

Medicinal plants and phytotherapy in traditional medicine of Paruro province, Cusco department, Peru

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Abstract

Medicinal plants constitute a very important resource in Peru both in culture and health-care systems, and a deep knowledge about the curative properties of plants has been developed, namely in rural areas. An ethnobotanical investigation was carried out in Paruro Province, Peru, with the aim to producing a census of medicinal plants utilized in traditional medical practices. Collection of information was performed in the field, by interviewing 118 traditional healers and collecting data on therapeutical uses of plant. The use of two hundred fifty five plants belonging to 73 families is reported. For each species the following data are provided: latin binomial, vernacular name(s), medicinal uses and preparation of the remedy. Data reported confirms the fundamental importance of medicinal plants in care-health systems and the deep knowledge about the curative properties of vegetal species in the studied area, which may potentially constitute a source of new pharmaceuticals.

Introduction

Peru's wide variety of ecological and climatic conditions favour the existence of one of the richest floras of the world, since it is represented by about 45,000 species, with a considerable number of plants employed for their medical properties. Medicinal plants have a long history of use in traditional medicine and even today a large portion of Peruvian populations relies solely on the administration of plant-derived preparations for the treatment of a diversity of ailments. Indeed, if in modern western civilization synthetic drugs prevail over those of extractive origin, in developing countries medicinal plants and/or their extracts are the main, often the only, sources of medicines. Thus, traditional medicine is a very important part of the health-care system in Peru. Access to hospital and other medical facilities are limited, and a high percentage of the population relies mainly on traditional healers for their illnesses.

Traditional healer, or shaman, is central in traditional medical practices; such a practitioner he uses various methods in the cure. Some rely on magical rites or on superstition, intended to pacify spirits, believed to have caused the illness. Others have specialized in healing broken bones by manipulation, a practice which is often successful. Most of healers use preparations of plants in their curative treatments, some of which are employed as adjuvant for treatments which are mainly based on magical rites: other healers regard the plant preparations as real drugs. These plants are obviously of interest to study for their content of possible pharmacologically active compounds. In Peru, the knowledge about medicinal plants has a very deep root, including and deriving from a very ancient inheritance that has a pre-hispanic origin and that was enriched by the influence of Spanish and European cultures.

A repertory of ethnobotanical resources may be important for developing countries, as basis to develop appropriate programs toward their agriculture, medical, pharmaceutical and commercial use. Since the degree of deforestation has been accele-

rated in Peru, it was felt important to collect document, and save knowledge on medicinal plants. Aside from the significance as a basic knowledge, the study of plants with medical properties is especially meaningful in tropical countries, due to their great variety of animal and vegetal species, a factor that increase the number of available resources [1]. On the other hand, tropical areas, and in particular forests, are regarded as a primary source of undiscovered pharmaceuticals [2] and studies on traditional medicines would undoubtedly help to alleviate human suffering in the long term [3].

Moreover, ethnobotanical data provide the basis for developing the cultivation of medicinal plants, thus lowering the costs of drugs in areas where economic conditions and/or cultural environment make the use of manufactured pharmaceuticals more difficult or more expensive. It has been stated that the more commonly used remedies within an ethnopharmacological system are the most likely to contain active ingredients [4].

The knowledge of ethnobotany and traditional phytotherapy is of fundamental importance, which Schultes [5] referred to as "the prolific and promising treasure-trove of the ethnopharmacological knowledge".

In Peru several books and papers reported the knowledge about medicinal plants used in traditional medicine [11-21]. No reports on this subject, however, are available for Paruro Province, even if in this area operate many traditional healers and medicinal plants are used daily.

The purpose of our ethnobotanical study is to show a panorama on the use of medicinal plants from one of the older regions of Peru, through an inventory of the plants used by traditional healers, with their botanical identification and reported uses, including diseases treated and the preparations of the remedies.

Methods

Study area

Paruro Province is located in the Department of Cusco, southwestern Peru (Figure 1). This Province consists of four different phytogeographic zones, each with a typical vegetation: a) the tropical forest ("selva"), between 200 and 1,000 m above sea level, which represents about 55% of the territory; b) the "Ceja de la Selva" (12%) with a characteristic tropical low-mountain vegetation; c) the upper plane (18%), whose vegetation is constituted mainly by herbs and shrubs; d) the inter-Andean valleys (15%), rich in herbs and shrubs, often aromatic. About two-third of the Paruro Province is thus covered by the vegetation of tropical forest, in different ecological zones.

Collection of information

Collection of information was performed in the field, during three consecutive years (2006-2008). Information on medicinal plants was obtained through casual conversation with healers and users (118 informants), in order to prevent biasing the answer and compromising spontaneity [6-8]. The informants were then asked to collect a specimen of the medicinal plant. Everything that came out during the interview was subsequently transferred to a structured form, recording for each plant, vernacular name, modes of preparation, and therapeutic prescription(s). Special attention was paid to the description of the symptoms of the diseases treated and these were translated in medicinal nomenclature. A particular care was paid to separate ritual/superstitious beliefs from the use of the plants in phytotherapy. Information about plants for which the botanical identification was impossible or uncertain was omitted.

Identification of plants

Identification of plants was performed by the Authors by using the McBride's *Flora of Peru* [9], the *Sinopsis de la Flora del Cusco* by Herrera [10] and by

comparison with identified vouchers deposited in the Herbarium Vargassianum (CUZ) and in the Herbarium of the Museo de Historia Natural "J. Prado" of the Universidad Nacional Mayor de San Marcos, Lima (USM). A voucher specimen of all plants mentioned in this paper is deposited at the Herbarium of the Centro de Estudios de Plantas Alimenticias y Medicinales at Cusco National University, Peru.

Literature survey

A literature survey was performed for the plants recorded in the available phytochemical and pharmacological literature. These data are presented in Results as "Secondary Metabolites" and "Pharmacological activities", respectively. Ethnobotanical data obtained have been also compared to the literature available for Peru: Herrera [11], Uphof [12], Girault [13], Soukup [14], Alarco de Zandra [15], Aldave Pajares and Mostacero Leon [16], Roersch and van der Hoogte [17], Rutter [18], De Feo [19], Velasco-Negueruela et al. [20] and Hammond et al. [21].

Results

Medicinal plants are listed in an alphabetical order by families. For each plant the following data are given: Latin binomial; vernacular name (**V. N.**), with the indication of its origin [(S) = Spanish, (Q) = Quechua, (A) = Aymara], parts of the plants used, preparation of remedies, medicinal uses, literature survey: uses reported in the mentioned ethnobotanical literature, secondary metabolites and pharmacological activities reported in published papers.

AMARANTHACEAE

Alternanthera repens Steud.

V. N.: Ccepo-ccepo (Q), hierba del moro (S), umutu (Q)

A decoction of the whole plant is used as a laxative and a purge. The same preparation is used

topically for anti-inflammatory cataplasms and baths in case of traumas and ecchymosis, as a vulnerary and as an antirheumatic.

Literature: Uses: Laxative [11, 13, 18]; vulnerary and local decongestant [13]. Secondary metabolites: Triterpene saponins [22]. Pharmacological activities: Antidiarrhoeal activity [23].

Amaranthus peruvianus (Schauer) Standley

V. N.: Jattacco (Q), yuyo (Q)

A leaf infusion is claimed to be an ovaric and a renal anti-inflammatory. The leaves are used as a food.

Literature: Uses: Purge, laxative, antidiarrhoic, antidysenteric, emmenagogue, regulator of the menstrual cycle, antirheumatic, oral and throat anti-inflammatory [15]. Secondary metabolites: Dietary fiber [24]. Pharmacological activities: No records.

Amaranthus quitensis HBK.

V. N.: Jattacco (Q), yuyo (Q)

An infusion of leaves is claimed to be an ovaric and a renal anti-inflammatory. The leaves are used as a food.

Literature: Uses: No records. Secondary metabolites: Saponins [25]. Pharmacological activities: No records.

Amaranthus spinosus L.

V. N.: Jattacco (Q)

A leaf infusion is claimed to be an ovaric and a renal anti-inflammatory. The leaves are used as a food.

Literature: Uses: Sudorific, febrifuge, in treatment of eruptive fevers and eczema, emollient, galactophorous [12]; laxative, in treatment of orchitis, ocular decongestant, in treatment of gout [13]; emmenagogue [14]; urinary antiseptic, anti-rheumatic [14, 19]; oral-pharynx antiseptic [19].

Secondary metabolites: Sterols [26]; Saponins [27-28]; Flavonoids [29, 48, 50, 53]; Coumarin derivatives [30-31]; Micronutrients, nutritional and anti-nutritional components [49, 54]. Pharmacological activities: Allergenic activity [32-34]; Antioxidant activity [35, 40, 42-44, 46]; Antiparasitic activity [36-37]; Antimalarial activity [38]; Lymphocyte-stimulating activity [39]; Alpha-amylase inhibitory activity [40]; Hepatoprotective activity [41, 45-47, 56]; Antipyretic activity [51]; Anti-diabetic, anti-hyperlipidemic and spermatogenic activity [52]; Antifungal activity [55]; Antinociceptive activity [57].

Guilleminea illecebroides HBK.

V. N.: Umuto (Q)

A decoction of the whole plant is claimed to be a laxative and a purge.

Literature: Uses: Vulnerary, maturative, laxative [13]. Secondary metabolites: No records. Pharmacological activities: No records.

AMARYLLIDACEAE

Bomarea involucrosa Baker

V. N.: Caña-caña (Q), sullu-sullu (Q)

A decoction of the leaves is used as a renal antinfective. The rhizome is used as a food.

Literature: Uses: Girault [13] reports *Bomarea* sp., "sullu sullu" as an abortifacient and in the treatment of nose bleeding. Secondary metabolites: No records. Pharmacological activities: No records.

Crocopsis fulgens Pax

V. N.: Chihuanhuay (Q)

A decoction of bulbs is used orally in the treatment of constipation and topically for anti-inflammatory cataplasms in the treatment of traumatic pains.

Literature: Uses: No records. Secondary metabo-

lites: No records. Pharmacological activities: No records.

Furcroya andina Trelease

V. N.: Cabuya (S), chunta-pacpa (Q), maguey (S), pacpa (Q).

A decoction of leaves is used topically in baths in the treatment of the arthritis and rheumatism. A flower infusion is claimed to be a diuretic. The flowers and the leaves are used as a veterinary food.

Literature: Uses: Sudorific in colds, lenitive for burns [13]; antiseptic, vulnerary, decongestant, in treatment of oedemas, in treatment of hepatic disorders [13-14]; skin depurative, ocular decongestant, in treatment of hydrophobia, gastric anti-inflammatory, in case of appendicitis (14). Secondary metabolites: Steroidal sapogenins [58-59]. Pharmacological activities: No records.

Stenomesson variegatum (R. et P.) Macbride

V. N.: Mahyua (Q), nahyua (Q)

A decoction of the bulbs is used as an abortifacient.

Literature: Uses: Purge [13]; abortifacient [13, 15, 19]; contraceptive [18], emmenagogue [19]. Secondary metabolites: Sterols [60]. Pharmacological activities: No records.

Zephyranthes parvula Killip

V. N.: Pulla-pulla (Q)

A decoction of the bulbs is applied topically in maturative cataplasms.

Literature: Uses: Maturative [11, 15]; resolvent [15]. Secondary metabolites: No records. Pharmacological activities: No records.

APIACEAE

Arracacia xanthorrhiza Brancr.

V. N.: Arracacha (Q), Virraca (Q)

A leaf infusion is claimed to be a blood depurative. Topically, a decoction of the leaves is used as an anti-inflammatory in case traumas and for antinfective baths. The juice obtained from the roots is drunk to treat hyperglycemia. The roots are used as a food.

Literature: Uses: Maturative, antirheumatic, gastralgic, anti-icteric [13]; galactophorous [14, 16]; to promote the conception [18]. Secondary metabolites: Phenols [62]; Starch [63]; Dietary fiber [24]; Flour [64]. Pharmacological activities: Antioxidant activity [61-62].

Azorella multifida Pers.

V. N.: China-llamachaqui (Q), china-tullma (Q), orcco-llamachaqui (Q)

An infusion of the whole plant is used as a gastralgic, a digestive, an anti-inflammatory of the respiratory tract, a mucolytic, an antitussive and in the treatment of renal diseases. A decoction of the whole plant is used topically as a vulnerary and a cicatrizer.

Literature: Uses: Rubefacient, maturative, to help fractures consolidation [14], in treatment of pneumonia, antirheumatic, antiseptic for wounds [16]. Uphof [11] reports *A. yareta* Haumann, "yareta", as an astringent and an absorbent. Girault [13] reports *Azorella* sp. "yareta" in treatment of pulmonary fevers, colds and migraine, as a tonic and to help fractures consolidation. Alarco de Zandra [15] reports *A. diapensoides* Agw., "diareta", as an analgesic, a maturative, and an emmenagogue. Secondary metabolites: No records. Pharmacological activities: No records.

Bowlesia acutangula Benth.

V. N.: Upfuisuru (Q)

A decoction of the whole plant is used as a

diuretic and a renal anti-inflammatory, and in treatment of cough and bronchial affections.

Literature: Uses: Sudorific, antirheumatic, in treatment of pulmonary diseases [13]. Velasco-Negueruela et al. [20] report *B. flabilis* J. F. Macbr., “uphuy suru”, as an antitussive, an antipyretic and used in treatment of “wind diseases”. Secondary metabolites: No records. Pharmacological activities: No records.

Bowlesia tropaeolifolia Gill. & Hook.

V. N.: Cuti-ckora (Q)

An infusion of the whole plant is claimed to be effective as a gastralgic; a decoction of the same parts is used as a topical vulnerary.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Daucus montanus H. et B. ex Schult.

V. N.: Jampatu-perejil (Q-S)

An aerial parts decoction is used as an abortifacient.

Literature: Uses: Digestive, antitussive [13]; gastralgic [13, 20]; rubbed on sore wrist [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Eryngium paniculatum Cav. & Dumby ex Delar.

V. N.: Chancorma (Q), escorzonera (S).

An infusion of the aerial parts is used as an antipyretic, and in treatment of respiratory illnesses, namely bronchitis.

Literature: Uses: No records. Secondary metabolites: Essential oil [65]. Pharmacological activities: No records.

Eryngium weberbaueri H. Wolff.

V. N.: Aya-llanta (Q), escorzonera (S), willanquichu (Q).

An infusion of the aerial parts is used as a sudorific, an antipyretic and in the treatment of respiratory affection, bronchitis and coughs. It is also used as an emollient and in the treatment of urinary retention.

Literature: Uses: Tonic, aperient, laxative, cholagogue, antirheumatic, antidiabetic, expectorant, skin depurative, in treatment of arteriosclerosis [15]; depurative, diuretic, hypotensive, in treatment of gout, sudorific [15, 19]. Secondary metabolites: No records. Pharmacological activities: No records.

Hydrocotyle alchemilloides A. Rich.

V. N.: Matteccllu (Q)

A leaf infusion is employed in the treatment of gastric ulcers and as a hepatoprotector. A decoction of the whole plant is claimed to be effective in the treatment of typhoid fevers and as an antigangrenous. Topically, the same preparation is used as an ophthalmic decongestant and an anti-inflammatory for varices.

Literature: Uses: Diuretic, in treatment of hepatic disorders and ulcers [11]; deodorant, anti-inflammatory, ocular decongestant, antihemorrhoidal, skin depurative [15]. Girault [13] reports *H. bonariensis* Lam., “matteklú”, as an antiseptic and a cicatrizer for sores and wounds, in cases of erysipelas and sunstroke, as an ocular decongestant, especially in treatment of conjunctivitis, in treatment of venereal diseases, as a hepatoprotector and a vomitory. Secondary metabolites: No records. Pharmacological activities: No records.

Hydrocotyle umbellata L.

V. N.: Chchucu-chchucu (Q)

An infusion of the whole plant is used to promote the uterus strengthening after the parturition.

Literature: Uses: Aperient, vomitory, hepatic anti-

inflammatory, odontalgic [14]; diuretic, vulnerary, antiseptic for wounds, ocular decongestant [14, 16]; skin depurative [14, 19]; antipyretic, cholagogue, depurative, in cases of headache [19]. Secondary metabolites: Flavonoids [66], Essential oil [67]. Pharmacological activities: No records.

Oreomyrrhis andicola Endl.

V. N.: Cancer-verbena (S), Pampa cominos (S)

An infusion of the aerial parts is claimed to act as a gastric antispasmodic and a digestive.

Literature: Uses: Antiscorbutic, antitussive, diuretic, cicatrizer [13]. Secondary metabolites: No records. Pharmacological activities: No records.

ARACEAE

Gorgonidium vargasii J. Bogner & D. H. Nicholson

V. N.: Amacho (Q), aya-culis (Q)

The leaves and the roots are toxic and their decoction is used as a biocide in agriculture.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

ASCLEPIADACEAE

Cynanchum tarmense Schlechter

V. N.: Ambar-ambar (Q), ambarina (Q)

An infusion of the whole plant is claimed to be effective in all respiratory affections, especially as an antitussive.

Literature: Uses: Girault [13] reports as "ambarina" *Scabiosa* sp. (Dipsacaceae) as an antiseptic for wounds, an antitussive, an ocular decongestant and in case of cataract. Secondary metabolites: No records. Pharmacological activities: No records.

ASTERACEAE

Achyrocline alata DC.

V. N.: Wira-wira (Q)

An infusion of the aerial parts is used in the treatment of respiratory affections.

Literature: Uses: Antitussive, in treatment of pulmonary diseases [13]. Secondary metabolites: Diterpenes [68]; Flavonoids [69-72]; Polyphenols [72-73]; Essential oil composition [74-76, 80-81]; Saponins [83]; Caffeoyl derivatives [88]. Pharmacological activities: Antioxidant activity [79-80]; antifungal activity [81]; cytotoxicity [81]; antitubercular activity [82].

Achyrocline ramosissima Britton

V. N.: Huirahuirah (Q), wira-wira (Q)

An infusion of the aerial parts is used in the treatment of respiratory affections.

Literature: Uses: Antimalaric, antibilious [11]; antitussive, in treatment of pulmonary diseases [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Achyrocline satureioides DC.

V. N.: Wira-wira (Q)

An infusion of the aerial parts is used as a topic anti-inflammatory in case of traumas and dislocations, and in baths, in the treatment of muscular atony.

Literature: Uses: Antitussive, in treatment of pulmonary diseases [13; 20]. Secondary metabolites: Flavonoids [72, 80, 83-89, 119, 127-128]; Pyrones [86, 90]; Essential oil [74-75, 86, 97-94, 126]; Polysaccharides [95-98]; Caffeoylquininate derivatives [99]; Dibenzofurans [100]; Phenols [124]. Pharmacological activities: Immunostimulating activity [92-95, 101, 130-131]; Anti-inflammatory activity [88, 95, 127]; Antispasmodic activity [102-103]; CNS activity [102]; Mutagenic and genotoxic

activity [104-105]; Diuretic activity [106]; Antiviral activity [107-108]; Antihyperglycemic activity [100, 132]; Antioxidant activity [109-110, 120, 123-125]; Antitumoral activity [112-113]; Hepatoprotective activity [114]; Antibacterial activity [115-116, 121, 131]; Photoprotective activity [117]; Prothrombotic activity [118]; Tyrosinase inhibitory activity [122]; Antigiardial activity [129]; Insect repellent activity [126].

Ambrosia peruviana Willd.

