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Resilience of Andean urban ethnobotanies: A comparison of medicinal plant use among Bolivian and Peruvian migrants in the United Kingdom and in their countries of origin

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ABSTRACT

Ethnopharmacological relevance: Analysing why and how ethnobotanical traditions 'survive' is important for a better understanding of migrants' health care behaviour. This study investigates the use of traditional medicinal plants among first generation migrants from Bolivia and Peru in London, in relation to practices among their peers in their respective home countries in order to assess changes in traditional health care among newcomer communities.

Materials and methods: A total of 98 semi-structured interviews were conducted in London (UK), Cochabamba (Bolivia) and Lima (Peru). Voucher specimens of all reported species were collected and identified. By comparing data on active plant uses and their applications, overlap and differences between health care practices before and after migration could be outlined.

Results: In London, people can rely on more biomedical alternatives and have access to less traditional herbal remedies as compared to their countries of origin. In general, Peruvians and Bolivians in London continued to use traditional medicine for common, self-limiting ailments that were also widespread in their countries of origin. The same widely used (either readily available cosmopolitan or culturally relevant) plant species appeared in the post-migration group. In general, less freshly available medicinal species were used in London and more edible, primary food species were consumed for medicinal purposes after migration.

Conclusions: Bolivian and Peruvian migrants in London clearly proved to be resilient in their use of home-remedies when faced with the changes that come with migration. The observed ethnobotanical coping strategies are characterised by: (1) the preservation of culturally salient species (cultural key stone species); (2) a positive influence of the presence of cultural diversity (cultural edge effect), (3) a creative blending of different kinds of knowledge and resources, noticeable in an increased use of dried, processed alternatives and food species; and (4) a reliance on social networks for the exchange of plant material.

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1. Introduction

Over the past decade, Britain has experienced an increase in Andean migrants. Officially, the South-American population in the UK has increased with 121% in ten years time (Kyambi, 2005). London is not an obvious destination for many Latin-American migrants, given the long and expensive journey and obvious lan-

guage barriers. Nevertheless the UK is continuously growing in popularity. One of the underlying reasons is probably the tightening of 'immigration' laws in the US after the bomb attacks of 9/11 2001. Moreover, until recently, Bolivians could enter the country with a tourist visa, which made it easier for them to come to the UK. There are no exact figures of the number of Andeans currently living in the UK. As of 2007, the Bolivian consulate in London estimated the number of Bolivian immigrants around 10,000. Although according to calculations based on remittances sent back to Bolivia, there must be at least twice as many Bolivians residing in the British capital (Sveinsson, 2007). In addition 10,000 Peruvians are officially registered at their consulate but actual figures are likely to be of a higher order as well as registration is not obligatory. In the early 1980s, many Peruvian refugees fled the atrocities of the guerrilla

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¹ These figures only take into account people who have been granted settlement and who are subject to immigration control.

Table 1Participants' demographics.

	Cochabamba Bolivia	Bolivians London	Lima Peru	Peruvians London
Female	n=21	n = 8	n = 22	n = 15
Male	n = 9	n = 12	n = 6	n = 5
Total participants	30	20	28	20
Average age	40 (stdev 15.2)	32 (stdev 9.7)	50 (stdev 17.4)	44 (stdev 14.6)
Age range (years)	19-79	19-60	23-80	19-75
Length of residence in the UK varies between (years) ^a	n.a.	1-10 (average: 3)	n.a.	1-30 (average: 8)

^a To the best of our knowledge, none of them had obtained British citizenship through nationalisation.

movement known as the Shining Path. The subsequent economic crisis of the 1980–1990s that affected the whole continent further reduced possibilities of upward social mobility and encouraged migration in search of employment (Berg, 2004). Most Bolivians in London arrived during the last five to seven years, for economic reasons or on grounds of political persecution (McIlwaine, 2007; Sveinsson, 2007).

Anyone formally residing in the UK can get free health care provided by the publicly funded National Health Service (NHS). In spite of this, several minority ethnic communities in the UK have not entirely replaced traditional health care models with the western biomedical system (Green et al., 2006; Pieroni et al., 2010). Current health care policies in the UK are still largely based upon the assimilationist principle that draws on the assumption that health inequalities will dissolve once migrants abandon their previous medical traditions and adjust to beliefs and practices of the 'host' society (Vázquez et al., in press). Despite the government's aim to reduce ethnic health inequalities (e.g. Race Relations Amendment Act 2000) and to render the NHS more culturally competent and hence develop appropriate health care for minority ethnic groups, little attention has been paid to traditional and informal health care practices of more recent migrant communities. A possible means to fill this gap is through urban ethnobotanical research on the use of home-remedies or informal health care practices within the household, based on the use of herbal medicines, animal parts and/or minerals (after WHO, 2002). Through analysis of how migration affects the use of such home-remedies in newcomer communities, results of urban ethnobotany can inform both policy makers and health care providers on mechanisms of cross-cultural adaptation, thereby taking a first step to reduce health disparities faced by these groups. Improving migrants' health may thus be one of the most obvious reasons to carry out urban ethnobotanical research aimed to gain insight into the perception and use of medicinal plants.

Traditional Andean medicine is characterised by its integrative approach in which physical and spiritual elements, food and medicine, herbal remedies and ritualised curing systems are intertwined for the treatment of ailments with a presumed natural or supernatural cause (Miles and Leatherman, 2003). Despite a certain degree of cultural erosion caused by an increased dominance of biomedicine, ethnomedical traditions are still evident in many parts of Bolivia and Peru, including metropolitan Lima (Vandebroek et al., 2004a,b; Bussmann et al., 2007; De-la-Cruz et al., 2007; Bussmann et al., 2009). Previously, we compared fieldwork data on the use of herbal remedies among first-generation Colombian migrants in London with literature on medicinal plant uses in their country of origin (Ceuterick et al., 2008). Results revealed that people do not simply adapt to a new medical culture. Instead, participants concurrently continued using traditional medicines, abandoned certain practices and integrated new elements into their pharmacopoeia.

The aim of the present article is to explore how and why the use of home-remedies among two other Andean communities in the UK changes and subsists in the light of migration by documenting: (a) most commonly treated health conditions, (b) motives for using traditional medicine and (c) plant species used for per-

sonal health care among a sample group of Bolivian and Peruvian migrants permanently residing in London and among two peer groups in their respective cities of origin, i.e. Cochabamba (Bolivia) and Lima (Peru). Results will be analysed using a resilience framework that explains the adaptive capacity of a system to absorb disturbance and reorganise while undergoing change (Walker et al., 2004: 4). This concept allows to focus on the dynamic continuation of Andean plant uses in London and the underlying mechanisms that might also be discernable in traditional health care practices of other migrant communities. Doing so we provide a new insight into the phenomenon of cultural persistence in the face of change.

2. Methodology

2.1. Semi-structured interviews

Data on plant uses in London were collected during 20 months of fieldwork in 2005-2007, as part of a larger study on the use and perception of traditional medicine among Latin-American migrants in the UK (Leverhulme Research Project Grant F00235D). The project was granted ethical approval by the University of Bradford Ethics Committee and followed guidelines outlined by the American Anthropological Association (1998) and the International Society of Ethnobiology (2006). Participants in London were recruited by purposive sampling (Tongco, 2007). Eligibility criteria for this primary sample included: a minimum age of 18 years, being from Bolivian or Peruvian descent (first generation, or 'newcomers' that were not born in the UK), permanently residing in London and having actively used at least one herbal remedy during the entire period of stay in the UK. In London, 40 people from Bolivian and Peruvian descent who had been living in the UK between 1 and 30 years were interviewed using a semi-structured questionnaire. In order to assess changes of plant use and perception within the same socio-economic and ethnic networks, a total of 58 of their relatives and close acquaintances were recruited through snowball sampling and interviewed in their cities of origin, i.e. Cochabamba (Bolivia) and Lima (Peru) between July and October 2007. In the home-countries slightly more women were interviewed as they are generally considered the main care-takers known to have more ample knowledge of traditional medicine (TM). Before the start of each interview, prior informed consent was obtained verbally. Interviews lasted between 1 and 3 h, were conducted in Spanish by the first author, tape-recorded and fully transcribed afterwards. In London, participants were asked to name all herbal remedies they were actively using at the time of the interview or they had been using at some point while residing in the UK. Hence, plant species used before migration were excluded. In order to recall more remedies, participants were subsequently asked to free-list actively used herbal remedies for a list of health conditions that was compiled from a preceding pilot study (Quinlan, 2005; Ceuterick et al., 2007). In the home-countries, interviewees were asked to name all remedies they would normally use for the same list of ailments. In all sites participants were asked additional open questions on their personal health care behaviour and preferences in relation to their perception of traditional medicine and the influence of migration

on their use of TM (in London). As indicated in Table 1, more people were interviewed in Bolivia and Peru. Despite this difference, the results allow to find out whether the same plant uses and ailment patterns prevailed among both groups before and after migration.

2.2. Voucher collection

Voucher specimens of medicinal plants documented during interviews were collected (reference collection numbers London MC1-42, Cochabamba MC43-101, Lima MC102-159). In London most samples consisted of pharmacognostic specimens (i.e. crude, dry plant material) that were purchased from Latino shops or provided by participants. Identification of these samples proved difficult as most contained dried, often sterile and fragmented plant material. Samples collected in London were identified using floras and analytical keys to plant families (Heywood, 1979; Thonner, 1981; Maas and Westra, 1993; Smith et al., 2004) and through comparison with the online herbarium collection of the New York Botanical Garden (NY) and the TROPICOS checklist. All voucher specimens were photographed and a reference collection was deposited at the Herbarium of the Laboratory of Pharmacognosy at the University of Bradford. Duplicates of specimens that could not be identified this way were taken to Lima (Peru) and compared with voucher specimens of the reference collections in the herbaria of La Molina (MOL) and San Marcos (USM) Universities. In Cochabamba, voucher specimens were purchased at the herbal markets of 'La Pampa' and 'Calatayud', where most participants shopped for herbal remedies. The remaining samples were obtained from participants' gardens. Fresh samples were pressed and dried according to the standard procedures of good botanical practices (Balick, 1999). Specimens were identified through comparison with the reference collections of the 'Herbario Nacional Forestal Martin Cárdenas' in Cochabamba and by using local botanical reference works (Cárdenas, 1941; Jiménez, 1984; Cárdenas, 1989; De Lucca and Zalles, 1992; Zalles and De Lucca, 1993; Uranga, 1996; Pestalozzi and Torrez, 1998; Montes de Oca et al., 2003; Vandebroek et al., 2003). In Lima, samples were bought at the popular markets of 'Surquillos', 'Ciudad de Dios', 'Breña', 'La Parada' and 'Mercado Central'. One participant also provided dried material, which was used as a pharmacognostic sample. Specimens were pressed, dried and identified at the 'Herbario del Departamento Académico de Biología de la Universidad Nacional Agraria La Molina' in Lima, by using the floras of Peru (Gibson, 1967; Brako and Zarucchi, 1993). Pictures were taken of all vouchers and reference collections were deposited at both herbaria. Furthermore, generally known, cultivated plants (such as onion, orange etc.) were identified in situ. To avoid mistakes, vernacular names (which often refer to more than one botanical species) were confirmed by participants during interviews using pictures or illustrations of botanical species (Thomas et al., 2007; Vandebroek et al., 2007).

3. Results

3.1. Most commonly treated health conditions

Overall, a majority of remedies was used for the same prevalent conditions in both groups before and after migration. In Cochabamba, a total of 805 use reports (citation frequency of an active use of remedy x for ailment y) were found. Among Bolivians in London, 195 use reports were found. A comparison of the most common conditions in both sites shows a general overlap. Gastro-intestinal problems (i.e. dyspepsia/indigestion, stomach ailments/gastritis, constipation, diarrhoea) were most commonly treated with traditional home-remedies among both Bolivian groups (28% in London and 22% in Cochabamba), followed by infections of the upper respiratory tract, i.e. common cold/influenza and

cough (together 17% in London and 13% in Cochabamba). Preparations to purge or clean the blood from 'impurities' were used by nearly half of the participants in London, where 7% of all treatments fell under this category of 'depuratives'. Among their peers in Bolivia this appeared to be one of the most frequently² treated health condition as well (3%). Another recurrent health condition in Cochabamba was nervous tension (referring to general nervousness, anxiety and depression as opposed to non-specific headaches) for which 50% of the interviewees used a certain treatment (5% of all health conditions). This condition continued to be important in the post-migration group (reported by a quarter of all participants). Skin injuries represented another type of conditions that figured high in both rankings (4% among both groups). Certain plant species were consumed as food, since they were considered 'healthy' in general without a specification of the assumed health-benefiting action. These species are called functional foods (Pieroni and Quave, 2006). Although both groups consumed such functional foods, it was a more widespread phenomenon in London (4%). On the other hand, the use of natural treatments for ophthalmologic conditions was more common in Cochabamba (4%). Finally, headaches and remedies to counter fatigue were more common among Bolivians in London. These conditions have been linked to a demanding migrant lifestyle (McIlwaine, 2007).

For the Peruvian group, a total of 714 use reports were found in Lima, as compared to 120 in London. Overall, the same common complaints occurred among Peruvians in London and the comparison group in Lima. Similar to the Bolivian case, gastro-intestinal problems (i.e. dyspepsia/indigestion, stomach ailments/gastritis, constipation and diarrhoea) were the most commonly treated conditions among both Peruvian groups (22% in London and 23% in Lima). Likewise, the consumption of functional foods was widespread among both Peruvian groups. In London, functional foods amounted to 17% of all uses, as compared to 5% in Lima. Treatments for kidney stones figured high in both rankings (4% in London and Lima alike). Similar to Bolivians in London and Cochabamba, Peruvians in Lima used many treatments for infections of the upper respiratory tract (17%). This use only decreased among Peruvians in London. Treatments for common cold and flu made up 11% of all remedies, while cough did not appear among prevalent ailments in London. Another 8% of all homeremedies in London consisted of depuratives, remedies used for 'cleaning' the blood. Two other conditions that were commonly treated in London included menstruation problems (4%) and insomnia (3%). Other common ailments in Lima were nervous tension (5%) and ophthalmologic complaints (5%). As for the Bolivian group, interviews revealed that Peruvian participants in London usually considered eye problems too severe to treat with home-remedies, and professional help was preferred, which explains the apparent disappearance of this use after migration.

3.2. (Kn)own health care strategies and underlying motives

Participants' motives for using traditional home-remedies were either (a) practical, (b) health concerns, (c) cultural and/or (d) economic, as summarised in Table 2. In general, motivations did not differ much between the participants in London and their peer groups in the home-countries. Health concerns were by far the main incentive for using herbal remedies, as the latter were considered more effective than pharmaceuticals, without negative side-effects (e.g. gastritis, liver damage) and more natural in general or containing 'less chemicals'. Availability and lower cost of home-remedies were mentioned by only a small percentage of participants, both

² Use frequency refers to the number of times a species was used for a certain condition.

Table 2 Motives for using TM.

