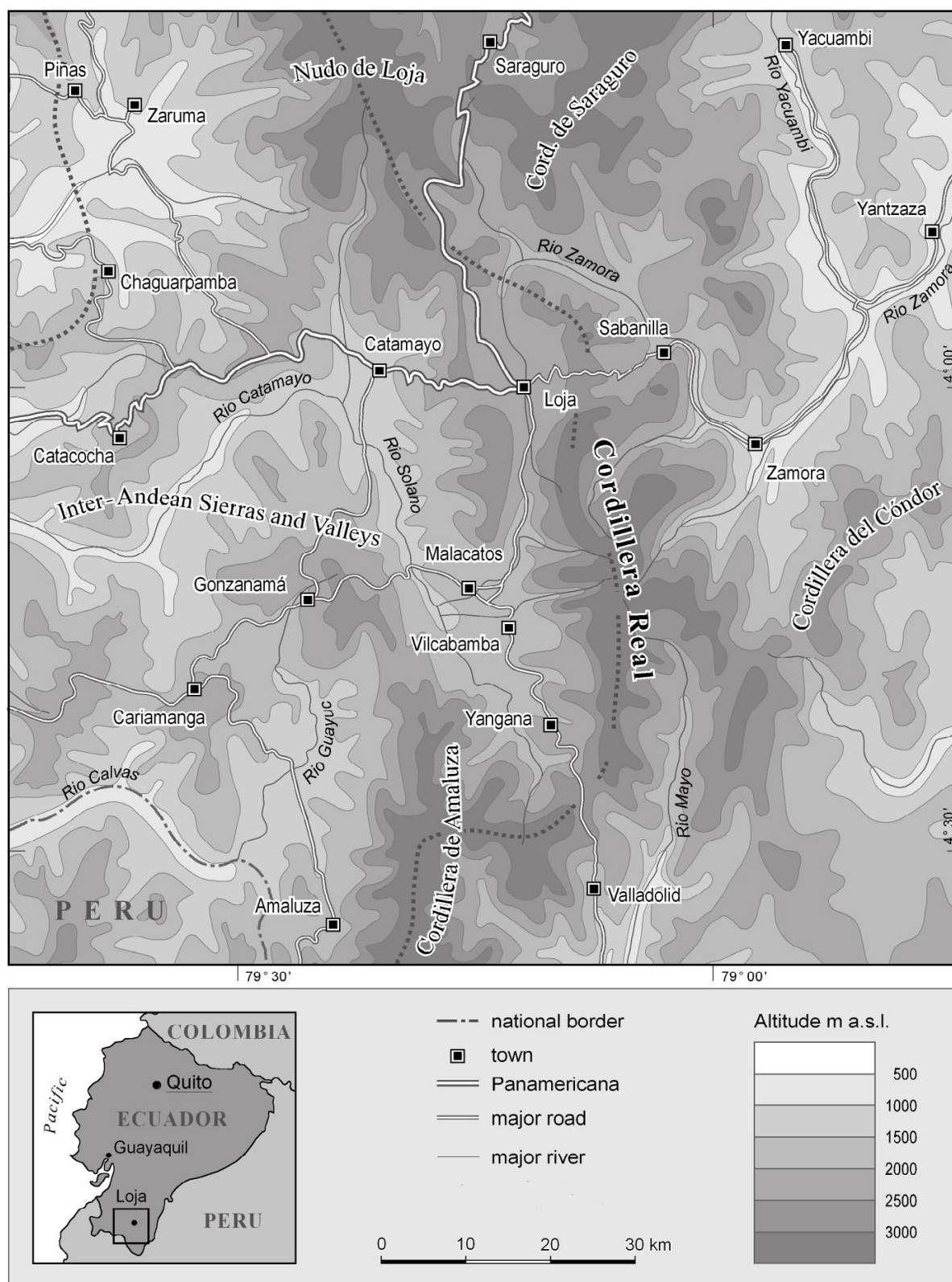


Figure 1
Study Area.

northern Andes and the dry, deciduous forests and deserts of the northern Peruvian lowlands.

Considerable progress has been made in the overall taxonomic treatment of the flora of the country as a whole [1-4]. However, the southern part of the country is relatively unexplored. The first floristic studies were conducted in the 1940's [5,6], followed by decades without any further research activity. Until the late 1990s little work had been done on vegetation structure, ecology, and ethnobotany.

A major lacuna in our knowledge of the Ecuadorian border region has to do with the rich shamanic lore found here, which has received little attention from anthropologists. Based upon 10 field trips to the southern side of the border in the late 1980s, Peruvian anthropologist Lupe Camino [7] has postulated a "health axis" of Andean ethnomedicine stretching from Loja, Ecuador in the highlands to the coastal desert of the Department of Piura in Northern Peru. Departing from the notion of "health coordinates," she defined this axis as a geographic space determined by shared concepts of health, specifically the "hot-cold" folk medical system found by anthropologists in many parts of Latin America. According to this theory, illness is explained as due to "cold" causes, such as entry of air into the body, or "hot" causes, such as excessive consumption of hot foods, with curing conforming to a doctrine of opposites: hot remedies to drive out cold and cold remedies to extract heat. The classic study of the "hot/cold dichotomy" was conducted by George Foster [8], who traced its origins to Greek humoral pathology brought by Spain to the New World. In contrast with this view, Camino sees the Andean folk medical system as rooted in the indigenous concept of "complementary opposites," and broadly applied to geography and cultural identity as well as the body, foods, and illness.

The present work grew out of an interdisciplinary project, initiated in 1995 on a grant from the San Diego Museum of Man, which involved collaboration between an ethnobotanist (Busmann), a medical anthropologist (Sharon), an ethnopharmacologist (Ezra Bejar) and a *curandero* (Cruz Roa) from the region around the town of San Pedro de Vilcabamba near Loja, Ecuador. The results of the preliminary fieldwork [9,10] were also published in a bilingual fieldguide [11], which included photos of the collected herbarium specimens, vernacular names, botanical identifications, descriptions as well as information on plant origin, ecological context, and indigenous uses and administration. Antecedents for this volume included [12] and [13] for the northern highlands of Ecuador, and [14] for the central highlands. In the current article this earlier work is incorporated into subsequent fieldwork and the entire corpus (215 plant species) is characterized

in terms of indigenous nomenclature and medicinal usage.

Since the start of the project in 1995, there have been some relevant innovations. In 1996, the Royal Danish Academy of Sciences and Letters published a comprehensive work on the ethnobotanical use of plants by three indigenous peoples of Coastal Ecuador [15]. In May of 1997, Douglas Sharon – following a precedent established with the help of a Peruvian *curandero*, Eduardo Calderón at the end of the 70s – was invited to join a group of Ecuadorian scholars in teaching a course on traditional medicine at the Faculty of Medical Sciences of the University of Loja. Also as of August 10, 1998 article 44 of the new Constitution of Ecuador stated that the Republic "will recognize, respect, and promote the development of traditional and alternative medicine."

Materials and methods

Plant collections

The majority of plants were collected during field visits in August-September 1995, May 1996, August-November 1996, March 1997, and June-July 1997. The specimens were registered under the collection series "Bejar" and "CORD" (see additional file 1).

Vouchers of all specimens were deposited at the Herbario Estación Científica San Francisco (ECSF), Herbario Loja (LOJA), Herbario Nacional de Ecuador (QCNE) and Herbario de la Pontificia Universidad Católica de Ecuador (QCA). The identification of the plant material was conducted entirely in Ecuador. No plant material was exported in any form whatsoever.

Nomenclature

The nomenclature of plant families, genera and species follows the Catalogue of Vascular Plants of Ecuador [2]. Species were identified using the available volumes of the Flora of Ecuador [4], and reference material in the herbaria QCA, LOJA and QCNE.

Ethnobotany

Ethnobotanical data were collected while accompanying four local healers (*curanderos*) and three midwives (*parteras*) from the Loja, Vilcabamba, Catamayo, Palanda and Amaluza areas of Loja province, when they went into the field for harvesting and to the markets to buy plants. In addition, *curanderos* and *parteras* were visited in their homes during the ten months of fieldwork to observe the preparation of remedies, and the authors participated in multiple healing rituals with each healer. Plant uses were discussed in detail with informants, after seeking prior informed consent from each respondent. Following a semi-structured interview technique [16,17], respondents were asked to provide detailed information about the ver-

vacular plant name in Spanish or Quichua; ailments for which a plant was used; best harvesting time and season; plant parts used, mode of preparation and application; and specific instructions for the preparation of remedies, including the addition of other plant species. In addition, market vendors in the areas named above, as well as other members of the public were asked about their plant use. All interviews were carried out in Spanish, with at least one of the authors present. Both authors are fluent in Spanish, and no interpreter was needed to conduct the interviews.

Data on plant species, family, vernacular name, parts used, traditional use and modality of use were recorded and are given in Additional File 1.

Results

Indigenous nomenclature

The vernacular names of the 215 registered plants used in Southern Ecuador are almost entirely derived from Spanish roots. Other indigenous languages, Quichua in particular, have no importance whatsoever in traditional plant nomenclature. Plants are compared to European introductions, and then named accordingly. Most species were named with only one vernacular name widely used by the healers involved in the study. This high uniformity of vernacular names indicates that most of the plants are well known and widely used in the region.

Informant consensus

The species reported in this paper are widely known and are employed for a large number of medical conditions. The same plants are frequently used by a variety of healers for the same purposes, and with only slight variations in recipes. All species found were well known to the healers involved in the study, and were often easily recognized by their vernacular names by other members of the population. This indicates that these remedies have been in use for a long time by many people.

Plant uses

A total of 215 taxa belonging to 158 genera and 76 families are now on record. Of these, 214 could be identified, most of them to the species level. A detailed overview of all plants encountered, their scientific and vernacular names, and all uses, is given in Additional File 1. This number of plants used represents only a fraction (about 5%) of the flora of the region. The families best represented are Asteraceae with 32 species, Euphorbiaceae, Lamiaceae and Solanaceae (11 species each), and Apiaceae, Fabaceae, Lycopodiaceae (9 species each) (Additional File 1). One hundred eighty-two (85%) of the species used are Dicotyledons, 20 Monocotyledons (9.3%), 12 ferns (5.5%), and one unidentified lichen was used.