V. N.: Altamisa (S), Marcju (Q)

An infusion of the leaves is used internally in the treatment of amenorrhoea, as a diuretic, in treatment of blood vomiting, as a cardiogenic and a sedative. Chopped leaves are used as a topic anti-inflammatory and in treatment of muscular pains. A tincture obtained from aerial parts is used externally in treatment of paralysis and rheumatism. The flowering tops, decocted in wine, are claimed to act as a vermifuge. The powder of dried and roasted seeds is employed in treatment of epilepsy.

Literature: Uses: Antirheumatic [11-14, 16, 18, 20]; astringent, tonic [12]; antiechymotic, in treatment of headache and epilepsy, general anti-inflammatory, gastralgic, cardiogenic, maturative, digestive [13]; vermifuge [13-19]; lenitive for hemorrhoids [13, 15]; emmenagogue, in treatment of amenorrhoea [14-15, 19-20]; anti-hysterical [14, 16]; antineuralgic [14, 16, 18]; aperient, to facilitate the parturition, antiparasitic [15]; insecticide [16]; digestive, tonic, antispasmodic [19-20]; antipyretic, to aid fractures consolidation, vermifuge, regulator of the menstrual cycle, to treat "wind diseases" [20]. Velasco-Negueruela et al. [20] report as "markhu" also *A. artremisioides* Miller as an antipyretic and a gastralgic. Secondary metabolites: Sesquiterpene derivatives [133-135]. Pharmacological activities: Cytotoxic activity [134]; Antileishmanial, trypanocidal, antituberculosis activity [135].

Aster sp.

V. N.: Puna llantén (Q-S)

An infusion of the plant is claimed to be effective in treatment of kidney affections and to act as a general antiseptic.

Baccharis genistelloides Pers.

V. N.: Quinsa-cucho (Q)

A decoction of the whole plant is used for washings as a uterine antiseptic and in treatment of gonorrhoea. Orally, the same preparation is claimed to act as a blood depurative, an emmenagogue, an antidiarrhoeic and as a general antiseptic.

Literature: Uses: Uterine astringent [11]; tonic, febrifuge [12]; antimalaric [13-14, 16, 18]; antirheumatic [14, 16, 18-19]; antiasthmatic, in treatment of dyspnoea, antiechymotic [19]; diuretic, in treatment of urinary retention, in treatment of leucorrhoea and blenorrhagia, to help the blood circulation, topic decongestant and skin depurative [13]; gastralgic, in treatment of dislocations [20]. Secondary metabolites: Essential oil [136-148]; Diterpenoids [140-145]; Flavonoids [144, 146]; Sterols [146]; Aromatic esters [144]; Phenolic compounds [147, 156]; Alkaloids [148]; Saponins [149]. Pharmacological activities: Antiviral activity [150-151]; Antimutagenic activity [152]; Antiarthritic activity [153]; Gastric cytoprotective activity [154]; Hepatotoxicity [155].

Baccharis polyantha HBK.

V. N.: Chchillca (Q), mayu-chchillca (Q)

The leaves are warmed and applied to the parturient thighs to promote the uterus dilatation. An alcoholic tincture of the leaves is used topically for massages and baths as an antirheumatic, an antiarthritic, in the treatment of facial paralysis, and in the treatment of the "aire" (respiratory disease).

Literature: Uses: To swollen stomach [20]. Secondary metabolites: No records.

Pharmacological activities: No records.

Baccharis salicifolia Pers.

V. N.: Chchillca (Q)

The powder of the leaves, mixed with other plants (*Ambrosia peruviana* Willd., *Minthostachys spicata* Epling) and salt is used for cataplasms to promote bones consolidation in cases of fractures. A decoction of the aerial parts is claimed to be an anti-inflammatory, an antirheumatic, an antiarthritic, and is used in sedative washings or baths for bones pains. A tincture of the leaves, with *Ambrosia peruviana* Willd. and *Schinus molle* L. (Anacardiaceae) leaves, is used for the same purposes.

Literature: Uses: Astringent, anti-inflammatory in podagra [14]; antirheumatic, sedative, analgesic [14, 16]. Alarco de Zandra [15] reports as "chillca" *Eupatorium amygdalinum* Lam. [Asteraceae] as an anti-inflammatory, an analgesic, a veterinary purge, in treatment of lumbago, as an antirheumatic, to help fractures consolidation, as an antiseptic for wounds and as an antiasthmatic. Secondary metabolites: Sterols [157]; Flavonoids [158-160]; Terpenoids [159, 161]; Essential oil [162-164, 166]. Pharmacological activities: Insect-repellent activity [165]; Antibacterial activity [166]; Anthelmintic activity [167].

Bidens andicola HBK.

V. N.: Misico (A), ppirca (Q), quello-ttica (Q), quico (Q), zumila (A).

A whole plant decoction is claimed to be effective as an oral contraceptive and, topically, as an anti-rheumatic. An infusion of the aerial parts is used in the treatment of renal affections. The leaves are used as a food.

Literature: Uses: Uterine antihemorrhagic [13, 15]; antirheumatic [14-15, 18]; in baths for the fright ["susto"] [20]. Secondary metabolites: Flavonoids [168]. Pharmacological activities: Antioxidant

activity [169-170].

Bidens triplinervia HBK.

V. N.: Ppirca (Q), quico (Q), silquihua (Q)

A decoction of the whole plant is used for cataplasms to stimulate blood circulation in cases of varices.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Cosmos peucedanifolius var. *tiraquensis* (Kuntze) Scherff

V. N.: Panti (Q)

An infusion of flowers is claimed to be effective as an antitussive, in the treatment of pleuritis and tuberculosis, as an expectorant, and as a diuretic.

Literature: Uses: Diuretic, in treatment of pleuritis [11]; sudorific [15, 18]; in treatment of respiratory diseases, uterine anti-inflammatory, to help fractures consolidation [17]; antitussive [17, 20]; antipyretic, in treating lumbago [20]. Girault [13] reports *C. diversiflorus* Ott. et Dic., "panti panti", as a sudorific, an antirachitic and in treatment of respiratory diseases. Secondary metabolites: No records. Pharmacological activities: No records.

Eupatorium pentlandianum DC.

V. N.: Jayac-chchillca (Q), manca-paqui (Q)

A leaf infusion is used topically for anti-inflammatory cataplasms, in the treatment of varices and in antirheumatic baths. An alcoholic tincture prepared with the aerial parts is employed topically for decongestant massages in cases of traumatic events.

Literature: Uses: To wean young children [20]. Girault [13] reports as "mankapaki" *Werneria scorpioides* (Lam.) Pers., chewed in case of halitosis and to strengthen the teeth, as an uterine antinfec-

tive and in treatment of blennorrhagia, as a decongestant for traumas, as a galactagogue, as a digestive and in treatment of hepatic affections, as an antiasthmatic, and in case of otitis. Rutter [18] reports as "manca paqui" *E. ayapanoides* and *E. parviflorum*. *E. ayapanoides* is reported as an anti-diarrhoic, in treatment of aphta, as an appetizer, a carminative, a digestive, a diuretic, in treatment of throat inflammations, as a tonic, a gastralgic, and in treatment of urinary and kidney illnesses. *E. parviflorum* is reported in treatment of aphta, as an appetizer, a carminative, a digestive, a diuretic, in treatment of throat inflammations, as an antidiarrhoic, a tonic, a gastralgic, an antidyenteric, an antitussive, an analgesic, in treatment of hepatic, urinary and renal illnesses. Secondary metabolites: No records. Pharmacological activities: No records.

Eupatorium sternbergianum DC.

V. N.: Lambra-caña (Q), manca-paqui (Q), rosa cayetana (S)

This plant is also called the "women's plant", because its uses in women diseases. An infusion of its aerial parts is used orally as an emmenagogue, in treatment of dysmenorrhoea and as a genito-urinary anti-inflammatory (topically and internally). A decoction of the aerial parts is used topically for anti-inflammatory and antiseptic washings.

Literature: Uses: Diuretic, antiblennorrhagic, antidiabetic [11]. Velasco-Negueruela et al. [20] reported as "manka-p'aki" *Ageratina sternbergiana* [DC.] King. et Rob. [Asteraceae], as a digestive, a sedative for gastric and colic pains and as an aid in childbirth. Secondary metabolites: Benzofurane derivatives [171]; Flavonoids [172-173]. Pharmacological activities: No records.

Flaveria bidentis Robinson

V. N.: China-paya (Q), mata-gusano (S)

An infusion of the leaves is used as an antitussive; the decoction is claimed to be a vermifuge and a topical cicatrizer.

Literature: Uses: Decongestant for insect bites [13]; antitussive [13-14, 18-19]; antiseptic for wounds, vulnerary [13-15, 18-19]; antidote for poisonings [18]; antiparasitic [19]. Secondary metabolites: Flavonoids [174-188, 192, 195]; Thiophene derivatives [189; 196]. Pharmacological activities: Inhibitory activity on the reduction of carbonyl groups [181]; Insecticide activity [190, 193]; Anticoagulant activity [187-188, 192]; Antioxidant activity [191; 194], Antibacterial activity [193, 197]; Allelopathic activity [193]; Nematocidal activity [196].

Gamochaeta spicata (Lam.) Cabrera

V. N.: Cketo-cketo (Q), orcco q'eto-q'eto (Q), pacha wira-wira (Q), q'eto-q'eto (Q)

An infusion of the aerial parts is claimed to be effective as an antitumoral, as a gastric antispasmodic, an antitussive, in the treatment of tuberculosis, an anti-inflammatory for gastric ulcers, and in treatment of renal and hepatic diseases. The same preparation is recommended topically as an antiseptic for wounds. The powder obtained from dried leaves is used as a topic antiseptic and to help the bone consolidation. The leaves of the plant, with the flour obtained from *Vicia faba* L. seeds, are used in decoction as an antitussive and in treatment of tuberculosis.

Literature: Uses: In literature, the plant is reported as *Gnaphalium spicatum* Lam. in treatment of pulmonary diseases [11, 13, 17-18]; in treatment of cancer [11, 19]; as an aperient [13]; an antiseptic for wounds [13, 17]; a hepatic anti-inflammatory [13-14; 17, 19, 21]; a tonic [14, 19-20]; an urinary antinfective, in treatment of kidney illnesses, an antitussive, a throat anti-inflammatory, in treatment of bronchitis, as an intestinal antinfective, in case of colics and hematuria, gastralgic, in treatment of gastric ulcers, skin depurative, antihaemorrhagic after the parturition [17]; as a vaginal and uterine anti-inflammatory [17, 19]; as an antiparasitic, a cholagogue [19]; to relieve leg cramps, for lumbago and lung problems [20]; as a general antinflammatory [21]. Alarco de Zandra [15] reports *Gnaphalium viravira*, "cketo

cketo" [Asteraceae], as a tonic, febrifuge, antiasthmatic, antitumoral. Secondary metabolites: No records. Pharmacological activities: Antimicrobial activity [198]; Larvicidal activity against *Aedes fluviatilis* [199].

Grindelia boliviana Rusby

V. N.: Chchiri-chchiri (Q), chiri-chiri (Q)

Cataplasms obtained with a decoction of the aerial parts are used to help the consolidation of bone fractures and dislocations. A decoction of the same parts is used topically as an analgesic, a vulnerary, a maturative and an antirheumatic. An infusion of the aerial plant parts is used in the treatment of the respiratory diseases and is recommended in cases of tuberculosis.

Literature: Uses: Vulnerary and resolvent [11, 13-14]; antihæmorrhagic, antirheumatic, sedative, analgesic, in treatment of leucorrhœa and blennorrhœgia [13]. Secondary metabolites: Diterpenes [200]. Pharmacological activities: No records.

Hieracium neo-herreræ Zahn

V. N.: Taruca-ninri (Q), villarga (Q)

A decoction of the aerial parts is used topically for washings as an antiseptic for wounds and in treatment of gonorrhœa. An infusion of the aerial parts is claimed to be effective in the treatment of respiratory and renal affections.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Hypochoeris acaulis Britton

V. N.: Quello-pilli (Q).

An infusion of the leaves is claimed to be a stomachic and a diuretic.

Literature: Uses: Intestinal antinfective, antitussive, antihæmorrhagic after parturition, in treat-

ment of bronchitis, topic anti-inflammatory, resolvent in case of dislocations [17]. Secondary metabolites: No records. Pharmacological activities: No records.

Hypochoeris sessiliflora HBK.

V. N.: Chicoria amarga (S), jayac-pilli (Q).

The juice of the plant, pure or mixed with a fruit juice, is claimed to be effective as an antibilious.

Literature: Uses: Antibilious [11]; antimalaric [11, 14]; urinary antiseptic, antipyretic, in treatment of renal and hepatic disorders [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Hypochoeris sonchoides HBK.

V. N.: Jayac-pilli (Q), oq'e-pilli (Q).

The juice of the plant, pure or mixed with a fruit juice, is claimed to be effective as a hepatoprotector and as an anti-choleretic. The leaves and the roots are used as a food.

Literature: Uses: Antibilious, antimalaric [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Hypochoeris stenocephala Kuntze

V. N.: Misqui-pilli (Q), pilli-pilli (Q)

An infusion of leaves is used as a hepatic anti-inflammatory and an antibilious. The leaves are used as a food.

Literature: Uses: Antibilious, antimalaric [11]. Girault [13] reports *H. andina* Griseb. "misqui pilli" as a blood depurative and a tonic. Secondary metabolites: No records. Pharmacological activities: No records.

Hypochoeris taraxacoides Benth. & Hook. f.

V. N.: Jayac-pilli (Q)

The juice of the leaves, pure or mixed with a fruit juice, is claimed to be effective as an antibilious. The leaves are used as a food.

Literature: Uses: For stomach problems, for pains of the waist area, tonic [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Liabum bullatum Hieron.

V. N.: Marancera (Q), pilli (Q)

A decoction of the roots is claimed to be an antidiarrhoic, while an infusion of the leaves is used as a digestive and a gastric antispasmodic.

Literature: Uses: Decongestant for dislocations, antirheumatic, in treatment of venereal diseases [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Liabum uniflorum Sch. Bip.

V. N.: Chchawi-chchawi (Q)

An infusion of the leaves is used as a diuretic. A decoction of the whole plant is used as an anti-inflammatory, an antirheumatic, an antiarthritic and as a lenitive for bone pains. The leaves are used as a food.

Literature: Uses: No records. Secondary metabolites: Phenylpropanoid glycosides [201]. Pharmacological activities: No records have been found in the literature concerning uses or pharmacological activities.

Mutisia cochabambensis Hieron.

V. N.: China-chinchircuma (Q)

An infusion of the flowers is claimed to be a hypotensive.

Literature: Uses: Tonic (20). Secondary metabolites: No records. Pharmacological activities: Antioxidant activity [197].

Mutisia hirsuta Meyen

V. N.: Chinchilcuma (Q), Chinchircuma (Q)

A decoction of aerial parts is employed for antirheumatic baths and as a sedative for bone pains. A leaf infusion is claimed to be a diuretic, a tonic and a digestive. An infusion of the flowers is used to treat respiratory affections.

Literature: Uses: Girault [13] and Alarco de Zandra [15] report as "chinchircuma" *M. viciaefolia* Cav. as a diuretic, an ovaric anti-inflammatory, a blood depurative, a cardiotoxic, in case of bronchitis [13]; an anti-inflammatory, an antiseptic for wounds, a tonic, in treatment of respiratory diseases and as a cardiotoxic [15]. De Feo [19] reports as "chinchircuma" *M. acuminata* R. et P. as a vulnerary, a cholagogue, an antitumoral, in treatment of respiratory affections. Secondary metabolites: Chromone, coumarin and coumestan derivatives [202]. Pharmacological activities: No records.

Onoseris albicans (D.Don) Ferreyra

V. N.: Panti-panti (Q)

A flower infusion is claimed to be effective in treatment of cold and coughs.

Literature: Uses: No records. Secondary metabolites: Sesquiterpenes [203]. Pharmacological activities: No records.

Pectis sessiliflora Sch. Bip.

V. N.: China-paya (Q)

An infusion of the aerial parts is used as a diuretic and in the treatment of dyspepsia; a decoction of the same parts is employed internally and for washings in the treatment of gonorrhoea.

Literature: Uses: Antibleorrhagic [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Perezia multiflora Less.

V. N.: Chancorma (Q), chancoruma (Q), valeriana (S)

An infusion of the whole plant is employed as an emollient, a sudorific, a diuretic, an antitussive, in the treatment of angina pectoris and of hepatic affections, as an ovaric and uterine anti-inflammatory, an antitumoral and in the treatment of eruptive affections.

Literature: Uses: Emollient [11, 13-14]; sudorific [11, 14, 16, 18]; diuretic [11, 14, 16, 18, 19-20]; in treatment of angina, bronchitis and cough; resolvent for dislocations, in treatment of hepatic disorders, analgesic for menstrual pains, ovaric anti-inflammatory, in case of rubella [13]; febrifuge [13, 16, 18-20]; antidote for poisonings [19]; anticatarrhal [20]. Secondary metabolites: Sesquiterpenes [204-205]; Coumarins [206-207]; Essential oil [208]. Pharmacological activities: Pesticide activity [208].

Perezia pinnatifida Lag. ex D. Don

V. N.: Orcco sotuma (Q), sotuma (Q)

An infusion of the whole plant is claimed to be effective as an antiasthmatic, an antitussive and in treatment of colds.

Literature: Uses: Tonic, diuretic, in treatment of angina, bronchitis and coughs, resolvent for traumas, in treatment of hepatic disorders, analgesic for menstrual pains, ovaric anti-inflammatory, in case of rubella, antipyretic [13]; for stomach ailments [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Perezia poeppigii Less.

V. N.: Sotuma (Q)

An infusion of the whole plant is used as an antipyretic, a diuretic, a diaphoretic and in the treatment of bronchial affections.

Literature: Uses: In literature as "sotuma" or "valeriana" is reported *Perezia*

coerulescens Wedd. as an antipyretic [11]; diuretic, sudorific, [11, 15-16, 18]; antiseptic, cardiotoxic, astringent [15]; sedative, skin depurative [15, 17]; for uterus strengthening after the parturition, in treatment of respiratory diseases and kidney troubles, antirheumatic, in case of headache, contraceptive, uterine anti-inflammatory, in treatment of hepatic disorders, urinary antiseptic [17]. Secondary metabolites: No records. Pharmacological activities: No records.

Schkuhria pinnata var. *octoaristata* Cabrera

V. N.: Canchalagua (Q), gentil perejil (S), piquichana (Q), rajacha (Q)

A decoction of the aerial parts is claimed to be a blood depurative, a diuretic, to help in lowering glycemia levels, an antirheumatic, an anti-icteric, an antibilious and a renal anti-inflammatory.

Literature: Uses: Anti-icteric [11, 13]; depurative, diuretic [13, 19]. Girault [13] reports *S. octoaristata* DC. used in hepatic disorders and biliar calculus, as a depurative, an antimalaric, a cicatrizer, a supplicative, and in treatment of pulmonary diseases. Secondary metabolites: Sterols [209]; Triterpenoids [209]; Diterpenes [210-212]; Sesquiterpenes [213-216]; Phenylpropanoids [216]. Pharmacological activities: Insect-antifeedant activity [214]; Antioxidant activity [216]; Antibacterial activity [217]; Hypoglycaemic activity [218]; Antimalarial activity [219].

Senecio canescens (H. et B.) Cuatrec.

V. N.: Quea-quea (Q)

A decoction of the aerial parts is used as an antirheumatic and in treatment of respiratory and renal affections.

Literature: Uses: In treatment of pneumonia, cicatrizer, antiseptic [13]; pectoral and antitussive [13-14]; sudorific [14]. Secondary metabolites: Sesquiterpenoids [220]. Pharmacological activities: No records.