		% in Cocha-bamba	% Bolivians in London	% in Lima	% Peruvians in London
Practical Accessible/available Dissatisfaction NHS or other	Accessible/available	=	5	4	-
	3	10	_	_	
Efficacy/efficiency	Efficacy/efficiency	35	35	11	25
	Natural, no chemicals	31	20	21	35
Health	No secondary or side-effects	23	35	7	_
	Healthier in general	7	10	14	_
	Tradition, culture, roots	10	20	7	35
Cultural Faith	Faith	7	5	21	20
Economic	Cost less	8	15	7	_





Fig. 1. An average medicine cabinet. A: in Cochabamba: Matricaria recutita L., Eucalyptus globulus Labill., Equisetum sp., Spartium junceum L. and Zea mays L.; B: in London: Cinnamomum verum J. Presl., Syzygium aromaticum (L.) Merr. and L.M. Perry, Camellia sinensis Kuntze, Cymbopogon citratus Stapf, Peumus boldo Mol. and Matricaria recutita L.; Note the differences in edible versus non-edible and dried versus fresh species.

'before and after' migration. Remarkably, more participants in London claimed using traditional home-remedies because they considered this an essential part of their tradition or culture.

3.3. Comparison of plant species used before and after migration

3.3.1. Bolivian home-remedies

Nearly half, or 42% of the home-remedies found in Cochabamba outlasted migration and was also used among Bolivians in London. Participants in Cochabamba reported using 168 different traditional home-remedies (including 64 single use reports, i.e. a remedy that was used by one person only), consisting of 130 botanical species (of which 11 could not be identified), 8 products of animal origin, 5 herbal mixtures (usually teabags containing a combination of herbs) and 17 other natural home-remedies (generally of mineral origin). Bolivians in London actively used 59 remedies (including 29 single use reports), encompassing a total of 33 different botanical species. A comparative overview of all documented species is provided in Annex 1.

The use of species in Cochabamba was more varied and the same species was generally used to treat different health conditions indicating a higher use versatility. The average number of uses per species in Cochabamba was 6.9, while the average number of applications per species among Bolivians in London was 3.4. When a species was used for a different health condition in London, these applications were usually not widespread and often cited by only one participant. Of all 130 botanical species used in Cochabamba, 45% were used fresh (n = 58), 38% dried (n = 49) and 17% both fresh and dried (n = 23). The majority of species (n = 73) or 56% was used medicinally, while 44% (n = 57) of these species had a primary function as food. In comparison, of the 44 botanical species used by Bolivians in London, 57% (n = 25) were used primarily as food plants,

while 43% (n = 19) were exclusively medicinal species. In total, 48% was used only dried, 39% was used fresh, and the remaining 3% was used interchangeably. These data indicate that in Bolivia, medicinal plant species were more commonly used fresh, while after migration herbal remedies consisted more frequently of dried species and food plants (see Fig. 1).

Table 3 provides an overview of the ten most common and salient natural home-remedies actively used among Bolivians in London and among their peers in Cochabamba, based on the number of use reports (n_u). Several species widely used in Cochabamba

Table 3Comparison of the most frequently used species in Cochabamba and among Bolivians in London.

Ten most salient species Cochabamba: Species (plant family) Spanish folk name	Ten most salient remedies Bolivians London: Species (plant family) Spanish folk name
1. Matricaria recutita L.	1. Erythroxylum coca Lam.
(Asteraceae) Manzanilla	(Erythroxylaceae) Coca
2. Eucalyptus globulus Labill	2. Matricaria recutita L.
(Myrtaceae) Eucalipto	(Asteraceae) Manzanilla
3. Erythroxylum coca Lam.	3. Citrus spp. (C. aurantifolia, C.
(Erythroxylaceae) Coca	limon) (Rutaceae) Limón
4. Malva parviflora L.	4. Cinnamomum verum Presl.
(Malvaceae) Malva	(Lauraceae) Canela
5. Citrus spp. (C. aurantifolia, C.	5. Mentisan® Mentholated
limon) (Rutaceae) Limón	ointment
6. Carica papaya L. (Caricaceae)	6. Allium sativum L. (Liliaceae)
Papaya ^a	Ajo
7. Aloe vera L. (Liliaceae) Sábila	7. Pimpinella anisum L.
	(Apiaceae) Anís
8. Citrus sinensis Pers.	8. Coffea sp. (Rubiaceae) Café
(Rutaceae) Naranja, flor de azar	
9. Gnaphalium versatile Rusby	Mentha piperita L.
(Asteraceae) Wira wira ^a	(Lamiaceae) Menta (MC48)
10. Camellia sinensis (L.) Kuntze	10. Eucalyptus globulus Labill
(Theaceae) Té	(Myrtaceae) Eucalipto

^a Not reported among other national peer group.

 $^{^{\}rm 3}\,$ Emic concepts have been used to distinguish between primarily food and medicinal species.

continued to be commonly used among Bolivians in London. Most species were applied for the same purposes before and after migration, respectively for common ailments such as gastro-intestinal problems and common cold. In general, most popular herbs had a more versatile use in Cochabamba, meaning that the range of potential applications of a species decreased among Bolivians in London (e.g. Eucalyptus globulus Labill). Furthermore, the overview of most frequently used species also illustrates a shift from mainly non-edible medicinal species before migration (e.g. Malva parviflora L., Gnaphalium versatile Rusby) to edible, typical food species in London (Pimpinella anisum L., Mentha spp., Coffea spp. and Allium sativum L.). Participants ascribed the prevalence of their use in London to a wide availability in supermarkets. Another (processed) home-remedy that was extensively used in London, yet remarkably less reported in Cochabamba was Mentisan®. This mentholated ointment is convenient to import (without restrictions). Furthermore, a species that figures high in both rankings is Erythroxylum coca Lam. Remarkably, despite partial prohibition of its use in the UK, coca was the most used species among Bolivians in London. Legally allowed teabags were widely consumed within the community and mostly replaced the use of dried leaves. Nonetheless, some participants also continued or at least attempted to import leaves as well. In Bolivia, besides the medicinal applications, coca leaves also had a sacred and social function, when used for future telling and in offerings to la Pachamama (k'hoa). These specific ritual functions were not observed in London where uses were restricted to medicinal applications.

Some of the species widely reported in Cochabamba were hardly ever used in London. Based on an analysis of participants' discourses on their consumption of medicinal plants this difference can be attributed to a changed availability. Fresh *Aloe vera* L. for example, was claimed to be harder to get hold of in London than in Cochabamba. In addition, a changed prevalence of ailments equally appeared to influence different consumption patterns. Tea leaves (*Camellia sinensis* (L.) Kuntze) for instance were generally applied to treat conjunctivitis in Cochabamba, an ailment that was less common among Bolivians in London.

Furthermore, a total of 59 botanical species used in Cochabamba, were not used by Bolivians in London. While many included single use reports, some uses were widespread in Cochabamba. In fact three of the species in the top ten of most used species in Cochabamba were not used at all by Bolivians in London: Malva parviflora L., Carica papaya L. and Gnaphalium versatile Rusby. The reasons for the absence of their uses after migration are mainly practical and are exemplary for the 'disappearance' of many other species from the pharmacopoeia of Bolivians in London. For example, the leaves of Malva parviflora L. (malva) were generally and almost exclusively used fresh in Cochabamba, yet import of green material to London was not observed during this study. Carica papaya L. on the other hand was not used for medicinal purposes by Bolivian participants in London, assumingly because of a lower prevalence of intestinal parasites (main indication) or due to the availability of other alternatives. The native Andean species, Gnaphalium versatile Rusby is a popular antitussive in highland Bolivia. In Cochabamba it was only sold (dried) in bulk at local markets, and not in sealed bags, which made this species less suitable for import to the UK.

3.3.2. Peruvian home-remedies

On the whole, Peruvians in London used fewer remedies than Bolivians in London. In Lima, 162 different remedies (including 50 single use reports) were reported for active use. Peruvians in London used 56 remedies (including 34 single use reports). In Lima, remedies included 144 botanical species (of which 18 could not be identified), 3 products of animal origin, 2 mixtures and 6 other natural home-remedies (often mineral). Annex 2 provides a full

Table 4Comparison of the most frequently used species in Lima and among Peruvians in London.

Ten most salient species Lima: Species (plant family) Spanish folk	Ten most salient remedies Peruvians London: Species,
name	Spanish folk name
1. Matricaria recutita L.	1. Matricaria recutita L.
(Asteraceae) Manzanilla	(Asteraceae) Manzanilla
2. Citrus spp. (C. aurantifolia, C.	2. Citrus spp. (C. aurantifolia, C.
limon) (Rutaceae) Limón	limon) (Rutaceae) Limón
3. Eucalyptus globulus Labill	3. Aloe vera L. (Liliaceae) Sábila
(Myrtaceae) Eucalipto ^a	
4. Solanum tuberosum L.	4. Uncaria tomentosa (Willd.ex
(Solanaceae) Papa	Roem.et Schult.) DC (Rubiaceae)
	Uña de gato
5. Plantago major L.	5. Allium sativum L. (Liliaceae) Ajo
(Plantaginaceae) Llantén ^a	
6. Pimpinella anisum L. (Apiaceae)	6. Erythroxylum coca Lam.
Anís	(Erythroxylaceae) Coca
7. Erythroxylum sp.	7. Origanum vulgare L. (Lamiaceae)
(Erythroxylaceae) Coca	Orégano
8. Chenopodium ambrosioides L.	8. Lepidium meyeni Walp.
(Chenopodiaceae) Paico ^a	(Brassicaceae) Maca
9. Petroselinum crispum (Mill.)	Chenopodium quinoa Willd.
Nyman ex A. W. Hill. (Apiaceae)	(Chenopodiaceae) Quinua
Perejil ^a	
10. Mentha sp. (Lamiaceae) Hierba	10. Pimpinella anisum L. (Apiaceae)
buena	Anís

^a Not reported among other national peer group.

overview of all home-remedies that were recorded. On the whole, less species were used in London for fewer health conditions. The average number of uses per species in Lima was 5.1, while among Peruvians in London this average decreased to only 2.1 uses per species. When a species was used for a different treatment in London, these uses were not widespread and generally cited by only one participant. Of all 144 botanical species used in Lima, 51% were used fresh (n = 73), 29% dried (n = 42) and 20% both fresh and dried (n=29). The majority of species (n=77) or 53% was used medicinally, while 47% (n = 67) of these species had a primary function as food. In comparison, 62% (n = 33) of the 53 botanical species used by Peruvians in London, were used primarily as food plants, while 38% (n = 20) were exclusively medicinal species. In line with findings from Cochabamba, more fresh medicinal species were used in Lima, while after migration, mostly dried species and food plants were used as herbal remedies. Thus, 60% of plant species was used only dried, 26% was used fresh, and the remaining 14% was used in interchangeably. As shown in Table 4, the species most commonly used by Peruvians in London and in Lima coincided to a certain extent. Again, as for the Bolivian group, the use versatility of plant species diminished after migration. For some of the most commonly used species in Lima, the range of applications decreased to only one specific treatment after migration i.e. Plantago major L. and Mentha spp. Species that were commonly used by Peruvians in London, included either easy accessible species (Citrus spp., Allium sativum L., Origanum vulgare L.), functional foods (Lepidium meyeni Walp., Chenopodium quinoa Willd.) (see Fig. 2) or culturally important species (Erythroxylum coca Lam., Uncaria tomentosa (Willd. ex Roem. et Schult.) DC). As for the Bolivian group, legal restrictions did not inhibit Peruvian participants to import and continue to use different coca products (like teabags, sweets and flour).

When comparing Tables 3 and 4 some differences can be observed between both Andean groups in London. A few species that were among the most widely used remedies in Lima were not used by Peruvians in London. These include *Eucalyptus globulus* Labill, *Chenopodium ambrosioides* L. and *Petroselinum crispum* (Mill.) Nyman ex A. W. Hill. They were used by Bolivians in London and are available in London. Likewise, *Aloe vera* L. was not used by Bolivians in London, while its use appears in the Peruvian rank-



Fig. 2. Functional food sold at 'La Parada' market Lima, Peru. A: maca (Lepidium meyenii Walp.). B: noni (Morinda citrifolia L.) and yacón (Polymnia sonchifolia Griseb.).

ing before and after migration. The absence of uses of ubiquitously available species can be interpreted as an indication of intracultural variation of ethnomedical practices. Replacement with allopathic medicine might be an alternative explanation for this discrepancy, as it was for example observed that Peruvian participants replaced eucalyptus with aspirins.

3.3.3. From the Andes to British supermarkets: provenance of home-remedies in London

Participants in London relied on different sources to obtain the above discussed plant species. Percentages mentioned here are based on the number of species that was obtained from a certain outlet. Within the whole Andean study group, supermarkets were by far the most popular venue for buying food species and common aromatic herbs (34%), followed by personal import (27%), Latino shops in London (16%) for more specialised herbs or species that are difficult to obtain (like coca) and markets with products from diverse minority ethnic groups (10%) for purchasing fresh herbs (e.g. mint leaves). Furthermore, participants sporadically relied on own cultivation for a range of culinary herbs (6%) and on health food stores (5%) for purchasing processed herbal products (like maca flour, a root vegetable used as energy stimulant). Herbal remedies were often shared and distributed within different social networks, thereby reinforcing the use of sometimes more difficult to obtain remedies like coca. Social networks of friends and relatives were indicated by participants as important for the preservation of traditional medicine. For non-urgent remedies, participants also asked family members in their country of origin to send home-remedies by parcel (via post), or asked peers who traveled back to bring along products. In addition, it was observed that remedies were sometimes imported from home-gardens of relatives living in other European countries with a milder climate (Italy and Spain). Accordingly, the most used remedies in London are products that are available from diverse sources: Matricaria recutita L., Citrus spp., Cinnamomum verum Presl., Allium sativum L., Pimpinella anisum L., Coffea sp., Mentha piperita L., Eucalyptus globulus Labill., Origanum vulgare L.

4. Discussion

Migration clearly has a corrosive effect on the use of homeremedies, as becomes clear from the diminished number and reduced versatility of medicinal plant applications among Bolivian and Peruvian migrants in London, in comparison with plant uses in their home-countries. A smaller ethnomedical knowledge base among post-migration groups has often been interpreted as a sign of acculturation, generally attributed to a limited access and exposure to natural resources in urban environments and to an increased preference for pharmaceutical treatments (Nguyen, 2003; Ososki et al., 2007). However, explaining why and how ethnobotanical traditions 'survive' is important for a better understanding of migrants' health care behaviour. The London-based Andeans in this study neither totally adhered to the traditions of their peer groups, nor did they completely abandon their medical practices (a process called deculturation) to substitute them with new practices (acculturation). In ethnoecological literature, such adaptive ability to transform and persist in the face of change and to maintain a capacity for renewal is known as resilience (Gunderson, 2003; Walker et al., 2006). As Folke et al. (2010) indicate, the idea that adaptation and transformation are essential aspects to maintain resilience might seem counterintuitive at first sight, as adaptation assumes loss of certain elements and the abandonment of former practices. However, resilience also incorporates a capacity to learn and continuously develop by combining knowledge and experience in response to change (Buchmann, 2009). According to Folke et al. (2003), there are four factors that promote resilience all of which apply to the use of traditional home-remedies by Andeans in London: (1) learning to live with change and absorb it, (2) nurturing diversity for reorganisation and renewal, (3) combining different kinds of knowledge for learning and (4) creating opportunities for self organisation.

