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Ethnopharmacology in the Upper Guadiana River area (Castile-La Mancha, Spain)

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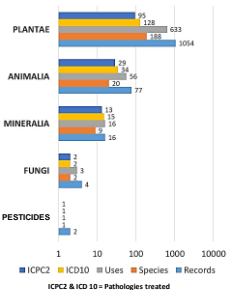
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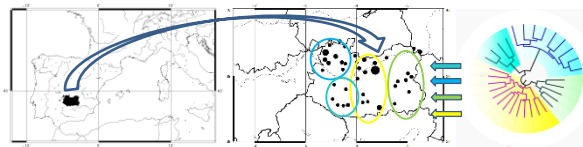
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Ethnopharmacology in the Upper Guadiana River area (Castile-La Mancha, Spain)

Relevance of the different kingdoms and types



Wetlands as a source of medicinal ingredients and foci of pathologies



Geographical patterns of medicinal ingredients (188 plant species, 20 animals and 12 minerals)



Table 1. Medicinal ingredients and uses, Kingdom: Animalia.

Abbreviations: PR (Provenance): EH, Eastern Hemisphere. EU, Europe. ME, Mediterranean. NH, Northern Hemisphere. SP, Spain. WI, Widespread. **Localities:** ABN, Abenójar. ALC, Alcoba. ALD, Aldea del Rey. ALH, Alhambra. ALM, Almodóvar del Campo. ARG, Argamasilla de Calatrava. ARR, Arroba de los Montes. BRA, Brazatortas. CAB, Cabezarrubias del Puerto. CAL, Calzada de Calatrava. CRC, Carrión de Calatrava. CRI, Carrizosa. CIU, Ciudad Real. DAI, Daimiel. ELR, El Robledo. ELT, El Torno. FER, Fernán Caballero. FON, Fontanarejo. FUC, Fuencaliente. FLL, Fuenllana. FRE, Fuente el Fresno. HER, Herencia. HIN, Hinojosa de Calatrava. HNT, Hontanar. HOR, Horcajo de los Montes. LAS, La Solana. LAM, Las Mesas. LOS, Los Cortijos. LUC, Luciana. MAL, Malagón. MOR, Moral de Calatrava. NAE, Navas de Estena. NAV, Navalpino. PIE, Piedrabuena. POZ, Pozuelo de Calatrava. PUE, Puebla de Don Rodrigo. RET, Retuerta del Bullaque. RUI, Ruidera. SCV, San Carlos del Valle. SPM, San Pablo de los Montes. TOR, Torre de Juan Abad. VIH, Villahermosa. VIC, Villamayor de Calatrava. VIO, Villarrubia de los Ojos. VIM, Viso del Marqués. VSC, Villanueva de San Carlos. **Broad Use:** CAR: Cardiovascular diseases, DER: Dermatologic disorders, GAS: Gastrointestinal problems, INF: Infections (antibacterial, antifungal, anti plasmodial, anti-viral, dental plaque inhibitor), MET: Metabolic syndromes including immunological–inflammatory and related diseases, N/A: Not available. NER: Nervous system, POI: Poisons (insecticide and others), RES: Respiratory complaints, SKE: Skeleto muscular system. **NIT:** Number of informants totalized. **INI:** Number of independent informants.