Senecio herrerae Cabrera

V. N.: Arnica (S), maichcha (Q)

A decoction of aerial parts is used topically for resolvent baths in cases of traumas.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Senecio pinnatilobatus Sch. Bip.

V. N.: Huertaculis (Q)

An infusion of leaves is used as an analgesic and in the treatment of epilepsy and respiratory affections.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Senecio pseudotites Griseb.

V. N.: Arnica (S), maichcha (Q)

A decoction of flowers and leaves or their powder is used topically as an anti-inflammatory, a resolvent in cases of traumatic pains, an antirheumatic, and an antiarthritic. An alcoholic tincture of the aerial parts is used topically and orally as an anti-inflammatory.

Literature: Uses: Vulnerary [11, 14-15]; in treatment of colics, vomitory, sternutatory, in treatment of urinary retention [13]; diuretic [13-15, 19]; resolvent for traumas, vermifuge [13, 15, 19]; anti-inflammatory, emollient, in treatment of angina [15]; antiasthmatic [19]. Secondary metabolites: Chalcones [221]; Triterpenes [222]. Pharmacological activities: No records.

Senecio rhyzomatosus Rusby

V. N.: Llancahuasa (Q), ticllayhuarmi (Q)

A decoction of the aerial parts, alone or with milk,

is claimed to be effective in the treatment of respiratory diseases (pneumonia, bronchitis, cough) and as a hepatoprotector. Fresh and powdered leaves are used topically as a vulnerary for sores and wounds, while a decoction of the leaves is used as a cicatrizer. An infusion of the aerial parts is used as a gastric anti-inflammatory, a stomachic, and in treatment of kidney affections.

Literature: Uses: Vulnerary, in treatment of pneumonia [11, 13-16, 18-19]; in case of angina, throat anti-inflammatory, to treat haemoptysis, topic decongestant, in cases of dog's bites [13]; skin depurative [14, 16, 18-19]; cholagogue, to heal wounds [21]. Velasco-Negueruela et al. [20] report as "t'iqlay warmi" *S. erosus* Wedd. for kidney pains. Secondary metabolites: No records. Pharmacological activities: No records.

Senecio rudbeckiaefolius Meyen & Walp.

V. N.: Arnica (S), maichcha (Q)

Chopped leaves in wine or alcohol are used as analgesic for traumatized areas. An infusion of the leaves, drunk on empty stomach, is claimed to be an appetizer, an emmenagogue and a diuretic. An alcoholic tincture of the flowers is claimed to be a topic antirheumatic and antiarthritic (in massages) and, orally, a balsamic for the respiratory tract. An alcoholic tincture is recommended for anti-inflammatory baths.

Literature: Uses: Gargles in angina and throat inflammations, to facilitate the conception [13]; antitussive, rubbed to cure dislocations [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Stevia galeopsidifolia Hieron.

V. N.: Manca-paqui (Q)

An infusion of the aerial parts is used for washings as a uterine antinfective. The same preparation is used orally as a stomachic and a digestive.

Literature: Uses: No records. Velasco-Negueruela

et al. [20] report as “manka p’aki” *S. rombifolia* HBK. var. *stephanacona* as a gastralgic and an emetic. Secondary metabolites: Flavonoids [223]. Pharmacological activities: No records.

Tagetes elliptica Sm.

V. N.: Monte-huacatay (Q).

A leaves infusion is claimed to be effective as a gastric antispasmodic, a carminative and a digestive. The leaves are used as food flavouring.

Literature: Uses: Flavouring for aliments [14]. Secondary metabolites: Flavonoids [224]. Pharmacological activities: No records.

Tagetes filifolia Lag.

V. N.: Anis-anis (S), anis silvestre (S), pampa-anis (Q-S), tuna-anis (Q-S).

The aerial parts, chewed on empty stomach, are used in the treatment of halitosis, against flatulence, as an antibilious, a gastric antispasmodic and an anti-inflammatory. A decoction of the whole plant, with stigmas of maize and *Bowlesia acutangula* Benth. plant, is used in treatment of respiratory diseases and pneumonia, as a diuretic and an emmenagogue. The leaves are used as food flavouring.

Literature: Uses: Stomachic [11, 15]; against flatulence [11, 13]; appetizer, digestive, galactagogue, in treatment of leucorrhoea, environmental disinfectant [13]; diuretic [14]; in treatment of meteorism [15]; in cases of colics [15, 17]; carminative, antispasmodic, aromatic [16]; gastralgic, urinary antiseptic, gastric and vaginal anti-inflammatory, antinfective after the parturition, in treatment of headache and hepatic disorders [17]. Secondary metabolites: Essential oil [225-236]; Thiophene derivatives [237-238, 241]. Pharmacological activities: Antifungal activity [226]; Anti-inflammatory activity [239]; Insecticidal activity [231]; Antiviral activity [241].

Tagetes graveolens L’Hérit. ex DC.

V. N.: Kita-huacatay (Q), mula-huacatay (Q).

An infusion of leaves is claimed to act as a gastric antispasmodic, a carminative, and a digestive.

Literature: Uses: Gastralgic, antirheumatic [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Tagetes mandonii Sch. Bip.

V. N.: Chicchipa (Q), chijchipa (Q)

A leaves infusion is claimed to be effective as a gastric antispasmodic, a carminative, a digestive and an expectorant. The same preparation is used topically as a cicatrizer and an antiseptic for wounds. The leaves are used as food flavouring.

Literature: Uses: Digestive, gastralgic, antirheumatic, in treatment of sciatica, cardiogenic [13]; flavouring for aliments [14]; antitussive, astringent for sores [15]. Secondary metabolites: Flavonoids [242-244]; Essential oil [245]. Pharmacological activities: No records.

Trixis divaricata Spreng.

V. N.: Jancu chchutan (Q)

The fresh aerial parts are used topically for cataplasms in the treatment of dislocation and traumas and to dissolve ecchymosis.

Literature: Uses: No records. Secondary metabolites: Sesquiterpenes [246]; Essential oil [247-249]. Pharmacological activities: Antiulcerogenic activity [250].

Viguiera mandonii Sch. Bip.

V. N.: Sunchchu (Q).

A decoction of the whole plant is employed orally as an antidote in cases of snake's bites. An infusion of the leaves is claimed to be an antidiarrhoic. The leaves are used as a food.

Literature: Uses: Girault (13) reports *V. pflanzii* vel. aff. Perkins "Akkosunchu" as an antiseptic for wounds, a cardi tonic, a diuretic. Secondary metabolites: No records. Pharmacological activities: No records.

Werneria dactylophylla Sch. Bip.

V. N.: Pupusa (Q)

A flower infusion is used orally as an antipyretic, an analgesic in the treatment of headache, respiratory diseases, and as an anti-inflammatory.

Literature: Uses: No records. Secondary metabolites: Diterpenes [251-252]. Pharmacological activities: No records.

Werneria nubigena HBK.

V. N.: Puna margarita (S)

An infusion of the whole plant is used topically as an antiseptic for wounds and as a cicatrizer.

Literature: Uses: Veterinary antiparasitic, digestive, ovaric antiseptic [13]; tonic, depurative, stomachic, cholagogue, in treatment of renal lithiasis, mucolytic, sedative for muscular pains [15]; in treatment of uterine cancer [21]. Secondary metabolites: Pyrrolizidine alkaloids [253]; Benzopyran derivatives [254]. Pharmacological activities: Antioxidant activity [191].

Werneria villosa A. Gray

V. N.: Puna ichu ichu (S-Q)

A decoction of the aerial parts is claimed to be effective as a hepatoprotector and in treatment of kidney affections. An infusion of the flowers is used an antitussive.

Literature: Uses: In treatment of leucorrhoea, vaginal anti-inflammatory, in treatment of urinary retention [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Zinnia multiflora L.

V. N.: Paya-china (Q), paya-paya (Q)

A whole plant infusion is used as a vermifuge. A decoction of the aerial parts is claimed to act as a blood depurative, an antibilious and a gastrointestinal anti-inflammatory.

Literature: Uses: Vermifuge, gastralgic, in treatment of hepatic illnesses [14, 18]. Secondary metabolites: Sesquiterpenes [255-256]. Pharmacological activities: No records.

BASELLACEAE

Ullucus tuberosus Caldas

V. N.: Olluco (Q), papa-lisas (S), atok-lisas (Q-S)

A leaves decoction is used as a gastric anti-inflammatory and an antispasmodic; on empty stomach, it is recommended as a laxative. Topically, a decoction of the tubers is used for maturative cataplasms, as a skin depurative, an escharotic, and a vulnerary. The tubers are used as a food.

Literature: Uses: To promote the conception, in treatment of erysipelas, antiseptic and cicatrizer for burns, stomachic, diuretic, in treatment of urinary retention [13]; vulnerary [13-14]; anti-inflammatory, gastralgic, to help the parturition [14]; emollient [14, 19]; decongestant, in treatment of respiratory affections, antispasmodic in parturition and gastric pains [19]. Secondary metabolites: Flavonoids [257, 62]; Triterpene saponins [258-259]. Pharmacological activities: Dietary fiber [24]; Hypoglycaemic activity [258]; Antioxidant activity [61-62, 260].

BEGONIACEAE

Begonia veitchii Hook. f.

V. N.: Achanccaray (Q)

A decoction of the rhizome is used as an urinary, intestinal and hepatic anti-inflammatory, and, drunk on empty stomach, is used as a laxative. The rhizome is used as a food.

Literature: Uses: Rutter (1990) reports *Begonia* spp. "Achanccarai" as an appetizer. Secondary metabolites: No records. Pharmacological activities: No records.

BERBERIDACEAE

Berberis boliviana Lechl.

V. N.: Chchejche (Q), quisca-quisca (Q)

A leaves decoction is claimed to be effective as a blood depurative and as an antimalaric. The same activity, but stronger, is attributed to the decoction of roots. The fruits are employed to prepare a refreshing drink.

Literature: Uses: Laxative, hypotensive, tonic, in treatment of hepatitis [15]. Girault [13] reports as "chchejche" *B. lutea* R. et P. var. *conforta* as a sedative, a tonic, in treatment of anaemia, in treatment of amoebic dysentery and urinary retention. Secondary metabolites: Alkaloids [261], Anthocyanins [262]. Pharmacological activities: No records.

BETULACEAE

Alnus acuminata HBK. ssp. *acuminata*

V. N.: Aliso (Q), lambran (Q)

A decoction of the leaves is used topically as an antirheumatic. An infusion of the leaves is claimed to be effective as an emmenagogue. A decoction of roots, mixed with milk, is recommended as an astringent, in the treatment of respiratory diseases, as an antidiarrhoic, an antipyretic, a diuretic, and a cholagogue. A decoction of trunk bark is used topically for cataplasms and washings as a haemorrhoid lenitive and in gargles for teeth strengthening.

Literature: Uses: Emmenagogue [11, 19]; antirheumatic, anti-inflammatory, in treatment of oedemas, odontalgic [13, 21]; galactofuge, maturative [14-15; 19]; astringent, febrifuge, haemostatic [15]; vulnerary, antispasmodic [15, 19]; hypotensive, diuretic

[19]; in treatment of uterine cancer [21]. Secondary metabolites: Flavonoids [263]; Triterpenes [264]; Alkaloids [264]. Pharmacological activities: Abortive effects in mice [263].

BRASSICACEAE

Descurainia perkinsiana Muschler

V. N.: Huayralacha (Q), alcalde-ccora (S-Q)

An infusion of the aerial parts is used topically as an ocular decongestant.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Lepidium bipinnatifidum Desv.

V. N.: Chichira (Q), chijchi (Q), mayu mostaza (Q-S)

A decoction of aerial parts is used as an intestinal antinfective, an analgesic, and a gastric antispasmodic; topically, it is recommended as a vulnerary and in cases of nasal haemorrhages. The leaves are used as a food.

Literature: Uses: Vulnerary and nasal haemostatic [11, 14]; in treatment of hepatic colics [13]; antidote for vegetal poisonings [18], to resolve swellings [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Lepidium chichicara Desv.

V. N.: Chichicara (Q)

A decoction of the aerial parts is used as an antiseptic for infected wounds. An infusion of the same parts is claimed to be an antidiarrhoic and an antihemorrhagic.

Literature: Uses: Febrifuge, children's antiparasitic [13]; in case of nose-bleeding [13, 15, 19, 20]; skin depurative [14, 18]; antidysenteric [14, 18-19]; odontalgic [15]; purge [15, 18]; vulnerary, antiseptic [19-20]. Secondary metabolites: No records have been found in the literature concernin secondary

metabolites. Pharmacological activities: No records.

Rorippa nasturtium-aquaticum (L.) Hayek

V. N.: Berro (S), chchijchi (Q), mayu-mostacilla (Q-S)

The juice of the plant is used in treatment of anaemia and as an antidiabetic; a decoction of the whole plant is recommended in the treatment of bronchitis and topically for baths and inhalations in case of respiratory affections and as an antirheumatic. Fresh leaves, eaten in salads, are used as a stimulator of the biliar function, in treatment of renal and vesical calculus and are claimed to be a skin depurative, to act as a gastric anti-inflammatory, and in treatment of scurvy. The leaves are used as a food and in preparation of a fermented drink, the "chicha de berro".

Literature: Uses: Antiscrophulosic, in treatment of kidney troubles [12]; febrifuge [12, 20]; antiscorbutic [12-13-16]; diuretic, cholagogue [13], gastric anti-inflammatory, in treatment of enteritis and amygdalitis, antidiarrhoic [14]; re-fresher, depurative, tenicide, diuretic, antirheumatic, in treatment of respiratory illnesses, to strengthening the gums, antianemic, in case of eczema [15]; laxative, in case of hepatic disorders [16]. Secondary metabolites: Essential oil [265-268]; Carotene and vitamins [269]. Pharmacological activities: Antioxidant activity [270].

BROMELIACEAE

Pitcairnia ferruginea R. et P.

V. N.: Ccoe-achupalla (Q), china-achupalla (Q), ñuttu-achupalla (Q)

A decoction of the inflorescences is employed as an analgesic and as an anti-inflammatory. A decoction of roots and leaves is used as a topical antirheumatic and antiarthritic.

Literature: Uses: Antitussive, in treatment of bronchitis, antidyenteric, purge, antiseptic in case of blennorrhagia [13]. Secondary metabolites: No

records. Pharmacological activities: No records.

Puya herrerae Harms

V. N.: Achupalla (Q), achupa (Q)

A decoction of the inflorescences is used as an ophthalmic lenitive.

Literature: Uses: Antiasthmatic, antiscorbutic [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Tillandsia capillaris R. et P.

V. N.: Clavel del aire (S), huayaco (Q), illau-illau (Q)

A decoction of the aerial parts is used topically as an antiparasitic.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Tillandsia usneoides L.

V. N.: Salvajina (S), milmajina (Q)

An infusion of the whole plant is used as an antitussive and in treatment of tuberculosis. A decoction of the same parts is used for washings as a haemorrhoid lenitive. The plant is also used, fresh or dried, as an environmental insecticide.

Literature: Uses: Antihæmorrhoidal [11, 13, 14-16, 18]; antitussive [13, 15]; analgesic for muscular pains [14-15]; antirheumatic, in treatment of cardiac, hepatic and pulmonary diseases [14, 16, 18]; tonic, insecticide [14, 18]; vulnerary, galactophorous [15]; sedative for headache, to wash hairs [20]. Secondary metabolites: Triterpenes [271-276]; Sterols [271]; Flavonoids [277-280]. Pharmacological activities: Analgesic activity [281]; Hypoglycaemic activity [282], Antiviral activity [283], Antimicrobial activity [284], Allergenic activity [285].

BUDDLEIACEAE*Buddleia coriacea* Remy

V. N.: Puna-quishuar (S-Q)

A bark decoction is used as an antibilious.

Literature: Uses: No records. Secondary metabolites: Flavonoids [286-288]. Pharmacological activities: Tyrosinase inhibitory activity [286-288].

Buddleia longifolia HBK.

V. N.: Quishuar (Q)

A bark decoction is used as an antibilious.

Literature: Uses: Antiseptic for wounds, in treatment of venereal diseases and ovaric inflammations [13]. Secondary metabolites: No records. Pharmacological activities: No records.

CACTACEAE*Austrocylindropuntia exaltata* (A. Berger) Blackeb.

V. N.: Patta-quisca (Q)

The trunk mucilage is used as a topic re-fresher in cases of traumas. An infusion of the trunk is used as an analgesic and an antipyretic. The fruits are used as a food.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Lobivia pentlandii (Hook.) Britton & Rose

V. N.: Añapancu (Q), sankaillo, (Q) sankairuro (Q).

The trunk mucilage is used a topic anti-inflammatory and as a nasal anti-haemorrhagic. The fruits are used as a food.

Literature: Uses: Girault (13) reports the use of *Lobivia* sp. "añapancu" in cases of sunstroke. Secondary metabolites: Alkaloids [290]. Pharmacological activities: No records.

Opuntia floccosa Salm-Dyck

V. N.: Huaraco (Q), ckora-rocka (Q)

The trunk mucilage, in water, is used as an emollient in the treatment of bronchitis. The fruits are used as a food.

Literature: Uses: In treatment of pulmonary diseases [11]; maturative, antiseptic for wounds [13]; gastralgic, to wash hairs [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Opuntia soehrensii Britton & Rose

V. N.: Airampo (Q)

An infusion of seeds is used in the treatment of eruptive illnesses, as an antipyretic, a tonic, and a sedative. The trunk mucilage is used as a topical anti-inflammatory and antirheumatic and in treatment of aphta. The fruits are used as a food.

Literature: Uses: Antiscorbutic, antirheumatic, depurative, in treatment of intestinal fevers [13]; in treatment of children aphta [14]; skin depurative [14-15]; diuretic, antiseptic for wounds, febrifuge, nasal haemostatic, antitussive [15]; food colouring [16]. Secondary metabolites: Lignans [290]. Pharmacological activities: No records.

Trichocereus cuzcoënsis Britton & Rose

V. N.: Jahuackollai (Q), gigantón (S)

The trunk mucilage is used as a topic anti-inflammatory in cases of traumas; it is also employed as a topical antimycotic. An infusion of the flowers is used as a cardi tonic.

Literature: Uses: In treatment of hydrophobia, vulnerary, diuretic (14). Girault [13] reports *T. peruvianus* Britt. et Rose "jawakollay" as a febrifuge, a re-fresher and in treatment of dropsy. De Feo [19] reports *T. peruvianus* Britton & Rose and *T. pachanoi* Britton & Rose as hallucinogenic species. Secondary metabolites: Alkaloids [291]; Triterpenes [292]. Pharmacological activities: No records.

CALYCERACEAE

Acicarpha tribuloides Juss.

V. N.: Estrella-quisca (S-Q), torillo-huma (Q)

A whole plant infusion is claimed to be a cholagogue as a mucolytic, and in treatment of respiratory affections. A decoction of the same parts is used as a hepatoprotector, in treatment of prostate inflammation, in treatment of kidney affections and as an odontalgic.

Literature: Uses: No records. Secondary metabolites: Flavonoids [293]; Iridoids [294]. Pharmacological activities: CNS activity [294]; Antiviral activity [295].

CAPRIFOLIACEAE

Sambucus peruviana HBK.

V. N.: Saucó (S)

An infusion of the flowers is claimed to be a diaphoretic in fevers, an expectorant and an antitussive. A decoction of aerial parts is used for anti-inflammatory, antirheumatic and antiarthritic baths. An alcoholic tincture of flowers is claimed to be an antitussive and effective in treatment of asthma; this preparation is also used as a purge. The fruits are used as a food.