4.1. 'Learning to live with change': the preservation of cultural keystone species

External change is perhaps most tangible in a decreased availability of traditionally used herbal remedies. Most studies indicate availability of a remedy as a decisive factor in the continuity and disappearance of traditional plant uses among migrant communities (Thorogood, 1993; Reiff et al., 2003; Pieroni et al., 2005; Viladrich, 2006; Ceuterick et al., 2007). Hence, one would assume that only the most accessible remedies 'survive'. However, a persistence of less obvious plant uses was documented as well. Rankings of the most commonly used species in all research sites also included culturally salient, less accessible and even prohibited species (e.g. Erythroxylum coca Lam.). Participants seemed to negotiate between, on the one hand, the continuation of traditional highly valued uses and, on the other hand, British importation restrictions (In the case of coca by abandoning the use of dried leaves for other alternatives). Participants' resilient plant use is thus reflected in a persistent use and preservation of 'cultural keystone species' (and to a broader extent natural products), that can be defined as markers for a community's cultural identity recognizable by their persistent use in relation to cultural change regardless of practical complications like legal prohibition (Cristancho and Vining, 2004; Garibaldi and Turner, 2004). This corroborates the idea that culturally salient species continue to be important after migration (Nguyen, 2003). Often a sort of nostalgic value is attributed to such remedies, as they embody an affiliation with the homecountry (Stone et al., 2005). This persistence is further confirmed in that 'tradition' became a more important argument for using TM among the participants in London. Such a conservative reflex can be seen as a way to affirm the value of former cultural traditions that are important for the successful 'survival' of a personal and ethnic identity (Reiff et al., 2003; Pieroni and Vandebroek, 2007; Volpato et al., 2009; Yöney et al., 2009; Van Andel and Westers, 2010). Moreover, species such as uña de gato – a traditional species from the Amazon region with clinically proven effectiveness as an antiinflammatory (Aguilar et al., 2002) – have undergone a widespread commercialisation both in Bolivia and in Peru and abroad. This has led to the revitalization of certain ethnomedical traditions and appears to have given these species an aura of effectiveness that reaffirms the traditional use and to a broader extent their Andean cultural heritage (Balick and Lee, 2002; Miles and Leatherman, 2003).

4.2. Nurturing diversity for reorganisation and renewal: the cultural edge effect

Diversity is the key to resilience (Norberg et al., 2008). Where two or more cultures 'intergrade', the resulting richness of knowledge and practices considerably enhances the resilience of local societies and their knowledge systems. Turner et al. (2003) have called this phenomenon the 'cultural edge effect'. It is argued here that, likewise, the (ethnomedical) diversity of a multicultural environment, increases the resilience of migrant ethnobotanies. With over 270 nationalities living within its borders, London is indeed a classical example of a 'cultural edge' or 'cultural transitional zone' where several social and cultural groups diverge and interact (Block, 2005). Such cultural interfaces promote the exchange and transference of both material goods and immaterial knowledge and provide structures that increase the availability of resources.

Based on accounts of participants, several species previously known as 'efficient', were used more intensively after migration exactly because of their easy and wide accessibility in other pharmacopoeias. The most striking example here is that of Matricaria recutita L. This cosmopolitan herb appeared in all rankings of most used species in this study. Chamomile tea is a popular remedy in folk medicine in the UK and the rest of Europe (De Cleene and Lejeune, 2003; Allen and Hatfield, 2004) as well as in modern Western phytotherapy (Barnes et al., 2007). Participants either used dried flowers (Matricaria recutita L. also know as wild or German chamomile) sold in Latino shops or imported from Peru-Bolivia or substituted them with more widely available commercial variants produced in the UK (often the cultivated Roman or English chamomile Anthemis nobilis L.). Reliance on different sources thus reinforces the resilience of Andeans' use of traditional homeremedies (and hence of their ethnobotanies).

4.3. Combining different kinds of knowledge and resources

Andeans in London also proved resilient in the continuation of their use of home-remedies by switching to more available substitutes and by creatively applying knowledge of those species (i.e. by using more dried and processed alternatives like teabags and flour when fresh species were unavailable after migration). While this change is certainly attributable to availability, it was also observed that participants proved to be inspired by commercial health food trends in the UK (see Chamberlain, 2004) and by dominant health

ideas and practices (spread by the media) like the '5 a day' campaign of the NHS (NHS, 2010). The post-migratory shift towards more edible food species for therapeutic applications in London is also reflected in the increased use of functional foods among participants in London. In addition, despite a general diminished versatility of plant uses, new applications of known species were observed among participants in London which further reflects a creative 'reorganisation and renewal' within the Andean ethnobotanies.

4.4. Creating opportunities for self-organisation: the role of social networks

During research it has been observed that through selforganisation at personal and community level the distribution of medicinal plant material and knowledge was promoted, thereby increasing the resilience of the urban ethnobotanies. Informal networks can best be illustrated using the example of coca leaves. Unlike other species such as chamomile and mint, coca cannot be bought from your average supermarket. Yet, participants actively sought for ways to import leaves. In addition, owners of Latino shops that were visited during this research claimed basing their stock exclusively on the demand of their Latino clientele, which points to the existence of active social, commercial networks. Moreover, Spanish Latin-American (free) newspapers published in London (Noticias, Express News, Extra) contained advertisements on herbal remedies, information on where to purchase them, and regularly included articles on traditional and herbal medicine, just like public websites (e.g. the Peruvian consulate). This shows how the ability for self-organisation at personal and community level fosters resilience.

5. Conclusions

The present article gives an overview of traditional medicines currently in use among members of the Andean community in London and offers an idea of the relative prevalence of those uses, which could guide health care providers. Results revealed that although not all home-remedies were still in use among Bolivian and Peruvian migrants in London, medicinal plant uses are considered important by the sample population. Certain plant species that are more closely linked to cultural identity are maintained, while others are replaced or abandoned. Furthermore, the Andeans living in the UK established means to maintain important traditional plant use practices for health into their daily life through social networks. In comparison with contemporary medicinal plant use among peer groups in Cochabamba and Lima, the ethnobotanies of Bolivian and Peruvian migrants in London clearly proved to be resilient when faced with migration. The observed coping strategies have been explored from a resilience perspective characterised by: (1) the preservation of cultural key stone species; (2) a cultural edge effect, i.e. a positive influence of the presence of cultural diversity on the use of medicinal plants; (3) a creative (re-)combination of different kinds of knowledge and resources, noticeable in an increased use of dried, processed alternatives and food species and (4) a reliance on community networks for exchange of plant material. Assumingly, these elements will also appear in the urban ethnobotanies of other ethnic minority communities of first-generation migrants and can thus be used as potential guidelines for future research that aims at looking into the health care behaviour of newcomer communities.

Finally, the present results illustrate the need for a better incorporation of Andean traditional medicinal knowledge and beliefs into the development of culturally effective health care. Crosscultural awareness of the specific health practices and preferences

of the growing Andean (and to a broader extent the whole Latin) community in London is needed and the prevailing and persistent preference of traditional remedies among these migrants should be considered. Health care providers could be attentive to the role traditional home-remedies might play in patients' health care seeking behaviour. Culturally sensitive questions on preferred treatments and beliefs around illness causations could be asked. Patients might also be asked about other remedies that were tried previous to seeking allopathic help. Concern should be expressed regarding potential interactions of traditional medicines with other products. Accordingly, when appropriate and not contraindicated, advice on benign traditional remedies might be incorporated into patient advice. This way not only compliance and trust would be improved, but a safer use of traditional medicines would be encouraged.

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Annex 1. Comparison of home-remedies found in Cochabamba and among Bolivians in London

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
Amaranthaceae Amaranthus caudatus L.	Kiwicha, amaranto/Love- lies-bleeding	S, d	Ingestion, food	Health food, energizing, eaten in soups, with yoghurt, milk, part of daily diet, eaten as breakfast	1	х
Amaranthaceae Iresine weberbauerii Suesseng, (MC20)	Flor blanca	Fl, d	Infusion	Menstrual pain	1	Х
Anacardiaceae Schinus molle L. (MC95)	Molle/Pepper tree	L/br, f	Steam inhalant/baths/external	Common cold: external use, leaves are heated, and put on the sole of the feet, said to heat the body, until cooled down, Considered a 'hot' remedy	4	x
		L/br, f	Bath	Rheumatism, anti-inflammatory, sore muscles, usually for feet	3	х
		L/br, f	Baths/External	Susto: feet bath (can be combined with café and eucalipto), leaves are heated and put on the sole of the feet, combined with mentisan, which is rubbed all over the body	2	x
		L/br, f	Carry a branch	Preventive measure for <i>oreja</i> , a branch has to be carried when passing a cemetery	2	x
		L/br, f	Bath	Aire	1	X
Apiaceae Apium Apio/Celer graveolens L. (MC75)	Apio/Celery	Ap, f	Infusion	Stomach ailments	2	x
		Ap, f	Food	Depurative, regulates the circulation	2	2
		Ap, f	Infusion/ingestion	Menstrual pain, combined with perejil	1	х
		Ap, f	Infusion	Hepatodepurative	1	х
Apiaceae Cuminum cyminum L.	Comino/Cumin	S, d	Infusion	Menstrual pain	1	x
Apiaceae Daucus carota L.	Zanahoria/Carrot	R, f	Eye drops/Juice	Conjunctivitis: drops directly administered in eye, juice considered 'good for the eye'	6	х
		R, f	Decoction	Gastritis	1	X
		R, f	Cataplasm	Emollient	1	х
		R, f	Decoction	Anti-diarrhoeal (can be combined with rice)	1	x
Apiaceae <i>Petroselinum</i> <i>crispum</i> (Mill.) Nyman ex A. W. Hill.	Perejil/Parsley	Ap, f	External	Haemostatic, applied as a tampon against nosebleed	6	Х
,		Ap, f	Food	Regulates circulation	1	2
		Ap, f	Infusion	Menstrual pains, combined with apio	1	x
		Ap, f	Infusion	Stomach ailments	1	1
Apiaceae Pimpinella anisum L. (MC22)	Anís/Aniseed	S, d	Infusion	Colics, carminative, digestive, infusion of 1/2 spoon per cup, aniseed is considered <i>cálido</i> (potentially harmful if consumed in large quantities)	11	6
		S, d	Infusion	Common cold, nasal congestion	1	х
Asteraceae Bidens pseudocosmos Sherff. (MAZ47)	Muni muni	S, d	Infusion	Sore throat, antitussive: s are toasted, grinded and prepared as coffee (1 cup)	1	х
Asteraceae Calendula officinalis L. (MC30)	Caléndula/Pot marigold	Fl, d	Infusion	Gastritis	1	х
Asteraceae Chuquiraga spinosa Less. (MC107)	Huamanpinta	Ap, d	Infusion	Kidney stones, cystitis	1	х
Asteraceae Cynara scolymus L. (MC68)	Alcachofa/Artichoke	L, f/d	Decoction/teabags	Hepatodepurative, for liver problems after excessive meals. 1 leaf/2 cups	2	x
		L, f/d	Decoction	Depurative	1	x

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
Asteraceae Gnaphalium versatile Rusby (MC45)	Wira wira	Fl, d	Infusion (in hot milk)/external	Common cold, flu, sore throat, antitussive: recipe infusion: 2 sp of sugar are melted in a pan until it turns brown, milk is added until the whole mixture is boiling (after turning off the fire) the flowers are added and left for a couple of minutes, drunk until cough is over, appr. 5 flowers/cup External use: mixed with mentisan and	16	х
Asteraceae <i>Lactuca</i> sativa L.	Lechuga/Lettuce	L,f	Infusion (3–4 tender leaves/cup)	rubbed on the whole body Tranquilliser, also for headaches caused by stress	5	4
Asteraceae Matricaria recutita L. (MC50)	Manzanilla/chamomile, German	L, f Fl/ap, f/d	Infusion Infusion/bath	Stomach ailments Stomach ailments, colics, digestive 1–3 branches/cup	1 17	х 9
	chamomile	Fl, f/d	Infusion/steam inhalant	Common cold, flu, antitussive, nasal congestion works as an anti-inflammatory (considered <i>fresco</i>), said to make a disease pass quicker, expels mucus, for sore throat infusion is gargled, for hay fever (n = 1):	17	2
		Fl, f/d	Infusion external use (eye bath)	steam inhalant Conjunctivitis	6	2
		Fl, f/d	Bath	Vaginal infections, used as baño de asiento	6	х
		Fl, f/d	Steam inhalant	Emollient, said to 'open the pores', or as anti-inflammatory	5	х
		Fl, f/d	Infusion/teabags	Menstrual pains (can be combined with coca)	4	1
		Fl, f/d	Infusion	Headaches	2	X
		Fl, f/d	Bath/external	Cystitis, for external use: mixed with tobacco and candle wax made of animal fat, rubbed on abdomen	2	Х
		Fl, f/d	Infusion	To treat fever, considered <i>fresco</i> , good for hot conditions such as fever or inflammations	2	x
		Fl, f/d	Infusion	Tranquilliser	1	1
		Fl, f/d	Steam inhalant	Susto	1	X
		Fl, f/d	Infusion	Anti-diarrhoeal	1	Х
		Fl, f/d	Infusion	Laxative	1 1	X
		Fl, f/d Fl, f/d	Infusion Bath	Heart ailments Muscle pain	1	X X
Asteraceae Polymnia sonchifolia Griseb.	Yacón	R, f	Ingestion, food/teabags/juice	Diabetes	2	x
		R, f	Ingestion, food/teabags/juice	To lose weight	1	х
Asteraceae Schkuhria pinnata var. octoaristata (DC) Cabr. (MC103)	Canchalagua	Ap, f	Infusion	Kidney stones, cystitis	1	х
Asteraceae <i>Senecio</i> sp. (MC93)	Chilk'u	L, f	Infusion	Laxative	1	х
Asteraceae Stevia spp. Asteraceae Taraxacum officinale L. (MC51)	Estevia/Stevia Diente de león/Dandelion	L, f	Preparation Infusion	Diabetes Cystitis, kidney stones, renal depurative	1 3	x x
eggiernate 21 (111251)	10011, 24114011011	L, f	Baths	Anti-inflammatory, infusion is used to wash wounds etc.	1	х
		L, f	Infusion	Hepatodepurative	1	Х
Asteraceae Tessaria fastigiata Griseb. (MAZ52)	Uri uri	Ap, f/d	Baths	Oreja	1	Х
Bixaceae Bixa orellana L.	Achiote/Lipstick tree	S, d	Cataplasm	For burns: grinded s, macerated in water, left outside in the sun for 2 h, until the water evaporated, mixed with 100 ml of olive oil (1 sp of achiote)	1	x
Practicacoao Practica	Nabo/Turnin	S, d	Ingestion	Kidney stones	1	X
Brassicaceae Brassica rapa var. rapa L.	Nabo/Turnip	R, f	Syrup	Common cold, antitussive: raw slices are chopped, covered in honey or sugar, left overnight, 1 sp/day	2	Х
Brassicaceae Lepidium meyeni Walp.	Maca/Maca	R, f/d	Ingestion	Health food, energizing	1	х
Brassicaceae Nasturtium officinale R.Br.	Berro/Watercress	L, f	Extract/Cataplasm	Sore throat, common cold: extract of fresh leaves, 1/2 cup each meal, with honey or singani, or cataplasm (100 g)	3	х
		L, f	Food	Depurative	1	x