One hundredseventy-nine species (83%) are indigenous to Southern Ecuador, while 36 species (17%) are introductions (Table 1). Many of the introduced species are medicinal plants brought in during colonial times.

Medicinal

Two hundred fifteen plants registered in Southern Ecuador had medicinal properties. The same species might be used for various medical conditions. In addition, the same medical condition (e.g. heart problems) might be treated using different plant parts and/or involved different applications, e.g., topical and oral. In the following the number of applications and the number of species used (in italics) are given to emphasize the importance of the treatment of specific conditions. The highest number of species (39, 18.1%) was used for the treatment of "magical" (psychosomatic) ailments, with fifty-nine applications (12.4% of all plant uses). Fever/Malaria (48 applications, 25 *species*), respiratory disorders (45 applications, 34 *species*), rheumatism (28 applications, 23 *species*), and nervous system problems (24 applications, 20 *species*) followed. Table 2 lists species used medicinally, while Table 3 gives an overview of all illnesses treated.

Most treatments are performed in the homes of the individual healers, who normally have their *mesas* (healing altars) already set up. In most cases in Southern Ecuador, a "Western" altar without many power objects is employed (Fig. 2), in contrast to Northern Peru, where normally a "traditional" *mesa* is set up (Fig. 3). This difference is rooted in the fact that traditional healing was illegal in Ecuador until the constitutional change of 1998. Additionally, traditional cures are often performed outdoors, either close to sacred lagoons or waterfalls, or at special ceremonial sites. A curing ceremony normally involves purifications of the patient by orally spraying blessed and enchanted herbal extracts on the whole body to fend off evil spirits.

Eighty-five different medicinal conditions were recorded. Most plants were used for the treatment of multiple ail-

Table 1: Main plant groups used in Southern Ecuador and plant origin

	Number of species	
		%
Dicotyledoneae	182	85
Monocotyledoneae	20	9.3
Pteridophyta	12	5.5
Lichenes	1	0.2
	215	100
Indigenous	179	83
Introduced	36	17

Table 2: Plant families used for medicinal purposes in the study area in Southern Ecuador

		Number of species
		%
ASTERACEAE	32	15
EUPHORBIACEAE	11	5.1
LAMIACEAE	11	5.1
SOLANACEAE	11	5.1
APIACEAE	9	4.2
FABACEAE	9	4.2
LYCOPODIACEAE	9	4.2
AMARANTHACEAE	8	3.75
URTICACEAE	7	3.25
POACEAE	6	2.8
PIPERACEAE	5	2.35
VALERIANACEAE	5	2.35
GERANIACEAE	4	1.85
BROMELIACEAE	3	1.4
CACTACEAE	3	1.4
ERICACEAE	3	1.4
LAURACEAE	3	1.4
LYTHRACEAE	3	1.4
ORCHIDACEAE	3	1.4
ACANTHACEAE	2	0.93
APOCYNACEAE	2	0.93
BORAGINACEAE	2	0.93
BRASSICACEAE	2	0.93
GENTIANACEAE	2	0.93
MALVACEAE	2	0.93
MYRTACEAE	2	0.93
ONAGRACEAE	2	0.93
PAPAVERACEAE	2	0.93
PLANTAGINACEAE	2	0.93
PROTEACEAE	2	0.93
ROSACEAE	2	0.93
RUTACEAE	2	0.93
ACTINIDIACEAE	1	0.46
ADIANTACEAE	1	0.46
AGAVACEAE	1	0.46
ANACARDIACEAE	1	0.46
ANNONACEAE	1	0.46
AQUIFOLIACEAE	1	0.46

Table 2: Plant families used for medicinal purposes in the study area in Southern Ecuador (Continued)

ARECACEAE		0.46
ASCLEPIADACEAE		0.46
ASPHODELACEAE		0.46
BASELLACEAE		0.46
BIGNONIACEAE		0.46
BOMBACACEAE		0.46
BURSERACEAE		0.46
CAMPANULACEAE		0.46
CANNACEAE		0.46
CAPRIFOLIAEAE		0.46
CARYOPHYLLACEAE		0.46
CELASTRACEAE		0.46
CHENOPODIACEAE		0.46
CYPERACEAE		0.46
EQUISETACEAE		0.46
IRIDACEAE		0.46
LICHENES		0.46
LILIACEAE		0.46
LOGANIACEAE		0.46
LORANTHACEAE		0.46
MIMOSACEAE		0.46
MYRISTICACEAE		0.46
NYCTAGINACEAE		0.46
OXALIDACEAE		0.46
PASSIFLORACEAE		0.46
POLEMONIACEAE		0.46
POLYGONACEAE		0.46
POLYPODIACEAE		0.46
PORTULACACEAE		0.46
PUNICACEAE		0.46
RUBIACEAE		0.46
SALICACEAE		0.46
SAPINDACEAE		0.46
SCROPHULARIACEAE		0.46
SELAGINELLACEAE		0.46
TILIACEAE		0.46
VERBENACEAE		0.45
ZINGIBERACEAE		0.46
TOTAL	215	99.97



Figure 2
Ecuadorian "Westernized" healing mesa.

ments. The large variety of applications was grouped into 37 main categories (Table 3).

Internal organs

The highest number of species was used to treat internal organ and digestive system disorders (101, 21% of all conditions treated). This included mostly urinary tract and kidney infections (40 applications, 28 *species*, 13% of all species used), liver problems (23 applications, 19 *species*) and stomach ailments, including ulcers (23 applications, 23 *species*). Eighteen species (18 applications) were used for the treatment of diarrheic conditions. The use of medicinal plants for the treatment of gastrointestinal disorders has a high prevalence in other Andean societies was documented by a variety of studies [17-20].

Magical

Mal aire (bad air), *mal viento* (bad wind), *susto* and *espanto* (fright), *mal ojo* (evil eye) and *envidia* (jealousy) are seen



Figure 3
Part of traditional Peruvian mesa.

as very common illnesses in Andean society. Causes are sudden changes in body temperature, any kind of shock, spells cast by other people, poisoned food, etc. Medicinal problems caused by outside influence were reported by a wide variety of studies [e.g. [22-24]]. The western concept of "psychosomatic disorders" describes these illnesses.

Fifty-nine applications fell into the "magical" category, with 39 plant species named to treat these disorders. *Mail aire* (18 applications), *susto* (14), and *sorcery* (9) were the most common magical illnesses encountered. Treatment in many cases involved the participation of the patient in a cleansing ceremony (*limpia*). This could either be a relatively simple spraying with perfumes and holy water, or a whole night ceremony involving the healers curing altar (*mesa*). In addition, patients frequently receive *seguros* (herbal amulets) for protection against further evil influences and for good luck. *Seguros* are flasks filled with powerful herbs as well as perfumes, pictures of saints, and hair and fingernails of the patient.

Fever, Malaria, Yellow Fever

In many cases, any fever is attributed to malaria or yellow fever, although frequently no confirming diagnosis is conducted. Yellow fever is very rare in Southern Ecuador. The frequent occurrence of the term in local illness categories is thus somewhat surprising. Malaria is rather common in some parts of Loja province, and does indeed represent a serious threat to the population, especially during the rainy season. Therefore it is not surprising that 25 plants were used to treat these conditions (48 applications).

Respiratory

In many rural areas, the smoke of cooking stoves still escapes through the roof or doorway. Consequently, a large variety of respiratory problems is very common. Houses are also often very damp and cold, especially at higher altitudes. This leads to a high incidence of respiratory infections. Forty-five applications included respiratory ailments, with 34 plant species employed to treat respiratory conditions. The most prevalent respiratory problems were the common cold (21 applications), cough (8), flu (7), and bronchitis (2).

Rheumatic problems

Twenty-eight applications comprised rheumatic problems, with 23 plant species used to treat rheumatic and musculo-skeletal ailments. Most of these arise from the living conditions of the population, mainly damp and cold caused by insufficient insulation, heating, and circulation in rural houses. Rheumatic conditions include arthritis, rheumatic fevers, muscular and skeletal pains, as well as body-joint pain.

Table 3: Plant uses in the study area in Southern Ecuador

	Number of uses		Number of species used	
		%		%
Magical	59	12.42	39	18.1
Fever, Malaria, Yellow fever	48	10.10	25	12.6
Respiratory	45	9.47	34	15.8
Urinary Tract	40	8.42	28	13.0
Rheumatic	28	5.90	23	10.6
Nerves	24	5.05	20	9.3
Liver	23	4.84	19	8.8
Stomach	23	4.84	22	10.2
Inflammation	20	4.21	20	9.3
Diarrhea and vomiting	18	3.79	18	8.3
Gynaecological	16	3.34	16	7.4
Heart	16	3.34	16	7.4
Food, Spice, Nutrition	13	2.74	13	6
Headache, Pain, Toothache	13	2.74	13	6
Wounds	12	2.53	12	5.6
Infections	11	2.32	11	5.1
Purgative	8	1.68	8	3.7
Skin problems	6	1.26	6	2.8
Construction	6	1.26	6	2.8
Fodder	5	1.05	5	2.3
Cramps	5	1.05	5	2.3
Bleeding	4	0.85	4	1.86
Eyes	4	0.85	4	1.86
Parasites	4	0.85	4	1.86
Blood purification	3	0.64	3	1.4
Diabetes	3	0.64	3	1.4
Tumors, Cancer	3	0.64	3	1.4
Bruises	3	0.64	3	1.4
Veterinary	2	0.43	2	0.93
Insect bites	2	0.43	2	0.93
Hernia	1	0.22	1	0.46
Gallbladder	1	0.22	1	0.46
Fractures	1	0.22	1	0.46
Ulcers	1	0.22	1	0.46
Allergies	1	0.22	1	0.46
Gangrene	1	0.22	1	0.46
Leucorrhea	1	0.22	1	0.46
Venereal disease	1	0.22	1	0.46
TOTAL	475	100	215	

Nerves

A fair number of species (20, for 24 applications) was used to treat nervous system disorders. This includes general nervous disorders (11 applications), depression (5) as well as psychological fatigue (4).

Inflammation

General inflammation of the body, without distinguishing if caused by natural or "magical" causes was treated with 20 plant species.

Gynecological problems

Menstruation problems, and complications in childbirth are very common medical conditions in Southern Ecua-

dor. Sixteen plants were employed to treat these disorders, with six species used to cure vaginal infections, and four species each for the treatment of childbirth complications and menstrual regulation.