Literature: Uses: In treatment of throat affections [11-12, 15, 19-20]; diuretic, in treatment of prostate and bladder inflammations [11, 15]; cicatrizer [12]; cardiogenic, vomitory, in case of sciatica [13]; odontalgic [13-14]; maturative [13-15, 18]; resolvent for traumas, lenitive for hemorrhoids [13, 15]; purge [13, 15, 18]; antirheumatic [13, 15, 19]; in treatment of respiratory diseases [13, 20]; in treatment of dropsy [14-15]; sudorific [14-15, 18, 20]; laxative, emollient, carminative, tonic, galactofuge, expectorant, antitussive, skin depurative, cicatrizer for burns [15, 21]; depurative [15, 19]; odontalgic, in case of oedemas [18]; aphrodisiac, antispasmodic in childbirth, gastralgic [20]; in treatment of kidney inflammations [21]. Secondary metabolites:

Flavonoids [296-297], Anthocyanins [298]. Pharmacological activities: Antimicrobial activity [296]; Antioxidant activity [297].

CARICACEAE

Carica candicans A. Gray

V. N.: Papayuelo serrano (S)

A flower infusion is claimed to be an antidiabetic; the fruit is eaten in the treatment of dyspepsia. The fruits are used as a food.

Literature: Uses: No records. Secondary metabolites: Essential oil [299]. Pharmacological activities: No records.

CARYOPHYLLACEAE

Arenaria lanuginosa Rohrb.

V. N.: Janchali (Q), celedonia (S)

An infusion of the whole plant is used for gargles as a throat anti-inflammatory; internally it is used as an antitussive, a uterine antihemorrhagic and an emmenagogue.

Literature: Uses: Vaginal antihemorrhagic [18]; gastralgic, regulator of the menstrual cycle [20]. Secondary metabolites: No records have been found in the literature concerning isolated substances. Pharmacological activities: No records.

Paronychia andina A. Gray

V. N.: Huayrañuño (Q)

An infusion of the aerial parts is employed as a diuretic.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Spergularia ramosa Cambess.

V. N.: Choquetacarpo (Q), choquetarpo (Q), sable

de oro (S)

A root decoction is claimed to be an antitussive and is used in treatment of tuberculosis and respiratory diseases.

Literature: Uses: No records. Secondary metabolites: Sterols [300]; Triterpenoid saponins [301-302]. Pharmacological activities: No records.

CELASTRACEAE

Maytenus cuzcoina Loes.

V. N.: Paltay-paltay (Q)

An infusion of aerial parts is employed as gastric respiratory anti-inflammatory.

Literature: Uses: No records. Secondary metabolites: Sesquiterpenes [303-305]; Triterpenes [306-307]. Pharmacological activities: Antitumoral activity [303]; Inhibitory activity of nitric oxide and prostaglandins [307]; Anti-Leishmania activity [306].

CHENOPODIACEAE

Chenopodium incisum Poir.

V. N.: Allcja-paicco (Q), arcja-paicco (Q)

An infusion of the aerial parts is used as a gastric antispasmodic, a carminative and a digestive, while a more concentrated infusion is recommended as an antidiarrhoic. The leaves are used as food flavouring.

Literature: Uses: Maturative, in treatment of gastric and hepatic disorders [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Chenopodium opulifolium Schrad.

V. N.: Ayara-quinua (Q-S), quinua silvestre (S), arac-quinua (Q-S), yana-quinua (Q-S), llipcha (Q)

A decoction of the aerial parts is used in treatment of tuberculosis; in parturition, it is used to promote the uterus contractions.

Literature: Uses: No records. Secondary metabolites: Flavonoids [308-309], Terpenoids [310]. Pharmacological activities: Mosquito-repellent activity [311].

CLADOPHORACEAE

Cladophora allantoides (Month.) Kntz.

V. N.: Mayu lacco (Q)

The fresh plant is used for anti-inflammatory cataplasms in case of traumas and dislocation, and a topic antipyretic. The fresh or dried plant is used as a food.

Literature: Uses: Re-fresher [11]. Girault [13] reports *Cladophora* sp. "lakho" or "llachchu" in treatment of hepatic disorders, as a decongestant and a resolvent for traumas. Secondary metabolites: No records. Pharmacological activities: No records.

CONVOLVULACEAE

Convolvulus crenatifolius var. *peruviana* Hallier f.

V. N.: Huillco (Q)

A decoction of the whole plant is claimed to be an antiseptic and a cicatrizer for wounds; orally, it is used as a depurative. An infusion of the aerial parts is used as a laxative and purge.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

CUCURBITACEAE

Apodanthera herrerae Harms

V. N.: Ckoto-ckoto (Q)

A fruit decoction is used on empty stomach as a laxative and a purge.

Literature: Uses: Purge [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Cyclanthera brachybotrys Cogn.

V. N.: Achojcha (Q), kita-achojcha (Q), monte-achojcha (S-Q)

The fruits, eaten in salads, are claimed to be refresher and digestive. Their juice and a decoction of leaves are used as an ophthalmic analgesic and decongestant. The fruits and the leaves are used as a food.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Sicyos bryonaefolia Moris

V. N.: Putac-Ilanco (Q)

A decoction of leaves and fruits is used as a laxative. The fruits and the young twigs are used as a food.

Literature: Uses: Purge [11, 13, 15]; in the treatment of intoxications [13]. Secondary metabolites: No records. Pharmacological activities: No records.

CUSCUTACEAE

Cuscuta grandiflora HBK.

V. N.: Mallhunua (Q), arwi-arwi (Q)

A whole plant decoction is used on empty stomach as a laxative, in case of flatulence, an antipyretic, a sedative, a contraceptive and in treatment of pharyngitis. Topically, the same preparation is used as a cicatrizer, an antiseptic for wounds, and in treatment of dermatitis.

Literature: Uses: Girault [13] reports *Cuscuta* sp. "mallunwa" in treatment of hepatic disorders, as a tonic, a febrifuge, a purge, a contraceptive, a maturative. Secondary metabolites: No records. Pharmacological activities: No records.

CYATHACEAE

Cyathea cuspidata Kuntze

V. N.: Sano-sano (Q)

A trunk decoction is used topically as an antiseptic for wounds and as a vulnerary. Orally, this preparation is claimed to be effective in treatment of renal affections and as a diuretic. The fronds are used as a food.

Literature: Uses: Vulnerary, cicatrizer [11, 18]. Girault [13] reports as "sanu sanu" *Alsophylla armata* (Sw.) Pr. (Cyathaceae) used a maturative and antiseptic for wounds. Secondary metabolites: No records. Pharmacological activities: No records.

CYPERACEAE

Schoenoplectus californicus (C.A. Mey) Soják

V. N.: Totora (Q)

A decoction of the aerial rhizome is used orally as a diuretic, and an antidysenteric. Topically, the same preparation is claimed to act as an antiseptic for wounds, an antiechymotic and a decongestant. A decoction of the trunk is used as a skin depurative. The subaqueous trunk is used as a food.

Literature: Uses: Hepatic depurative, resolvent for traumas and antiechymotic, vulnerary, haemostatic, cicatrizer, antiseptic for wounds [13]; astringent, depurative [18]. Secondary metabolites: No records. Pharmacological activities: No records.

ELAEOCARPACEAE

Vallea stipularis L. f.

V. N.: Chicllurmay (Q), chchicllur (Q)

A leaves infusion is used as an antidiarrhoic, an astringent and an antipyretic. A decoction of leaves and young branches is used as a cholagogue, a depurative of blood, a vomitory; topically is used as an ophthalmic anti-inflammatory.

Literature: Uses: Ocular astringent [14]; astringent [18]; vulnerary, skin depurative, topical antiseptic, antihemorrhagic, for stomach-ache, anti-

rheumatic [20]. Secondary metabolites: No records. Pharmacological activities: No records.

EPHEDRACEAE

Ephedra americana H. et B. ex Willd.

V. N.: Pinco-pinco (Q), pfluco-pfluco (Q)

A decoction of the aerial parts is used topically for washings in the treatment of gonorrhoea, in gargles in treatment of pyorrhoea, and as an ocular anti-inflammatory. An infusion of the same parts is used orally as a diuretic.

Literature: Uses: In case of pyorrhoea and gums inflammations [11, 13-15, 18]; depurative [12, 14, 18, 19]; diuretic [12, 14-15, 18-19]; in case of flatulence, antidysenteric, ovary antiseptic [13]; urinary antinfective [13-15, 18, 19]; to help fractures consolidation, vulnerary [13, 15, 19]; astringent [13, 19]; anti-bleenorrhagic, in treatment of typhus, genito-urinary antinfective, antitubercular [15]; balsamic, in treatment of bronchitis, sudorific, antipyretic, antitussive [16]; antiasthmatic [16, 19]; in treatment of conjunctivitis [18]; antiseptic, antirheumatic, in treatment of amenorrhoea [19]. Secondary metabolites: Alkaloids [312]; Tannins [313]. Pharmacological activities: No records.

EQUISETACEAE

Equisetum bogotense HBK.

V. N.: Cola de caballo (S), mocco-mocco (Q)

A decoction of the aerial parts is used as a diuretic, in the treatment of hydropsy, as a regulator of the menstrual cycle, as an anti-icteric, as an emollient. Topically, the decoction of the aerial parts is used as a nasal antihemorrhagic and for antiarthritic baths. A decoction prepared with this plants and lemon juice, *Linum usitatissimum* L., *Triticum sativum* L., *Foeniculum vulgare* Miller, *Zea mays* L., is claimed to be a sedative and an antipyretic.

Literature: Uses: Stomachic [11]; astringent, antidysenteric, in treatment of gonorrhoea, antidia-

betic [12]; antihemorrhagic [12, 14, 19]; diuretic [12, 14, 18-20]; vaso-constrictor [14]; in treatment of mouth affections, emmenagogue, tonic, in treatment of hepatic disorders [14, 18]; skin depurative [14, 18-19]; antiseptic for wounds [14, 19]; haemostatic, antitumoral, in case of halitosis, in treatment of dental abscesses, sedative in colics, urinary antiseptic [18]; vulnerary, antimalaric [19]; depurative, urinary antiseptic [20]. Girault [13] reports *E. xylochaetum* Hild. var. *mokko mokko* as "mokko mokko" in treatment of yellow fever, in treatment of bladder illnesses and in lithiasis, as an uterine and urinary antinfective, an antiseptic for venereal wounds, in treatment of hepatic disorders, in case of urinary retention, in case of epistaxis, as an antirachitic. Alarco de Zandra [15] reports as "cola de caballo" *E. arvense* L. as a diuretic, an astringent, a re-fresher, in treatment of renal lithiasis, a throat anti-inflammatory, a skin depurative, a depurative, an analgesic in hepatic and renal pains, a lenitive for hemorrhoids, a nasal haemostatic, in case of pyorrhoea. Secondary metabolites: No records. Pharmacological activities: Diuretic activity [314-315].

EUPHORBIACEAE

Euphorbia penicillata (Millsp.) R. E. Schult.

V. N.: Huachanca (Q)

A decoction of the aerial parts is used, on empty stomach, as a laxative and as a purge.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

FABACEAE

Apurimacia incarum Harms

V. N.: Chacanuhuay (Q), chacanhuay (Q)

A decoction of the whole plant is used topically as an antiparasitic and insecticide. Orally, it is used as a narcotic.

Literature: Uses: Narcotic [11]; antispasmodic [11, 18]. Secondary metabolites: No records. Pharmacological activities: No records.

Astragalus sp.

V. N.: Pacha-juscka (Q)

The aerial parts of the fresh plant are used for cataplasms in cases of traumas.

Astragalus garbancillo Cav.

V. N.: Garbancillo (S), juscka (Q), porotillo (S)

A decoction of the aerial parts is used as veterinary cicatrizer and an antiseptic for wounds, a resolvent in cases of traumas and in treatment of scabies and dandruff.

Literature: Uses: Vulnerary [11, 13]; insecticide [11-14; 19]; narcotic, abortifacient, antirheumatic, in treatment of gout [13]; skin depurative, in cases of dandruff [14, 19]; to consolidate fractures in man, equines and cattle, analgesic, depurative in case of nettle-rash [20]. Rutter [18] reports *A. uniflorus*, "garbancillo", as an insecticide and a skin depurative. Secondary metabolites: Saponins [316]. Pharmacological activities: Haemolytic activity [316].

Cassia hookeriana Gill.

V. N.: Muttuy (Q)

A leaves decoction is claimed to be a topic anti-inflammatory, an antirheumatic, an antispasmodic. Orally, it is used as a purge and a diuretic. An infusion of the leaves is used as an aperient and in the treatment of amenorrhea. The flowers are used as a food.

Literature: Uses: Laxative [11, 13, 16]; antirheumatic, maturative [13], to wash hairs [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Dalea boliviana Britton

V. N.: Pimpinela (S), orcco-pimpinela (Q-S), pichirachi (Q), yahuar-maqui (Q)

An infusion of the aerial parts is used as a sedative, in the treatment of epilepsy and as a cardiotoxic.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Desmodium mollicum DC.

V. N.: Runa-manayupa (Q)

A decoction of the whole plant is used as a diuretic and in treatment of kidney affections, as a haemostatic and, topically, as a skin antiseptic.

Literature: Uses: Diuretic [13]; antiseptic for wounds [13, 15]; kidney and liver antinflammatory [21]. Aldave Pajares and Mostacero Leon [16] and De Feo [19] report *D. limense* Hook. "manayupa" as a diuretic and an antinflammatory [16]; as a depurative, an antinflammatory, a regulator of the menstrual cycle, to help the parturition [19]. Secondary metabolites: Flavonoids [317]. Pharmacological activities: No records.

Krameria triandra R. et P.

V. N.: Pacha-lloque (Q), ratania (S)

A root decoction is claimed to be a tonic, an astringent, an antidiarrhoic, an anti-inflammatory, a stomachic, an anti-haemorrhagic, and an antitumoral. Topically, it is used as an antimycotic, a vulnerary and a cicatrizer and for gargles in treatment of laryngitis.

Literature: Uses: Astringent [11-16; 18]; tonic [11-12, 14, 16]; tooth preservative [12, 18]; vaginal antihemorrhagic, lenitive for haemorrhoids, gastric and vaginal antihemorrhagic, in treatment of bronchopneumonia, antidiarrhoic, antidysenteric [13]; haemostatic [13-16, 18]; diuretic, expectorant, gastric and vaginal anti-inflammatory, otalgic, antihemorrhoidal, antidysenteric, in treatment of

intestinal and nasal haemorrhages [15]. Secondary metabolites: Flavonoids [318-320]; Neolignans [321-324]. Pharmacological activities: Carcinogenic activity [325]; Algicidal activity [326]; Antioxidant activity [319, 324]; Allergenic activity [327]; Antiherpetic activity [320]; Anti-inflammatory and antimicrobial activity [328, 330]; Photoprotective activity [324]; Molluscicidal activity [329].

Lupinus dora C. P. Smith

V. N.: Pacha q'era (Q)

A decoction of the aerial parts is used topically as a resolvent and a decongestant in cases of traumas and as a vulnerary, in washings and cataplasms.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Lupinus microphyllus Desr.

V. N.: Quera (Q), kera (Q), pata-quera (Q)

A decoction of the aerial parts is used topically as a resolvent and a decongestant in cases of traumas, and as a vulnerary, in washings and cataplasms.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Lupinus prostratus Agardh

V. N.: Pacha-quera (Q), pata-quera (Q)

A decoction of the fresh leaves and trunk is applied topically as a resolvent and an anti-inflammatory in cases of traumas and as an anti-rheumatic. Orally, this preparation is used as an abortifacient.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Otholobium pubescens J. W. Grimes

V. N.: Huallhua (Q)

An aerial parts decoction is used externally as a cicatrizer and an antiseptic for wounds. The same preparation, orally, is claimed to be a vermifuge, a laxative and a purge. Powdered seeds are claimed to be an analgesic. An infusion of the plant is used as a stomachic, a digestive, an emmenagogue, an antidiabetic and an antidiarrhoic.

Literature: Uses: In the literature is reported *Psoralea glandulosa* L. [Fabaceae], as "huallhua", as a regulator of the menstrual cycle [11, 15]; gastralgic, blood depurative [13]; digestive [13, 15]; carminative, stomachic [14]; vermifuge, sudorific [14; 15; 18]; astringent, antidiarrhoic, purge [14, 18]; antidiabetic, vomitory, emollient, haemorrhoid lenitive [15]; in treatment of enteritis [18]. De Feo [19] reports *Psoralea pubescens* L. as a lenitive for haemorrhoids, an antiparasitic (mange), a digestive and in treatment of children enteritis. Secondary metabolites: Phenylpropanoids [331]. Pharmacological activities: Antihyperglycemic activity [331].

Trifolium amabile HBK.

V. N.: Chicmu (Q), chijmu (Q), layu (Q)

A decoction of the roots is used as an antiseptic for wounds, as a cicatrizer and as a vulnerary; it is also used as an ocular decongestant. Orally, it is claimed to be a tonic. The roots are used as a food.

Literature: Uses: Vulnerary, ocular decongestant [11, 13, 15]; regulator of the menstrual cycle, digestive, in treatment of constipation, in treatment of bronchial diseases, oral antihemorrhagic, cicatrizer [13]; tonic [15]. Velasco-Negueruela et al. [19] report as "chiqumu" or "ch'ukau" *T. peruvianum* (Kuntze) I. M. Johnston as an antitussive, in treatment of pharyngitis and ocular diseases. Secondary metabolites: No records. Pharmacological activities: No records.

GENTIANACEAE

Gentiana prostrata Haenke

V. N.: Penccacuc (Q), pencca-pencca (Q)

An infusion of the whole plant is used in the treatment of respiratory diseases, as a sudorific, and as a sedative.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Gentianella campanuliformis (Reimers) Fabris

V. N.: Pfata-mote (Q)

An infusion of the whole plant is used in the treatment of renal affections, respiratory illnesses, as an antitussive, and as a sedative.

Literature: Uses: Sudorific [11]; digestive, gastralgic, tonic, antidyenteric, antirachitic, in treatment of anemia and scurvy [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Gentianella dolichopoda (Gilg) J. S. Pringle

V. N.: Phallcha (Q), ckello-phallcha (Q)

An infusion of the aerial parts is claimed to be an antitussive, a diuretic, and a diaphoretic.

Literature: Uses: Girault [13] reports *G. primuloides* Gilg "phallcha" as a sudorific, a veterinary antiparasitic, against hair loss. Secondary metabolites: No records. Pharmacological activities: No records.

Gentianella scarlatina (Gilg) J. S. Pringle

V. N.: Puca-phallcha (Q), casi-huanca (Q)

An infusion of the aerial parts is claimed to be effective as a hepatoprotector and in treatment of kidney and respiratory affections.

Literature: Uses: Sudorific [11]. Girault [12] reports *Gentiana acaulis* L. (Gentianaceae) "puka phallcha" as an antitussive, in treatment of gingivitis and to strengthen the teeth, a digestive, a sudorific in

pulmonary diseases. Secondary metabolites: No records. Pharmacological activities: No records.

Gentianella vargasii Fabris

V. N.: Morado-phallcha (S-Q)

An infusion of the whole plant is used as an antipyretic.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Halenia bella Gilg

V. N.: China-phallcha (Q), ckello-phallcha (Q)

An infusion of the whole plant is used as an antitussive and a mucolytic.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

GERANIACEAE

Geranium filipes Killip

V. N.: Chili-chili (Q), ajotillo (Q)

A decoction of the roots is used as a digestive, an antinfective, a hepatoprotector, in treatment of pancreas affections, as an urinary antinfective, to stimulate the regeneration of the intestinal flora, as an antidiarrhoic, as an antipyretic and in the treatment of bronchitis. Topically, it is used as a skin depurative and for gargles in treatment of aphta.