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
Bromeliaceae Ananas comosus (L.) Merr.	Piña/Pineapple	Fr	Teabags	Weight loss	2	х
Buddlejaceae Buddleja coriacea Remy	Quiswara	P,f/d Ap, f/d	Decoction Infusion	Renal depurative, cystitis, diuretic To treat fever	2	x x
(MC80) Burseraceae species not identified	Copal	Re	Aromatic smoke	Against Susto	1	х
Cactaceae Opuntia soehrensii Britton & Rose (MC85)	Airampu	S, d	Infusion	To treat fever	2	х
Cactaceae Opuntia sp. Caricaceae Carica	Tuna/Prickly pear Papaya/Papaya	L, f S, f/Fr, f	Cataplasm Ingestion	General pain in the bones Laxative	1 11	x x
рарауа L.		S, f	Ingestion	Anthelmintic, 4–5 s, can be taken with milk (1 sp/l), eaten with muesli as preventive measure	9	x
Caryophyllaceae Dianthus sp.	Clavel blanco/Carnation	Fl, f/d	Infusion	Tranquilliser	1	х
Chenopodiaceae Beta vulgaris var. cicla	Acelga/Swiss chard	Fl, f/d Ap,f	Infusion Steam inhalant/Cataplasm	Heart ailments Common cold, nasal congestion, sinusitis, expectorant. Leaves are applied as cataplasm on forehead, or boiled and used as steam inhalant	1 3	x x
Chenopodiaceae Chenopodium ambrosioides L. (MC71)	Paico, payku/Wormseed	L, f	Cataplasm Infusion	Headache Stomach ailments, digestive, 2–3 leaves/cup	1 8	x 1
(WC/1)		L, f L, f	Infusion Cataplasm	Hepatodepurative Rheumatism: leaves are grinded, and mixed with salt and applied on aching parts	1 1	x x
Chenopodiaceae Chenopodium pallidicaule Aellen	Kañihua, kañawa/Kañiwa	S, d	Ingestion, infusion	Health food, energizing, immunostimulant	2	1
puntaicuale Achen		S, d	Infusion	Considered a 'cold' remedy good for treating a fever	1	x
Chenopodiaceae Chenopodium quinoa Willd.	Quinua/Quinoa	S, d	Ingestion, food (cooked)	Health food, energizing	1	3
		S, d	Cataplasm	Anti-inflammatory: cooked quinua is applied as a cataplasm, said to absorb the first inflammation, combined with <i>llantén</i> leaves	1	х
Chananadiacasa	Ecninaca/Spinach	S, d L, f	Decoction (in milk) Food (cooked)	Ulcers Considered 'good for the eye'	1 1	X
Chenopodiaceae Spinacia oleracea L. Clusiaceae Clusia cf.	Espinaca/Spinach Incienso/Incense	L, I La, d	Aromatic smoke	For <i>pachamama</i> or <i>hormiga</i> , the patient is	2	x x
lechleri Rusby		La, d	Aromatic smoke	exposed to the fume of the incense For susto, rubbed on body to find out were one got frightened, combined with a ritual of calling the soul of the asustado, cloths of the patient (usually child) are held in the smoke of the incense	2	х
		La, d	Aromatic smoke	To avert bad luck, special type: incienso Gloria	1	х
Cucurbitaceae Cucumis sativus L.	Pepino/Cucumber	Fr, f	External	Against spots, impurities of the skin, raw slices are put on the face, left over night	3	х
Cucurbitaceae Cucurbita maxima Wall.	Zapallo/Pumpkin	S, d	Ingestion	Anthelmintic: s are toasted, grinded and ingested, on an empty stomach	3	Х
Equisetaceae Equisetum giganteum L. (MC52)	Cola de caballo/Horsetail	Ap, d	Infusion	Cystitis, renal depurative, kidney stones	8	1
		Ap, d Ap, f/d	Infusion Infusion	Menstrual pains Digestive	1 1	x 1
Erythroxylaceae Erythroxylum coca Lam. (MC43)	Coca	Ap, d L, f/d	Infusion Infusion/chew	To treat fever Stomach ailments, digestive, depending on size of leaf: 3–7 leaves/cup, flour: 1/2 sp./cup	1 13	x 5
Lain. (IVIC-13)		L, f/d	Chewed/reading	Chewed during k'hoa ritual, burnt as part of white <i>mesa</i> , and read for future telling	4	x
		L, d	Infusion	Menstrual pains (can be combined with manzanilla)	3	х
		L, d	Chewed	Stimulant	2	7

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoE
		L, d	Infusion/chewed	Sore throat (can be combined with eucalipto)	2	х
		L, d	Infusion	Hypertension, high cholesterol	2	х
		L, d	Chewed	Toothache	1	х
		L, d	Infusion	Headaches	1	3
		L, d	Infusion	Painkiller, for earache	1	х
		L, d	Infusion	General painkiller, analgesic	1	1
		L, d	Chewed	To treat diabetes	1	Х
		L, d	Infusion	Altitude sickness (soroche)	1	Х
		L, d	Infusion	Common cold, flu, antitussive	1	Х
Euphorbiaceae Croton lechleri Muell. Arg.	Sangre de drago, sangre de grado/Dragons'	Re	Infusion	Depurative: 3 drops/glass (water), 1 glass/day, on an empty stomach	2	х
	blood					
		Re	Infusion	Menstrual pains	1	Х
Euphorbiaceae Manihot esculenta Crantz.	Yuca, cassava/Manioc	R, f/d	Decoction	Gastritis	1	х
Euphorbiaceae Phyllanthus niruri L. (MC152)	Chanca piedra/Stone breaker	Ap, f	Infusion	Renal depurative, kidney stones	2	1
		Ap, f	Infusion	Depurative	1	х
Fabaceae Cassia	Sen/Senna	L, d	Infusion	Laxative	2	х
angustifolia Vahl.						
Fabaceae <i>Glycine max</i> Merr.	Soya/Soy bean	S	Ingestion	Functional food: good for the blood and heart, consumed as soy milk, tofu, and other soy based products	1	2
Fabaceae Lupinus	Tarwi	S, f	Ingestion	Stomach ailments, believed to 'clean the	1	х
mutabilis Sweet				stomach'		
Fabaceae Medicago sativa L.	Alfalfa/Alfalfa	L, f	Infusion	Digestive	1	х
abaceae Spartium junceum L. (MC72)	Retama/Spanish broom	Br, f/d	Kept in house	To avert bad luck, said to absorb all bad energy, put in garden, or house, at entrance, whole plant is wreathed in the form of a cross, and put behind door, more effective on Tuesdays and Fridays, infusion used to allow the house to autority it spirits.	4	х
		D., C	D - el-	used to clean the house, to avert evil spirits		
		Br, f	Bath	Oreja Garaga a a la la	1	Х
		Br, f	Feetbath	Common cold	1	Х
abaceae <i>Vicia faba</i> L.	Haba/Broad bean	Fl, f Po, f	Infusion Cataplasm	Heart ailments, 2–3 flowers/cup Cataplasm on forehead, can be combined	1 2	x x
lliciaceae, <i>Illicium</i>	Anís estrella/Star	S, d	Infusion	with <i>acelga</i> Laxative, mainly for babies	1	x
verum Hook. f uglandaceae Juglans	anise Nogal/Walnut	L, f/d	Infusion	Depurative	1	x
sp. .amiaceae Melissa officinalis L. (MC47)	Toronjil/Lemon balm	Ap, f/d	Infusion/cataplasm	To treat headaches	5	x
Officialis L. (WC47)	Daiiii	Ap, f/d	Infusion	Heart ailments	2	x
		Ap, f/d	Infusion	Colics	1	X
		Ap, f/d	Infusion	Susto	1	x
Lamiaceae <i>Mentha</i> piperita L. (MC48)	Menta, poleo/Mint	L, f	Infusion/food	Stomach ailments, carminative, infusion: taken until the discomfort passes, when used in food: preventive measure	5	5
		L, f	Infusion	Laxative	1	х
		L, f	Infusion	Anthelmintic (advised on empty stomach)	1	x
		L, f/d	Steam inhalant	Flu, nasal congestion	1	2
amiaceae <i>Mentha</i> sp. (MC5, MC7)	Hierba buena/Mint	L, f	Infusion	Anthelmintic: on empty stomach, 10 leaves/cup	1	x
amiaceae Origanum vulgare L.	Orégano/Oregano, pot marjoram	L, f/d	Infusion	Menstrual regulator, emmenagogue (=promotes menstrual discharge) can be abortive in large quantities!	3	x
		L, f/d	Food	Digestive, used preventively	1	х
.amiaceae Rosmarinus officinalis L. (MC62)	Romero/Rosemary	L, f	Baths/macerate (external)	Anti-inflammatory, general body pains, can be combined with eucalipto. Macerate in alcohol: for a few days (left outside in the sun), then used to rub affected body parts, also in case of muscle cramps; considered cálido (potentially harmful if consumed in large quantities)	2	х
		L, f	Infusion	Stomach ailments	2	х
		L, f	Baths/infusion	Susto	2	x
		L, f	Infusion	Heart ailments	1	x
		L, f	Baths	Post partum, fortifying for the body, also used after any kind of operation	1	х
		L, f	Baths	Oreja	1	x

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
		L, f	Infusion	Tranquilliser	1	х
Lamiaceae <i>Satureja</i> boliviana (Benth.) Briq.	K'hoa	Br	Burnt	Part of a <i>mesa</i> for good luck	2	Х
Lamiaceae <i>Satureja</i> boliviana (Benth.) Briq., syn.	Muña	Ap, f	Infusion	Anthelmintic	1	х
Clinopodium bolivianum (MC87)						
·	C 1 (C)	Ap, f	Bath	Susto	1	X
Lauraceae Cinnamomum verum J. Presl (MC1)	Canela/Cinnamon	Ba, d	Decoction	Anti-diarrhoeal: can be combined with maicena, a pan of boiling water, 1/2 maicena, 1 stick of <i>canela</i> , a few cloves	2	5
Lauraceae Laurus	Laurel/Bay laurel	L, d	Infusion	Stomach ailments, digestive	1	х
nobilis L.	Dalta / Assasada	C	Descrien	Anti diambasal	2	1
Lauraceae Persea americana Mill.	Palta/Avocado	S, r Fr, f	Decoction External	Anti-diarrhoeal Conditioner for dry hair	2	1
		Fr, f	Food	Gastritis	1	X
Liliaceae <i>Allium cepa</i> L. Cebolla/Onion	Cebolla/Onion	Bu,f	External	Burns, vulnerary, membrane is put on affected skin or slices of raw onion are rubbed	6	X
		Bu,f	Syrup	Antitussive, bronchitis, recipe: 1 onion $(\pm 100\mathrm{g})$, $100\mathrm{g}$ of carrot, 1 green apple, grated, mixed th 11 of water, 1/2 sp of aniseed, boiled until only 1/21 is left, mixed	2	1
		Bu,f	Eye drops	with honey, 2–3 times/day Conjunctivitis: drops of the milky juice of	1	x
Liliaceae Allium sativum L.	Ajo/Garlic	Cl, f	Ingestion/macerate	an onion are put in the eye To treat hypertension, 'good for the circulation'. Ingested, food, can be	6	6
		Cl. f	Channel	macerated in vinegar for a couple of days, or macerated in a glass of cold water for one night, the infusion is drunk the following morning after garlic is removed.	2	_
		Cl, f Cl, f	Chewed Ingestion	Toothache Anthelmintic, ingested, macerated in vinegar or drunk with a glass of lukewarm	3 2	x x
		Cl, f	Macerate in vinegar	milk (to be taken on an empty stomach) Common cold	1	1
Liliaceae Aloe vera L.	Sábila/Aloe	L, f (gel)	External	Burns, vulnerary, cicatrizant, leaves soaked in water, overnight, peeled and gel applied on affected part	10	1
		L, f	External	Emollient, conditioner for hair	3	x
		L, f	External	Bruises	1	X
		L, f L, f	Ingestion Ingestion	Common cold Augments immune system: the gel in the leaves is mixed with yoghurt and consumed as a fortifying food, high levels	1 1	x x
				of the mineral selenium		
		L, f	Ingestion	Stomach ailments	1	x
Linaceae Linum usitatissimum Griseb.	Linaza/Linseed, flaxseed	S, d	Decoction/ingestion	Laxative	2	х
		S, d S, d	Decoction Decoction	Anti-diarrhoeal Gastritis	1 1	x x
		S, d S, d	Decoction	To treat fever	1	x x
Lythraceae Punica granatum L.	Granada/Pomegranate	P P	Infusion	Anti-diarrhoeal	1	X
Malvaceae Malva parviflora L. (MC46)	Malva/Mallow	L, f	Cataplasm/baths	Anti-inflammatory, vulnerary	8	х
		L, f	Infusion (1 leaf/cup)/enema	Stomach ailments, gastritis, treatment of one week	5	х
		L, f	Cataplasm	To treat burns	2	Х
		L, f	Infusion/cataplasm	To treat fever	2	X
		L, f	Infusion/cataplasm	To treat fever	2	X
		L, f L, f	Baths Infusion	Anti-diarrhoeal Laxative	1 1	X Y
		L, I L, f	Infusion	Menstrual pain	1	x x
		L, f	Infusion	Depurative	1	1
		L, f	Chewed	For toothache, 1 leaf, chewed for 10–15 min	1	x
		L, f	Infusion	Tranquilliser	1	х