Heart and circulatory system

The main application for circulatory system problems was the treatment of heart pain. Twelve species were used for the treatment of heart conditions, including heart attacks and heart pain. Three species were used to regulate hypertension, and one species helped to lower cholesterol levels.

Pain

Thirteen species were used as analgesics, especially for the treatment of headaches, general pain, and toothache.

Infection (bacterial and viral)

Bacterial and viral infections, especially wounds, were a major concern. Twelve plant species were used, mostly as poultices, to treat infected wounds, one of them to treat gangrene. Eleven species were used to treat internal bacterial infections.

Other uses

A wide variety of plants were used to treat other ailments: Eight species served as purgatives, five were used to remedy cramps. Hemorrhages, eye infections, skin disorders, and parasites (amoebas and worms) were treated with four species each.

Three species were used for blood purification, diabetes, and cancer. Insect bites (2), hernia, fractures, allergies, leucorrhea and venereal disease (one species each) were less important medical conditions treated.

Parts of medicinal plants used and mode of application

In most cases (61%) the whole plant was used for medicinal purposes, followed by leaves (13%), and flowers (6%), the seeds, roots, bark, fruits, and latex were rarely used (3% each) (Table 4).

Almost all remedies were prepared from fresh plant material (96%) (Table 5). All of the introduced plant species were cultivated in fields and gardens, while most of the indigenous species were collected in the wild.

Diseases and other health problems were most frequently treated with decoctions of various plant species. The use of single species for treatments was rare.

Table 4: Plant part used for medicinal purposes

Plant Part	Number of uses	
		%
Whole plant	146	61.1
Leaves	32	13.5
Flowers	15	6.3
Seeds	8	3.3
Root	8	3.3
Bark	8	3.3
Fruit	8	3.3
Latex	7	2.9
Wood	5	2.1
Branches	2	0.9
TOTAL	239	100

Table 5: Plant constitution

Constitution	Number of uses	
		%
Fresh	207	95.8
Dry	9	4.2
TOTAL	216	100

Of all preparations mentioned, plants were mostly boiled in water or sugarcane alcohol (*aguardiente*).

The most frequent way to administer remedies was as to prepare a decoction and ingest it orally (67.8%), followed by application as a poultice (31.8%, plant crushed or boiled and applied). Only 0.4% of the plants were burned for inhalation (Table 6).

Food and spices

Thirteen plant species, predominantly European introductions like *Pimpinella anisum*, *Foeniculum vulgare*, *Origanum vulgare*, etc. were used as food and spices, in addition to their medicinal use.

Construction

Erythrina and *Inga* species were used as material to plant live fences. *Ochroma pyramidale* (balsa) was used as a very light construction timber. Palm fronds and palm stems (*Bactris* sp.) were used for thatching and roof construction.

Ceremonial

Palm staffs (*Bactris* sp.) are still used as power objects on Southern Ecuadorian *mesas*.

Veterinary and fodder

Hardly any plants in Southern Ecuador had veterinary uses. *Cicuta virosa* was used to treat animal wounds. Various species of *Erythrina* and *Inga* were used as animal fodder. The introduced *Melinis minutiflora* was mostly used as fodder.

Table 6: Preparation and application methods for medicinal plants:

Application	Number of uses	
		%
Oral	168	67.8
Topical	79	31.8
Inhalation	1	0.4
TOTAL	248	100

Conclusion

Andean societies have used plants for physical therapy and psychosomatic ailments for millennia. Southern Ecuador falls into the Northern Peruvian cultural area. It appears to represent a Diaspora from the latter area, and a region where traditional plant knowledge, though important, has declined considerably.

The use of hallucinogens, in particular the San Pedro cactus (*Echinopsis pachanoi*) is a vital component in Andean healing practices, and has been practiced for millennia [25-28]. However, Southern Ecuadorian *curanderos* and *parteras* have almost entirely abandoned this custom. In fact, San Pedro was not mentioned as a mind-altering plant by any healer or midwife interviewed, and was not used in curing ceremonies. Centuries of prohibition have led to a pronounced abandonment of traditional knowledge. This is also reflected in the current study. Many plants used for "magical" purposes in Peru [29] have disappeared from traditional use in Ecuador. The fear of prosecution is still very deeply rooted in the healer community, and most healers interviewed stated that they did not wish to be cited by name.

Most healing altars or *mesas* in Southern Ecuador are almost entirely devoid of any "pagan" objects such as sea-shells, pre-Columbian ceramics etc. Patients are cleaned, by spraying them with holy water and perfumes. In rare cases tobacco juice and extracts of Jimson weed (*Datura ferox*) are used to purify the patients. Southern Ecuadorian *mesas* are also much less elaborate than the *mesas* of Peruvian *curanderos* (Figs. 2 and 3). The incantations used by healers during their curing sessions center on Christian symbolism. References to Andean cosmology are almost entirely absent, and the use of guinea pigs as diagnostic instruments has all but disappeared from the tool kit of these healers.

Interestingly, Peruvian *curanderos* have started to fill this spiritual void in Southern Ecuador. Healers from the Northern Peruvian mountains and coastal plains frequently cross over to Ecuador to offer their services to patients – including increasing numbers of foreigners with a "New Age" orientation – who are not satisfied with the more Westernized approach of Ecuadorian healers. These Peruvian colleagues have a much more elaborate plant knowledge, and their *mesas* as well as their incantations follow a more traditional pattern.

For the most part, the knowledge of medicinal plants is still transmitted orally. An illustrated identification guide for Southern Ecuadorian plant use [11] will hopefully help to keep the traditional knowledge left in this area alive.

Authors' contributions

Both authors share the contributions to fieldwork, data analysis, and compilation of this manuscript.

Declaration of competing interests

The author(s) declare that they have no competing interests.

Additional material

Additional file 1

Medicinal plant species of Southern Ecuador: Scientific and vernacular names, uses and preparation. The data provided represent the complete overview on all plants encountered: Scientific names, vernacular names, plant parts used, preparation and uses.

Click here for file

[<http://www.biomedcentral.com/content/supplementary/1746-4269-2-44-S1.pdf>]

Acknowledgements

The authors would like to thank Ezra Bejar, Cruz Roa, and Curtis and Joy Hoffman for their collaboration during fieldwork and for their generous hospitality. Thanks go to the herbaria LOJA, QCA and QCNE for the use of their facilities in plant identification.

The partial support of this work by the Deutsche Forschungsgemeinschaft (DFG) is acknowledged, and the authors also wish to thank the Ecuadorian Ministry for the Environment for granting permission to conduct research. Most of all, we want to express our sincere gratitude to the people of Southern Ecuador for sharing their ethnobotanical knowledge.

References

1. Jørgensen PM, Ulloa Ulloa C: **Seed plants of the High Andes of Ecuador – a checklist.** AAU Reports 1994, **34**:1-443.
2. Jørgensen PM, León-Yanez S, Eds: **Catalogue of the vascular plants of Ecuador.** Monographs in Systematic Botany from the Missouri Botanical Garden 1999, **75**:-.
3. Ulloa Ulloa C, Jørgensen PM: **Arboles y arbustos de los Andes del Ecuador.** AAU Reports 1993, **30**:1-263.
4. Sparre G, Harling B: **Flora of Ecuador (various authors).** Council for Nordic Publications in Botany, 1978–2006.
5. Espinosa B: **Estudios botánicos en el sur del Ecuador. I. Loja-Catamayo-Malacatos- Vilcabamba.** – Loja, Universidad Nacional 1948.
6. Espinosa B: **Estudios botánicos en el sur del Ecuador. II. Herbarium Universitatis Loxoensis (Primer Inventario).** – Loja, Universidad Nacional 1948.
7. Camino L: **Cerros, plantas y lagunas poderosas: La medicina al norte del Perú** Lluvia Editores, Lima; 1992.
8. Foster G: **Hippocrates' Latin American Legacy: "Hot" and "Cold" in Contemporary Folk Medicine.** In *Colloquia in Anthropology Volume II*. Edited by: Wetherington R. Southern Methodist University, Fort Burgwin Research Center, Dallas; 1978:3-19.
9. Béjar E, Bussmann RW, Roa C, Sharon D: **Pharmacological search for active ingredients in medicinal plants of Latin America.** In *International Symposium on Herbal Medicine: A Holistic Approach* Edited by: Shuman T, Garrett M, Wozniak L. SDSU International Institute for Human Resources Development, San Diego; 1997:63-81.
10. Bussmann RW: **Ethnobotany and Biodiversity Conservation.** *Modern Trends in Applied Terrestrial Ecology* :345-362.
11. Béjar E, Bussmann RW, Roa C, Sharon D: **Herbs of Southern Ecuador – Hierbas del Sur Ecuatoriano** Latin Herbal Press, San Diego; 2001.
12. Kothari B: **Nucanchic panpa janpicuna - Plantas Medicinales del Campo.** Abya-Yala Quito; 1993.
13. Ruiz E: **Plantas Medicinales Andinas - Uso práctico.** Abya-Yala Quito; 1993.