Literature: Uses: In treatment of children aphta [11, 13]; vaginal antiseptic, regulator of the menstrual cycle [13]; chewed against highland sickness [13, 15, 19]; anticatarrhal [13, 20]; in treatment of respiratory diseases, skin antiseptic and depurative, escharotic, antimycotic [17]; in treatment of hepatic disorders [17, 20]; in treatment of kidney affections [20]. Velasco-Negueruela et al. [20] report *G. sessiliflorum* Cav., "chili-chili", as an antipyretic. Secondary metabolites: No records.

Pharmacological activities: No records.

Geranium staffordianum Kunth

V. N.: Cristala china (Q), pasuchaca (Q)

A decoction of the roots is used as a depurative.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

HALORRHAGIDACEAE

Myriophyllum elatinoides Gaudich.

V. N.: Chchinquil (Q)

An infusion of the aerial parts is employed as an ophthalmic anti-inflammatory.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

HYDROCHARITACEAE

Elodea chilensis Casp.

V. N.: Chchinquil (Q), unu-chchinquil (Q)

An infusion of the whole plant is claimed to be a digestive; a decoction is employed as a vomitory.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Elodea potamogeton Espinosa

V. N.: Onera (Q), pucquio-onera (Q)

A leaves infusion is used as a gastric antispasmodic and as a hepatoprotector.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

HYPERICACEAE

Hypericum struthiolaefolium Juss.

V. N.: Chinchamale (Q)

A decoction of the whole plant is used for washings in treatment of gonorrhoea and blennorrhagia. Orally, it is used as an anti-icteric, an antibilious and an antihæmorrhagic.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

IRIDACEAE

Cypella herrerae Diels

V. N.: Michi-michi (Q)

An infusion of the aerial parts is claimed to be an antipyretic, a diuretic, an emmenagogue and an intestinal antinfective. A decoction of the same parts is used topically as a hæmorrhoid lenitive.

Literature: Uses: No records. Secondary metabolites: No records. Pharmacological activities: No records.

Sisyrinchium chilense Hook.

V. N.: Pfataco-collanan (Q), pascua-collanan (S-Q)

The bulbs in decoction are used in the treatment of scurvy and as a gastric anti-inflammatory.

Literature: Uses: In treatment of children aphta [11, 14]; abortifacient, antiseptic and cicatrizer for ulcers [13]. Secondary metabolites: No records. Pharmacological activities: No records.

JUGLANDACEAE

Juglans neotropica Diels

V. N.: Nogal (S)

Dried and powdered leaves are applied topically in treatment of eczema and blepharitis. The infusion

of fresh leaves are used for baths in the treatment of rheumatism and arthritis. A decoction of leaves is used topically as an antiseptic for wounds, as a cicatrizer, a vulnerary, a uterine antinfective and as a haemorrhoid lenitive. Orally, the same formulation is claimed to be a digestive, an antitubercular, an anti-rachitic, an emmenagogue, a mucolytic, in treatment of anaemia, an astringent and a vomitory. The fruits are used as a food.

Literature: Uses: Vermifuge, sudorific, in treatment of respiratory diseases, lenitive for hemorrhoids, in treatment of leucorrhoea, skin depurative [13]; antidiabetic [13; 15]; antipyretic [13; 15; 19]; tonic, digestive anti-inflammatory, diuretic, expectorant [15]; astringent [15; 19]; antitussive [15; 18; 18]; vulnerary, topic and vaginal antinfective, against hair-loss, in treatment of respiratory diseases, regulator of the menstrual cycle [19]. Secondary metabolites: No records. Pharmacological activities: Antiviral and antimicrobial activities [332].

JUNCACEAE

Luzula racemosa Desv.

V. N.: Kumu-kumu (Q)

A whole plant decoction is used as an infective, in treatment of kidney affections and as an antitussive.

Literature: Uses: Antitussive, for lumbago and backaches [20]. Secondary metabolites: No records. Pharmacological activities: No records.

LAMIACEAE

Hedeoma mandoniana Wedd.

V. N.: Pacha-cjuñuca (Q), pampa-muña (Q), pata-cjuñuca (Q), pata-oregano (Q-S)

An infusion of the aerial parts is used as an antidiarrhoic, a gastric antispasmodic and a digestive. The leaves are used as a food flavouring.

Literature: Uses: Antiseptic for wounds, in

treatment of colics and migraine [13]; gastralgic [20]. Secondary metabolites: Essential oil [333-335]. Pharmacological activities: Insecticide and antiparasitic activities [333-334].

Lepechinia meyenii (Walp.) Epling

V. N.: Salvia (S), puna-salvia (S), pacha-salvia (Q-S)

An infusion of the aerial parts is used topically as an antiseptic, a vulnerary, an astringent, an anti-inflammatory and, orally, as a gastric antispasmodic, a tonic, an antidiabetic and is recommended in the treatment of bronco-pulmonary affections.

Literature: Uses: Digestive, gastralgic [13]; antispasmodic, carminative [21]. Secondary metabolites: Diterpenoids [336]. Pharmacological activities: Antioxidant activity [191, 337]; Antimicrobial activity [338].

Minthostachys setosa Epling

V. N.: Muña (Q), muña-muña (Q)

An infusion of the aerial parts is used as an antipyretic, a gastric antispasmodic, an antirheumatic, a carminative, a digestive, against flatulence and as an anti-inflammatory of the respiratory tract. A decoction of the leaves is claimed to be effective in the treatment of kidney and biliar affections. Topically, the same preparation is used as a skin depurative and as a vulnerary. The leaves are used as food flavouring.

Literature: Uses: Stomachic, digestive [11, 17]; gastralgic, antitussive, throat anti-inflammatory, antispasmodic in case of colics, regulator of the menstrual cycle, to expulse the placenta after parturition, analgesic in parturition pains, uterine anti-inflammatory, in cases of intestinal occlusion, antirheumatic [17]; antimycotic, antidiarrhoic, anthelmintic, in treatment of respiratory diseases [17, 19]; antiparasitic [17, 19-20]; vermifuge, gastralgic, insecticide, antimycotic [20]. Girault [13] reports *M. mollis* [Kunth.] Griseb. "khoa muña" as a digestive, in case of flatulence and as an anti-rachitic.

Secondary metabolites: Essential oil [339].
Pharmacological activities: Larvicidal activity [340].

Minthostachys spicata Epling

V. N.: Muña (Q), muña-muña (Q)

An infusion of the aerial parts is claimed to be an antipyretic, an antidiarrhoic, a stomachic and a digestive. The leaves are used as food flavouring.

Literature: Uses: No records. Secondary metabolites: Essential oil [341]; Flavonoids [342]. Pharmacological activities: No records.

Salvia dombeyi Epling

V. N.: Llagas-ñucchu (Q)

A flower infusion is claimed to be an antitussive. The fruits in decoction are used as a strong narcotic.

Literature: Uses: Girault (13) reports *S. rubrifaux* Epl. "llakas ñujchu" as a sudorific in colds, an antiseptic and cicatrizer for purulent wounds, and in treatment of migraine. Secondary metabolites: No records. Pharmacological activities: No records.

Salvia oppositiflora R. et P.

V. N.: Ñujchchu (Q)

An infusion of the flowers is used as a diaphoretic in the treatment of pleuritis and respiratory diseases. A decoction of the same parts is claimed to act as a contraceptive.

Literature: Uses: Regulator of the menstrual cycle, emmenagogue, abortifacient, antimalaric, uterine antihemorrhagic, ocular decongestant, antiseptic for sores and wounds, cicatrizer, antiasthmatic [13]; antipyretic, in treatment of respiratory affections [13, 17, 19]; in treatment of hepatic illnesses [17]; tonic [19]. Secondary metabolites: Essential oil [343]. Pharmacological activities: No records.

Satureja brevicalyx Epling

V. N.: Cjuñuca (Q), sayac-cjuñuca (Q), sunchumuñsa (Q)

An infusion of the aerial parts is used as a gastric antispasmodic, a stomachic, an anti-choleretic and a digestive; the decoction of the same parts is used as a vermifuge. The plant is used as food flavouring.

Literature: Uses: Vaginal and ovaric antiseptic, stomachic, in treatment of hepatic disorders [13]; for stomach pains and colics [20]. Aldave Pajares and Mostacero Leon [16] report *Satureja* spp. as a tonic, stimulant, aperient. Secondary metabolites: Essential oil [344]. Pharmacological activities: No records.

Stachys boliviana Briq.

V. N.: Hierba del cancer (S), cancer-ccora (S-Q), china-cancer (Q-S), pampa-ccora (Q)

An infusion of the aerial part is claimed to be an antihemorrhagic and a diaphoretic in the treatment of pleuritis and respiratory affection, and mammary cancer. Topically, a decoction of the same parts is employed as an antinfective for purulent wounds.

Literature: Uses: In treatment of pleuritis [11]; in cases of halitosis, emmenagogue [13]; antiseptic, vulnerary [11, 13, 15, 17, 19]; antitumoral [15, 19]; carminative, in case of meteorism [16]; resolvent for traumas, antimycotic, in treatment of biliar lithiasis, uterine anti-inflammatory, antihemorrhagic after the parturition, in treatment of leishmaniasis, gastralgic, in case of colics, escharotic [17]; antiparasitic, anti-inflammatory [17, 19]. Velasco-Negueruela et al. [20] report as "yerba del cancer" *S. aperta* Epl. to treat those who have drunk too much cane alcohol, as anti-inflammatory, a vulnerary, an escharotic and an antiseptic. Secondary metabolites: No records. Pharmacological activities: No records.

LILIACEAE

Nothoscordum andicola Kunth

V. N.: Chchullcus (Q), ñas-cebolla (Q-S), kita-cebolla (Q-S)

A bulb decoction is claimed to be an antipyretic, an anti-inflammatory of the respiratory tract and a vermifuge. The bulbs are used as a food.

Literature: Uses: Vomitory [13]; febrifuge [13-14]. Secondary metabolites: No records. Pharmacological activities: No records.

LOASACEAE

Caiohpora horrida Urban et Gilg ex Rusby

V. N.: Orcco-quisa (Q), puna-quisa (S-Q)

An infusion of the aerial parts is claimed to be effective as a genito-urinary and respiratory anti-inflammatory, and as a gastric antispasmodic.

Literature: Uses: In cases of nose-bleeding; in treatment of sciatica, in treatment of pneumonia, regulator of the menstrual cycle, abortifacient [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Loasa cuzcoensis Killip

V. N.: China-quisa (Q), ortiga (S)

The warmed aerial parts are used for massages in cases of facial paralysis. An infusion of the aerial parts is used as a diuretic and a mucolytic, while the decoction is used as a vulnerary.

Literature: Uses: Diuretic [11]; for kidney ailments and for side aches [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Mentzelia cordifolia Dombey ex Urb. et Gilg

V. N.: Manca-rajra (Q)

A decoction of the whole plant is used as an anthelmintic, a hepatoprotector, and an emollient.

Literature: Uses: Antitussive, diuretic, depurative

[13]; anthelmintic, hepatic antinflammatory, cholagogue [14, 19]; cicatrizer of gastric ulcers [19]; in case of ear aches; wound-healing agent [21]. Secondary metabolites: Iridoids [345]. Pharmacological activities: Wound-healing activity [346].

LOBELIACEAE

Lobelia decurrens Cav.

V. N.: Amacho (Q)

A leaves infusion is used as a laxative and a drastic purge. A whole plant decoction is employed as an insecticide.

Literature: Uses: Maturative, antiasthmatic, throat anti-inflammatory, antiseptic, cicatrizer [13]; purge, escharotic [13-14, 18]; insecticide [14, 18]. Secondary metabolites: Alkaloids [347]. Pharmacological activities: No records.

Lobelia tenera HBK.

V. N.: Marancera (Q), pilli (Q)

A decoction of the roots is claimed to be a laxative, a purge, a contraceptive and a topical antiseptic. The leaves are used as food flavouring.

Literature: Uses: Antiseptic for wounds, purge, vermifuge [13]. Secondary metabolites: No records. Pharmacological activities: No records.

LORANTHACEAE

Ligaria cuneifolia Van Tiegh.

V. N.: Liga (S), suelda que suelda (S), popa (Q)

An infusion of the whole plant is claimed to be a vomitory and a cardiogenic. The dried and powdered plant is used topically to help the fractures consolidation and as a resolvent in cases of traumas. The gum is used in topical applications as an analgesic and as a local anti-inflammatory.

Literature: Uses: To help fractures consolidation

[11]. Secondary metabolites: Flavonoids [348-352]. Pharmacological activities: Antioxidant activity [170]; Toxic activity [353]; Antiproliferative activity [351-352]; Hypotensive activity [351-352]; Immunomodulatory activity [351-352, 354]; Activity on hemorheological blood properties [355, 357-358]; Antitumoral activity [356]; anticholesterolemic activity [358].

MALVACEAE

Acaulimalva englerana (Ulbr.) Krapovickas

V. N.: Altea (S), thurpa (Q), pachamalva (Q-S), china thurpay (Q)

A decoction of the roots is used as an emollient, in the treatment of digestive illnesses, as an anti-diarrhoic and as an antitussive. Topically, the same preparation is used as an antiseptic and a vulnerary. The roots, fresh or air-dried, are used as a food.

Literature Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Malva parviflora L.

V. N.: Malva (S), malva comun (S), malva silvestre (S), rupfo (Q), pampa-rupfo (Q)

A decoction of the leaves is used in treatment of pyorrhoea, as an anti-inflammatory in the respiratory disorders, as a diaphoretic, in treatment of gastric ulcers and, on empty stomach, as a laxative. An infusion of the leaves is claimed to be an emollient and a digestive. A flower infusion is used as an ocular antiseptic; topically, it is used as a maturative, a skin depurative and a resolvent for traumas. A decoction of the whole plant is used for vaginal washings in treatment of dysmenorrhoea and blennorrhagia.

Literature Uses: Decongestant for insect bites, antiseptic for wounds, laxative, antitussive, in treatment of angina and laryngitis [13]. Alarco de Zandra [15] reports as "malva" *Althea rosea* as an

emollient, a pectoral, a sudorific, an urinary antiseptic, an antiechymotic, a gastralgic, an odontalgic, an antitussive and in case of blood emesis. Rutter [18] reports as "malva" *Malva* sp. as a gastralgic, in treatment of dysmenorrhoea and bronchitis, as an ocular analgesic and a maturative. Secondary metabolites: Antinutritional constituents [362], Phenols [363]. Pharmacological activities: Myopathy-inducing activity [359, 365]; Antibacterial activity [360-361]; Antioxidant activity [363]; Wound healing activity [364].

Malvastrum acaule A. Gray

V. N.: Rupfu (Q)

An infusion of the leaves is used, on empty stomach, as a gastric emollient and as a purge. The decoction of the aerial parts is employed for baths as a female genito-urinary antiseptic.

Literature Uses: Purge [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Malvastrum peruvianum (Gray) Hill.

V. N.: Rupfu (Q)

An infusion of the leaves is used, on empty stomach, as an emollient and as a purge. A decoction of the aerial parts is used for baths as a female genito-urinary antiseptic.

Literature Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Nototriche aretoides A. W. Hill.

V. N.: Panti-thurpay (Q), thurpay (Q)

An infusion of the aerial part is used in the treatment of respiratory and digestive diseases, an antitussive and a general tonic.

Literature Uses: Mallow substitute [11].

Secondary metabolites: No records.
Pharmacological activities: No records.

Nototriche flabellata A. W. Hill.

V. N.: Pulliri-tascha (Q)

An infusion of the aerial parts is employed in treatment of organic general debilitation, as a tonic and as an emollient in bronchial affections.

Literature Uses: No reports have been found in the literature concerning traditional uses.
Secondary metabolites: No records.
Pharmacological activities: No records.

Nototriche holoserica A. W. Hill.

V. N.: Thurpay (Q)

A whole plant is claimed to be effective as a hepatoprotector, an antitussive, a stomachic and in treatment of renal affections. Topically, a decoction of the same parts is used as a decongestant in cases of traumas.

Literature Uses: Mallow substitute [11]; gastralgic [20]. Girault [13] reports as "thurpay" *N. mandoniana* (Wedd.) Hill., as an antidyenteric, a throat anti-inflammatory, in cases of pyorrhoea, as an antitussive, in treatment of bronchitis and hepatic disorders, as an intestinal antinfective. Secondary metabolites: No records. Pharmacological activities: No records.

Nototriche sulphurea A. W. Hill.

V. N.: Puna-phallchay (Q)

A decoction of the whole plant is used as a decongestant in cases of traumas.

Literature Uses: No reports have been found in the literature concerning traditional uses.
Secondary metabolites: No records.
Pharmacological activities: No records.

MYRTACEAE

Eugenia chequen Molina

V. N.: Arrayan (S), mirto (S)

A tincture of the flowering branches is used orally and topically as an antirheumatic and an antiarthritic. An infusion of the leaves is claimed to be an antidysenteric, an antidiarrhoic, a sedative, a neurosthenic, a nervine tonic, an anti-anaemic, an anti-icteric, an antiscorbutic. The fruits are used as a food.

Literature Uses: Tonic, expectorant, diuretic, anticatarrhal, antitussive [12]; to strengthen the teeth, in treatment of gingivitis, antirheumatic, antidysenteric [13]. Secondary metabolites: No records. Pharmacological activities: No records.

ONAGRACEAE

Epilobium junceum Forst. f.

V. N.: Duraznillo (S), sortigilla (S)

An infusion of the aerial parts is used as an anti-inflammatory of renal and digestive tracts, as an antidysenteric, an antidiarrhoic and a gastric antispasmodic.

Literature Uses: No reports have been found in the literature concerning traditional uses.
Secondary metabolites: No records.
Pharmacological activities: No records.

Fuchsia boliviana Carr.

V. N.: Capac-ñucchu (Q), chimpu-chimpu (Q)

A decoction of the fruits is used as a strong narcotic. The leaves are used as topic anti-inflammatory and antirheumatic. The fruits are used as a food.

Literature Uses: Narcotic [15]. Secondary metabolites: Flavonoids [366]. Pharmacological activities: No records.

Oenothera campilocalyx C. Koch et Bouché

V. N.: Alto-yahuar-chchuncka (Q), huaylla-yahuar-chchuncka (Q)

An infusion of the aerial parts is used as a topical antieczchymotic. The dried aerial parts are applied to help fractures consolidation.

Literature: Uses: Haemostatic [11]. Girault [13] and Soukup [14] report *O. multicaulis* R. et P. "huaylla-cajetilla" or "yahuar chchuncka" as a vaginal and uterine anti-inflammatory, in treatment of leucorrhoea [13] and as an antieczchymotic [14]. Secondary metabolites: No records. Pharmacological activities: No records.

Oenothera rosea L'Hérit. ex Aiton

V. N.: Yahuar-chchuncka (Q)

An infusion of the aerial parts is used as an emmenagogue in the treatment of amenorrhoea. Topically, the same preparation is used as a resolvent in cases of traumas, an antiseptic, a vulnerary and an antieczchymotic.

Literature: Uses: Vulnerary, antieczchymotic, resolvent for traumas, to help fractures consolidation [11, 13, 15, 17, 19-20]; in case of nose-bleeding, depurative, regulator of the menstrual cycle [13]; vermifuge [15, 19]; in treatment of respiratory illnesses [15, 18-19]; antinfective after the parturition, antitussive, sedative in pregnancy pains, analgesic for uterine, gastric and intestinal pains, in treatment of biliar gallstones, uterine anti-inflammatory, antirheumatic [17]; to treat kidney ailments [17, 20]; anti-inflammatory, sudorific, to treat headaches [20]. Secondary metabolites: No records. Pharmacological activities: Antidiarrhoic activity [367]; Antinflammatory activity [368].