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
Monimiaceae <i>Peumus</i> boldo Mol. (MC2)	Boldo/Boldo leaf	L, d	Infusion	Hepatodepurative, liver ailments, combined with lemon juice, to balance the harmful properties should not be taken during more than one week, 3 leaves/cup, 3 times/day	3	1
		L, d	Infusion	Stomach ailments, digestive	2	1
		L, d	Infusion	Renal depurative	1	1
		L, d	Infusion	Menstrual pain	1	Х
Moraceae Ficus sp.	Higo/Fig	Fr, f	Decoction (refresco)	Laxative	1	х
Musaceae Musa spp. usually Musa × paradisiaca L.	Plátano/Banana	Fr, f	Ingestion	Anti-diarrhoeal	5	Х
Myristicaceae Myristica fragrans Houtt.	Nuez moscada/Nutmeg	S, d	Chewed/food	Aire: sucked or chewed entirely or grated, also added as condiment to soups	6	Х
jrugruns Houtt.	moscada/ivutineg	S, d	Chewed	To treat fever	1	x
Myrtaceae Eucalyptus globulus Labill. (MC17)	Eucalipto/Eucalyptus	L, d	Steam inhalant/infusion/ baths/external/chewed	Common cold, flu, antitussive, nasal congestion, sore throat. External use: leaves are heated on a fire, and put on the whole chest (lungs) (usually for children) or on the sole of the feet. Considered a hot plant good for cold diseases. Advised to use	28	6
		L, d	Baths	at night, before going to sleep To treat susto (can be combined with molle and romero)	2	x
		L, d	Baths	Tranquilliser	1	x
		L, d	Baths	To treat aire (can be combined with molle)	1	х
		L, d	Feetbath	To treat sore muscles, anti-inflammatory (can be combined with <i>molle</i> and <i>romero</i>)	1	х
		L, d	Steam inhalant	To treat headaches	1	х
		L, d	External	For fever, put on chest or back, until leaves are dry (usually for children), quantity of leaves depends on size of patient's chest/back	1	х
Myrtaceae Psidium guajava L.	Guayaba/Guava	L, f	Infusion	Depurative	1	x
Myrtaceae Syzygium aromaticum (L.) Merr. & L.M.Perry (MC24)	Clavo de olor/Clove	Bu, d	Chewed	Toothache	8	3
		Bu, d	Infusion	Anti-diarrhoeal	1	Х
Oleaceae Olea europaea L.	Aceituna/Olive	0	Ingestion	Gall bladder, can be combined with lemon juice	1	Х
		0	Ingestion	Laxative, preferably on empty stomach	1	Х
		0	Ingestion	Gastritis	1	Х
		0	External	Burns	1	Х
Papaveraceae Argemone mexicana L. (MAZ48)	Cardo santo/Mexican poppy	Fl, f	Infusion	Sore throat	1	Х
Pedaliaceae, Sesamum indicum L.	Ajonjoli/Sesame	S, d	Ingestion	Health food, ingestion 1–2 sp. can be mixed with juice	2	х
Piperaceae <i>Peperomia</i> spp. (MC150)	Congona	L, f	External	For earache the leaves are heated in a pan or fire, then drops of the liquid inside the leaves are applied inside the ear canal, if there is no relief treatment might be repeated after 2–3 h until the pain stops	10	х
Piperaceae Piper acutifolium Poepp. ex Kunth (MC63)	Matico	L, f	Infusion	Menstrual pain	1	х
Plantaginaceae Plantago major L. (MC55)	Llantén/Plantain	L, f/d	Infusion	Stomach ailments	3	х
		L, f/d	Leaves fresh/dried	Kidney stones, cystitis, renal depurative	2	x
		L, f	Cataplasm	Anti-inflammatory, soaked in water, applied topically on affected skin, leaves are said to absorb inflammation, applied until they dry, can be combined with quinua	1	х
Poaceae Avena sativa L.	Avena/Oats	S, d	Decoction (in water or milk)	Laxative, regulates digestive system, can be mixed with orange juice, and used preventively as part of daily diet (health food)	4	1
		S, d	Decoction, external	Emollient, facial mask	2	х
		S, d	Decoction (in soupr or milk)	Gastritis	1	х

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Poaceae Cymbopogon citratus Stapf (MC6)	Hierba luisa/Lemon grass	Ap, f	Infusion	Stomach ailments	1	х
Poaceae Hordeum vulgare L.	Cebada/Barley	S, d	Decoction (in milk)	Ulcers	1	х
		S, d	Decoction (in water)	Anti-diarrhoeal	1	х
Poaceae <i>Oryza sativa</i> L.	Arroz/Rice	S, r S, d	Decoction Decoction, external	Anti-diarrhoeal Emollient, applied as a mask on face or other affected skin	4 1	x x
Poaceae Triticum spp.	Trigo/Wheat	S, d	Decoction Decoction (in milk)	Laxative Ulcers	1 1	x x
Poaceae <i>Zea mays</i> L.	Choclo, cabello de choclo/Corn	Maicena, starch	Infusion/decoction	Anti-diarrhoeal, diluted in lukewarm water or Coca-Cola (2 sp. per 1/2 cup), decocted with apple	12	x
		St, d	Infusion	Cystitis, renal depurative, kidney stones	3	Х
		St, d S	Infusion External	Rheumatism Burns (sediment of fermented seeds,	1 1	x x
Polygonaceae Rumex	Rompe piedra	L, f	Infusion	<i>chicha</i> applied on skin) Gall bladder	1	х
sp. (MC65) Rosaceae <i>Fragaria</i> sp.	Frutilla/Strawberry	Br, f	Infusion	Renal depurative	1	х
Rosaceae, Malus spp.	Manzana/Apple	Fr, f	Infusion/food	Sedative, tranquilliser	3	X X
ловассис, типо эрр,	.manzana/nppic	Fr, f	Decoction	Anti-diarrhoeal	1	X
		Fr, f	Ingestion	Laxative	1	X
Rosaceae Prunus domestica L.	Ciruela (negra)/Plum	Fr, f/d	Ingestion/decoction (refresco)	Laxative	6	1
Rosaceae Prunus persica (L.) Batsch	Mocochinchi, durazno/Peach	Fr, d	Decoction (refresco)	Laxative	3	x
			Teabags	Tranquilliser	1	Х
Rosaceae <i>Prunus</i> salicifolia Kunth	Capuli/Capulin	Br/Fr, f	Infusion	Gall bladder, anti-inflammatory	1	х
				To treat headaches	1	X
				Hepatodepurative	1	X
				Renal depurative	1	X
				Stomach ailments	1	Х
Rosaceae <i>Rosa</i> sp. (MC70)	Q'hasi rosa, rosa/Rose	Pt, d	Infusion	Heart ailments	3	х
		Pt, d	Infusion	Susto	1	X
		Pt, d	Infusion	Tranquilliser	1 1	X
Rosaceae Rubus sp.	Mora/Blackberry	Pt, d Fr, f	Eye bath Juice	Conjunctivitis Diabetes	1	X X
Rosaceae Kubus sp. Rosaceae Sanguisorba minor Scop. (MC87)	Pimpinela/Burnet	R f/d	Food/decoction	Gastritis	2	X X
, ,		Ap, f	Infusion	Heart ailments	1	х
		Ap, f	Infusion	Tranquilliser	1	х
Rubiaceae Coffea arabica L.	Café/Coffee	S, r	Steam inhalant/Feetbath	Common cold, feet bath can be combined with retama, ruda, salt, steam inhalant	2	х
		S, r	Feetbath	with molle Susto, treatment often in combination with calling the soul back	2	х
		S, r	Infusion, coffee	Stimulant	1	3
		S, r	Feetbath	Arrebato, 1/4 kg	1	x
		S, r	External	Grind is put on wounds as a vulnerary	1	х
Rubiaceae Morinda citrifolia L.	Noni/Indian mulberry, cheese	Fr, f	Juice	Renal depurative	1	х
Rubiaceae <i>Uncaria</i> tomentosa (Willd. ex Roem. et Schult.) DC	fruit Uña de gato/Cat's claw	V, d	Infusio	Depurative	2	x
,		V, d	Infusion	Kidney stones, cystitis	1	x
Rutaceae Citrus reticulata Blanco	Mandarina	P, f	Chewed	Laxative	2	x
		L, f/d	Infusion	Tranquilliser	1	x
Rutaceae Citrus sinensis Pers.	Naranja, flor de azar/Orange, orange blossom	L, f/d	Infusion	Tranquilliser, 4 leaves, boiled until the water has a yellow colour, advised to drink at night	6	1
		Fr, f/P	Juice/chew	Laxative	5	х
		Fl, d	Infusion	Heart ailments	3	x
		Fr, f	Juice (hot)	Common cold, flu, sore throat	2	2
		Fr, f	Juice (mixed with milk)	Anthelmintic	1	х
		P	Infusion	To avert bad spirits, an infusion of retama and naranja is used to clean the house	1	х

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Rutaceae Citrus spp. (different species! lime Citrus aurantifolia (Christm.) Swingle, limon Citrus limon (L.) Burm.f)	Limón/Lemon, lime	Fr, f	Juice (hot)	Common cold, flu: hot lemon juice (diaphoretic), for sore throat juice (potentially mixed with salt) is gargled	13	8
		L, f/d	Infusion (3–4 leaves/cup)	Tranquilliser	2	х
		Fr, f	External	Emollient, black spots, hair	3	X
		Fr, f	Juice, external	Juice of a lemon is used to clean wounds, considered good antiseptic and cicatrizant	1	1
		Fr, f	Juice	For gall bladder problems: juice mixed with olive oil	1	Х
		S, f	Chewed	Toothache	1	х
Rutaceae Ruta graveolens L. (MC58,	Ruda/Rue	L, f	External/macerate (external)/food	For aire: rue is rubbed on affect parts, sometimes as a macerate or added to food	8	х
MC59)		L, f	External	as condiment for same purpose Leaves are heated and put inside ear canal	2	х
				for 2-3 h		
		Ap, f	Kept in house	Protection against mal de ojo	1	1
		Ap, f	Baths	Oreja	1	X
		Ap, f	Baths	Common cold, can be combined with retama, coffee sediment, salt, used in a feet bath	1	х
Sapindaceae Paullinia cupana H.B. & K.	Guaraná/Guarana	S, d	Infusion	Common cold, flu	1	х
Smilacaceae Smilax medica Petz. (MC10)	Zarzaparrilla/Sarsapari	la R, d	Decoction	Depurative, cholesterol, said to be helpful against skin problems caused by impurities in the blood, can be drunk only once a day (cálido)	7	1
Solanaceae Atropa belladonna L.	Belladona/Deadly nightshade	Fl, f	External	Cystitis: flowers rubbed on the abdomen (where bladder is situated)	1	x
Solanaceae Capsicum sp.	Ají/Chilli	Fr, d	External	Rubbed on face and other parts affected by aire	1	х
Solanaceae Cestrum parqui L'Herit (MC88)	Andres wailla	Fl, d	Infusion	Colics, digestive, to be taken in small amounts, 1 cup before going to sleep	2	x
, ,		Fl, d	Infusion	Kidney stones	1	х
Solanaceae, Lycopersicon esculentum Mill.	Tomate/Tomato	Fr, f	Food	Laxative	1	х
		L Fr, f	Infusion External	Colics For sore throat slices of tomato are heated and put on the neck, throat and covered in	1	x x
				a (white) cloth, usually before going to sleep		
Solanaceae Nicotiana longiflora Cav. (MC74)	Tabaco/Tobacco	L, f	Cataplasm	Vulnerary	1	х
(IVIC/4)		L, f	Cataplasm	Rheumatism	1	х
		L, f	External	Rubbed on abdomen for cystitis	1	х
Solanaceae Solanum tuberosum L.	Papa, papa runa/Potato	Tu, f	External	Headaches: raw slices applied on forehead, wrapped with cloth, shawl, or worn under a hat, can be used during the day	6	Х
		Tu, f	External	For tired eyes, applied topically	1	х
		Tu, f	Infusion	Renal depurative	1	x
		Tu, f	Decoction	Anti-diarrhoeal	1	x
		Tu, f	External	For toothache, slices of raw potato are put on the cheek	1	х
Solanaceae, Solanum sp. (MC97)	Pochongora	Ap, f/d	Infusion	Stomach ailments, laxative	2	1
	met Int. 1	Ap, f/d	Infusion	To treat fever	1	х
Theaceae Camellia sinensis (L.) Kuntze	Té/Black tea	L, d	Eye bath/external/teabags	Conjunctivitis: eyes are washed with the infusion (eyebath), soaked leaves or teabags soaked in hot water are applied on the eye	14	х
Tiliaceae <i>Tilia</i> sp.	Tilo/Linden	Fl/Ba	Infusion/extract/ baths/decoction	Common cold, flu	4	x
		L, d	Infusion/teabags	Sedative, tranquilliser	2	х
		Fl, d	Cataplasm	Skin problems	1	Х
Urticaceae Urtica urens L. (MC56)	Ortiga, itapallu/Nettle	Ap, f	Infusion	Depurative	2	х

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
Valerianaceae Valeriana officinalis L. (MC34)/Asteraceae Perezia coerulescens Wedd. (MC138) (Same names, used for same purposes!)	Valeriana/Valerian	R/O	Decoction/infusion	Tranquilliser, sedative, nervous headaches	3	х
		R	Decoction	Heart ailments	1	Х
Varbanacasa Linnia	Codrón/Lomon	R	Decoction Infusion	Susto	1 5	x 2
Verbenaceae <i>Lippia</i> citriodora (Lam.) Humb. Bonpl. Kunth. (MC23,MC78)	Cedrón/Lemon verbena	L, f/d		Stomach ailments, digestive		
Violaceae Viola odorata L. (MC101)	Violeta/Violet	L, f/d Fl, f	Infusion Infusion	Tranquilliser Heart ailments	4 1	x x
		Fl, f	Infusion	Antitussive (2 flowers/cup)	1	х
7::	Innailea (Cinana	L, f/d	Infusion	Heart ailments, hypertension	2	X
Zingiberaceae Zingiber officinale Roscoe	Jengibre/Ginger	R, f	Ingestion/infusion	Said to be good for muscle pains and for the joints, also consumed as functional food	2	х
Not identified	Chilca	L, f	Cataplasm	Vulnerary, combined with <i>malva</i>	1	х
Not identified	Copaiba	L	Infusion	For menstrual pains, 30 g/cup, 3 times/day	1	X
Not identified	Lluta lluta	S	Infusion	Common cold, sore throat, for children only one spoon, should always be used in small quantities, often passes after drinking one time	1	Х
Not identified	Lok'o lok'o	L, f	Cataplasm	For sinusitis, leaves are wrapped around forehead and covered in cloth	1	х
Not identified	Madre selva	Fl, f	Infusion	Heart ailments	3	Х
Not identified, probably Fabaceae Desmodium molliculum (Kunth) DC	Manayupa	L, f	Infusion	Menstrual pain	1	х
		L, f	Infusion	Kidney stones	1	х
Not identified	Palo santo	Ap	Decoction	Renal depurative	1	X
Not identified	Saúco	Fl, d Fl, d	Infusion Infusion	Heart ailments	1 1	X
Not identified	Tartago	L, f	External	Tranquilliser For general body pains: leaves are toasted, crushed, mixed with chicken fat, rubbed on aching parts	1	x x
Not identified	Tusilago	Ap, f/d	Infusion	Antitussive	1	х
Not identified Animal origin	Ulala	L, f	Cataplasm	To treat fever	1	х
Batoidei <i>Raja</i> sp.	Aceite raya/Ray oil	Oil	External	General muscle pain	1	Х
Camelidae <i>Lama glama</i> L.	Grasa de Ilama/Llama fat	Animal fat	External	The fat is heated and rubbed on the back or other body parts affected by rheumatism or muscle pains	1	Х
Produced by honey	Miel/Honey		External	Vulnerary	1	1
bees (genus Apis) Resinous mixture collected by bees (genus Apis) used for	Propóleo/Propolis		Ingestion	Common cold, flu, antitussive, sore throat, considered 'natural antibiotic	5	1
sealing gaps in the hive Produced by honey	Jalea real/Royal		Ingestion	Functional food fortifying, same effect as	1	x
bees (genus Apis)	Jelly		External	maca, roborant, reconstituent	2	1
	Huevo/Egg	Egg white	External External	Vulnerary, cicatrizant To treat a fever, whipped egg white is applied in the armpits, on forehead and	3 3	1 x
		Egg yolk	External	covered in newspaper The yolk is mixed with lemon juice, used as conditioner for dry hair	1	x
	Yogur/Yoghurt		Food	Laxative	2	1
	Leche/Milk		Food Ingestion (hot	Comfort food Sedative (drunk before going to sleep),	1 3	x x
			milk)	tranquilliser	2	1
			Ingestion Ingestion	Laxative Anthelmintic (can be combined with	2 1	1 x
			Ingestion	papaya and orange juice) Sore throat (hot milk with honey)	1	x
Mixtures Mixture of different herbs	Duermete		Infusion	Tranquilliser	1	х
Herbal supplement	Espirulina			Source of calcium, dietary supplement	1	x