Scientific Names and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Agelenidae													
<i>Tegenaria domestica</i> (Clerck, 1757)	<i>telaraña</i>	WI	Buildings of cities, towns and villages	VIM	web	made a poultice with spider web and powdered chili pepper	apply	inflamaciones	M60.9 Myositis, unspecified	L18 Muscle pain	SKE	2	1
Apidae													
<i>Apis mellifera</i> Linnaeus, 1758	<i>miel</i>	WI	Garrigue	VIO	honey	direct	eat	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	9	1
				PIE, RET	honey	decoction or infusion	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	22	3
				VIM	honey	decoction with oregano and dried figs	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				NAE	propolis	direct	drink	<i>dolor de garganta</i>	J02.9 Acute pharyngitis, unspecified	R72 Strep throat	RES	1	1
				DAI	honey	direct	smear gums	<i>encías</i>	K05 Gingivitis and periodontal diseases	D82 Teeth/gum disease	INF	1	1
				BRA	honey	direct	apply	<i>para reventar granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	3	1
				NAV	honey	direct	apply	<i>en las heridas para taparlas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
				ALC, RET	honey and flour	mix	apply	<i>acné</i>	L70 Acne	S96 Acne	DER	2	2
				ALC	honey and flour	mix	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	1	1
				ALC	honey and flour	mix	apply	<i>golondrinos</i>	L73.2 Hidradenitis suppurativa	S92 Sweat gland disease	DER	1	1
Ardeidae													
<i>Ardea cinerea</i> Linnaeus, 1758	<i>garza real</i>	EH	Inland surface waters	CRC	feather	direct	apply	<i>para los escalabraos cicatrizante, para las</i>	S00 Superficial injury of head	S17 Abrasion/scratch/blister	DER	2	1
	<i>garza</i>			CRC, DAI, HIN	feather	direct	apply		T01.9 Multiple open wounds, unspecified	A81 Multiple trauma/injuries	SKE	5	3

Scientific Names and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
				DAI, VIO	feather	direct	apply	<i>cortaduras heridas, para cortar las hemorragias cicatrizante</i>	T14.1 Open wound of unspecified body region T01.9 Multiple open wounds, unspecified	S13 Animal/human bite	DER	11	2
<i>Ardea purpurea</i> Linnaeus, 1766	<i>garza</i>	EH	Inland surface waters	CRC	feather	direct	apply			A81 Multiple trauma/injuries	SKE	1	1
Bovidae <i>Ovis aries</i> Linnaeus, 1758	<i>oveja</i>	WI	Garrigue	VIM	matured cheese	direct	eat	<i>diarrea</i>	K59.1 Functional diarrhoea	D11 Diarrhoea	GAS	2	1
Buthidae <i>Buthus occitanus</i> (Amoreux, 1789)	<i>alacrán, araclán</i>	ME	Garrigue	ALC, HIN, HOR	whole animal	fried in olive oil and that oil is filtered	apply	<i>picadura de alacrán</i>	X22 Contact with scorpions	A86 Toxic effect non-medicinal substance	POI	4	3
Canidae <i>Canis familiaris</i> Linnaeus, 1758	<i>perro</i>	WI	Buildings of cities, towns and villages	HIN	hair	fry the dog's hair and rub the oil on the bite in order to prevent rabies	apply	<i>rabia</i>	A82 Rabies	A77 Viral disease other/NOS	INF	2	1
Cervidae <i>Cervus elaphus</i> Linnaeus, 1758	<i>venao</i>	WI	Woodland, forest and other wooded land	FER	marrow	direct	rub	<i>dolores de las articulaciones</i>	Arthrosis (M15-M19)	L91 Osteoarthritis other	SKE	2	1
	<i>venao</i>			ALC	horn	with the tip of the horn an amulet was made	hung as a necklace in small children to protect them from the evil eye	<i>mal de ojo</i>	F43.0 Acute stress reaction	P02 Acute stress reaction	NER	1	1
	<i>venao</i>			ALC	heart bone	sn amulet was made	carry on	<i>mal de ojo</i>	F43.0 Acute stress reaction	P02 Acute stress reaction	NER	1	1
				ALC, VIM	heart bone	an amulet was made	carry on	<i>para el corazón</i>	I51.9 Heart disease, unspecified	K84 Heart disease other	CAR	3	2
	<i>venado</i>			FER	marrow	direct	rub	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
	<i>venao</i>			VIM	horn	direct	apply on the bite	<i>picaduras de víbora</i>	T63.0 Snake venom	A86 Toxic effect non-medicinal substance	POI	3	2
Columbidae <i>Columba livia</i> Gmelin, 1789	<i>paloma</i>	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	FER	excrement	mallows cooked and pigeon excrements made into poultices	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1
<i>Columba oenas</i> Linnaeus, 1758	<i>paloma</i>	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	FER	excrement	direct	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1
Equidae <i>Equus asinus</i> Linnaeus, 1758	<i>burro</i>	WI	Moist or wet eutrophic and mesotrophic grassland	CRC	milk	direct	drink	<i>tos</i>	R05 Cough	R05 Cough	RES	1	1
				NAE	excrement	decoction	apply	<i>derrames</i>	T14.1 Open wound	S13 Animal/human bite	DER	1	1