OXALIDACEAE

Hypseocharis pimpinellifolia Remy

V. N.: Yanaroco (Q), pampa tara (Q)

An infusion of the aerial parts is claimed to be

effective in the treatment of renal affections.

Literature Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: Antimutagenic and antioxidant activities [369].

Oxalis petrophila Kunth

V. N.: Occa-occa (Q), vinagrillo (S)

An infusion of the aerial parts is used as an antiscorbutic and an intestinal anti-inflammatory.

Literature: Uses: In treatment of aphta [11, 13], vomitory [13]. Velasco-Negueruela et al. [20] report as "vinagrillo" *O. scandens* HBK. as an antipyretic. Secondary metabolites: No records. Pharmacological activities: No records.

Oxalis picchensis Kunth

V. N.: Occa-chchllcu (Q)

An infusion of the aerial parts is used as an antiscorbutic and an intestinal anti-inflammatory.

Literature: Uses: In treatment of children aphta [11]. Velasco-Negueruela et al. [20] report as "ch'ullkus" *Oxalis* sp. as an antipyretic and for oral cavity ailments. Secondary metabolites: No records. Pharmacological activities: No records.

Oxalis tuberosa Molina

V. N.: Oca (Q)

A leaves decoction is used topically as an ocular decongestant and for antirheumatic baths; orally, it is used as a tonic, a cholagogue, an antipyretic, and an anti-inflammatory in cases of traumas. A decoction of the tubers, on empty stomach, is used as a vomitory. The tubers are used as a food.

Literature: Uses: Vomitory, maturative, skin depurative [11]; re-fresher [14]; emollient [14, 19]; antiscorbutic, anti-inflammatory, anti-icteric, in treatment of genito-urinary diseases, purge, to

prevent typhus, in treatment of otalgia, emollient, in treatment of testicle inflammations [15]; astringent [18]; in case of earache, urinary antiseptic [19]. Secondary metabolites: Dietary fiber [24]; b-Carbolines [370]; Flavonoids [371]; Phenols [62, 372]. Pharmacological activities: Antioxidant activity [61-62, 259, 372].

PAPAVERACEAE

Argemone subfusiformis G.B. Ownbey

V. N.: Ccjarhuinchu (Q), cardo santo (S), cardón (S)

A decoction of the aerial parts is used topically as an antihemorrhagic and a local analgesic. A leaves infusion is claimed to be a sudorific in the treatment of colds and dropsy, a diuretic, an antipyretic, a mucolytic, and, on empty stomach, it is employed as a purge and as a narcotic. The fruits are used as a narcotic.

Literature: Uses: Purge, narcotic [11, 13-15]; antitussive, expectorant, sudorific, tonic [13-15]; cicatrizer, antiseptic for wounds [13, 15]; antiasthmatic, febrifuge, escharotic [14-15]; diuretic, depurative, choleric, stomachic, vomitory, odontalgic [15]; ocular anti-inflammatory [15-16]; in treatment of hepatic disorders [13]. Secondary metabolites: Alkaloids [373-374]. Pharmacological activities: Antimalarial activity [375].

PASSIFLORACEAE

Passiflora ligularis A. Juss.

V. N.: Granadilla (S)

The juice obtained from the fruits is administered in weaning of childrens, as a stomachic, a digestive, an antibronchial and in the respiratory affections, as an antipyretic and an anti-inflammatory, in treatment of headache, as a sedative for menstrual pains and as a spasmolytic. Topically, a decoction of the leaves is used in cases of bites of viper or hydrophobic dog. The fruits are used as a food.

Literature: Uses: Antiseptic for wounds, vulnerary, antimalaric, stomachic [14, 19]; febrifuge, to prevent yellow fever [14, 18-19]; mucolytic, in treatment of gallstones, tonic, in case of rabies [19]. Secondary metabolites: Alkaloids [376]; Glycosides [377-379]; Phenols [380-381]; Polysaccharides [382]. Pharmacological activities: Antioxidant activity [380-382].

Passiflora pinnatistipula Cav.

V. N.: Tintin (Q)

The fruits in boiling water are used as a stomachic and in the treatment of respiratory affections, namely bronchitis. The fruit is claimed to act as a sedative, a sudorific, an anti-inflammatory of digestive tract, especially in cases of gastric ulcers. The fruits are used as a food.

Literature: Uses: Girault [13] reports as "tintin" *P. mixta* L. fil. as an antiseptic for wounds, a maturative, a febrifuge, and in treatment of hepatic and biliar affections. Secondary metabolites: No records. Pharmacological activities: No records.

PIPERACEAE

Peperomia inaequalifolia R. et P.

V. N.: Congona (Q)

An infusion of the aerial parts is employed as an analgesic for headache and gastric pains, as a stomachic and a cardiogenic. A decoction of the aerial parts is used for washings as an antiseptic and a cicatrizer for wounds.

Literature: Uses: In treatment of gingivitis and otitis [18]. Girault [13] reports *P. reflexa* (L. fil.) Diert. as "konkona" as an antiscorbutic, a tonic, a cardiogenic, in treatment of colds, as an auricular and ocular anti-inflammatory. Alarco de Zandra [15] reports *P. congona* "congona" against hair-loss, as a lenitive for hemorrhoids, a resolvent for traumas, an antiscorbutic and a sedative. De Feo [19] reports as "congona" *P. flavamenta* Trel. and *P. galioides* HBK. as a vulnerary, ear anti-inflammatory, lenitive for

hemorrhoids, decongestant in case of burns, against hair-loss, in treatment of scurvy, as an anti-hysterical. Velasco-Negurueta et al. [20] report as "congona" *P. galioides* HBK. as a vulnerary, a decongestant for burns, an anti-inflammatory and to cure toothache. Secondary metabolites: No records. Pharmacological activities: No records.

Piper angustifolium R. et P.

V. N.: Mocco-mocco, matico

A decoction of the aerial parts is used as a balsamic in respiratory affections, as an antirheumatic (also in baths) and as an antiasthmatic. Topically, it is used as an antiseptic for venereal infections and wounds and as a cicatrizer.

Literature: Uses: Astringent, antiseptic for wounds, skin depurative, diuretic, stomachic, in treatment of bronchial and pulmonary diseases, vulnerary, vomitory, promoter of the conception [15]. Uphof [12], Soukup [14], Rutter [18] and De Feo [19] reports as "matico" *P. elongatum* R. et P. as an astringent, a stimulant, a styptic [12]; a cicatrizer [12, 14]; a genito-urinary antiseptic [12, 17]; a vulnerary [12, 17, 19]; a pectoral [14]; an antiseptic for wounds [14, 17, 19]; a throat anti-inflammatory, an antihæmorrhagic, a vaginal antitumoral, an antihæmorrhagic post-partum, to facilitate the parturition and in pregnancy swellings, an antirheumatic [18]; in treatment of respiratory affections [17, 19]; in treatment of venereal infections [18]; a general anti-inflammatory, an antimalaric, an antidysenteric [19]. Girault [13] reports as "kita matiku" or "moho moho" *P. elongatum* var. *moco moco* Trelease as an antiscorbutic, in treatment of dropsy, a skin depurative, a febrifuge, an antiseptic for venereal wounds. Secondary metabolites: Essential oil [383]; Phenols [384]. Pharmacological activities: Anthypertensive and anthyperglycaemic activity [384].

PLANTAGINACEAE

Plantago durvillei Del. ssp. *pflanzii* (Pilg.) Pilg.

V. N.: Saccarara (Q)

An infusion of the leaves is used as a renal anti-inflammatory. The leaves are used as a food.

Literature: Uses: Oral astringent [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Plantago hirtella HBK.

V. N.: Huaccac ccallon (Q), saccarara (Q), lengua de vaca (S)

A whole plant decoction is used as a topic antiseptic for wounds, a cicatrizer and an antihæmorrhagic. Orally, it is employed as a diuretic, an antitussive, an expectorant and in the treatment of bronchitis.

Literature: Uses: In treatment of mouth affections [11, 17]; antiseptic for wounds, antidysenteric [13, 17]; carminative, in treatment of urinary retention, diuretic, in hepatic disorders, anti-inflammatory, gastralgic, vulnerary, in case of otalgias and respiratory illnesses, intestinal antiseptic, antiparasitic, antigangrenous, in treatment of biliar lithiasis, in treatment of hematuria, antitussive, in treatment of nausea and emesis in pregnancy, to promote the parturition, febrifuge and antinfective after the parturition, skin depurative, vaginal anti-inflammatory, contraceptive, in case of herpes, to help fractures consolidation [17]. Secondary metabolites: No records. Pharmacological activities: No records.

Plantago monticola Decne.

V. N.: Ichu-ichu (Q)

An infusion of the whole plant is employed for antiseptic washings in cases of gonorrhoea. An infusion of the aerial parts is claimed to act as a diuretic, a depurative and an antitussive.

Literature: Uses: In treatment of cold and pulmonary illnesses, in cases of urinary retention, in treatment of blennorrhagia, antidote for poisonings [13]. Velasco-Negurueta et al. [20] report as "ichu ichu" *P. lamprophylla* Pilger as an antitussive.

Secondary metabolites: No records.
Pharmacological activities: No records.

POACEAE

Agropyron breviaristatum Hitchcock

V. N.: Grama (S)

A decoction of the whole plant is used as a hepatoprotector, in the treatment of renal affections and as an intestinal antinflective.

Literature: Uses: Girault [13] reports as "grama común" or "kachu" *Cynodon dactylon* Willd. as a diuretic, an antidysenteric, in treatment of hepatic affections and in biliar gallstones. Secondary metabolites: No records. Pharmacological activities: No records.

Cortaderia bifida Pilg.

V. N.: Nihua (Q), ñihua (Q), huantar (Q), cortadera (S)

A decoction of the roots is used as an antihæmorrhagic and a blood depurative.

Literature: Uses: Girault [13] reports as "niwa" or "okkcha okkcha" *C. quila* [Nees.] Stapf. as a plant administered to puerperae to facilitate the *post-partum*. De Feo [19] reports as "cortadera" *Scleria malaleuca* (Shlecht. et Cham.) Reichb. (Cyperaceae) in treatment of female sterility. Secondary metabolites: Triterpene derivatives [385]. Pharmacological activities: No records.

Distichlis spicata Greene

V. N.: Grama (S), grama dulce (S), r'ama-ckachu (Q)

A whole plant decoction is used as a urinary and a digestive anti-inflammatory, as a diuretic, a depurative and in treatment of pleuritis. Topically, it is used as an antiseptic and a cicatrizer.

Literature: Uses: Re-fresher, emollient, diuretic, in treatment of pleuritis [11]. Secondary metabolites:

Essential oil [386]. Pharmacological activities: No records.

Festuca dichoclada Pilg.

V. N.: Cuchu-ñihua (Q), yana-coya (Q)

A decoction of the aerial parts is used as a galactophorous and as a diuretic.

Literature: Uses: In treatment of bronchitis and cough, antiseptic for varices [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Festuca dolichophylla J. et C. Presl.

V. N.: Chillihua (Q), chilligua (Q)

A decoction of the aerial parts is used as a diuretic.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Stipa jarava Beauv.

V. N.: Ichu (Q), iru-ichu (Q), paja (S)

A decoction of the whole plant is claimed to be useful as an antitussive and in the treatment of bronchial affections.

Literature: Uses: Antiseptic for ulcers, uterine anti-inflammatory [13]. Secondary metabolites: No records. Pharmacological activities: No records.

POLEMONIACEAE

Cantua buxifolia Lam.

V. N.: Ccantu (Q), kantu (Q)

A flower infusion is used as an anti-inflammatory and as an antitussive.

Literature: Uses: Ocular decongestant, antitussive, anti-icteric [13, 15, 19-20]. Secondary metabolites:

tes: No records. Pharmacological activities: No records.

POLYGALACEAE

Monnina amarella Chodat.

V. N.: Aceitunilla (S)

An infusion of the aerial parts is used as an antipyretic and a decoction of the same parts is employed as a topic antirheumatic.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Monnina salicifolia R. et P.

V. N.: Sambo ckorota (Q)

A decoction of the aerial parts is used against dandruff and to strengthen hairs. Orally, an infusion of the aerial parts is employed in the treatment of bronchitis and coughs.

Literature: Uses: Antidysenteric, maturative, antirheumatic [13]; against dandruff, to promote hair growth [14]. Secondary metabolites: No records. Pharmacological activities: No records.

POLYGONACEAE

Muehlenbeckia volcanica Endl.

V. N.: Mullaka (Q), mullaca (Q), coca-coca (Q)

An infusion of the aerial parts is used orally as an anti-inflammatory, an analgesic, a diuretic, an antiasthmatic and a mucolytic; topically, it is used in the treatment of scurvy, for gargles in tonsillitis and in treatment of aphta.

Literature: Uses: In treatment of scurvy [11]; antipyretic [11, 19]; chewed in toothache, antitusive, in treatment of gastric ulcers [13]; in treatment of aphta [13, 14, 19]; antiasthmatic, in case of capillary fragility [16]; in treatment of bronchitis [19].

Secondary metabolites: Antraquinones [387-388]; Flavonoids [389]. Pharmacological activities: Inhibitory activity on gastrointestinal transit [389].

Polygonum hydropiperoides Michx.

V. N.: Duraznillo (S), arroz-arroz (S)

An infusion of the aerial parts is claimed to be effective as a renal anti-inflammatory.

Literature: Uses: In cases of urinary retention, maturative, decongestant for insect bites, in treatment of gout [13]; haemostatic [16]. Secondary metabolites: No records. Pharmacological activities: Antibacterial activity [390].

Rumex cuneifolius Campd.

V. N.: Llaque (Q), lengua de vaca (S)

A leaves decoction is used topically for washings as an antiseptic for wounds, as a haemorrhoid lenitive and in treatment of gonorrhoea. Orally, the same preparation is used as an anthelmintic and as a depurative. The leaves and the roots are used as a food.

Literature: Uses: Blood depurative [11]; maturative, resolvent for traumas, in treatment of hepatic disorders, urinary antiseptic, regulator of the menstrual cycle, to strengthen gums and teeth, in frictions against alopecia [13]; astringent, tonic, depurative [15]; vulnerary, for dermatitis and swellings [20]. Secondary metabolites: No records. Pharmacological activities: No records.

POLYPODIACEAE

Asplenium fragile C. Presl.

V. N.: Cuti-raqui-raqui (Q), cuti-cuti (Q)

An infusion of the aerial parts is used as a diaphoretic, an astringent and an antidiabetic.

Literature: Uses: Girault [13] reports *Asplenium* sp., "kuti raki raki" or "kumu kumu" as a sudorific in colds and to promote the conception of a male son.

Secondary metabolites: No records.
Pharmacological activities: No records.

Asplenium monanthes L.

V. N.: Kumu-kumu (Q)

An infusion of the aerial parts is used as a diaphoretic.

Literature: Uses: Sudorific [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Campyloneurum angustifolium (Sw.) Feé

V. N.: Calahuala (Q)

A decoction of the fronds is employed as an astringent, an antidiarrhoic, a diaphoretic, a stomachic, a re-fresher of the renal tract, a blood depurative in treatment of gout, an antitussive, an anti-rheumatic and in treatment of syphilis.

Literature: Uses: Astringent [11, 12, 14, 18]; diaphoretic [11, 12, 14-15, 18-19]; in treatment of dropsy [12, 15]; diuretic, depurative, expectorant, febrifuge [12, 15, 18-19]; antirheumatic [15]; in treatment of venereal diseases [15, 19]; urinary antiseptic [18]; against "blood illnesses" [19]. Girault [13] reports *Polypodium pycnocarpum* Christ. as "calahuala" as a vermifuge, a vulnerary and in treatment of pulmonary diseases. Secondary metabolites: Anthraquinones [391]. Pharmacological activities: No records.

Cheilanthes incarum Maxon

V. N.: Inca-cuca (Q)

An infusion of the rhizome is used as an expectorant and in treatment of respiratory diseases.

Literature: Uses: Diuretic, abortifacient, in treatment of bronchitis [13]; anticatarrhal [13, 20]. Secondary metabolites: No records. Pharmacological activities: No records.

Niphidium crassifolium (L.) Lellinger

V. N.: Ancac-pfurum (Q), calahuala (Q)

A decoction of the fronds is used in treatment of gonorrhoea, as a depurative, an astringent and a diaphoretic. It is also recommended in the treatment of the jaundice and pulmonary affections, as an antiparasitic and an antihæmorrhagic.

Literature: Uses: Depurative, in treatment of venereal diseases [11]; anti-icteric, in treatment of pulmonary diseases, hallucinogenic, in treatment of purulent abscesses, in treatment of urinary retention, vermifuge, vulnerary [13]; astringent [18]. Secondary metabolites: No records. Pharmacological activities: No records.

Notholaena nivea (Poir.) Desv.

V. N.: Inka saire (Q), doradilla (Q), yana tullu (Q)

A decoction of the aerial parts is used as an antidiabetic and an expectorant.

Literature: Uses: Intestinal antinfective [11]; digestive, sudorific in dropsy, purge [13]. Secondary metabolites: Flavonoids [392]; Flavonoids [393]. Pharmacological activities: Antioxidant activity [394]; Antiparasitic activity [393].

Polypodium buchtienii Rosenst.

V. N.: Inca-cuca (Q)

A decoction of the fronds is used as a tonic and in the treatment of respiratory affections. Topically, it is recommended as a resolvent in cases of traumas and as a cicatrizer.

Literature: Uses: Sudorific in treatment of malaria and pulmonary affections, laxative, vermifuge [13].

Secondary metabolites: No records. Pharmacological activities: No records.

PTERYDACEAE

Adiantum poiretii Wikstr.

V. N.: Culantrillo del pozo (S), yana-tullu (Q)

An infusion of the aerial parts is claimed to be a diuretic, a tonic, an antitussive and is used in the treatment of bronchial affections. The juice of the plant is used as a contraceptive and an abortifacient.

Literature: Uses: Pectoral, sudorific, in treatment of gallstones, diuretic, anti-icteric, against hair-loss [19]. Girault [13] and Alarco de Zandra [15] reports as "culantrillo del pozo" *A. capillus veneris* L. as a throat anti-inflammatory, in treatment of urinary retention, a stomachic, in treatment of pulmonary diseases [13]; an expectorant, a balsamic, an antitussive [15]. Rutter [18] reports as "culantrillo" or "culantrillo del pozo" *Adiantum* sp. as an aphrodisiac, a diuretic, a sudorific, a pectoral and in treatment of biliar calculosis. Secondary metabolites: No records. Pharmacological activities: No records.

RANUNCULACEAE

Anemone helleborifolia DC.

V. N.: Huallpachaqui (Q), solimán (S)

An infusion of the aerial parts is claimed to be a diuretic, a diaphoretic and a sedative. A decoction of the same parts is used topically as a resolvent in cases of traumas and as a rubefacient.

Literature: Uses: Rubefacient [11, 14]; diaphoretic, diuretic, antitussive, neuralgic, regulator of the menstrual cycle [14]. Secondary metabolites: No records. Pharmacological activities: No records.

Anemone triternata Vahl

V. N.: Huallpachaqui (Q)

The plant is toxic. A decoction of its aerial parts is used topically as a rubefacient and in the treatment of varices.

Literature Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records.

Pharmacological activities: No records.

Ranunculus pilosus HBK.

V. N.: Chapu-chapu (Q)

An infusion of the aerial parts is used topically as an antirheumatic, an antiarthritic, a vulnerary and a rubefacient.