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Cbba	Na LoB
Mixture of different herbs	Marituna		Aromatic smoke	Susto	1	х
Mixture of different herbs: guayacán, hercampuri, tapecueche, ceibo, hierba dulce, paico	Té kantuta		Teabags	Gall bladder, internal anti-inflammatory	1	x
Herbal compuest containing: Pimpinella anisum L., Erythroxylum sp., Matricaria recutita L.	Trimate		Teabags	Stomach ailments, digestive	2	1
			Teabags	Common cold	1	Х
Other home-remedies Aceite/Oil		0	External	Burns, vulnerary (can be mixed with salt, used as antiseptic)	7	1
		0	Ingestion	Laxative	1	х
Acero/Aluminium			External	An aluminium bracelet is worn as a preventive measure for aire	1	x
Agua/Water			Ingestion	Laxative: ±21 of lukewarm water to be drunk on empty stomach (can be mixed with oil)	2	х
			Ingestion	Stomach ailments	1	х
			Ingestion	Kidney stones	1	X
			External	Ice is put on forehead to treat fever	1	X
Alcohol/Alcohol			External	Rubbed on forehead to treat fever	2	X
			External	Rubbed on forehead for headaches	1	X
Barro/Mud			External	Applied as cataplasm on forehead	1	Х
Carne/Meat (red)			External	Burns	1	Х
Cono de papel/Paper tube			External	For earache: a tube of newspaper is put in the ear and lighted on the outside, the warm smoke that enters the ear canal this way is said to alleviate the pain	2	х
Jabon/Soap			Suppository	Laxative	1	х
Leche maternel/Human milk			Eye drops	For conjunctivitis	1	х
Mentisan, mentholated ointment, produced in Bolivia		0	External	Common cold, flu: rubbed on the neck (tonsils), throat, under the nose, the plant of the feet and the back (usually before going to sleep), optionally covered in newspaper to keep one warm, can also be combined with wira wira flowers	6	8
		0	External	Susto	1	х
		0	External	Arrebato	1	х
		0	External	Cold sores	1	Х
Mostaza/Musterd			External	Rubbed for arrebato	1	х
Orin/Urine			External	On forehead to treat fever	1	х
			Eye drops	For conjunctivitis	1	х
Pan/Bread			Decoction	Colics	1	Х
Sal/Salt			External	Burns	2	Х
			Infusion	Mixed with water and gargled for sore throat	1	Х
			Infusion	For toothache: mixed with water, gargled as a mouthwash	2	х
Vinagre/Vinegar			Gargled	Sore throat: heated and applied externally on neck, or gargled	2	х
Vino/wine			Ingestion	Hypotension	1	Х
Yeso/Gypsum			Ingestion	For stomach ulcers: 3 sp/1 l, 3 cups/day	1	х

Abbreviations: x: no use recorded, na: number of use-reports, LoB: Bolivians in London. Ap: aerial parts, Ba: bark, Br: branches, Bu: bulb, Cl: cloves, Fl: flowers, Fr: fruit, L: leaves, La: latex, O: oil, P: peel, Po: pods, Pt: petals, R: root, Re: resin, S: seeds, St: stigma, Tu: tuber, V: vine/f: fresh, d: d f: fresh, d: dried, r: roasted.

Annex 2. Comparison of home-remedies found in Lima and among Peruvians in London

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoP
Amaranthaceae Amaranthus caudatus L.	Kiwicha, amaranto/Love- lies-bleeding	S, d	Ingestion, food	Health food, energizing, eaten in soups, with yoghurt, milk, part of daily diet, eaten as breakfast	5	2
Amaranthaceae Iresine weberbauerii Suesseng. (MC20)	Flor blanca	Fl, d	Infusion	Depurative	1	х
Anacardiaceae Schinus molle L. (MC95)	Molle/Pepper tree	L/br, f	Cataplasm/macerate	Antitussive, bronchial problems, can be combined with ginger	2	x
		L/br, f	Macerate in Pisco (external use)	Muscular pains (can be combined with marco)	1	х
		L/br, f	Baths	Ritual baths for good luck	1	х
		L/br, f	Bath	Aire, can be combined with other plants for aire, e.g. marco, ruda	1	х
Apiaceae Apium graveolens L. (MC75)	Apio/Celery	Ap, f	Infusion/food	Stomach ailments, digestive, colics	6	х
, ,		Ap, f	Infusion	Antidiarrhoeal	2	х
		Ap, f	Infusion	Hepatodepurative, liver ailments	2	х
		Ap, f	Infusion/ingestion	Menstrual pain, combined with perejil	1	Х
Apiaceae <i>Daucus carota</i> L.	Zanahoria/Carrot	R, f	Decoction	Anti-diarrhoeal, with salt and sugar, natural saline solution	2	х
		R, f	Juice	Considered 'good for the eye'	1	х
		R, f	Cataplasm	Emollient	1	х
Apiaceae Foeniculum vulgare P. Miller	Hinojo/Fennel	Ap, f/d	Infusion	Hypertension	1	Х
		Ap, f/d	Teabags	Sedative	1	х
Apiaceae <i>Petroselinum</i> <i>crispum</i> (Mill.) Nyman ex A. W. Hill.	Perejil/Parsley	Ap, f/d	Food	Functional food, regulates circulation, depurative, hypertension	9	х
		Ap, f/d	Extract	Conjunctivitis: drops of the extract of fresh parsley are put in the inflamed eyes	1	x
		Ap, f/d	Infusion	Menstrual pains	1	х
		R	Decoction	Enhances memory	1	х
Apiaceae Pimpinella anisum L. (MC22), Asteraceae Tagetes filifolia Lag. (MC123)	Anís/Aniseed	S, d/Ap, f	Infusion/decoction/ teabags	Carminative, digestive, 1 sp./cup	16	1
J. J		Ap, f	Infusion	Liver ailments	1	х
Asteraceae Acanthoxanthium spinosum (L.) Furreau (MC147)	Juan alonso	Ap, f/d	Infusion/baths	Prostate problems	2	Х
		Ap, f/d	Infusion	Renal depurative	1	Х
Asteraceae Ambrosia arborescens Miller (MC111)	Marco, altamisa	Ap, f	Baths	Ritual baths for good luck, can be combined with <i>molle</i> and <i>retama</i>	2	х
		Ap, f	Macerate (external)	For muscle pain, macerate is rubbed on affected areas (recipe macerate: <i>marco, molle, romero, eucalipto soaked in</i> Pisco for 15 days-1 month)	1	Х
		Ap, f	Baths	For <i>aire</i> , can be combined with other plants for <i>aire</i> , e.g. <i>ruda</i> , <i>molle</i>	1	Х
Asteraceae Aristeguietia ballii (Oliv.) R.M. King & H. Rob. (MC115)	Asmachilca, pulmonaria	L, f/d	Macerate/infusion/ teabags	Common cold, antitussive, bronchial ailments	2	х
Asteraceae Baccharis genistelloides (Lam.) Pers. (MC108)	Kinsa k'uchu, carqueja	Ap, f/d	Infusion	Depurative (1 sp/day, treatment may not last for over 10 days)	1	х
reis. (Meros)		Ap, f/d	Infusion	Hepatodepurative, can be combined with canchalagua	1	x
		Ap, f/d	Infusion	To treat headaches	1	х
Asteraceae Chuquiraga spinosa Less. (MC107)	Huamanpinta	Ap, d	Infusion	Renal depurative	1	x
Astonosos - Commit 1	MATima and an	Ap, d	Infusion	Prostate problems	1	X
Asteraceae Gnaphalium versatile Rusby (MC45)	Wira wira	Fl, d	Infusion	Antitussive, can be combined with eucalipto	1	х
Asteraceae Lactuca sativa L.	Lechuga/Lettuce	L, f	Infusion (in hot milk)	Tranquilliser	3	1
Asteraceae Matricaria recutita L. (MC50)	Manzanilla/chamomile, German chamomile	Fl, f/d	Infusion/teabags	Stomach ailments, digestive, 1 branch/l	14	8
	chamonnic	Fl, f/d	Eye drops	Conjunctivitis	11	x

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoP
		Fl, f/d	Infusion/teabags	Tranquilliser	4	3
		Fl/Ap, f/d Fl, f/d	Infusion Baths	Anti-diarrhoeal Bronchial problems: feet have to be bathed in manzanilla infusion 'to keep warm', diaphoretic, part of treatment of bronchial problems, tbc	2 1	x x
		Fl, f/d	Infusion	Liver ailments	1	х
		Fl, f/d	Infusion	Menstrual pain	1	1
Asteraceae Perezia multiflora (Bonpl) Less.	Escorzonera	Ар	Macerate/infusion/ decoction/teabags	Common cold, flu, antitussive, sore throat, can be combined with asmachilca, huamanripa	3	Х
Asteraceae Picrosia longifolia D. Don (MC122)	Achicoria	Ap, f	Infusion	Depurative	2	x
		Ap, f	Food	Hepatodepurative	1	X
Asteraceae Polymnia sonchifolia Griseb.	Yacón	R, f	Infusion	Sore throat	1	Х
Asteraceae Schkuhria pinnata var. octoaristata (DC) Cabr. (MC103)	Canchalagua	Ap, f	Decoction	Depurative	1	х
		Ap, f	Infusion	Hepatodepurative	1	X
Asteraceae <i>Senecio</i> sp. (MC149)	Huamanripa	L, f/d	Infusion	Common cold, antitussive, sore throat, 3 leaves/cup, 3 cups/day, can be combined with eucalipto, escorzonera and ortiga roja	7	х
		L, f/d	Infusion	Prostate problems, combined with mashua	1	Х
Asteraceae Stevia spp.	Estevia/Stevia	L, f/d	Infusion Preparation	Renal depurative, combined with <i>mashua</i> Diabetes	1 1	x x
Asteraceae steviu spp.	Estevia/stevia		Preparation	High cholesterol	1	Х
Bixaceae <i>Bixa orellana</i> L.	Achiote/Lipstick tree	S, d	Decoction	Prostate problems	2	x
		S, d	Decoction	Renal depurative	1	х
Boraginaceae Borago officinalis L. (MC102)	Borraja/Borage	L, f/d	Infusion/teabags	Common cold, antitussive	2	Х
Brassicaceae Brassica oleracea italica Plenck	Brocoli/Broccoli	Ap, f	Food (cooked)	Health food, anti-carcinogenous, preventive measure	1	Х
Brassicaceae <i>Brassica</i> rapa var. rapa L.	Nabo/Turnip	R, f	Juice	For sore throat, tonsillitis: gargles with juice of turnip (without water), long-term treatment (at least one month)	2	Х
Brassicaceae <i>Brassica</i> spp.	Col/Cabbage	Ap, f/d	Food (cooked)	Health food, anti-carcinogenous, preventive measure	1	х
Brassicaceae Lepidium meyeni Walp.	Maca/Maca	R, d	Decoction/food (oatmeal), smoothie	Health food, energizing, roborant, enhances memory	5	4
Brassicaceae Nasturtium officinale	Berro/Watercress	L, f	Cataplasm	Cicatrizant	1	х
R.Br. Brassicaceae Raphanus sativus L.	Rábano/Radish	R, f	Syrup	Antitussive, prepared like onion syrup	1	x
Bromeliaceae Ananas comosus (L.) Merr.	Piña/Pineapple	Fr/P	Decoction	Cystitis, kidney stones (diuretic)	1	1
(=)		Fr	Food	Health food, energizer	1	х
Cactaceae Opuntia soehrensii Britton &	Airampu	S, d	Macerate/decoction	Common cold, antitussive, can be combined with <i>huamanripa</i>	1	х
Rose (MC85) Caricaceae Carica papaya L.	Papaya/Papaya	S, f/Fr, f	Juice/food	Laxative	3	х
- • •		S, f	Ingestion	Anthelmintic: blended in juice, 3-4 s/cup	1	x
		S, f S, f	Ingestion Ingestion	Kidney stones, one week treatment Hepatodepurative: 10 s, chewed and	1 1	x x
		L, f	Cataplasm	ingested Anti-inflammatory, can be combined with	1	х
Caryophyllaceae	Clavel	Fl, f/d	Infusion	llantén Tranquilliser	2	x
Dianthus sp.	blanco/Carnation	FL, f/d	Infusion	Heart ailments, can be combined with toronjil	1	x
		Fl, f/d	Enema	Liver ailments, combined with verbena	1	х
		Fl, f/d	Baths	Emollient, can be combined with <i>retama</i>	1	x
Celastraceae Maytenus laevis Reissek	Chuchuhuasi	Ba, d	Tincture	Restorative tonic, immunostimulant	1	1
Chenopodiaceae Beta vulgaris L.	Beterraga, remo- lacha/Beetroot	R, f	Food	Health food, fortifying	1	Х
		R, f	Juice	Laxative: to be taken on empty stomach	1	X

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoI
		R, f	Juice	Depurative: combined with drinking lots of mineral water and light soups (1 day a week)	1	х
Chenopodiaceae Chenopodium ambrosioides L. (MC71)	Paico, payku/Wormseed	L, f/R	Infusion/decoction	Anti-diarrhoeal, 3 cups/day	5	х
(WC/1)		L, f	Infusion/food (soup)	Colics, digestive	5	х
		L, f L, f	Infusion Infusion	Anthelmintic Liver ailments, often combined with other species 'good for the liver'	3 1	x x
		R	Infusion	Antitussive, bronchial problems, to be drunk as agua de tiempo (during maximum 30 days)	1	х
Chenopodiaceae Chenopodium quinoa Willd.	Quinua/Quinoa	S, d	Ingestion, food (cooked)	Health food, energizing	5	4
Cucurbitaceae Cucumis sativus L.	Pepino/Cucumber	Fr, f	External	Tired eyes	1	x
Sativas L.		Fr, f	External	Emollient	1	х
		Fr, f	Food	Laxative (eaten with peel)	1	x
Cucurbitaceae Cucurbita maxima Wall.	Zapallo/Pumpkin	S, d	Ingestion	Anthelmintic: toasted, on an empty stomach	1	Х
Cucurbitaceae Cucurbita sp.	Calabaza	S, d	Enema	Purgative (combined with lemon juice and almond oil)	1	x
Equisetaceae Equisetum giganteum L. (MC52)	Cola de caballo/Horsetail	Ap, d	Infusion	Renal depurative	6	х
		Ap, d	Infusion	Prostate (see mashua)	1	x
		Ap, f/d Ap, d	Infusion Baths	Depurative Anti-inflammatory, can be combined with	1 1	X X
Erythroxylaceae Erythroxylum coca Lam. (MC43)	Coca	L, d	Infusion/chew	llantén Stomach ailments, digestive, 10 leaves/cup	7	1
Edili. (MC 13)		L, d	Infusion	Sore throat, antitussive. Infusion of coca (6–7 leaves) can be combined with <i>tara</i> , lemon juice, gargled	4	1
		L, d	Infusion	Arthritis, rheumatism: 1-2 sp. diluted in a cup of hot water or with juice (1 sp. for 15 days until stomach is adapted, then 2 spoons), on an empty stomach or at night, before going to sleep	2	х
		L, d	Infusion	Altitude sickness (soroche)	2	x
Euphorbiaceae <i>Croton</i> <i>lechleri</i> Muell. Arg.	Sangre de drago, sangre de grado/Dragons' blood	Re	Infusion	Stomach ailments, ulcers, 20 drops/glass, considered an internal vulnerary, can be combined with sábila	3	х
		Re	Infusion	For sore throat an infusion is gargled	1	1
Euphorbiaceae	Chanca	Re Ap, f	Enema Infusion	For liver ailments, combined with <i>verbena</i> Kidney stones, said to have only mild effect	1 3	x 1
Phyllanthus niruri L. (MC152)	piedra/Stone breaker			and hence can be combined with pills		
·/		Ap, f	Infusion/decoction	Depurative	2	x
Euphorbiaceae Ricinus	Higrilla	Ap, f S, f/d	Infusion/decoction Ingestion	Digestive Laxative	1 1	x x
communis L. Fabaceae Arachis hypogaea L.	Maní/Peanut	S, d	Food	Anti-depressant	1	x
Fabaceae Caesalpinia spinosa (Molina) Kuntze	Tara	Fr/Po, f/d	Decoction/infusion	For sore throat, infusion drunk, decoction gargled	11	x
		Fr/Po, d	External	Cicatrizant, pods grinded and applied on wounds	1	x
Fabaceae Cassia angustifolia Vahl.	Sen/Senna	L, f/d	Infusion	Laxative, 3 cups/day or before going to sleep, 6–8 leaves/cup	4	1
Fabaceae Glycine max Merr.	Soya/Soy bean	S	Ingestion	Health food (soy milk)	1	1
Fabaceae, Lens culinaris Med. Fabaceae Medicare	Lenteja/Lentil	S, d	Food (cooked)	Anaemia, can be combined as a juice with guayaba	1	x
Fabaceae Medicago sativa L.	Alfalfa/Alfalfa	L, f	Food	Energizing, fortifying, prepared with quinoa, maca,	1	х