Scientific Names and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Hirudinidae									of unspecified body region				
<i>Hirudo troctina</i> Johnson, 1816	<i>sanguijuelas</i>	ME	Inland surface waters	DAI	whole animal	direct	The leeches were used to suck the blood.	<i>golondrinos</i>	L73.2 Hidradenitis suppurativa	S92 Sweat gland disease	DER	2	1
				CRC, DAI	whole animal	direct	The leeches were used to suck the blood	<i>para sacar toda la sangre de los moratones</i>	T14.0 Superficial injury of unspecified body region (haematoma)	S16 Bruise/contusion	SKE	4	2
Hominidae													
<i>Homo sapiens</i> Linnaeus, 1758	<i>leche de mujer</i>	WI	Buildings of cities, towns and villages	CRC, DAI, VIO	milk	direct	drop a milk thimble from a woman who is breastfeeding	<i>dolor de oído</i>	H66.9 Otitis media, unspecified	H71 Acute otitis media/myringitis	N/A	11	3
	<i>orina</i>			ALC, DAI	urine	direct	wet the hands, directly or making mud.	<i>para los cortes</i>	T01.9 Multiple open wounds, unspecified	A81 Multiple trauma/injuries	SKE	2	2
	<i>mierda</i>			VIM	faeces	crushed with glass anhd reduced to powder	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1
Lacertidae													
<i>Timon lepidus</i> (Daudin, 1802)				VIM	fat	direct	apply	<i>en las heridas para taparlas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	2
Lamprophiidae													
<i>Malpolon monspessulanus</i> (Hermann, 1804)	<i>culebras</i>	ME	Garrigue	FER	snake shed skin	direct	apply	<i>para cuando no duermes</i>	G47.0 Disorders of initiating and maintaining sleep (insomnias)	P06 Sleep disturbance	NER	3	1
				ALC, HIN	snake shed skin	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	2
				FER	whole animal	fry in oil	apply	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	3	1
				VIO	snake shed skin	direct	apply	<i>para cicatrizar las heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
Mantidae													
<i>Mantis religiosa</i> (Linnaeus, 1758)	<i>sin pensar en viernes</i>	NH	Garrigue	FER, VIO	ootheca	direct	see it or carry along	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	11	2
Meloidae													
<i>Berberomeloe majalis</i> (Linnaeus, 1758)	<i>reventones</i>	EU	Garrigue	VIO	whole animal	not specified	not specified	<i>contraveneno</i>	Accidental poisoning by an exposure to noxious substances (X40-X49)	A86 Toxic effect non-medicinal substance	POI	9	1
	<i>curatos</i>			LUC	whole animal	fry in oil	apply	<i>dolores</i>	R52.9 Pain, unspecified	A01 Pain general/multiple sites	SKE	1	1
Phasianidae													
<i>Gallus gallus</i>	<i>gallina/huevo</i>	WI	Subsistence	ALC	eggs	olive oil and	apply	<i>quemaduras</i>	Burns and	S14 Burn/cald	DER	1	1