14. Quezada A, Hermida C, Vega G, Canizares E, Hermida J: *La Práctica Médica Tradicional en las Provincias del Azuay, Cañar, el Oro y Morona Santiago* IDICSA Cuenca; 1992.
15. Barfod A, Kvist L, Eds: *Comparative Ethnobotanical Studies of the Amerindian Groups in Coastal Ecuador* The Royal Danish Academy of Sciences and Letters, Copenhagen; 1996.
16. Alexiades MN: **Collecting ethnobotanical data: an introduction to basic concepts and techniques.** In *Selected Guidelines for Ethnobotanical Research: A Field Manual* Edited by: Alexiades, MN. The New York Botanical Garden, New York; 1996:53-94.
17. Alexiades MN, Lacaze D: **FENAMADs program in traditional medicine: an integrated approach to health care in the Peruvian Amazon.** In *Medicinal Resources of the Tropical Forest* Edited by: Balick MJ, Elisabetsky E, Laird SA. Columbia University Press, New York; 1996:341-365.
18. Arrázola S, Atahuachi M, Saravia E, Lopez A: **Diversidad florística medicinal y potencial etnofarmacológico de las plantas de los valles secos de Cochabamba Bolivia.** *Revista Boliviana de Ecología y Conservación Ambiental* 2002, **12**:53-85.
19. Bastien J: *Healers of the Andes: Kallawaya Herbalists and Their Medicinal Plants* University of Utah Press, Salt Lake City; 1987.
20. Bastien J: *Drum and Stethoscope: Integrating Ethnomedicine and Biomedicine in Bolivia* University of Utah Press, Salt Lake City; 1992.
21. Macía JM, García E, Vidaurre PJ: **An ethnobotanical survey of medicinal plants commercialized in the markets of La Paz and El Alto, Bolivia.** *J Ethnopharmacology* 2005, **97**:337-350.
22. Girault L: *Kallawaya: Curanderos itinerantes de los Andes* UNICEF-OPS-OMS, La Paz; 1987.
23. Oblitas E: *Plantas medicinales de Bolivia* Editorial Los Amigos del Libro, La Paz; 1992.
24. Salcedo MB: *Un herbolario de Ch'ajaya desvela sus secretos.* Ediciones Sen-pas, La Paz 1986.
25. Sharon D: *Wizard of the Four Winds: A Shaman's Story* Free press; 1978.
26. Sharon D: *El Chamán de los Cuatro Vientos.* Siglo veintiuno editores, México 1980.
27. Sharon D: **Tuno y sus colegas: notas comparativas.** *En el Nombre del Señor: Shamanes, demonios y curanderos del norte del Perú.* Australis S.A., Lima 1994:128-147.
28. Joralemon D, Sharon D: *Sorcery and Shamanism: Curanderos and Clients in Northern Peru* University of Utah Press, Salt Lake City; 1993.
29. Bussmann RW, Sharon D: **Traditional Medicinal Plant Use in Northern Peru: Tracking Two Thousand Years of Healing Culture.** *Journal of Ethnobiology and Ethnomedicine* in press.

Publish with **BioMed Central** and every scientist can read your work free of charge

"BioMed Central will be the most significant development for disseminating the results of biomedical research in our lifetime."

Sir Paul Nurse, Cancer Research UK

Your research papers will be:

- available free of charge to the entire biomedical community
- peer reviewed and published immediately upon acceptance
- cited in PubMed and archived on PubMed Central
- yours — you keep the copyright

Submit your manuscript here:
http://www.biomedcentral.com/info/publishing_adv.asp



Additional file 1. Species encountered and used in Southern Ecuador						
Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
ACANTHACEAE						
<i>Justicia</i> sp.	Hierba de la Justicia	Whole plant, fresh	Oral	Cooked with sugar.	Heart, Pneumonia, Anxiety, Psychological tension, Fright / Susto, Freight in children / Espanto	Bejar148
<i>Sanchezia oxysepala</i> Mildbr.	Cimora Toro	Flowers and small Leaves, fresh	Oral	Put Flowers into flask with alcohol.	Against sorcery and for dreams, for good luck	Bejar76
ACTINIDIACEAE						
<i>Saurauia</i> spp.	Hierba del Oso	Leaves, fresh	Topical	Applied to the affected area.	Rheumatism	Bejar152
ADIANTACEAE						
<i>Adiantum concinnum</i> Wild. ex H.B.K.	Cucharillo	Whole plant, fresh	Oral	Cooked with sugar.	Diabetes	Bejar92
AGAVACEAE						
<i>Agave americana</i> L.	Cabuyo, Penca de Caballo	Leaves, fresh	Topical	Parboiled.	Depression, Curse someone, Defend against sorcerers during sessions	Bejar48, 236
AMARANTHACEAE						
<i>Aerva lanata</i> (L.) Jus.	Escancel	Flowers, fresh	Topical	Fresh or cooked with Flor de Malva tea and Aloe juice, rubbed.	Infection, Depression, Liver, Headache	Bejar128
<i>Alternanthera porrigens</i> (Jacquin) Kuntze	Moradilla	Whole plant, fresh	Oral	Cooked with sugar, Malva Olorosa, Toronjil.	Kidneys, Lungs	Bejar200
<i>Amaranthus cruentus</i> L.	Sangorache	Whole plant, fresh	Oral	Horchata with Aguardiente (Sugarcane spirit).	Headache, Fever, Gangrene, Specific female illnesses	CORD18
<i>Amaranthus hybridus</i> L.	Bledo	Whole plant, fresh	Oral	Horchata, 1/2 Tsp in 1L Horchata.	General pain, Heat in the breast	CORD8
<i>Amaranthus retroflexus</i> L.	Bledo Serrano, Cancel Serrano	Whole plant, fresh	Oral	Horchata, 1/2 Tbsp in 1L of water for horchata.	Flu, Headache, Fever	CORD37
<i>Amaranthus spinosus</i> L.	Bledo	Whole plant, fresh	Oral	Boiled and eaten as soup.	Food	Bejar44
<i>Amaranthus</i> sp.	Lancetilla	Whole plant, fresh	Oral	Horchata, take 1/2 Tbsp for 1 liter of water.	Flu, Insect bites	CORD14
<i>Iresine diffusa</i> H.B.K. ex Willd.	Sangrinaria	Whole plant, fresh	Oral	Horchata, 1 Tbsp in 1L Horchata.	Vaginal discharge with blood	CORD43
ANACARDIACEAE						
<i>Schinus molle</i> L.	Molle	Leaves and Seeds, fresh	Topical, Oral		Rheumatism, Spice	Bejar196
ANNONACEAE						
<i>Annona cherimola</i> Miller	Cherimoya	Seeds	Oral	Boiled.	Cold, during childbirth	Bejar110

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
APIACEAE						
<i>Apium graveolens</i> L.	Apio Negro	Whole plant, fresh	Oral	Boiled, taken with sugar for 15 days.	To reduce swellings	Bejar36
<i>Cicuta virosa</i> L.	Cicuta	Whole plant, fresh	Topical	Boiled with Chila Chilo, Cordoncillo, as Poultice, washing of wounds.	Wounds of animals	Bejar74
<i>Coriandrum sativum</i> L.	Culantro, Cilantro	Whole plant, fresh or dried	Oral	1 Tbsp in 1L Horchata.	Sleeping aid, Spice	CORD62
<i>Cyclospermum leptophyllum</i> (Pers.) Eichler	Cuminillo	Whole plant, fresh	Oral	Cooked with Malva Olorosa and sugar.	Diarrhea, Stomach	Bejar82
<i>Daucus montanus</i> H. & B. ex Spreng.	Culantrillo	Whole plant, fresh	Oral	1 Tbsp in 1L Horchata.	Stomachache, Gas	CORD45
<i>Eryngium foetidum</i> L.	Culantrillo	Whole plant, fresh	Oral	Boiled with Cola de Caballo, Matico (Leaves), Cadillo, Caña Agria, and Trensilla.	Kidneys	Bejar92
<i>Foeniculum vulgare</i> P. Miller	Hinojo	Whole plant, fresh	Oral	Boiled with sugar and Aguardiente.	Infections, Women after childbirth	Bejar164
<i>Petroselinum crispum</i> (Miller) A.W. Hill	Perejil	Leaves, fresh	Oral and Topical	Parboiled with meat to eat. with salt to make a poultice.	Infections, Nose bleeds, To forget love or trauma, Spice	Bejar240
<i>Pimpinella anisum</i> L.	Anis	Whole plant, fresh or dried	Oral	Cooked as tea.	Colds, Chills	Bejar34
APOCYNACEAE						
<i>Plumeria rubra</i> L.	Suche	Latex	Topical	Applied to the affected area with unwashed lamb's wool. patient must not eat oils or lard. Administer for 15 days.	Hernia	Bejar278
<i>Thevetia peruviana</i> (Pers.) Schum.	Camalonga	Bark and seeds, fresh	Oral	Decoction of the Bark or seed.	Fever, Heart, Against Evil Eye/Mal Ojo	Bejar54
AQUIFOLIACEAE						
<i>Ilex guayusa</i> Loes	Guayusa	Whole plant, fresh	Oral	Cooked, drunk with Lemon and Orange.	Sorcery, Diuretic, Anemia	Bejar144
ARECACEAE						
<i>Bactris</i> spp.	Chonta	Wood			Ceremonial staffs, Construction of houses and roofs	Bejar114
ASCLEPIADACEAE						
<i>Marsdenia cundurango</i> Rchb.f.	Condorango	Stems and Bark, fresh or dried	Oral	Soaked in Cane alcohol.	Kidneys	Bejar84
ASPHODELACEAE						
<i>Aloe vera</i> (L.) Burm f.	Sábila, Savila Penca	Whole plant, fresh	Oral	Take the crystals washed from 1 Leaves and mix with orange or honey in 1/2l of water. the acid is put on red inflammations.	Kidneys, Liver, Inflammation, Weight loss, Internal infections, Protecting the house	CORD33, Bejar274