Family, species (voucher number)	Spanish folk name/English	Parts used	Administration	Specific medicinal use	Na Lima	Na LoP
Fabaceae Prosopis	name Algarobina	Po, d	Food (in hot milk)	Flour consumed as functional food,	1	x
pallida (H. & B. ex Willd.) H.B.K.				energizer		
Fabaceae Spartium junceum L. (MC72)	Retama/Spanish broom	Po, d Fl, f	Ingestion Baths	For stomach ailments, combined with aloe Emollient, strong infusion is prepared, can be combined with roses	1 1	x x
Janeeam 2. (e., 2)	5.00.11	Fl, f Br, f	Infusion Baths	Flu, combined with <i>eucalipto</i> For good luck, ritual baths, can be combined with other magical species for	1	x x
Gentianaceae Gentianella alborosea	Hercampuri	Ap, d	Infusion	good luck Depurative	2	х
(Gilg) Fabris Geraniaceae <i>Pelargonium</i> sp.	Geranio/Geranium	Fl, f	Infusion	Tranquilliser	1	1
Inches de cons Inches	No col/Malacet	Fl, f	Infusion	Sore throat: gargles	1	x
Juglandaceae Juglans sp.	Nogal/Walnut	L, f/d	Decoction	Common cold, flu, 3 leaves/1 l water (small amount, bitter)	1	х
Lamiaceae Melissa officinalis L. (MC47)	Toronjil/Lemon balm	Ap, f/d	Infusion	Heart ailments, palpitations, can be combined with other species for heart ailments (e.g. roses)	4	х
		Ap, d	Teabags	Tranquilliser	2	
Lamiaceae Mentha	Menta, poleo/Mint	Ap, f/d L, f	Infusion Infusion	Hypertension, combined with parsley Stomach ailments, digestive	1 6	x 2
piperita L. (MC48)		L, f	Infusion	Anti-diarrhoeal	2	v
		L, f	Extract	Anthelmintic (advised on empty stomach)	2	x x
Lauria anna Mautha an	Highe house /Mint	L, f/d	Infusion/teabags	Common cold flu	1 6	1
Lamiaceae <i>Mentha</i> sp. (MC5, MC7)	Hierba buena/Mint	L, f	Extract/infusion	Anthelmintic: on empty stomach, to become the extract, fresh leaves are crushed and squeezed through a cloth, this consumed per spoon, can be added to a glass of (hot) milk. Or as infusion: as agua de tiempo, 4 branches/11	6	х
		L, f	Infusion	Stomach ailments, colics	3	2
		L, f L, f	Infusion Cataplasm	Anti-diarrhoeal, 1 branch/cup For burns: 2 leaves are boiled, grinded and	1 1	x x
		·	-	applied topically as a cataplasm		Α
Lamiaceae	Muña	L, f Ap, f/d	Infusion Infusion	Liver ailments, combined with <i>paico</i> Colics, carminative, digestive, 1–2	1 8	x x
Minthostachys mollis Griesebach (MC133)	Willia			branches/cup		
Lamiaceae Ocimum	Albahaca/Basil	Ap, f/d L, f	Infusion Extract	Menstrual pains Anthelmintic	1 1	X X
basilicum L. (MC3)		•				
Lamiaceae Origanum	Orégano/Oregano,	S, f L, f/d	External Infusion	Conjunctivitis: s applied in eye Menstrual pains	1 4	х 3
vulgare L.	pot marjoram	I f/A	Infusion	Stomach ailmonts, digastive, 1 sp./sup	5	1
		L, f/d Ap, f/d	Infusion	Stomach ailments, digestive, 1 sp./cup Anti-diarrhoeal, a branch/cup, 3 cups/day (morning, afternoon, evening)	1	X
Lamiaceae Otholobium	Culán	Ap, f/d	Infusion	Liver ailments, combined with <i>paico</i> Anti-diarrhoeal	1 3	x
pubescens (Poiret) Grimes (MC104)	Culén	Ap, f/d	Infusion	Aliti-tilal Hibeal	3	х
Lamiaceae Rosmarinus officinalis L. (MC62)	Romero/Rosemary	L, f	Infusion/macerate/ steam inhalant	Common cold, flu, bronchial problems	4	х
,		L, f	Food	Enhances memory	1	x
		L, f	Macerate (external)	Rubbed for muscle pain, can be combined with marco	1	Х
		L,f	Infusion/food	Tranquilliser, added as a condiment in food, 'good for the nervous system'	2	х
Lamiaceae Salvia sp. (MC29)	Salvia/Sage	Ap, f/d	Infusion	General analgesic	1	Х
Lamiaceae Satureja pulchella (H.B.K.) Bri- quet = Clinopodium pulchella (Kunth) Govaerts (MC135)	Panisara	Ap, f	Infusion	Hepatodepurative	1	х
Lamiaceae Thymus vulgaris L.	Tomillo/Thyme	Ap, f/d	Infusion/teabags	Common cold, can be combined with escorzonera	1	x
Lauraceae Cinnamomum verum J. Presl (MC1)	Canela/Cinnamon	Ba, d	Infusion	Anti-diarrhoeal	1	х
J(/		Ba, d	Teabags	Common cold	1	х

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoP
Lauraceae Persea americana Mill.	Palta, aguacate/Avocado	S, r	Decoction	Anti-diarrhoeal, 1/4 or 1/2 of the seed, can be combined with a branch of <i>culén</i>	7	х
		S	Decoction	Menstrual regulator, emmenagogue, combined with (red) onion (membrane)	1	х
		Fr, f	External	Emollient, for hair	1	Х
.iliaceae <i>Allium cepa</i> L.	Cebolla/Onion	Bu, f	Syrup	Antitussive, expectorant: chopped onion, covered in lots of sugar, 'au bain-marie', left overnight, the next day a kind of syrup will be left (from mix of juice from onion and sugar), 2-3 times/day, 1 spoon	4	1
		Bu, f	External	Burns	1	х
		Bu, f	Decoction	Stomach ailments, salmonella	1	х
Liliaceae Allium Ajo/Garlic sativum L.	Ajo/Garlic	Cl, f	Ingestion/food	To treat hypertension, depurative. Can be preventively, as part of diet, or ingested with pure curative purpose: clove ingested on empty stomach, daily	3	5
		Cl, f	Syrup/macerate	Antitussive, asthma, syrup (see kión), macerate: 1 garlic, 1/2 part of Vermouth, 1/2 part of Pisco, macerated for 2–3 months (during summer, to be taken during winter), to be taken when	2	х
		Cl, f	External	symptoms appear, one cup Conjunctivitis: a clove of garlic is heated, then wrapped (hot) in a handkerchief and put on the affected eye	1	х
		Cl, f	Ingestion	Anthelmintic, 1 clove, peeled, crushed, and taken on an empty stomach, mixed with lukewarm water, during one week	1	х
		Cl, f	External	Rubbed on nail to make them grow faster	1	Х
iliaceae Aloe vera L. Sá	Sábila/Aloe	L, f (gel)	External	Emollient, conditioner for hair	4	X
		L, f (gel)	External	Burns	3 2	4
		L, f (gel) L, f (gel)	Ingestion	Stomach ailments, tonic, the leaves are soaked in water, left overnight and peeled the next day, blended and drunk (potentially mixed with honey), a piece of approximately 10 cm, anti-inflammatory effect on stomach, increases appetite Antitussive, also for allergy: the leaves are	1	x 1
				soaked in water, left overnight and peeled the next day, blended and drunk (potentially mixed with honey)		
		L, f (gel)	Ingestion	Hepatodepurative, detox remedy, soaked for 3 days in water (peeled), gel blended with honey, drunk or eaten raw (in salads), internal anti-inflammatory	1	х
Linaceae Linum Linaza/Linseed, usitatissimum Griseb. flaxseed	,	S, d	Decoction/ingestion	Laxative, can be: 1 sp. grinded (not toasted), mixed with yoghurt, juice, milk (twice a day, morning-evening), also anti-inflammatory for the bowls (regulates), drunk on a daily basis, either prepared as a smoothie (mixed with yoghurt or fruit juice), or as a decoction: 1/2 cup of s, boiled, and mixed with lemon juice and honey or milk (drunk as a soft drink during the day)	8	2
		S, d	Decoction	Renal depurative, main ingredient of emolliente	3	1
		S, d	Decoction	Depurative	1	x
ythraceae Punica granatum L.	Granada/Pomegranate	Fr, f	Juice	Anti-diarrhoeal	1	х
Malvaceae Malva parviflora L. (MC46)	Malva/Mallow	L, f	Eye bath	Conjunctivitis	1	х
		L, f L, f	Decoction Cataplasm	Sore throat Vulnerary, leaves in boiling water, put as (hot) cataplasm on aching parts, anti-inflammatory effect	1	x x
Monimiaceae <i>Peumus</i> boldo Mol. (MC2)	Boldo/Boldo leaf	L, d	Infusion	Stomach ailments, advised: after meals	3	1
Moraceae <i>Ficus</i> sp. Musaceae <i>Musa</i> spp. usually	Higo/Fig Plátano/Banana	Fr, f/d Fr, f	Food Food	Laxative Laxative	1 1	x
Musa × paradisiaca L.		Fr, f	Food	Anti-depressant	1	x

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoP
Myrtaceae Eucalyptus globulus Labill. (MC17)	Eucalipto/Eucalyptus	L, d	Steam inhalant/ infusion/teabags	Antitussive: 1/2 leaf per cup, combined with wira wira, romero and huamanripa, 1–3 leaves/cup or 6–8/l, can be drunk at night, or during the day as agua de tiempo (either hot or cold), considered 'hot', and thus dangerous in large quantities	22	х
		L, d L, d	Aromatic smoke Macerate	To prevent folk illnesses, clean the air Macerate with <i>marco</i> , rubbed for muscle pain	3 1	x x
Myrtaceae Psidium guajava L.	Guayaba/Guava	Fr, f	Juice	Anaemia	1	х
Myrtaceae Syzygium aromaticum (L.) Merr. & L.M.Perry (MC24)	Clavo de olor/Clove	L Fl, d	Infusion Chewed	Common cold, flu Toothache	1 5	x 1
Oleaceae Olea europaea L.	Aceituna/Olive	0	Ingestion	Depurative, 1 sp each morning for at least 10 months, to purify blood and liver, can be combined with lemon juice (mixed with the olive oil)	1	x
Onagraceae Oenothera rosea Aiton (MC124)	Chupa sangre	Ap, f	Cataplasm/infusion	Liver ailments	2	x
roseu Aitoii (WC124)		Ap, f	Cataplasm	Anti-inflammatory, can be combined with verbena	1	x
		Ap, f	Infusion	Tranquilliser, can be combined with lechuga, hoja del olvido. Interferes with treatment of bronchial problems, to be avoided during such treatment	1	x
Passifloraceae Passiflora spp.	Maracuyá, granadilla/Passion fruit	Fr, f	Juice	Hypertension	3	х
Pedaliaceae, Sesamum	Ajonjoli/Sesame	Fr, f S, d	Ingestion Ingestion	Laxative: on empty stomach Health food, 1 sp./cup, source of calcium,	1 1	x x
indicum L.	Ajonjon/sesame	3, u	nigestion	mixed with juice	1	Х
		S, d	Ingestion	Diabetes, 50 g/day	1	х
Piperaceae <i>Peperomia</i> spp. (MC150)	Congona, siempreviva	S, d L, f	Ingestion External	High cholesterol For earache if the earache is cause by wind, then <i>ruda</i> is used, for every other type of earache, <i>congona</i> is used. Leaves are heated, drops applied inside ear canal, left overnight, or if the pain is severe, also during the day, and changed in the afternoon. Alternatively, drops of a decoction are applied in the ear.	1 5	x x
		L, f	External	Conjunctivitis: leaves (heated) put under the eye	1	х
		L, f	External	Toothache: leaves heated, put on aching part with cotton	1	х
Piperaceae <i>Piper</i> acutifolium Poepp. ex Kunth (MC130)	Matico	L, f L, f	Infusion Infusion/baths	Heart ailments Anti-inflammatory	1 6	х
		L, f	Infusion	Sore throat, flu: gargles	2	X
		L, f L, f	Eye bath Decoction	Conjunctivitis To treat fever	1 1	x x
Plantaginaceae Plantago major L. (MC55)	Llantén/Plantain	L, f	Cataplasm/baths	Anti-inflammatory, leaves are washed, decocted and put (hot) on the affected parts (e.g. feet), combined with cola de caballo, matico, salt, limon (verde), papaya (leaves) and uña de gato, during 1 week, once/day (steam bath), for all kinds of inflammations	7	х
		L, f	Eye bath	Conjunctivitis	4	х
		L, f L, f/d	Cataplasm/baths Cataplasm	For burns and as general vulnerary For fever: put on forehead	4 1	x x
Poaceae Avena sativa L.	Avena/Oats	S, d	Ingestion	Laxative: 3 large spoons mixed with a little water, ingested at night, taken on daily basis, functions as a regulator of the bowls	2	1
Poaceae Cymbopogon	Hierba luisa/Lemon	S, d Ap, d	Ingestion Infusion	High cholesterol Stomach ailments, digestive, 3 cups/day	1 9	x 1
citratus Stapf (MC6) Poaceae Hordeum	grass Cebada/Barley	S, d	Decoction	Renal depurative, with lemon juice	5	x
vulgare L. Poaceae Oryza sativa L.	Arroz/Rice	S, r	Decoction	Anti-diarrhoeal, mixed with toasted bread and a bit of carrot, drunk 3 times/day, until symptoms pass	1	х