Literature: Uses: Strong rubefacient [11, 14]. Secondary metabolites: No records. Pharmacological activities: No records.

RHAMNACEAE

Colletia spinosa Lam.

V. N.: Roqqe (Q)

An infusion of the aerial parts is recommended as a tonic and the decoction is used as resolvent in cases of traumas. A decoction of the roots is claimed to be an antidiarrhoic.

Literature: Uses: Tonic [11]. Girault [13] reports *C. spinosissima* Gmel., "rokke", as a resolvent for fractures and dislocations, antirachitic, sudorific in rheumatism, purge. Secondary metabolites: Alkaloids [395]. Pharmacological activities: No records.

ROSACEAE

Alchemilla erodiifolia Wedd.

V. N.: Sillo-sillo (Q)

An infusion of the aerial parts is used as a diuretic.

Literature: Uses: No records. Girault [13] reports as "sillu sillu" *A. andina* (Perry) Macbr. as an oral anti-inflammatory and to treat burns. Velasco-Negueruela et al. [20] report as "sillu sillu" *A. pinnata* R. et P. as an astringent and an ocular decongestant. Secondary metabolites: No records. Pharmacological activities: No records.

Fragaria chiloensis Duchesne

V. N.: Frutilla (S)

A leaves decoction is used as a renal, hepatic and digestive anti-inflammatory and as an antipyretic. The fruits are used as a food.

Literature: Uses: Anti-inflammatory, antieczymotic, antidiarrhoic, antidysenteric, skin depurative, in treatment of conjunctivitis, stomachic, laxative, mouth anti-inflammatory [13]. Secondary metabolites: Flavonoids [396-398, 406]; Essential oil [399]; Phenols [400, 402, 404]. Pharmacological activities: Antioxidant activity [397-398, 402-408]; Antimicrobial activity [400]; Antifungal activity [401]; Antiproliferative activity [405].

Kageneckia lanceolata R. et P.

V. N.: Lloque (Q), lloque-lloque (Q), pampa-lloque (Q)

A decoction of the aerial parts is used topically in treatment of gonorrhoea; orally, it is used as a purge, a vomitory, an antimalaric and an antipyretic.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: Antioxidant activity [170].

Margyricarpus setosus R. et P.

V. N.: Canlli (Q), china-canlli (Q)

A decoction of the aerial parts is used a diuretic and a depurative.

Literature: Uses: Diuretic, depurative [11-12]; antiasthmatic, decongestant [13]; antitussive [20]. Secondary metabolites: Aryl and triterpenic glycosides [407]. Pharmacological activities: No records.

Polylepis incana HBK.

V. N.: Queñua (Q), keñua (Q), queñual (Q)

A decoction of trunk barks is used as an internal and topical astringent (gargles). The powdered charcoal is employed as an antiseptic for sores and wounds and in oral infections. Internally, it is recommended in the treatment of enterocolitis.

Literature: Uses: Cardiotoxic [13]. Secondary metabolites: Flavonoids [408-409]; Terpenoids [409]. Pharmacological activities: No records.

Rubus bogotensis HBK.

V. N.: Cjari-cjari (Q), siraca (Q)

A leaves infusion is used as a digestive and a renal anti-inflammatory. A decoction of the roots is used as an antidiarrhoic and an antianaemic. The fruits are used as a re-fresher and a stomachic.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Rubus robustus Presl.

V. N.: Cjari-cjari (Q)

An infusion of leaves and flowers is used as an anti-inflammatory of the digestive and respiratory tracts, an antitussive and in the treatment of angina. The fruits are used a laxative. A decoction of the roots is claimed to be an antidiarrhoic. The fruits are used as a food and in the preparation of a refreshing drink.

Literature: Uses: Re-fresher [12]; in treatment of constipation, astringent, in treatment of angina and throat inflammations, antitussive, in treatment of colds [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Rubus roseus Poir.

V. N.: Cjari-cjari (Q)

The fruits are claimed to be a re-fresher of the digestive and renal tracts. An infusion of the flowers

is used as a tonic, a digestive and a hepatoprotector. The fruits are employed as a food and in the preparation of a refreshing drink.

Literature: Uses: Diuretic, ovaric anti-inflammatory and in treatment of ovaric disorders, in case of angina and throat inflammation [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Tetraglochin strictum Poepp.

V. N.: Canlli (Q), china-canlli (Q)

A decoction of the aerial parts is claimed to be a diuretic and a blood depurative.

Literature: Uses: Diuretic, depurative [11]. Velasco-Negueruela et al. [20] report as “k’anlli” *Senecio spinosus* DC. (Asteraceae) to treat headaches. Secondary metabolites: No records. Pharmacological activities: No records.

RUBIACEAE

Arcytophyllum thymifolium (R. et P.) Standley

V. N.: Pescon chaquin (Q)

An infusion of the aerial parts is used as an antispasmodic, a stomachic, in the treatment of ulcers and as a cardi tonic. A decoction of the whole plant is used topically as an ocular anti-inflammatory, a skin depurative and a resolvent in cases of traumas and dislocations. The fruits and the flowers are used as a food.

Literature: Uses: For blows to the body and to treat sore feet [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Uncaria guianensis (Aubl.) Gmel.

V. N.: Uña de gato (S), Ancaj sillo (Q)

A decoction of the root barks is used as an antirheumatic, a gastric anti-inflammatory, an antitumoral, a contraceptive and in treatment of ulcers and renal and urinary lithiasis.

Literature: Uses: Antidysenteric [12]; antitumoral, contraceptive, anti-inflammatory, antirheumatic, in treatment of gastric ulcers [19]. Secondary metabolites: Alkaloids [410-418, 427]; Triterpenes [412, 415, 419]; Polyphenols [425]. Pharmacological activities: Anti-inflammatory activity [420-423]; Antioxidant activity [421, 424, 426], Antioxidant activity [422]; Antibacterial activity [428].

SALICACEAE

Salix humboldtiana Willd.

V. N.: Sauce (S)

The decoction of trunk barks is employed as a topic antirheumatic. Orally, it is used as an astringent and an antidiarrhoic. An infusion of the leaves is used as a digestive and in the treatment of gastric ulcers.

Literature: Uses: Antitussive, gastralgic, antiseptic for wounds [13]; febrifuge [13-14, 16, 19]; uterine astringent, antiseptic for gangrenous ulcers [14]; tonic [14-16]; antidiarrhoic [14, 16, 19]; antirheumatic [14-16; 19]; diuretic, astringent, sedative, anti-inflammatory, regulator of the menstrual cycle, depurative, skin depurative, contraceptive [15]; digestive [16, 19]; astringent, in case of toothache, antimalaric, eupeptic [19]. Isolated substances: Salicin [429]. Pharmacological activities: No records.

SANTALACEAE

Quinchamalium procumbens R. et P.

V. N.: Chinchamale (Q), quinchamalium (Q)

A whole plant infusion is claimed to be a diuretic and a blood depurative, a tonic, an emmenagogue, and is used in the treatment of gastric ulcers. Topically, it is used as an antiseptic and a vulnerary.

Literature: Uses: Emmenagogue, depurative, in treatment of dropsy, in case of oedemas, in treatment of hepatic disorders [13]; pectoral, resolvent for traumas [14]. Secondary metabolites: No records. Pharmacological activities: No records.

SAXIFRAGACEAE

Escallonia herrerae Mattf.

V. N.: Pfauca (Q)

An infusion of the flowers is used as a stomachic. A leaves infusion is employed topically to stimulate the uterine contractions during the parturition. A decoction of the barks is claimed to be an antirheumatic.

Literature Uses: No reports have been found in the literature concerning traditional uses. **Secondary metabolites:** No records. **Pharmacological activities:** No records.

Escallonia resinosa Pers.

V. N.: Chachacomo (Q)

A decoction of the barks is employed as an antirheumatic, an antiarthritic and an anti-inflammatory. A leaves infusion is claimed to act as a carminative, a diuretic, a tonic, an antianaemic; it is used in treatment of tuberculosis, as an emmenagogue and an antipyretic. Topically, it is used as a vulnerary.

Literature Uses: Antirheumatic, in cases of paralysis [13]; carminative [14]; tonic [14, 18]. **Secondary metabolites:** No records. **Pharmacological activities:** No records.

Saxifraga magellanica Poir.

V. N.: Huamanripa (Q)

An infusion of the aerial parts is used as a mucolytic, in treatment of bronchitis and tuberculosis.

Literature Uses: Pectoral [11]; anti-inflammatory, antidote for poisonings [19]; for lung ailments [20]. Girault [13] reports as "wamanripa" *Senecio culcitoides* Wedd. (Asteraceae) in treatment of broncopulmonar diseases, as an antirheumatic and an antiasthmatic. **Secondary metabolites:** No records. **Pharmacological activities:** No records.

SCROPHULARIACEAE

Alonsoa acutifolia R. et P.

V. N.: Aya-maicha (Q), aya-aya (Q)

A decoction of the aerial parts is used as an odontalgic, an antidiarrhoic and an antirheumatic.

Literature Uses: Resolvent for traumas, analgesic [13]; odontalgic [13-14, 16]; to treat "wind diseases" [20]. **Secondary metabolites:** No records. **Pharmacological activities:** No records.

Bartsia bartsiosides (Hook.) Edwin

V. N.: Mesa-ticka (Q), pantac-ñucchu (Q)

An infusion of the aerial parts is used in treatment of respiratory affections.

Literature Uses: Velasco-Negueruela et al. [20] report *B. aff. bartsiosides* (Hook.) Edwin for menstrual complaints, as an antipyretic and for lumbago. **Secondary metabolites:** No records. **Pharmacological activities:** No records.

Bartsia camporum Diels

V. N.: Aya (Q), mesaticca (Q), pantac-ñucchu (Q)

An infusion of the aerial parts is employed as a diaphoretic.

Literature Uses: No reports have been found in the literature concerning traditional uses. **Secondary metabolites:** No records. **Pharmacological activities:** No records.

Bartsia gracilis Benth.

V. N.: Kello-ticka- ñucchu (Q), puna-ñucchu (Q), qeshua-ñucchu (Q)

An infusion of the aerial parts is used topically as a resolvent in cases of traumas and orally in the treatment of respiratory affections.

Literature Uses: No reports have been found in

the literature concerning traditional uses.

Secondary metabolites: No records.

Pharmacological activities: No records.

Calceolaria cuneiformis R. et P.

V. N.: Puru-puru (Q), ayac-zapatilla (Q-S)

An infusion of the aerial parts is claimed to be a diuretic and is employed in topical and internal treatment of uterine affections.

Literature: Uses: Diuretic, in treatment of uterine affections [11, 14-16]; skin depurative [15]. Girault [13] reports as "puru puru" *C. incarum* Kranzl., as a febrifuge, an antiseptic and in treatment of venereal diseases. Velasco-Negueruela et al. [19] report *Calceolaria* sp. "ayac zapatillan" as a female contraceptive. Secondary metabolites: No records. Pharmacological activities: No records.

Calceolaria engleriana Kraenzl.

V. N.: Ayac-zapatilla (Q-S), puru-puru (Q)

A decoction of the aerial parts is used topically in the treatment of gonorrhoea and as an antinflective. Orally, it is used as a diuretic and an antidiabetic.

Literature: Uses: In treatment of venereal diseases and leucorrhoea, in case of dropsy [13]. Girault [12] reports as "ayac sapatillan" *Calceolaria glauca* R. et P. as an antitussive, a vaginal antiseptic and in treatment of urinary retention. Secondary metabolites: No records. Pharmacological activities: No records.

Calceolaria fiebrigiana Kraenzl.

V. N.: Mayu-borrajá (Q-S)

A decoction of the whole plant is used as an antigangrenous and an antipyretic.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Calceolaria myriophylla Kranzlin

V. N.: Ayac-zapatilla (Q-S)

A decoction of the aerial parts is claimed to be a diuretic, an antidiabetic and an uterine antihemorrhagic. The same preparation is used topically in the treatment of gonorrhoea.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Calceolaria scabra R. et P.

V. N.: Ayac-zapatilla (Q-S), ñuttu-zapatilla (Q-S)

A decoction of the aerial parts is used as a diuretic.

Literature: Uses: Girault [13] reports as "ñuttu saptillan" *Calceolaria trifida* R. et P. as a maturative and in treatment of blennorrhagia. Secondary metabolites: No records. Pharmacological activities: No records.

Calceolaria scapiflora Benth.

V. N.: Puna-ayac-zapatilla (Q-S)

A decoction of the aerial parts is employed in the treatment of renal affections.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Castilleja fissifolia L. f.

V. N.: Pampa-pianita (Q)

An infusion of the aerial parts is used in treatment of respiratory affections, namely as a pectoral.

Literature: Uses: No reports have been found in the literature concerning traditional uses.

Secondary metabolites: No records.
Pharmacological activities: No records.

Mimulus glabratus HBK.

V. N.: Occoruro (Q), berro (Q), vilco-yuyo (Q)

An infusion of the whole plant is claimed to act as a digestive, an anti-inflammatory, an energizer, a tonic, an antianaemic and is used in treatment of scurvy and tuberculosis. On empty stomach, it is used as a laxative. The aerial parts are used as a food.

Literature: Uses: In treatment of hepatic diseases [11, 13]; depurative, in case of alopecia, throat anti-inflammatory [13]; antitubercular, intestinal antinfective, antirachitic, in treatment of epilepsy, pneumonia, bronchitis, anaemia and kidney and liver illnesses, antirheumatic, to hair strengthening, in case of aphta, to block emesis, antinfective after the parturition, in treatment of nausea and emesis in pregnancy, in treatment of cold and ulcers, antitussive, diuretic, in case of dropsy, contraceptive, vaginal anti-inflammatory, antipyretic [17]; tonic for hangover [20]. Secondary metabolites: Cyclohexanone derivatives [430]. Pharmacological activities: No records.

Veronica peregrina L.

V. N.: Cajetilla (S), huaylla-cajetilla (Q-S)

An infusion of the whole plant is claimed to be effective as an antispasmodic, an antitubercular and an antirheumatic. It is used in the treatment of gout, in dyspepsia and as a cholagogue.

Literature: Uses: No records. Secondary metabolites: Phenylpropanoids [431]; Flavonoids [431-434]. Pharmacological activities: Blood coagulant activity [432], Antioxidant activity [434].

SOLANACEAE

Brugmansia arborea (L.) Lagerheim

V. N.: Floripondio (S), campanchu (Q)

An infusion of the flowers is used as a sedative and an analgesic. The leaves are employed as a narcotic and their infusion is used topically as resolvent in cases of traumas and as a maturative.

Literature: Uses: Narcotic, hallucinogenic [19]. The literature also reports *Datura arborea* L. ["floripondio"] as a lenitive and maturative [11, 13]; an antiasthmatic, narcotic, antispasmodic, resolvent, in treatment of migraine [13, 15]; in treatment of kidney affections [15]; vulnerary, sedative, to treat "wind diseases" [20]. Secondary metabolites: Alkaloids [435-437]. Pharmacological activities: Spasmolytic activity [437]; CNS activity [438-440].

Cestrum coriaceum Miers

V. N.: Hierba santa (S), hierba hedionda (S), ñucjau (Q)

An infusion of the aerial parts is used as a sudorific and an antipyretic. Topically, it is used as an astringent, an analgesic, a cicatrizer, an antihæmorrhoidal, a vulnerary and a resolvent in cases of traumas.

Literature: Uses: Emollient, re-fresher, antiseptic for wounds [11]; sudorific [11, 18]; antioedematous [14], febrifuge [14, 18-19]; anti-inflammatory, skin depurative [18]; lenitive for hemorrhoids, in case of toothache, antirheumatic, astringent [19]. Girault [13] reports as "hediondilla" or "yerva santa" *C. hediondinum* Don. as a febrifuge, an antiseptic for wounds, a maturative, a narcotic, a sudorific, a cicatrizer, a decongestant for traumas. Alarco de Zandra [13] reports as "hierba santa" *C. hediondinum* Dun. as a febrifuge, an astringent, a lenitive for hemorrhoids, a stomachic, a digestive, in treatment of insomnia, in case of meteorism, as a lenitive for colics and joints pains, as an antineuralgic, to prevent hair-loss. Secondary metabolites: No records. Pharmacological activities: No records.

Nicotiana undulata R. et P.

V. N.: Ccama-saire (Q), saire (Q), ccjamachu (Q)

The leaves fermented in alcohol are used as a narcotic and a vomitory. Chopped, they are used as a veterinary escharotic, antiseptic and vulnerary.

Literature: Uses: Emetic, purge, analgesic [11, 14]; antirheumatic, in treatment of pulmonary diseases, veterinary antiparasitic [13]; antitumoral [14, 18]. Secondary metabolites: Alkaloids [441]. Pharmacological activities: No records.

Saracha contorta R. et P.**V. N.:** Ahuaymanto (Q)

A leaves decoction is used topically as an anti-inflammatory and an antirheumatic. The berries are used as a food.

Literature: Uses: A drink prepared with berries is administered for recovering after parturition [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Solanum andigenum Juz. & Bukasov**V. N.:** Papa (S)

A decoction of the peel of the tubers is used in the treatment of gastritis and gastric ulcers. A decoction of the flowers is employed orally as a stomachic and topically as an ocular decongestant. The tubers are used as a food.

Literature: Uses: Narcotic, lenitive for burns, to treat cataract, varicous ulcers and erysipelas, maturative, escharotic, in cases of excessive perspiration [13]; antipyretic, in treatment of migraine [13, 17]; cicatrizier, to help fractures consolidation, antirheumatic, antiseptic, gastralgic, in treatment of gastric and duodenal ulcers, antitubercular, antipyretic after the parturition, intestinal antinfective [17]. Secondary metabolites: Polyphenols [442]; Flavonoids [443]; Alkaloids [445]. Pharmacological activities: Antioxidant activity [260, 444].

Solanum nitidum R. et P.**V. N.:** Ñuñunca (Q)

An infusion of the aerial parts in used topically in the treatment of gonorrhoea and as an antiseptic for wounds, an antirheumatic and an antipyretic. A flower infusion is used as an ophthalmic anti-inflammatory.

Literature: Uses: Antirheumatic, narcotic, drastic [13]; to treat “wind diseases” and hangover [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Solanum pulverulentum Pers.**V. N.:** Ñuñumia (Q)

A decoction of the aerial parts is used a vomitory and a purge. The infusion is claimed to be a diaphoretic and is used in the treatment of bronchial diseases.

Literature: Uses: Purge, vomitory [11, 13, 15]; sudorific, to made bitter the milk [11, 15]; febrifuge, antimalaric [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Solanum radicans L. f.**V. N.:** Kusmaillo (Q), ccusmaillo (Q)

An infusion of the aerial parts is used as a purge and a depurative.

Literature: Uses: Purge, laxative [11]; sudorific in colds, in treatment of typhoid fevers and colics, antidyenteric [13]; hepatic anti-inflammatory, decongestant for insect bites [15]; antidiarrhoic, antipyretic, digestive [19]. Secondary metabolites: No records. Pharmacological activities: No records.

TROPAEOLACEAE*Tropaeolum peregrinum* L.**V. N.:** Huallpa-huallpa (Q)

A decoction of the whole plant is used as a

laxative and a purge. The tubers are used as a food.

Literature: Uses: In treatment of urinary retention, regulator of the menstrual cycle, abortifacient, narcotic, vaginal antiseptic, anaphrodisiac, in treatment of leucorrhoea [13]. Secondary metabolites: Isothiocyanates [446-449]; Flavonoids [450]. Pharmacological activities: No records.