Scientific Names and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
(Linnaeus, 1758)			garden areas			chicken egg white, beat thoroughly, it was like a cream that was put in the burn			corrosions (T20-T32)				
	<i>gallina</i>			FUE	whole animal	decoction	drink	<i>dolor de garganta</i>	J02.9 Acute pharyngitis, unspecified	R72 Strep throat	RES	1	1
	<i>gallo</i>			CRC	ocular adnexa	direct	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	1	1
				NAE	excrement	decoction	apply	<i>derrames</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
Suidae <i>Sus domesticus</i> Erxleben, 1777	<i>cerdo</i>	WI	Subsistence garden areas	VIO	ham	direct	chew	<i>dolor de oído</i>	H66.9 Otitis media, unspecified	H71 Acute otitis media/myringitis	N/A	9	1
				HOR	lard	direct	apply	<i>empachos</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
				VIM	blood	rancid blood sausage	eat	diarrhea	K59.1 Functional diarrhoea	D11 Diarrhoea	GAS	2	1
				HIN	lard	direct	apply	<i>para las grietas de las manos musculatura y esqueleto</i>	L30.9 Dermatitis, unspecified	S88 Dermatitis contact/allergic	DER	2	1
				HOR	lard	direct	apply	<i>para reventar granos, Granos</i>	M79.1 Myalgia	L18 Muscle pain	SKE	1	1
				BRA, CRC, VIC	bacon	direct	apply	<i>para los hinchazones verrugas para las torceduras</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	6	4
				HOR	lard	direct	apply	<i>heridas</i>	R60.0 Localized oedema	K07 Swollen ankles/oedema	MET	1	1
				ALC	lard	direct	apply		B07 Viral warts	S03 Warts	INF	1	1
				ALD	lard	direct	smear and massage		S93.6 Sprain and strain of other and unspecified parts of foot	L80 Dislocation/subluxation	SKE	3	1
				FER, FUE	bacon or lard	direct or ointment	apply		T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	3	2
Viperidae <i>Vipera latastei</i> Bosca, 1878	<i>vibora</i>	SP	Garrigue	ELR	head	direct	place the head of the animal in a cloth bag and hang it from the neck	<i>erisipela</i>	A46 Erysipelas	S76 Skin infection other	INF	2	1

Table 2. Medicinal ingredients and uses, Kingdom: Fungi.

Abbreviations: PR (Provenance): WI, Widespread. Localities: RUI, Ruidera. VIO, Villarrubia de los Ojos. **Broad Use:** DER: Dermatologic disorders. **NIT:** Number of informants totalized. **INI:** Number of independent informants.

Scientific Names, Vouchers	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0	Broad	NIT	INI
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and Families										Pathology	Use			
Agaricaceae														
<i>Lycoperdon perlatum</i> Pers.	<i>pedo de lobo chiquitín,</i> <i>pedos de lobo</i>	WI	Garrigue	RUI	mushroom spores	direct	apply	<i>quemaduras</i>	Burns and corrosions (T20-T32)	S14 Burn/cald	DER	1	1	
				VIO	Sporocarp and spores	direct	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	2	
Sclerodermataceae														
<i>Pisolithus arhizus</i> (Scop.) Rauschert	<i>pedo de lobo</i>	WI	Garrigue	RUI	mushroom spores	direct	apply	<i>quemaduras</i>	Burns and corrosions (T20-T32)	S14 Burn/cald	DER	1	1	

Table 3. Medicinal ingredients and uses, Kingdom or type: Mineralia.

Abbreviations: PR (Provenance): WI, Widespread. **Localities:** ALC, Alcoba, ALD, Aldea del Rey, CRC, Carrión de Calatrava, DAI, Daimiel, FER, Fernán Caballero, LAM, Las Mesas, MOT, Mota del Cuervo, VIM, Viso del Marqués. **Broad Use:** DER: Dermatologic disorders, GAS: Gastrointestinal problems, GYN: Gynaecology, INF: Infections (antibacterial, antifungal, anti plasmodial, anti-viral, dental plaque inhibitor), N/A: Not available. **NER:** Nervous system, **RES:** Respiratory complaints, **SKE:** Skeleto muscular system. **NTI:** Number of informants totalized. **INI:** Number of independent informants.