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoF
Poaceae <i>Triticum</i> spp. Poaceae <i>Zea mays</i> L.	Trigo/Wheat Choclo, cabello de choclo/Corn	S, d S	Decoction Ingestion	Laxative Hypertension	1 4	x x
Polygonaceae Muehlenbeckia	Mullaca	S Ap, f/d	Ingestion Infusion/teabags	Kidney stones, cystitis Common cold, can be combined with huamanripa	1 1	1 x
volcanica (Benth.) Endl. (MC132)				naamam pa		
EIUI. (WC132)		Ap, f/d	Decoction	Anti-diarrhoeal	1	х
		Ap, f/d	Decoction	Depurative, postpartum	1	X
	Ap, f/d	Decoction	Colics	1	x	
		Ap, f/d	Decoction	Toothache	1	X
Rosaceae Cydonia oblonga Miller	Membrillo/Quince	F, f	Food	Functional food, roborant, can be combined with pineapple, apple, kiwicha, quinoa and maca	1	х
Rosaceae Hesperomeles lanuginosa Ruiz & Pav. (MC146)	Hoja del olvido	Ap, f	Infusion/baths	Tranquilliser (see name: leaf that makes you forget your sorrows)	2	х
Rosaceae, Malus spp.	Manzana/Apple	Fr, f	Food	Laxative: raw apple (with skin), either drunk with yoghurt or milk (eaten at night)	4	x
		Vinegar	Ingestion	Hypotension: mixed with honey 1/2 or 1 cup	1	x
		Fr, f/d	Food	Functional food, fortifying	1	1
Rosaceae Prunus domestica L.	Ciruela (negra)/Plum	Fr, f/d	Ingestion	Laxative	1	1
		Fr, f/d	Ingestion	Anti-diarrhoeal	1	x
Rosaceae <i>Prunus dulcis</i> (Mill.) D.A. Webb	Almendra/Almond	S>0	Enema	Purgative	1	х
Rosaceae Prunus salicifolia Kunth	Capuli/Capulin	L, f/d	Decoction	Common cold, flu, 4–6 leaves/l	1	х
Rosaceae Pyrus communis L.	Pera/Pear	L, f/d	Infusion	Laxative	1	х
Rosaceae <i>Rosa</i> sp. (MC70)	Rosa/Rose	Pt, d	Eye bath	Conjunctivitis	3	х
		Pt, d Pt, d	Infusion Baths	Tranquilliser Emollient, combined with <i>retama</i>	2 1	X
Rosaceae Rubus sp.	Mora/Blackberry	Fr, f	Juice	Good for the circulation	1	X X
Rosaccac Rubus sp.	Wiora/Diackberry	Fr, f	Juice	Laxative	1	X
		Fr, f	Juice	Sore throat	1	x
Rosaceae Sanguisorba minor Scopoli (MC136)	Pimpinela/Burnet	Ap, f/d	Infusion	Heart ailments	3	х
()		Ap, f/d	Infusion	Tranquilliser	2	х
Rubiaceae Coffea arabica L.	Café/Coffee	S, r	Infusion, coffee	Hypotension: mixed with Pisco	1	х
		S, r		Suspension from diet for stomach ailments	1	x
Rubiaceae Morinda citrifolia L.	Noni/Indian mulberry, cheese fruit	Fr, f	Juice	Roborant, augments the defense system, soaked in boiling water, blended and consumed as a juice, drunk without sugar	1	1
Rubiaceae Uncaria tomentosa (Willd. ex	Uña de gato/Cat's claw	V, d	Infusion	Anti-inflammatory	3	3
Roem. et Schult.) DC		V, d	Decoction	Kidney stones, renal depurative	2	1
Rutaceae <i>Citrus sinensis</i> Pers.	Naranja, flor de azar/Orange, orange blossom	Fr, f	Juice	Laxative	2	x
	orange biossom		Infusion	Tranquilliser: 2–3 spoons are diluted in a glass of water	1	x
			Infusion	For susto: 1 sp./cup, calming, tranquillising effect	1	x
		P	Decoction	Anti-diarrhoela: can be combined with avocado and/or <i>sidra</i> and a spoon of caramelised sugar	1	х
		Fr, f	Juice	Common cold	1	x
Rutaceae <i>Citrus</i> spp. (different species! lime <i>Citrus</i> aurantifolia (Christm.) Swingle,	Limón/Lemon, lime	Fr, f Fr, f	Juice Juice (hot)	To treat headaches Common cold, flu, antitussive: hot lemon juice, for sore throat juice (mixed with salt) is gargled	1 17	х 4
limon <i>Citrus limon</i> (L.) Burm.f)		Fr, f	Juice (external)	Conjunctivitis: drops of lemon juice are	3	x
		,	• • • • • • • • • • • • • • • • • • • •	applied in eye		
		Fr, f	Food/decoction	Tranquilliser	2	х

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na Lo
		Fr, f	External	Applied on forehead (until they dry) for fever	2	х
		Fr, f	Juice	Depurative, high cholesterol: treatment of 20 days, in which the first day the juice of one lemon is drunk, the second day 2 lemons, up to 10 lemons, then reducing the	2	х
		Fr, f	Juice, external	number each day Juice of a lemon is used as a vulnerary, especially for mosquito bites	1	х
		Fr, f	Enema	Purgative	1	х
		Fr, f	External	Anti-inflammatory	1	х
		Fr, f	Juice	Health food, mixed with egg shells, left for 4–5 days (the lemon purportedly dissolves the egg shells), blended with honey, 1 cup/day, before or after meals	1	х
Rutaceae Ruta graveolens L. (MC58, MC59)	Ruda/Rue	L, f	Baths	For aire (combined with other remedies for aire, like retama, molle)	1	х
		L, f	External	Earache: leaves are heated and put inside ear canal	3	х
		Ap, f	Infusion	Stomach ailments, carminative	3	1
Solanaceae <i>Capsicum</i> sp.	Ají/Chilli	S, d	External	For treatment of burns, and as vulnerary: rubbed on affected area (can be mixed with water or oil)	5	х
Solanaceae <i>Cestrum</i> auriculatum L'Herit (MC127)	Hierba santa	Ap, f/d	Baths	To treat fever	2	х
Solanaceae, Lycopersicon esculentum Mill.	Tomate/Tomato	Fr, f	External	Burns	2	х
Solanaceae Solanum melongena L.	Berenjena/Eggplant	Fr, f Fr, f	External Juice	Emollient, put on face before going to sleep High cholesterol	1 1	x x
Solanaceae Solanum tuberosum L.	Papa, papa runa/Potato	Fr, f Tu, f	Food Juice/decoction	To lose weight Cystitis: extract (liquid) of raw potato (with skin) (extracted by grating the potato), mixed with juice of 1 lemon, to be taken on an empty stomach for all kinds of infections of the urinary system. Kidney stones; water in which potatoes are cooked (said to dissolve kidney stones), treatment of one month, 11 per day. 3 cups/day, 1/2 h before each meal, treatment of 10 days	1 7	x x
		Tu, f	External	Headaches: raw slices on forehead	4	х
		Tu, f	External	Fever: raw slices on forehead	3	Х
		Tu, f Tu, f	External External	Bruises, anti-inflammatory For toothache, slices of raw potato are put on the cheek	2	x x
		Tu, f	Ingestion	Ingestion of grated potato for stomach ailments	1	х
		Tu, f Tu, f	External External	Vulnerary Conjunctivitis: raw slices are put on the	1 1	x x
Sterculiaceae	Cacao/Cocoa	S, d	Decoction	eyes, said to have anti-inflammatory effect Antitussive, expectorant	1	x
Theobroma cacao L. Theaceae Camellia	Té/Black tea	L, d	Teabags	Anti-diarrhoeal: very strong tea treatment	5	x
sinensis (L.) Kuntze		L, d	Teabags	for 1-3 days (2-3 times/day) Antitussive, flu, tea with lemon juice or for sore throat: mixed with salt and gargled	3	1
		L, d	Teabags (external)	Conjunctivitis: eyes cleaned with a cotton-bud dipped in an infusion, 3 times/day	2	х
		L, d	Teabags	Hypotension (mixed with a bit of Pisco)	1	х
		L, d	Teabags	General stomach ailment, hot tea	1	x
Γiliaceae <i>Tilia</i> sp.	Tilo/Linden	L, d	Infusion	High cholesterol	1	x
Fropaloaeceae Tropaeolum tuberosum Ruiz. & Pav. (MC89)	Mashua, isaño	L, d Tu, f	Infusion Decoction/food	Digestive Prostate problems. Decoction can be combined with achiote, cola de caballo, huamanripa, juan alonso, huamapinta, manayupa, one should be cured after	1 3	x x
		m . c	.	drinking 5 l		
Urticaceae Urtica urens	Ortiga/Nettle	Tu, f Ap, f	Decoction Catalasm	Renal depurative For aire: leaves are heated (e.g. in a pan)	1 1	x x

hive

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na Lo
		Ap, f	Decoction	Common cold, flu, combined with huamanripa	1	х
Valerianaceae Valeriana officinalis L. (MC34)/Asteraceae Perezia coerulescens Wedd. (MC138) (Same names, used for same purposes!)	Valeriana/Valerian	R	Infusion/decoction/ teabags	Tranquilliser	6	х
		R	Infusion	Heart ailments, can only be used in small quantities	2	х
		R	Decoction	Tonic, said to regenerate brain and lungs	1	х
/erbenaceae <i>Lippia</i> citriodora (Lam.) Humb. Bonpl. Kunth. (MC23, MC78)	Cedrón/Lemon verbena	L, f/d	Infusion	Stomach ailments, digestive	3	х
		L, f/d	Infusion/teabags	Tranquilliser, can be combined with toronjil	2	х
Verbenaceae Verbena	Verbena	L, f/d Ap, f	Infusion Infusion/enema	Antitussive Hepatodepurative, can be combined with	1 2	x x
litoralis L. (MC119)		Ap, f	Infusion	other hepatodepuratives Stomach ailments in general, can be	1	x
		A	Catantaria	combined with paico	1	
	Jengibre, kión/Ginger	Ap, f R, f	Cataplasm Cataplasm/syrup	Anti-inflammatory Antitussive, expectorant, common cold, flu. Cataplasm: mashed, mixed with rum and molle, applied on forehead. Syrup: combined with 1 onion and 1 garlic, boiled, blended, used for gargling or ingestion (1 sp). Considered a hot remedy that keeps one warm, diaphoretic.	1 3	x x
		R, f	Food	Health food, used in a preventive way, as condiment	1	х
Not identified, probably Fabaceae Desmodium molliculum (Kunth) DC	Manayupa	L, f	Infusion	Prostate problems	1	х
	A1 .	L, f	Infusion	Kidney stones		
Not identified (MC158) Not identified	Abuta Agua de florida	Ba, d	Decoction External	Diabetes Susto: some drops are sprinkled on the	1 2	x x
			External	asustado Mal de ojo: some drops are sprinkled on the asustado	1	х
Not identified	Arnica (pumichanca)	L, f	Macerate (external)	Bruises, anti-inflammatory	1	x
	(pumenanca)	Fl, f/d	Macerate (ingestion)	Antitussive: macerated in Pisco, for 3–4 days, taken with a bit of honey	1	x
Not identified	Caraguala	R, d	Decoction	Stomach ailments, sort of internal anti-inflammatory	1	х
lot identified	Flor amarilla	Fl, f/d	Keep in house	To avert bad luck	1	х
lot identified	Flor de arena	Fl, d	Infusion	Depurative	2	х
lot identified lot identified	Hierba del susto Lirio	Ap, f/d Fl, f	Infusion/baths Baths	Susto Good luck, to attract positive energy,	2 2	x x
				relaxing effect		
lot identified lot identified	Mataraton Mogo mogo	Ap, f L, f/d	Baths Decoction/baths	Chickenpox Pneumonia	1 2	x x
	_	L, f/d	Decoction	To treat fever		
lot identified	Pagra	Pt	Baths	Common cold, flu (2 petals/cup)	1	х
		Pt L, f	Baths Decoction	Rheumatism Tranquilliser (3 leaves/1 l)	1 1	x x
ot identified	Panti panti	Fl, f	Infusion	Antitussive, expectorant (can be combined with <i>q'eto q'eto</i> , also unidentified species)	1	X
lot identified	Pensamiento	Fl, f	Infusion	Tranquilliser, also for nervous headaches, can be combined with <i>toronjil</i>	3	х
Not identified	Perla	Ap, f/d	Infusion	Stomach ailments	1	х
Not identified	Rima rima	Fl, f	Decoction	To treat headaches	1	Х
		Fl, f	Baths	Susto	1	х
Not identified Not identified	Shirac Sidra	Ap, f Fr, f	Infusion Decoction	To treat nausea, antiemetic, 1 branch/cup Anti-diarrhoeal	1 1	x x
Animal origin Resinous mixture	Propóleo/Propolis		Ingestion	Common cold, sore throat	1	x
collected by bees (genus <i>Apis</i>) used for sealing gaps in the hive						

Family, species (voucher number)	Spanish folk name/English name	Parts used	Administration	Specific medicinal use	Na Lima	Na LoP
	Yogur/Yoghurt		Food	Laxative	1	х
	Leche/Milk		Ingestion	Laxative	2	х
Mixtures	Panetela		Food (soup)	Anti-diarrhoeal, soup of toasted bread and toasted rice, cooked with cinnamon and cloves, and optionally with carrots, celery, Against dehydration, believed to function as as a saline solution.	7	х
Other home-remedies	Ponche, caspiroleta		Food (blended beverage)	Common cold, flu, antitussive. Basic ingredients, alcohol (Pisco, cognac), whipped white of 1 egg, milk or lemon juice. Boiled, to be drunk before going to sleep, diaphoretic.	3	x
Agua/Water			Baths/external	For fever, ice cold bath (only for short amount of time, then quickly wrapped in towel), a cloth dipped in cold water is put on the forehead	3	1
			External	For headaches: cold water or ice is put on the forehead	3	х
			External	Burns	1	1
Alcohol/Alcohol			External	Rubbed on forehead to treat fever	2	х
,			External	Rubbed on forehead for headaches	2	х
			External	Drops are applied inside the ear	1	х
Azufre/Sulphur			External	Rubbed on body for aire	1	X
Cigarro/Cigar			External	For earache: smoke of a cigar is blown inside the ear canal, this is said to alleviate the pain	1	Х
Sal/Salt			External	Burns: first water is applied on the affected skin, then covered in salt, which is said to absorb and prevent the formation of blisters	2	х
Vino/wine			Ingestion	Hypotension	1	x

Abbreviations: x = no use recorded, na = number of use-reports, LoP = Peruvians London. Ap: aerial parts, Ba: bark, Br: branches, Bu: bulb, Cl: cloves, Fl: flowers, Fr: fruit, L: leaves, La: latex, O: oil, P: peel, Po: pods, Pt: petals, R: root, Re: resin, S: seeds, St: stigma, Tu: tuber, V: vine/f: fresh, d: dried, r: roasted.

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