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
ASTERACEAE						
<i>Achyrocline hali</i> Hieron	Vida Vida	Whole plant, fresh	Oral		Cough, Heart, Nerves, Epilepsy	CORD1
<i>Ageratum conyzoides</i> L.	Pedromera Blanca, Pedrorera Blanca	Whole plant, fresh	Oral	Cooked, mixed with Manzanilla or <i>Fleishmannia</i> sp. (Asteraceae).	Gastrointestinal problems	Bejar230, 232
<i>Ambrosia peruviana</i> Willd.	Altamís	Whole plant, fresh	Topical	1 fresh Leaves on the forehead.	Headache	CORD61
<i>Artemisia absinthium</i> L.	Ajenjo, Ajenco, Polén	Leaves, fresh	Oral, Topical	Cooked. Baths, with 3 Tbsp in 2L of hot water.	Body pain, Stomach Pain. only for critical illnesses	Bejar 25, CORD57
<i>Baccharis obtusifolia</i> H.B.K.	Chilca Redonda	Whole plant, fresh	Oral, Topical	Cooked, taken with sugar. For hot seated baths - 3 Tbsp in 2L of hot water.	Stomach Pain, Vomiting, Bad Air / Mal Aire, Colds, Bone pain	Bejar106, CORD28
<i>Bidens pilosa</i> L.	Huichinge	Whole plant, fresh	Oral	Cooked.	Liver, Infections, Diarrhea	Bejar168
<i>Brickellia diffusa</i> (Vahl.) A. Gray	Monte de la Huanchaca	Whole plant, fresh	Topical	Boiled with Sauco, Chin Chin, Chila Chilo, Hierba del Coche, Santa Maria, Suelta con Suelta and Aguardiente. rubbed externally.	Fright / Susto	Bejar198
<i>Chrysanthemum leucanthemum</i> L.	Margarita	Whole plant, fresh	Oral, Topical	Rubbed externally and placed in the mouth of the patient during cleansing ceremonies.	Bad Air / Mal Aire	Bejar190
<i>Chuquiraga jusieui</i> J.F. Gmel	Chuquiragua	Branches and Leaves, fresh	Oral	1/2 Tbsp in 1L of boiling water, taken with sugar.	Cold, Cough, Pain of the Bones, Flu, Malaria, Fever	Bejar120, CORD34
<i>Chuquiraga spinosa</i> sp. <i>huamanpinta</i> C. Ezcurra	Chuquiragua	Branches and Leaves, fresh	Oral	1/2 Tbsp in 1L of boiling water, taken with sugar.	Cold, Cough, Pain of the Bones, Flu, Malaria, Fever	Bejar120, CORD34
<i>Conyza</i> sp.	Saucillo	Whole plant, fresh	Oral	Horchata, 1 Tbsp of Flowers in 1L of Horchata.	Colic	CORD24
<i>Dorobea pimpinellifolia</i> (H.B.K.) B. Nord	Borraja Serrana	Whole plant, fresh	Oral	1 Tbsp in 1L Horchata.	Cough, Flu	CORD38
<i>Eupatorium dendroides</i> Spreng.	Chila Chilo	Whole plant, fresh	Topical	Bath prepared with Chin Cil, Hierba del Cocke, Monte de la Huanchaca.	Bad Air / Mal Aire, Fright (Children)/ Espanto	Bejar104
<i>Gnaphalium americanum</i> Mill.	Vira Vira, Lechuguilla	Whole plant, fresh	Oral	Cooked, 1 Tbsp in 1L boiling water.	Bad Air / Mal Aire, Impact, shock, Diarrhea in children	Bejar302, CORD46
<i>Loricaria thyrsoides</i> (Cuatr.) Dillon	Valeriana Fina, Trensilla	Whole plant, fresh	Oral	2 Tbsp in 1L boiling water or Aguardiente.	Cramps, Bone pain, Bad Air / Mal Aire, Kidneys	CORD50, Bejar290
<i>Matricaria frigidum</i> (HBK) Kunth	Manzanilla	Whole plant, fresh	Oral and Topical	1/2 Tbsp in 1L of water for horchata, with sugar, Aspirin, Caña Agria, Cola de Caballo, Cadillo and Culantrillo. with seeds and cocoa-butter for stomach ailments.	Stomach pain, Colds, Fever, Diarrhea, To wash skin	CORD23, Bejar186
<i>Onoseris odorata</i> (D. Don) Hooker & Arnott	Lechuguilla	Whole plant, fresh	Oral	Cooked with sugar, Hierba del Perro.	Diarrhea (Children)	Bejar176

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
<i>Pentacalia</i> sp.	Valeriana Fina	Whole plant, fresh	Oral	2 Tbsp in 1L boiling water or Aguardiente.	Cramps, Bone pain, Bad Air / Mal Aire, Kidneys	CORD51
<i>Picrosia longifolia</i> D. Don	Cerraja	Whole plant, fresh	Oral	Crushed and parboiled.	Liver, Amoebas	Bejar72
<i>Porophyllum ruderale</i> (Jacq.) Cas.	Hierba Gallinazo	Whole plant, fresh	Oral and Topical	With Aguardiente or as a poultice.	Bad Air / Mal Aire, Fright / Susto	Bejar156
<i>Pseudelephantopus spicatus</i> (B.Jus. ex Aubl.) Rohr	Suelda con Suelda	Whole plant, fresh	Topical	Cooked with Hierba del Coche y Monte de la Huanchaca. Poultice.	Freight/ Susto (Children), Stomach Pain, Wounds	Bejar280
<i>Pseudelephantopus spiralis</i> (Lesing) Cronquist	Chicoria	Whole plant, fresh	Oral	Cooked.	Fever, High blood pressure, Shivering fits, Malaria	Bejar102
<i>Senecio</i> sp.	Retama Serrana	Whole plant, fresh	Oral	Horchata, 1 Tbsp of Flowers in 1L of Horchata.	Yellow Fever	CORD39
<i>Siegesbeckia orientalis</i> L.	Pacunga	Whole plant, fresh	Oral	Cooked with Pedromera, Manzanill, Cominillo.	Stomach	Bejar220
<i>Tanacetum parthenium</i> (L.) Sch. Bip.	Santa Maria	Leaves, fresh	Topical	Rub externally with Aguardiente, Monte Gallinazo.	Fright / Susto, Witchcraft, Against the devil	Bejar266
<i>Tagetes minuta</i> L.	Chin Chil	Whole plant, fresh	Topical	Rubbing with Monte de Coche, Alcanfora, Chila Chilo, Aguardiente.	Skin irritation, Bad Air / Mal Aire, Fright (Children)/Espanto caused by the rainbow	Bejar108
<i>Tagetes</i> sp.	Chinininge	Whole plant, fresh	Oral	Mince and extract juice, 1 Tbsp for every chicken.	Inflamed gall bladder in chicken	CORD65
<i>Taraxacum officinale</i> Wiggers	Diente de Leon	Whole plant, fresh	Oral	Cooked, with Aguardiente.	Liver, High blood pressure	Bejar124
<i>Vernonia patens</i> H.B.K.	Laritaco	Leaves, fresh	Oral	1 glass a day during the evening, 1 month.	Rheumatism, Bad Wind/ Mal Viento, Boils, Freight / Espanto	Bejar174
<i>Werneria</i> sp.	Clavel Amarillo de Sepa, Clavel Amarillo de Yuca	Whole plant, fresh	Oral	Horchata, 1/2 Tbsp in 1L of water for horchata.	Yellow Fever	CORD41
BASELLACEAE						
<i>Basella alba</i> L.	Lutuyuyo	Root, fresh	Oral	Boiled with sugar, Buenas Tardes and San Agustin Lluyo.	Diarrhea	Bejar180
BIGNONIACEAE						
<i>Tecoma stans</i> (L.) Jus. ex H.B.K.	Fresmo, Gualpe	Flowers, fresh or dried	Oral	2 Tbsp of Flowers in 1L Horchata.	Yellow Fever	Bejar134, CORD71
BOMBACACEAE						
<i>Ochroma pyramidale</i> (Cav. ex Lam.) Urban	Balsa	Wood			As very light construction timber	Bejar40

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
BORAGINACEAE						
<i>Borrigo officinalis</i> L.	Borraja de jardín	Whole plant, fresh	Oral	Horchata, 2 Tbsp in 1L of boiling water.	Asthma, Cough, Bronchitis	CORD59
<i>Heliotropium</i> spp.	Yanacaspe	Whole plant, fresh	Topical	Crush, apply directly on tooth.	Toothache, Broken teeth	Bejar304
BRASSICACEAE						
<i>Lepidium virginicum</i> L.	La Chicera	Whole plant, fresh	Oral		Fright (Children)/ Espanto (niños), Protection during childbirth, Post-partum protection	Bejar172
<i>Rorippa nasturtium-aquaticum</i> (L.) Hayek	Berros	Whole plant, fresh	Oral	Crushed and cooked with milk.	Lungs	Bejar42
BROMELIACEAE						
<i>Puya eryngioides</i> André	Achupalla Amarilla	Whole plant, fresh	Oral	1 Tbsp in 1L boiling water.	Yellow Fever	CORD53
<i>Puya maculata</i> L.B. Sm.	Achupalla Negra	Whole plant, fresh	Oral	1 Tbsp in 1L boiling water.	Yellow Fever	CORD52
<i>Puya</i> sp.	Chupaya	Stems, fresh	Oral, Topical	Cooked, drunk with sugar or applied as ointment.	Tumors, Infections	Bejar118
BURSERACEAE						
<i>Bursera graveolens</i> (H.B.K.) Triana & Planchon	Palo de Santo	Whole plant, fresh	Oral, Topical	Extract juice, take with sugar. Latex rubbed or applied as a wash.	Anemia, Fragrance	Bejar226
CACTACEAE						
<i>Cephalocereus royeri</i> (L.) Britten & Rose	Pitayo	Fruits and Leaves, fresh	Oral	Extract juice and drink.	Liver, Witchcraft	Bejar248
<i>Echinopsis pachanoi</i> (Britton & Rose) Friedrich & G. Rowley	San Pedro, Huachuma	Whole plant, fresh	Oral	One glass daily to prevent ulcers.	Purgative, Ulcers	Bejar166
<i>Opuntia pubescens</i> Wendland	Gorondilla	Leaves, fresh and without spines	Oral	Boiled a drink together with Eucalipto, Cola de Caballo, Culantrillo, Matico, Prenadilla, Moraja.	Removes obstructions in the urinary tract	Bejar136
CAMPANULACEAE						
<i>Centropogon</i> sp.	Cholo Valiente	Whole plant, fresh	Topical	Parboiled with Aguardiente as poultice and bath.	Rheumatism, Pain of the Bones, Cold Feet, Wounds	Bejar112
CANNACEAE						
<i>Canna indica</i> L.	Achira Negra	Leaves, fresh	Topical	Pinch one Leaves and put the warm oil that drips out on the belly.	Insect bites	CORD29
CAPRIFOLIAEAE						
<i>Sambucus peruviana</i> HBK	Sauco Tilo	Whole plant, fresh	Oral	Horchata, 1/2 Tbsp in 1L of water for horchata.	Flu, Heart pain	CORD22