Scientific Names and types	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NTI	INI
Calcium oxides CaO (quicklime)	<i>cal</i>	WI	Imported	VIM	all	decoction with <i>Typha</i> fruits	wash	<i>almorrana</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	2	1
Hidroxides NaOH (Sodium hydroxide; Sodium lye)	<i>sosa cáustica</i>	WI	[Salicornia], [Suaeda] and [Salsola] pioneer saltmarshes	CRC	salts	macerate	massage	<i>empacho</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
Hydrogen oxides H ₂ O with H ₂ CO ₃	<i>hervideros de Carrión hervideros</i>	WI	Inland surface waters	CRC	water	boil	bath	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
				CRC	water	pools and rafts	bath	<i>piel</i>	XII Diseases of the skin and subcutaneous tissue	N/A	DER	1	1
H ₂ O	<i>agua fría</i>			ALC	water	cold	wash	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	1	1
Lignites Jet (lignite)	<i>azabache</i>	WI	Imported	VIM	all	carved into the shape of a "higa" (hand giving the middle finger)	carry on	<i>mal de ojo</i>	F43.0 Acute stress reaction	P02 Acute stress reaction	NER	2	1
Metal halide NaCl (Sodium Chloride)	<i>sal</i>	WI	Marine habitats	ALD	all	vinegar and salt	apply	<i>para las llagas de la boca</i>	K12 Stomatitis and related lesions	D83 Mouth/tongue/lip disease	INF	3	1
				FER	all	salted bacon	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
				VIM	all	crush jara leaves, retama shoots and salt, add vinegar and made into poultice	apply	<i>pies torcios</i>	S93.4 Sprain and strain of ankle	L80 Dislocation/subluxation	SKE	2	1
Silicates baked red clay	<i>teja caliente</i>	WI	[Salicornia], [Suaeda] and [Salsola] pioneer saltmarshes	FER	tile	baked	apply	<i>resfriaos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
				ALC	tile	baked	apply	<i>para los</i>	N94.6 Dysmenorrhoea,	X02 Menstrual pain	GYN	1	1

Scientific Names and types	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NTI	INI
Mud (mixture of water, loam, silt, and clay) and magnesium sulfate	<i>lodo</i>	WI	[Salicornia], [Suaeda] and [Salsola] pioneer saltmarshes	ALC	tile	baked	Apply wrapped with a cloth bath	<i>dolores de la regla dolores</i>	unspecified	A01 Pain general/multiple sites N/A	SKE	1	1
				DAI	all	direct		<i>iba la gente a bañarse para curarse</i>	R52.9 Pain, unspecified		N/A	2	1
	<i>lodo</i>	LAM	mud	direct	apply	<i>dolores</i>	M79.1 Myalgia	L18 Muscle pain	SKE	2	1		
	<i>lodo</i>	MOT	mud	direct	apply	<i>picaduras de avispas</i>	X23 Contact with hornets, wasps and bees	S12 Insect bite/sting	DER	1	1		
Sulfate salts CaSO ₄	<i>cristales, alcohol, vinagre</i>	WI	Mediterranean gypsum scrubs	DAI	all	crushed crystals macerate in alcohol or vinegar	rinse	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	1

Table 4. Medicinal ingredients and uses, type: Synthetic pesticides.

Abbreviations: PR (Provenance): WI, Widespread. **Localities:** ALC, Alcoba. ELR, El Robledo, NAE, Navas de Estena. **Broad Use:** INF: Infections (antibacterial, antifungal, anti plasmodial, anti-viral, dental plaque inhibitor). **NIT:** Number of informants totalized. **INI:** Number of independent informants.

Scientific Names	Vernacular	PR	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Phenolics Zotal (Biphenyl-2-ol 3%, Chlorophene 1.5%, Naphtha, solvents and excipients to complete 100%)	<i>Zotal</i>	WI	ALC, ELR, NAE	all	direct	drop a few drops on the tooth	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	3	2

Table 5. Medicinal ingredients and uses, Kingdom: Plantae.