Tropaeolum seemanni Buchenau

V. N.: Añu-añu (Q), kita-añu (Q)

An infusion of the aerial parts is used as an astringent and an emmenagogue. Topically, it is used as a skin depurative.

Literature: Uses: Astringent, emmenagogue, skin depurative [11]. Secondary metabolites: Isothiocyanates [448]. Pharmacological activities: No records.

Tropaeolum tuberosum R. et P.

V. N.: Añu (Q), mashua (Q), isaño (Q)

An infusion of the aerial parts is used as a diuretic. A decoction of the tubercles is used as a haemostatic. The dried tubers are eaten as an anaphrodisiac. The tubers are used as a food.

Literature: Uses: Diuretic, antiseptic in blennorrhagia [13]; anaphrodisiac [13-15]; In treatment of renal lithiasis [13-15, 18]; in treatment of genitourinary pains, antianaemic [15]. Secondary metabolites: Dietary fiber [24]; Phenols [62, 458-459]; Isothiocyanates and thioureas [448, 451-454]; Flavonoids [455, 457]. Pharmacological activities: Antioxidant activity [62, 260, 455-459]; Antireproductive activity [452, 460]; Nematocidal activity [452]; Antibiotic activity [452].

URTICACEAE

Urtica andicola Wedd.

V. N.: Ccuru-quisa (Q), quisa (Q), puna-quisa (S-Q), ortiga (S)

An infusion of the aerial parts is used orally as a diuretic and topically as a rubefacient. The decoction of the whole plant is employed to recover the uterus after the parturition. The leaves are used as a food.

Literature: Uses: Rubefacient [11]. Secondary metabolites: No records. Pharmacological activities: No records.

Urtica flabellata HBK.

V. N.: Ccoe-quisa (Q), quisa (Q)

The infusion of the aerial parts is used as a renal anti-inflammatory, as an antipyretic and an antidiysenteric. The decoction is used topically as an antirheumatic. The leaves are used as a food.

Literature: Uses: Antitussive, antiparasitic, decongestant [13]. Secondary metabolites: No records. Pharmacological activities: No records.

Urtica magellanica Juss. ex Poir.

V. N.: Mula-quisa (Q), api-quisa (Q), ortiga (S), quisa (Q)

An infusion of the aerial parts is claimed to be a haemostatic, a diuretic, a depurative, an astringent and an antidiarrhoic. The fresh leaves are used as a rubefacient in cases of facial paralysis. The leaves are used as a food.

Literature: Uses: Rubefacient, diuretic [11]; in treatment of pulmonary diseases, regulator of the menstrual cycle, uterine anti-inflammatory [13]; anaesthetic [15]; sudorific, antirheumatic, in treatment of sciatica [15, 19]; antihemorrhagic, decongestant for traumas, to help fractures consolidation, in treatment of headache, pneumonia and respiratory illnesses, tonic and antihemorrhagic after the parturition, in case of epilepsy, lenitive for colics, gastric and intestinal pains, uterine anti-inflammatory, contraceptive, in treatment of kidney affections, laryngitis, antipyretic, prostate anti-inflammatory, urinary antiseptic [17]; for ovary complains [20]. Secondary metabolites: No records.

Pharmacological activities: No records.

USNEACEAE

Ramalina flaccescens Nyl.

V. N.: Intic suncjan (Q), papelillo (S), papel-cucho (S-Q)

An infusion of the whole plant is used as an antitussive and an expectorant.

Literature: Uses: Antitussive [20]. Secondary metabolites: No records. Pharmacological activities: No records.

Thamnia vermicularis (L.) Asch.

V. N.: Ujutillo (Q), intic-San Juan (S-Q)

An infusion of the whole plant is used as an antitussive and an expectorant.

Literature: Uses: No records. Secondary metabolites: Depsides [461-462, 470]; Phenols [463-464]; Usnic acid [469]; Polysaccharides [472-473]. Pharmacological activities: Antibacterial activity [465]; Antiproliferative activity [466]; Immunomodulatory activity [467-468, 472]; Cytotoxic activity [471].

VALERIANACEAE

Valeriana decussata R. et P.

V. N.: Pellco (Q), sacha-pellco (Q)

An infusion of the whole plant is used as an antispasmodic, an antidiarrhoic and in treatment of bronchial affections.

Literature Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

Valeriana jasminoides Briq.

V. N.: Valeriana (S)

A decoction of the roots is used as a sedative, in treatment of insomnia and bronchial affections.

Literature: Uses: Girault [13] and Alarco de Zandra [15] report as "valeriana" *V. coartata* R. et P. in treatment of urinary retention [13]; as an antispasmodic, a sedative, an antiseptic for wounds, to help fractures consolidation [13, 15]; as a tonic, a carminative, an hypnotic, a gastralgic, a vermifuge [15]. Rutter [18] reports *Valeriana* sp. as an antispasmodic and an antirheumatic. De Feo [19] reports as "valeriana" *V. pinnatifida* R. et P. as a vulnerary, an antiseptic for burns, to help fractures consolidation, an antispasmodic, a cardi tonic, a vermifuge. Secondary metabolites: No records. Pharmacological activities: No records.

VERBENACEAE

Aloysia boliviensis H. N. Moldenke

V. N.: Cedrón (S)

An infusion of the aerial parts is used as a stomachic, a carminative and a tonic.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Velasco-Negueruela et al. [20] report as "cedrón cedrón" *A. fiebrigii* Hayek to treat headaches. Secondary metabolites: No records. Pharmacological activities: No records.

Aloysia scorodonioides Cham.

V. N.: Cedroncillo (S), cedrón del campo (S)

An infusion of the aerial parts is used as a stomachic, a carminative, a tonic, a diuretic and in treatment of amenorrhoea.

Literature: Uses: Uterine astringent [11]. Secondary metabolites: No records. Pharmacological activities: Antioxidant activity [192].

Verbena litoralis HBK.

V. N.: Verbena (S)

An infusion of the aerial parts is used as a laxative and a purge, on empty stomach, as a diuretic and an anti-inflammatory of the respiratory tract and in treatment of bronchial diseases. An infusion of the flowers is claimed to be an analgesic, an anti-inflammatory and an antitussive.

Literature: Uses: Digestive, antiseptic [14]; febrifuge [14, 18]; antitussive, vomitory [18]; anthelmintic [18, 21]; antirheumatic [21]. Velasco-Negueruela et al. [20] report as “verbena” *V. hispida* R. et P. to treat headaches. Secondary metabolites: Iridoids [474-483]; Flavonoids [474]; Triterpenoids [475]. Pharmacological activities: NGF-potentiating activity [479-486].

VIOLACEAE

Viola pygmaea Juss. ex Poir.

V. N.: Violeta (S)

An infusion of the flowers is used as an analgesic, an anti-inflammatory and an antitussive.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: No records. Pharmacological activities: No records.

ZANNICHELLIACEAE

Zannichellia palustris L.

V. N.: Pasto de agua (S)

A whole plant infusion is used topically as an antipyretic and a resolvent in cases of traumas.

Literature: Uses: No reports have been found in the literature concerning traditional uses. Secondary metabolites: Flavonoids [487]. Pharmacological activities: No records.

Discussion and Conclusions

The data obtained provided information on the claimed curative properties of numerous empirically accepted prescriptions involving 255 plant species, belonging to 73 different families. The medicinal plants belong, in the great majority, to higher plants; Asteraceae (49 species used), Scrophulariaceae (13 species), Fabaceae (species) and Apiaceae (11 species) constitute the more represented families. The phytotherapeutic use of some Lichenes (2 species) and Pteridophyta (10 species) was also recorded. A considerable number of plants employed medicinally, is also used as a food, food flavouring or in preparation of fermented or refreshing drinks (66 species).

We recorded 1,086 uses for plants; of these 251 are administered as topical drug. Figure 2 shows the medical uses prescribed for internal use: According to healers information, the internal prescription were divided in fifteen groups: AI: anti-inflammatory, antirheumatic; AP: antiparasitic, antibiotic; BD: blood diseases; CV: cardiovascular diseases; ENT: ear, nose and throat diseases; FOOD: medicinal plants used also as food; GI: diseases of the gastrointestinal tract; NP: neuropsychiatric diseases; O: other; OM: osteomuscular diseases; OP: ophthalmologic diseases; R: diseases of the respiratory system; S: systemic diseases; SD: skin diseases; UG: diseases of the urogenital tract. The most important uses were for gastrointestinal diseases (239 uses registered), for the ailments of the respiratory tract (137 uses reported), and for urogenital illnesses (136 uses reported), followed by anti-inflammatory uses (65). The phytotherapeutic uses cover the treatment of common and minor ailments. Numerous vegetal remedies are used as antinfectives and antipyretics, to treat dysentery, diarrhoea and intestinal parasites, skin diseases and genito-urinary affections. These findings are not unexpected, given that in tropical areas the climate is propitious for the development of infective diseases and because of the poor hygiene conditions of rural areas. The use of some plants appear to be particular: some plants are administered before parturition to

facilitate the childbirth and after the parturition to promote the rehabilitation of the puerperal. Very interesting appears the use of vegetal remedies used to treat bones pains and to aid fractures consolidation or some plants use in the treatment of hangover. Some plants are used to treat insomnia, as narcotics or in neuropsychiatric diseases. Also affections of the female genito-urinary tract are frequently treated by traditional plants. Only very few prescription for "modern" (for example hyperglycemia) have been registered.

Figure 3 reports the folk uses of plants used topically: of these, the majority is employed in symptomatic treatment of inflammatory diseases and as antiseptics for wounds. Washings for the genito-urinary tract diseases are often prescribed.

For a great number of medicinal plants we registered more than one use: some plants are used, on the contrary in the treatment of numerous diseases.

The most common methods of preparing remedies are by making decoction or infusions in water. The liquid is either drunk or used topically. The uses of alcoholic tinctures and plant poultices were also recorded. Generally, more different ways of remedy preparation and administration were reported for each plant. Common is also the use of different plants formulation for different affections.

The prescription of the vegetal remedies are very specific, showing a complete knowledge of the possible toxic activity of the medicinal species used.

Vernacular names were recorded for all medicinal plants, in Spanish, Aymara or Quechua, two local languages. Many of them are new, while others indicated other plants in different parts of Peru.

A true ethnobotanical classification was made by natives among medicinal plants. According to Girault [13] it is possible to observe a system of classification of medicinal plants that often is very similar to classic taxonomy.

An analysis of our findings showed that, for the great majority of the mentioned plants, the know-

ledge of their uses were uniformly distributed among the healers and/or users. For others, it appears that either the knowledge of the use of a certain remedy was restricted to a few people, or the way of preparing, administering and uses differ according to the different informant

A survey of ethnobotanical literature referring to the area under study and more generally to medicinal Andean flora, reveals that a great number of species (87) is completely new in the ethnobotanical literature. Moreover, numerous of the recorded medicinal plants have uses different from those reported in literature. Furthermore, data obtained showed clearly that the therapeutic use of only few species, coming from other floras, have been incorporated into the local pharmacopoeia through contacts with other cultures.

The literature survey reveals that only for few plants notices about the chemical components and pharmacological activities. It is possible to find exhaustive reports on chemical composition only for very few plant species. On the contrary, most of the species reported, not phytochemically and pharmacologically characterized, may potentially constitute a primary source of new pharmaceuticals. For plants for which the specific literature reports chemical and / or pharmacological data, in many cases the traditional uses resulted confirmed.

The therapeutical uses of vegetables are often complemented by rites and magic formulas, because the traditional beliefs associated the plant with a beneficial (or harmful) spirit who operate the cure (or the damage). We have not recorded these interesting observations on ritual and/or magic uses of medicinal plants, but, as previously reported [19, 488], the real effectiveness of the remedies is often certainly bond up with the rituals during which they are administered and with the ancestral beliefs that accompany the therapy. On the other hand, those beliefs make the Andean phytotherapy out of step with academic pharmacognosy, that assign to each plant a well identified time in which they possess greater quantities of active substances. This situation is common in rural communities, but in more

developed areas, in particular towns, the use of medicinal plants is current among people who have not such beliefs. Moreover, it is nothing that physician with scientific training often find certain plants helpful, naturally without all cultural and magical superstructures.

The high number of plant recorded in this study confirms the fundamental importance of medicinal plants in care-health systems and the deep knowledge about the curative properties of multiple vegetal species in the studied area. On the other hand, the high degree of phytotherapeutic knowledge is demonstrated by the high average citation per informant.

Data recorded appear suitable for gathering information on the economic use of plants. It has been proven, time and time again, that the traditional medical knowledge handed down by the common people constitutes sources of information useful for scientific research and that many plants utilised exclusively in popular tradition, when exposed under scientific examination, have been found to be useful for different sectors in the industry. Therefore, science and tradition have a strong connection between them; science, in fact, has often traditional origins [489].

Moreover, in spite to great development and spread of modern medicine, traditional knowledge about the use of plant keeps working as the most popular alternative to assist health problems in developing countries.

Thus, ethnopharmacological studies can be utilized to understand the social, cultural and economic factors influencing ideas and actions concerning health and illness, and also get information on types of diseases and health problems present among the people of a particular locality.

Such studies may help to provide the basic health care services to the greater part of rural populations in an effective way and, at the same time, may constitute a primary and useful source for the development of new drugs. Thus, the need for conservation of medicinal plants and their know-

ledge appears to be a primary topic [490].

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Figure 1 - The province Paruro in Cusco Department

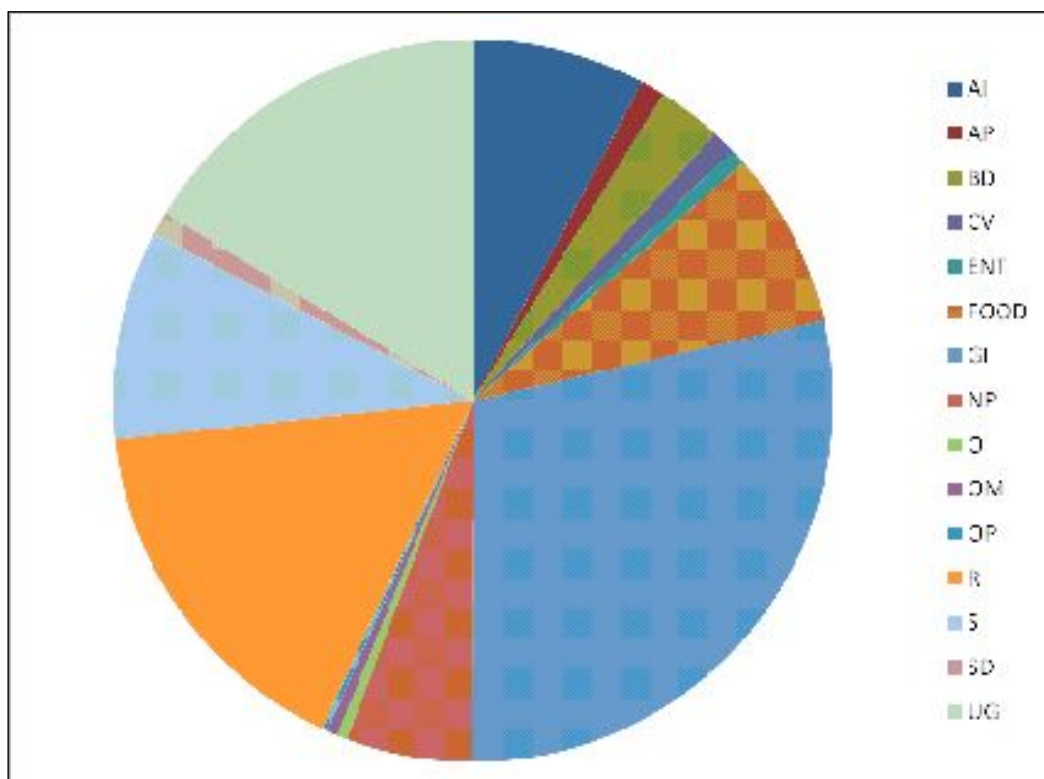


Figure 2 – Folk uses of medicinal plants used in oral formulations: AI: antiinflammatory, antirheumatic; AP: antiparasitic, antibiotic; BD: blood diseases; CV: cardiovascular diseases; ENT: ear, nose and throat diseases; FOOD: medicinal plants used also as food; GI: diseases of the gastrointestinal tract; NP: neuropsychiatric diseases; O: other; OM: osteomuscular diseases; OP: ophthalmologic diseases; R: diseases of the respiratory system; S: systemic diseases; SD: skin diseases; UG: diseases of the urogenital tract

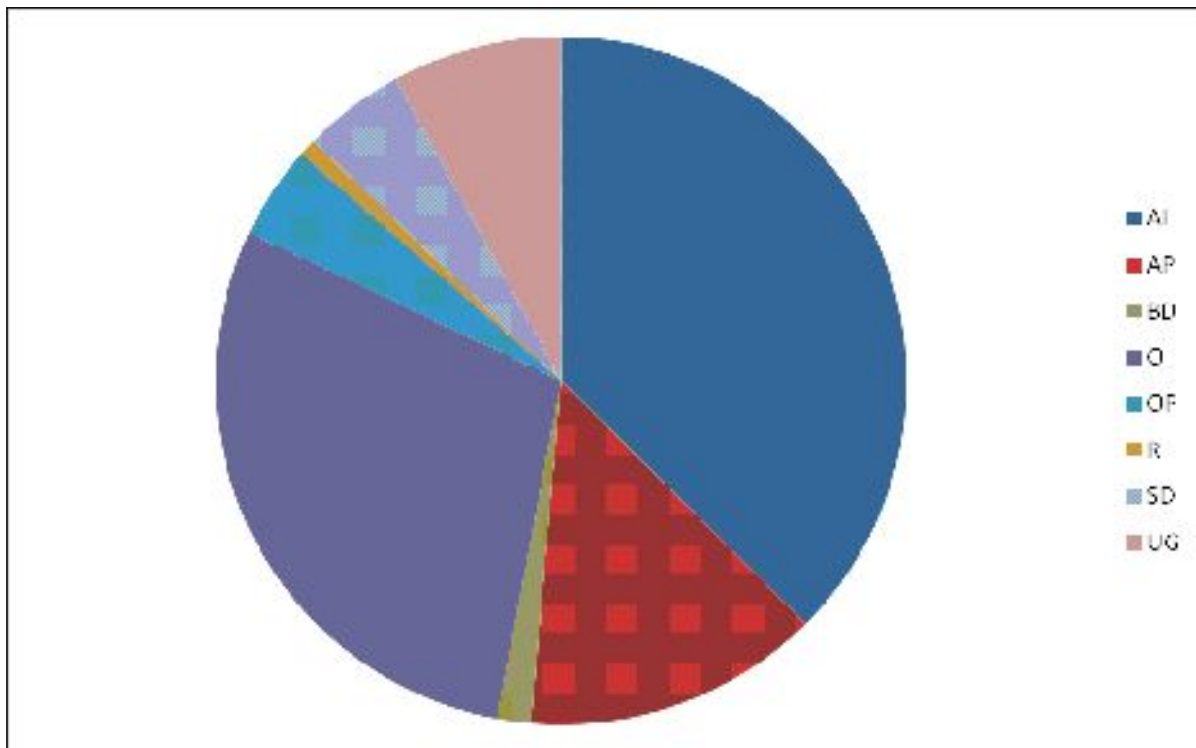


Figure 3 – Folk uses of medicinal plants used topically: AI: antifungal, antiparasitic, antibiotic; AP: antiparasitic, antibiotic; BU: blood diseases; O: other; OP: ophthalmologic diseases; R: diseases of the respiratory system; SD: skin diseases; UG: diseases of the urogenital tract