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
CARYOPHYLLACEAE						
<i>Dianthus caryophyllus</i> L.	Clavel	Flowers, fresh	Oral	Cooked with Toronjil.	Heart, Nervous system, Nasal passages	Bejar78
CELASTRACEAE						
<i>Maytenus laevis</i> Reischek	Chuchuasi	Bark, fresh	Topical and Oral	Bark soaked for 15 days in Aguardiente, then ground and heated, applied as ointment and drunk.	Kidneys	Bejar116
CHENOPODIACEAE						
<i>Chenopodium ambrosioides</i> L.	Paico	Whole plant, fresh	Oral, Topical	Extract the juice of the Leaves, put 1 Tbsp in 1/2L of fresh water. For intelligence blend with an egg. With Hierba del Perro, very gentle for children. Rubbed externally.	Parasites, Intelligence	Bejar222, CORD32
CYPERACEAE						
<i>Cyperus</i> sp.	Dictamo del Campo	Root, fresh	Oral	Boiled and taken with sugar for 15 days.	Allergies	Bejar122
EQUISETACEAE						
<i>Equisetum bogotense</i> (H.B.K.) Kunth	Cola de Caballo	Whole plant, fresh	Oral	1 Tbsp in 1L Horchata, drink with Cadillo, Trensilla, Caña Agria, Culantrillo.	Kidneys, Washing of wounds	Bejar80, CORD9
ERICACEAE						
<i>Bejaria aestuans</i> L.	Payama Rosada	Whole plant, fresh	Oral	Horchata - 1 Tbsp in 1L water.	Kidneys	CORD2
<i>Gaultheria reticulata</i> H.B.K.	Pajama, Uva	Whole plant, fresh, Fruits	Oral	2 Tbsp in 1L of boiling water, Fruits and juice eaten.	Kidneys, Inflammation, Food	CORD47
<i>Macleania salapa</i> Benth	Salapa	Whole plant, fresh, Fruits	Oral	Oralen as vegetable, Fruits, juice.	Nutritional supplement	CORD88
EUPHORBIACEAE						
<i>Croton draconoides</i> Muell. Arg.	Sangre del Drago	Latex, fresh	Oral	Extract and take.	Kidneys, Infections	Bejar264
<i>Croton lechleri</i> Muell. Arg.	Sangre del Drago	Latex, fresh	Oral	Extract and take.	Kidneys, Infections	Bejar264
<i>Croton wagneri</i> Muell. Arg.	Mosqueera	Leaves, fresh	Oral	Cooked with Pico Pico.	Stomach pain, Pneumonia, Rheumatism, Tooth extraction	Bejar204
<i>Jatropha curcas</i> L.	Piñon	1. Latex, fresh 2. Seeds	1. Topical. 2. Oral	1. Rubbed externally 2. 2-3 seeds.	1. Wounds 2. Purgative, causes vomiting and diarrhea	Bejar246
<i>Jatropha gosypifolia</i> L.	Piñon	1. Latex, fresh 2. Seeds	1. Topical. 2. Oral	1. Rubbed externally 2. 2-3 seeds.	1. Wounds 2. Purgative, causes vomiting and diarrhea	Bejar246
<i>Jatropha multifida</i> L.	Piñon	1. Latex, fresh 2. Seeds	1. Topical. 2. Oral	1. Rubbed externally. 2. 2-3 seeds	1. Wounds. 2. Purgative, causes vomiting and diarrhea	Bejar246

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
<i>Phyllanthus niruri</i> L.	Chanca Piedra	Whole plant, fresh	Oral	2 Tbsp of Flowers in 1L Horchata, drink with honey.	Kidney stones, Stomach ache	CORD70, Bejar100
<i>Phyllanthus stipulatus</i> (Raf.) Webster	Chanca Piedra	Whole plant, fresh	Oral	2 Tbsp of Flowers in 1L Horchata, drink with honey.	Kidney stones, Stomach ache	CORD70, Bejar100
<i>Phyllanthus urinaria</i> L.	Chanca Piedra	Whole plant, fresh	Oral	2 Tbsp of Flowers in 1L Horchata, drink with honey.	Kidney stones, Stomach ache	CORD70, Bejar100
<i>Ricinus communis</i> L.	Higuerilla	Bark, fresh	Topical	Cooked with Aguardiente, for a poultice.	Fractures, Sprains	Bejar162
FABACEAE						
<i>Calliandra taxifolia</i> (Kunth) Benth	Seda Seda	Flowers, fresh	Oral	Tea, 2 Tbsp of Flowers in 1L boiling water, drink with honey.	Red vaginal discharge	CORD669
<i>Desmodium molliculum</i> (H.B.K.) DC.	Vijado Blanco	Whole plant, fresh	Oral	Horchata: take 1 Tbsp of the whole plant and put in 1L of water, add honey.	Intestinal pain, White and yellow vaginal discharge	CORD15
<i>Desmodium triflorum</i> (L.) DC	Pega Pega	Whole plant, fresh	Topical	Cooked, with Aguardiente, as poultice.	Lesions	Bejar234
<i>Erythrina fusca</i> Loureiro	Porotillo	Bark, wood and Leaves	Oral	Feed.	Fodder, Fencing	CORD86
<i>Erythrina velutina</i> Willdenow	Porotillo	Bark, wood and Leaves	Oral	Feed.	Fodder, Fencing	CORD86
<i>Inga edulis</i> C. Martius	Pajúl, Guato	Whole plant	Oral	Feed.	Fodder for pigs, Fencing	CORD87
<i>Inga feuillei</i> DC.	Pajúl, Guato	Whole plant	Oral	Feed	Fodder for pigs, Fencing	CORD87
<i>Lupinus</i> sp.	Vijado Serrano	Whole plant, fresh	Oral	Horchata, 1/2 Tbsp in 1L of water for horchata.	Inflammation, White vaginaldischarge	CORD42
<i>Mimosa acantholoba</i> (Humb. & Bonpl. ex Willd.) Poir	Uña de Gato	Whole plant, fresh	Oral and Topical	Crushed and boiled, applied as poultice or drunk.	Cancer	Bejar296
<i>Spartium junceum</i> L.	Retama	Whole plant, fresh	Oral	2 Tbsp in 1L of Aguardiente, to clean.	Freight/ Susto	CORD30
GENTIANACEAE						
<i>Centaurium erythraea</i> Rafin	Canchalagua	Whole plant, fresh	Oral	Cooked with also used sugar, Huichinge and Verbená. Comparable to Chuquiragua.	Cold, Cough, Flu	Bejar62
<i>Halenia weddelliana</i> Gilg.	Clavel Amarillo Seco	Whole plant, fresh	Oral	1 Tbsp in 1L Horchata.	Yellow Fever	CORD36
GERANIACEAE						
<i>Geranium humboldtii</i> Sprengel	Valeriana	Whole plant, fresh	Topical	3 Tbsp in 1L Aguardiente, then spit at children.	Inflammation, Cramps, Evil Air / Mal Aire	CORD44
<i>Pelargonium odoratisimum</i> (L.) L' Herit ex Ait	Malva Olorosa	Whole plant, fresh	1. Oral 2. Topical	1. Horchata: 1 Tbsp in 1L water 2. Poultice, sap of the Leaves applied directly to affected area.	1. Diarrhea, Stomach pain, Inflammation 2. Haemostatic	Bejar184, CORD19
<i>Pelargonium roseum</i> Willd.	Malva Rosa	Whole plant, fresh	Oral	Horchata put 1Tbsp in 1L water.	Stomach pain	CORD7

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
<i>Pelargonium zonale</i> (L.) L'Herit.	Geranio	Whole plant, fresh	Oral	2 Tbsp in 1L of boiling water.	Cures wounds	CORD21
IRIDACEAE						
<i>Sisyrinchium</i> sp.	Pimienta del Campo	Whole plant, fresh	Oral	Horchata - 1 Tbsp in 1L boiling water with honey.	Desinflammatory, Stomach pain	CORD5
LAMIACEAE						
<i>Melisa officinalis</i> L.	Toronjil	Whole plant, fresh or dried	Oral	2 Tbsp in 1L of Horchata, boil slightly.	Nerves, Nervous system, Sadness, Depression, Heart pain	CORD60, Bejar286
<i>Mentha x piperita</i> L.	Hierba Buena	Whole plant, fresh	Oral	Cooked with sugar, Toronjil, Malva Olorosa.	Stomach ache	Bejar146
<i>Mentha spicata</i> L.	Hierba Buena	Whole plant, fresh	Oral	Horchata, For Horchata put 1 Tbsp of the whole plant in 1L of boiling water.	Stomach ache	CORD16
<i>Mentha viridis</i> L.	Menta	Whole plant, fresh	Oral, Topical	Boiled in water for worms, Boiled in milk for cold, Boiled with Aguardiente and rubbed on for rheumatism.	Anthelmintic, Colds, Rheumatism	Bejar194
<i>Minthostachys mollis</i> Griesebach	Poleo	Leaves, fresh	Oral, Topical, Inhalation	Crush Leaves, inhale oils or boil.	Cold, Flu	Bejar250
<i>Ocimum basilicum</i> L.	Albaca	Whole plant, fresh	Oral	Cook, with Grama Dulce and Toronjil.	During childbirth	Bejar26
<i>Rosmarinus officinalis</i> L.	Romero	Whole plant, fresh	Oral, Topical	Cooked, with Aguardiente.	Bad Air / Mal Aire, Nerves, Sore eyes	Bejar254
<i>Salvia microphylla</i> Kunth.	Camotillo	Leaves and Flowers, fresh	Topical	With Aguardiente.	Inflammation of the arms and feet, Rheumatism	Bejar56
<i>Salvia ramificolia</i> H.B.K	Salvia Real	Leaves and Flowers, fresh	Topical	With Aguardiente.	Rheumatism	Bejar272
<i>Scutellaria</i> sp.	Monte Negro	Whole plant, dried and ground	Oral and Topical	Grind together with Sangorache to get the extract. Put 4 tablespoons in 1/2l of lukewarm water. It should be drunk and rubbed in the body.	Headache, Fever	CORD17
<i>Stachys</i> sp.	Poleo Grande	Whole plant, fresh	Oral	Horchata, For Horchata put 1 Tbsp of the whole plant in 1L of boiling water.	Stomach pain, Stomach gases, Inflammations	CORD4
LAURACEAE						
<i>Ocotea floribunda</i> (Sw.) Mez.	Ishpingo	Whole plant, fresh	Topical	Rubbed with Monte de Coche, Chin Cil, Chila Chilo, Aguardiente.	Bad Air / Mal Aire, Skin irritation, Fright (Children) / Espanto caused by the rainbow	Bejar170
<i>Ocotea</i> sp.	Alcanfora	Whole plant, fresh	Topical	Rubbed with Monte de Coche, Chin Cil, Chila Chilo, Aguardiente.	Bad Air / Mal Aire, Skin irritation, Fright (Children) / Espanto caused by the rainbow	Bejar28
<i>Persea americana</i> Mill.	Palta	Seed, fresh	Oral	Crushed and boiled. 1. with sugar, 2. w/o sugar.	1. Abdominal pain 2. Toothache	Bejar228