Abbreviations: PR (Provenance): AS, Asia. EU, Europe. ME, Mediterranean. PA, Pacific islandns. WI, Widespread. **Localities:** ABN, Abenójar. ALC, Alcoba. ALD, Aldea del Rey. ALH, Alhambra. ALM, Almodóvar del Campo. ARG, Argamasilla de Calatrava. ARR, Arroba de los Montes. BRA, Brazatortas. CAB, Cabezarrubias del Puerto. CAL, Calzada de Calatrava. CRC, Carrión de Calatrava. CRI, Carrizosa. CIU, Ciudad Real. DAI, Daimiel. ELR, El Robledo. ELT, El Torno. FER, Fernán Caballero. FON, Fontanarejo. FUC, Fuencaliente. FLL, Fuenllana. FRE, Fuente el Fresno. HER, Herencia. HIN, Hinojosa de Calatrava. HNT, Hontanar. HOR, Horcajo de los Montes. LAS, La Solana. LAM, Las Mesas. LOS, Los Cortijos. LUC, Luciana. MAL, Malagón. MOR, Moral de Calatrava. NAE, Navas de Estena. NAV, Navalpino. PIE, Piedrabuena. POZ, Pozuelo de Calatrava. PUE, Puebla de Don Rodrigo. RET, Retuerta del Bullaque. RUI, Ruidera. SCV, San Carlos del Valle. SPM, San Pablo de los Montes. TOR, Torre de Juan Abad. VIH, Villahermosa. VIC, Villamayor de Calatrava. VIM, Viso del Marqués. VIO, Villarrubia de los Ojos. VSC, Villanueva de San Carlos. **Broad Use:** ANT: Antidote, AND: Andrology, CAN: Cancer (tumours), CAR: Cardiovascular diseases, DER: Dermatologic disorders, EYE: Ophthalmic problems, GAS: Gastrointestinal problems, GYN: Gynaecology, INF: Infections (antibacterial, antifungal, anti plasmodial, anti-viral, dental plaque inhibitor), MET: Metabolic syndromes including immunological-inflammatory and related diseases, N/A: Not available. NER: Nervous system, PAR: Parasites, POI: Poisons (insecticide and others), RES: Respiratory complaints, SKE: Skeleto muscular system, URO: Urology. **NIT:** Number of informants totalized. **INI:** Number of independent informants.