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
LILIACEAE						
<i>Allium cepa</i> L.	Cebolla Blanca	Tuber, fresh	Oral	Expres juice and drink	Cough	Bejar70
LOGANIACEAE						
<i>Buddleja americana</i> L.	Salvia	Leaves, fresh	Topical	Cooked, with Aguardiente, as rubbing or bath.	Bad Air / Mal Aire, Headache, Eye sight	Bejar258
LORANTHACEAE						
<i>Gaiadendron punctatum</i> (Ruiz & Pav.) G. Don	Guajuro amarillo	Flowers, fresh	Oral	2 Tbsp of Flowers in 1L Horchata.	Yellow Fever	CORD72
LYCOPODIACEAE						
<i>Huperzia brevifolia</i> (Grev. & Hook) Holab	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD79
<i>Huperzia columnaris</i> B. Oellg.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD84
<i>Huperzia compacata</i> (Hook.) Trevis.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD83
<i>Huperzia espinosana</i> B. Oellg.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD78
<i>Huperzia hypogaea</i> B. Oellg.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD76
<i>Huperzia kuestneri</i> (Nessel) B. Ollg.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD77, 81
<i>Huperzia magellanicum</i> (P. Beaum) Sw.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD80
<i>Lycopodium jussiaei</i> Desv. ex Poir	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD82
<i>Lycopodium vestitum</i> Desv. ex Poir.	Agua Minga	Whole plant, fresh	Oral, Topical	3 Tbsp in 2L water for baths. 1 Tbsp for 1L Horchata.	Liver, Kidneys, Fever, Inflammation, Colds	CORD75
LYTHRACEAE						
<i>Cuphea carthagenensis</i> (Jacq.) J.F. Macbr	San Antonio	Whole plant, fresh	Topical	Externally as a bath or wash like sulfur to cleanse wounds.	Wounds	Bejar262
<i>Cuphea loxensis</i> Kunth.	Hierba del Toro	Whole plant, fresh	Oral	Cooked.	Leukorrhea	Bejar160
<i>Cuphea racemosa</i> (L.f.) Spreng.	Hierba del Coche	Whole plant, fresh	Topical	Cooked with Chila Chilo, Chin Chil, and Monte de la Huanchaca as a poultice.	Fright / Espanto (Children)	Bejar150
MALVACEAE						
<i>Malva sylvestris</i> L.	Malva Blanca	Whole plant, fresh	Oral	Cooked.	Laxative	Bejar182
<i>Sida rhombifolia</i> L.	Guintun verde	Leaves, fresh	Topical	Put the Leaves with salt and use for poultices, put on infections.	Infections	CORD31

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
MYRISTICACEAE						
<i>Myristica fragrans</i> Hout.	Nuez Moscada	Fruits, fresh	Topical	Apply with Aguardiente, Toronjil, Huanil del Campo, Hierba Mora, Payachilla, Mus Mus.	Bad Air / Mal Aire, Sorcery, Wounds (disinfection)	Bejar210
MYRTACEAE						
<i>Eucalyptus globulus</i> Labill.	Eucalipto	Leaves, fresh	Oral	Cooked with sugar Prenadilla and Orange Juice	Sore throat, Bronchitis	Bejar130
<i>Psidium guineense</i> Sw.	Guayavilla	Yellow Fruits and Flowers, fresh	Oral	Drink juice and Flowers extract with sugar.	Diarrhea	Bejar142
NYCTAGINACEAE						
<i>Mirabilis jalapa</i> L.	Buenas Tardes	Root, fresh	Oral	Cooked with San Agustin Yullo.	Purgative	Bejar46
ONAGRACEAE						
<i>Fuchsia loxensis</i> H.B.K.	Pena Pena	Whole plant, fresh	Oral	1/2 Tbsp with 1L of Horchata.	Nerves	CORD10
<i>Oenothera rosea</i> Aiton	Shullo	Whole plant, fresh	Oral	horchata - take 1 Tbsp of the whole plant an put in 1L water, add honey.	Liver, Kidneys	CORD26
ORCHIDACEAE						
<i>Epidendrum acrorhodum</i> Hagster & Dodson	Hierba del Caballero	Flowers, fresh	Oral	With cold water, sugar, Chirimoya, Orange and Lime Flowers, Toronjil, Congona, white roses and some drops of Aguardiente.	Fragrance, Good Luck	RBU/PL340
<i>Epidendrum cochlidium</i> Lindl.	Flor de Christo	Flowers, fresh	Oral	With cold water, sugar, Chirimoya, Orange and Lime Flowers, Toronjil, Congona, white roses and some drops of Aguardiente.	Nerves	Bejar132
<i>Lycaste gigantea</i> Lindl	Caña Caña	Flowers, fresh	Oral	Boiled with Cola de Caballo, Llanten, Matico Culantrillo and Cadillo.	Kidneys	Bejar60
	Simayuca	Fruits, fresh	Oral	Boiled with Preñadilla and Guayusa.	Male fertility	Bejar276
OXALIDACEAE						
<i>Oxalis peduncularis</i> H.B.K.	Trebol	Whole plant, fresh	Oral	Cooked with Sauco, lemon and bismocarbonato.	Diarrhea, Scurvy	Bejar288
PAPAVERACEAE						
<i>Argemone mexicana</i> L.	Cardo Santo, Anís	Whole plant, fresh	Oral	Boil to extract the juice, take with sugar, 1 Tbsp in 1L tea.	Sore eyes, Lungs, Fright / Susto, Stomach pain, Stomach inflammation	Bejar64, CORD67
<i>Papaver somniferum</i> L.	Amapola Roja, Amapola Blanca	Flowers, fresh	Oral	1 Tbsp of Flowers in 1L of Horchata.	Purify the blood, Vaginal discharge with blood, Menstrual regulation	CORD56. Bejar30, 32
PASSIFLORACEAE						
<i>Pasiflora ligularis</i> Jus.	Grenadilla	Peel of Fruits, Leaves, fresh	Topical	Cooked, applied as poultice with agua florida.	Infections, Menstrual cramps	Bejar140

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
PIPERACEAE						
<i>Peperomia alata</i> R.&P.	Congona Serrana	Whole plant, fresh	Oral	Refrigerated, Take 1 spoon of refrigerated mixture in lukewarm water. for nerves taken together with "Pega Pega" (<i>Fuchsia loxensis</i>). for Evil Wind and much sweating spray on body. It doesn't work as well as Congona. .	Evil wind / Mal viento, Heart, Nerves	CORD13
<i>Peperomia blanda</i> (Jaq.) H.B.K.	Congona	Whole plant, fresh	Oral	Refrigerated, Take 1 spoon of refrigerated mixture in lukewarm water. for nerves taken together with "Pega Pega" (<i>Fuchsia loxensis</i>). for Evil Wind and much sweating spray on body.	Evil wind / Mal viento, Heart, Nerves. It doesn't work as well as Congona	CORD12
<i>Peperomia congona</i> Ruiz & Pav.	Congona	Whole plant, fresh	Oral	Cooked.	Nerves, Heart	Bejar86
<i>Piper aduncum</i> L.	Cordoncillo, Matico	Whole plant, fresh	Oral, Topical	For the liver 3 Tbsp in 1L Horchata, drink with sugar, Grama Dulce, Caña agria and Cola de Caballo. for washing wounds.	Liver, Wounds	Bejar88, 192. CORD58
<i>Piper angustifolium</i> L.	Cordoncillo, Matico	Whole plant, fresh	Oral, Topical	For the liver 3 Tbsp in 1L Horchata, drink with sugar, Grama Dulce, Caña agria and Cola de Caballo. for washing wounds.	Liver, Wounds	Bejar88, 192. CORD58
PLANTAGINACEAE						
<i>Plantago australis</i> Lam.	Llantén	Whole plant, fresh	Oral	Cooked, taken with Huichinge, Cola de Caballo and Mortino.	Liver, Kidneys	Bejar178
<i>Plantago major</i> L.	Llantén	Whole plant, fresh	Oral	Horchata, 1 Tbsp in 1L Horchata.	Liver, Breast pain, Anti Inflammatory	CORD64
POACEAE						
<i>Bromus pitensis</i> Kunth.	Triguillo	Whole plant, fresh	Topical	Cooked and rubbed externally.	Urinary infections, Woman problems	Bejar292
<i>Cymbopogon citratus</i> (DC.) Stapf.	Hierba Luisa, Paja Luisa	Leaves and Root, fresh	Oral	Use root for dysentery and Leaves to make tea.	Dysentery	CORD20
<i>Cynodon dactylon</i> (L.) Pers.	Gramma Dulce	Whole plant, fresh	Oral	Cooked, taken with Toronjil, Caña Agria, Cadillo and sugar.	Kidneys	Bejar138
<i>Holcus lanatus</i> L.	Abrecaminos, Hierba del Perro	Whole plant, fresh	Oral	Cooked, with Malva Olorosa, Paico, Agua de Huayaddilla, and sugar.	Diarrhea occurring with a cold	Bejar154
<i>Hordeum vulgare</i> L.	Cebada	Seeds	Oral	1. Seeds are cooked and passed through a strainer, taken in the afternoon. 2. Seeds (grains), no fever present toasted grains with Oregano and white onions in water.	1. Tiredness 2. Diarrhea	Bejar68

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
<i>Melinis minutiflora</i> P.Beauv.	Yaragua	Whole plant, fresh	Oralen	Feed.	Good fodder for cows and guinea pigs, etc.	CORD27
POLEMONIACEAE						
<i>Cantua quercifolia</i> Jus.	Pepiso	Leaves, fresh	Topical	Parboiled, as bath or rubbing.	Rheumatism	Bejar238
POLYGONACEAE						
<i>Polygonum hydropiperoides</i> Michaux	Soliman, Solimancillo	Whole plant, fresh	Topical	Put some plants in 2L boiling water and sometimes add Matico and Geranio.	Pimple, Wash wounds of livestock	CORD63
POLYPODIACEAE						
<i>Polypodium</i> spp.	Calahuala	Root, fresh	Oral	Cooked, taken with Honey, Grama Dulce and .	Kidneys	Bejar52
PORTULACACEAE						
<i>Portulaca oleracea</i> L. subsp. <i>tuberculata</i> Danin & H.G. Baker	Cutuyuyo, Verdalonga	Whole plant, fresh	Topical, Oral	Crushed and boiled, eaten fresh with salsa and oil or rice.	Fever, Liver	Bejar94, 300
PROTEACEAE						
<i>Oreocallis grandiflora</i> (Lam.) R.Br.	Boldo	Flowers, Leaves, fresh	Oral	Horchata, take 1 Tbsp of Flowers and Leaves and put in 1L of boiling water.	Liver, Dizziness, Cirrhosis, Wash the blood	CORD3
<i>Roupala loxensis</i> I.M. Johnst.	Tarro Serrano	Whole plant, fresh			Dye yarn brown, Flavor Orals	CORD85
PUNICACEAE						
<i>Punica granatum</i> L.	Granada	Leaves, fresh	Oral	2 Tbsp in 1L of boiling water.	Dysentery, Diarrhea with blood	CORD55
ROSACEAE						
<i>Eriobotrya japonica</i> (Thunb.) Lindl.	Nispero	Leaves, fresh	Oral	Boiled.	Liver, Reduce Cholesterol, Diabetes	Bejar208
<i>Sanguisorba officinalis</i> L.	Pimpinella de Bejuco	Whole plant, fresh	Topical	Rubbed exterenally.	Bad Air / Mal Aire	Bejar244
RUBIACEAE						
<i>Cinchona officinalis</i> L.	Cascarilla	Bark, dried	Oral	Boil 1/2 Tsp in 1L water. in Aguardiente 1 Tbsp for 1/2l .	Freight/ Susto, Fever, Bone pain, Malaria, Malaria Tertian, Weight loss, Flu or colds	CORD6, Bejar66
RUTACEAE						
<i>Citrus aurantium</i> L.	Naranja Agria	Fruits, Peel, fresh	Oral	Juice of two Fruits with Guayusa as vitamin supplement for breakfast, Peel burned as incense in ceremonies.	Scurvy, Stomach ache, High blood pressure, Deodorant, Bad Air / Mal Aire	Bejar206
<i>Ruta graveolens</i> L.	Ruda	Whole plant, fresh	Topical	Used as poultice under arms, heated naturally. for baths and frotations: 2 Tbsp in 1/2L of Aguardiente, 1/2 Tbsp in 1/2L of water.	Sore eyes, Bad humor, Dizziness, Headache, Nausea, Vomiting, Cleansing/ Limpiar	Bejar256, CORD25

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
SALICACEAE						
<i>Salix humboldtiana</i> Willd.	Sauce	Leaves, fresh	Oral	1. Boiled with Aguardiente 2. Chewed	1. Fever 2. Infections	Bejar268
SAPINDACEAE						
<i>Dodonaea viscosa</i> Jacq.	Chamana	Whole plant, fresh	Topical	Macerated in Aguardiente, 3 times per week, every other day.	Arthritis, Bones, Cold, Muscle pain, Bone pain, Rheumatism	Bejar72, 96
SCROPHULARIACEAE						
<i>Scoparia dulcis</i> L.	Tiatina	Whole plant, fresh	Topical	Wash affected area and apply as a poultice.	Bruises caused by physical blows to the body	Bejar284
SELAGINELLACEAE						
<i>Selaginella arthritica</i> Alston	Doradilla, Trensita, Trensilla	Whole plant, fresh	Oral	Cooked, taken with sugar, Chuquiragua, Verbena, Canchalagua.	Bones, sore bones	Bejar126
SOLANACEAE						
<i>Acnistus arborescens</i> (L.) Schlttdl.	Pico Pico	Leaves, fresh	Oral	Boil, give a large glass with Mosquera, Chirimoya and a lot of sugar. if patient doesn't vomit, give him another glass.	Stomach, Vomiting, Purgative, Stomach swelling	Bejar242
<i>Brugmansia candida</i> Persoon	Floripondio, Guando	Leaves, Flowers, fresh	Oral		Freight / Susto	CORD90
<i>Cestrum auriculatum</i> L'Herit	Sauco Comun	Whole plant, fresh	Oral, Topical	Cook and mixed with Trebol, lemon and bismocarboanate, drink or rub externally.	Diarrhea, Scurvy	Bejar270
<i>Cestrum</i> sp.	Sauco Verde	Leaves, fresh	Topical	Put the juice of the leaves in water, put on forehead	Against heat/fever	CORD68
<i>Datura ferox</i> L.	Chamico	Leaves, fresh	Topical	Remove leaves and then rub affected area with them.	Asthma, Rheumatism	Bejar98
<i>Iochroma loxense</i> (Kunth.) Miers.	Marapico	Whole plant, fresh	1. Topical, 2.,3.Oral	1. Applied as ointment, 2. Flowers boiled with Flor de Christo, Clavel, Pega Paga 3. Crushed and boiled with Pega de Algodon, steer haunch and Zapallo Serrano.	1. Toothache. 2. Nerves 3. Tumors	Bejar188
<i>Nicotiana tabacum</i> L.	Tabaco	Whole plant, fresh	Topical	Rub externally.	Parasites, Fungicide, Insecticide	Bejar282
<i>Solanum americanum</i> Mill.	Mortiño, Hierba Mora, Yerba Mora	Whole plant, fresh	1. Oral, 2. Topical	1. 1 Tbsp in 1L boiling water 2. Crush Leaves and apply on skin.	1. Fatigue of drunkards, Nausea 2. Sorcery	CORD49, Bejar158
<i>Solanum albidum</i> Dunal	Tululuche	Whole plant, fresh	Topical	Rub externally.	Rheumatism	Bejar294
<i>Solanum nigrum</i> L.	Mortiño	Whole plant, fresh	Oral	Cooked, taken with aspirin and sugar.	Kidneys, Hangover fever, Vomiting, Shame	Bejar202

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
<i>Streptosolen jamesonii</i> (Benth.) Miers	Arco Iris, Flor de Quinde	Whole plant, fresh	1. Topical 2. Oral	Poleo de Gentil, 7 Espiritús, and Timolina.	1. Fright (Children)/ Espanto, Yellow fever 2. Heart attack, Epilepsia	Bejar38, CORD66
TILIACEAE						
<i>Triumfetta mollissima</i> Lam.	Cadillo	Whole plant, fresh or dried	Oral	Crushed and cooked for Horchata, 3 Tbsp in 1L Horchata. with sugar, phosphorous tablets (Aspirin), Caña Agria, Cola de Caballo, Trensilla and Culantrillo.	Kidneys, Inflammation	CORD48, Bejar50
URTICACEAE						
<i>Parietaria debilis</i> G. Forst.	Palitalia	Whole plant, fresh	Oral	Crushed and boiled with Aguardiente, salt and Naranja Agria, taken for nine days.	Internal bleeding caused by a blow	Bejar224
<i>Pilea microphylla</i> (L.) Lieberman	Preñadilla	Whole plant, fresh	Oral	Cook, mix with Simayuca, Guayusa, Aromatic Eucalyptus, and Sugar, take once daily for one month.	Fertility, Diuretic, Lungs, Venereal diseases	Bejar252
<i>Urtica dioica</i> L.	Ortiga Negra	Whole plant, fresh	Topical	Rubbed externally: affected area should be rubbed with alcohol or iodine afterwards.	Muscle pain	Bejar218
<i>Urtica magellanica</i> Juss. ex Poir.	Ortiga Blanca	Whole plant, fresh	Topical	Rubbed externally: affected area should be rubbed with alcohol or iodine afterwards.	Muscle pain	Bejar212
<i>Urtica urens</i> L.	Chige, Ortiga	Whole plant, fresh	Oral	Cooked.	Neurological pain, Purify the blood	CORD11, Bejar50
<i>Urera baccifera</i> (L.) Gaudich ex Wedd.	Ortiga de Caballo	Whole plant, fresh	Topical	Rubbed externally: affected area should be rubbed with alcohol or iodine afterwards.	Muscle pain	Bejar214
<i>Urera</i> spp.	Ortiga de Leones del Oriente	Whole plant, fresh	Topical	Rubbed externally: affected area should be rubbed with alcohol or iodine afterwards.	Muscle pain	Bejar216
VALERIANACEAE						
<i>Valeriana convallarioides</i> (Schmale) B.B. Larsen	Valeriana Grande, Lirio	Whole plant, fresh	Oral	1 Tbsp in 1L boiling water.	Yellow Fever	CORD54
<i>Valeriana decussata</i> Ruiz & Pav.	Valeriana	Bark and Root, fresh	Oral	Soaked in Aguardiente with sugar, Toronjil, and Congona.	Heart, Nervous system, Nerves	Bejar298
<i>Valeriana microphylla</i> H.B.K.	Valeriana Grande Rosada	Whole plant, fresh	Oral	2 Tbsssp in 1L boiling water or Aguardiente.	Bone pain, Cramps, Evil Air / Mal Aire, Kidney	CORD73
<i>Valeriana plantaginea</i> H.B.K.	Valeriana, Lirio pequeño	Whole plant, fresh	Oral	2 Tbsssp in 1L boiling water or Aguardiente.	Bone pain, Cramps, Evil Air / Mal Aire, Kidney	CORD74
<i>Valeriana</i> sp.	Violeta Serrana	Whole plant, fresh	Oral	1 Tbsp in 1L Horchata.	Cough	CORD40
VERBENACEAE						
<i>Lantana communis</i> L.	San Agustin Lluyo	Root, fresh	Oral	Boiled, take with sugar and Buenas Tardes.	Purgative	Bejar260

Family/Species	Indigenous name	Plant part used	Admin.	Preparation	Use	Coll. #
ZINGIBERACEAE						
<i>Costus glabratus</i> S.W.	Caña Agria	Whole plant, fresh	Oral	Boiled with Cola de Caballo, Llantén, Matico, Culantrillo and Cadillo.	Kidneys, Diabetes	Bejar58
INDET.						
	Hierba de Venado	Whole plant, fresh	Oral	Timolina.	White and yellow vaginal discharge, Inflammation	CORD35