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Adoxaceae <i>Sambucus nigra</i> L.	<i>sabuco</i>	WI	Western	LAM	flower	liquorice	apply	<i>resfriado</i>	J00 Acute	R74 Upper respiratory	RES	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
(ALBA 6252)			Iberian sub-Mediterranean deciduous thickets			cooked, sabuco leaves and cotton			nasopharyngitis (common cold)	infection acute			
	<i>sabuco</i>			LAM	flower	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
	<i>sabuco</i>			HOR, NAE	flower	decoction	inhalation	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				HOR, RET	leaf	cook then poultice with lard	apply	<i>para los hinchazones</i>	R60.0 Localized oedema	K07 Swollen ankles/oedema	MET	2	2
	<i>sabuco</i>			NAE, VIO	flower	infusion	to wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	19	2
	<i>saúco</i>			HOR, RET	leaf	cook then poultice with lard	apply	<i>dolor muscular</i>	M79.1 Myalgia	L18 Muscle pain	SKE	2	2
				NAE	flower	infusion	to wash	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	10	1
				HOR, RET	flower	macerate in olive oil	rub	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	2
				HNT	flowering aerial parts	fry in olive oil	apply	<i>quemaduras</i>	Burns and corosions (T20-T32)	S14 Burn/cald	DER	2	1
				HOR	leaf	crush then poultice with lard	apply	<i>quemaduras</i>	Burns and corosions (T20-T32)	S14 Burn/cald	DER	2	1
				NAE	flower	macerate in olive oil	apply	<i>quemaduras</i>	Burns and corosions (T20-T32)	S14 Burn/cald	DER	2	1
Amaranthaceae													
<i>Beta vulgaris</i> L. (ALBA 4829)	<i>azúcar</i>	ME	Subsistence garden areas	FER	root	infusion	drink	<i>calenturas malas</i>	A23 Brucellosis	A78 Infectious disease other/NOS	INF	2	1
				DAI	root	infusion with <i>Teucrium</i> , mallow flower, liquorice root, marshmallow root, and sugar	drink	<i>"para costipaos malos"</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				CRC, FER	root	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	4	2
<i>Salsola vermiculata</i> L. (ALBA 2177)	<i>sosa</i>	ME	Mediterranean halo-nitrophilous scrubs	CRC	whole plant	macerate	massage	<i>empacho</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
Amaryllidaceae													
<i>Allium cepa</i> L.	<i>cebolla</i>	WI	Arable land	HOR	bulb	an onion is	drink	<i>el azúcar</i>	Diabetes mellitus	T89 Diabetes insulin	MET	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
(ALBA 6247)			with unmixed crops grown by low-intensity agricultural methods			cooked with leaves of chicory and artichoke leaves			(E10-E14)	dependent or T90 Diabetes non-insulin dependent			
<i>Allium sativum</i> L. (ALBA 6249)	<i>ajo</i>	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	VIM HOR	bulb bulb	decoction direct	drink rub	<i>estreñimiento picaduras de araclanes</i>	K59.0 Constipation X22 Contact with scorpions	D12 Constipation A86 Toxic effect non-medicinal substance	GAS POI	2 1	1 1
Anacardiaceae <i>Pistacia lentiscus</i> L. (ALBA 4218)	<i>lantisca</i>	ME	Garrigue	ALC, HOR NAE, SPM	bulb bark	crush and poultice reduce to fibres	apply are introduced into the teeth with decay	<i>picaduras de araclanes</i> <i>dolor de muelas</i>	X22 Contact with scorpions K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS) K59.1 Functional diarrhoea	A86 Toxic effect non-medicinal substance D82 Teeth/gum disease	POI INF	2 2	2 2
<i>Rhus coriaria</i> L.		ME	Mediterranean halo-nitrophilous scrubs	DAI	flowering aerial parts	infusion	drink	<i>astringente</i>	K59.1 Functional diarrhoea	D11 Diarrhoea	GAS	1	1
Apiaceae <i>Apium graveolens</i> L. (ALBA 11044)	<i>apio</i>	WI	Subsistence garden areas	HOR ALC ALC	aerial parts aerial parts aerial parts	direct decoction and poultice with honey and flour decoction and poultice with honey and flour	eat apply apply	<i>infección de estómago bronquitis</i> <i>resfriado</i>	K25 Gastric ulcer J20 Acute bronchitis J00 Acute nasopharyngitis (common cold)	D83 Mouth/tongue/lip disease R78 Acute bronchitis / bronchiolitis R74 Upper respiratory infection acute	GAS RES RES	3 2 2	3 2 2
<i>Coriandrum sativum</i> L.	<i>cilantro</i>	WI	Subsistence garden areas	DAI	fruit	decoction	drink	<i>epilepsia</i>	G40 Epilepsy	N88 Epilepsy	NER	1	1
<i>Cuminum cyminum</i> L.	<i>cominos</i>	WI	Subsistence garden areas	ALC, RET	fruit	infusion	drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin X22 Contact with scorpions	D73 Gastroenteritis presumed infection A86 Toxic effect non-medicinal substance	INF POI	2 2	2 1
<i>Eryngium campestre</i> L. (ALBA 10012)	<i>cardosanto</i>	ME	Phoenician torgrass swards	ELR	leaf	crush	apply	<i>picaduras de alacranes</i>	X22 Contact with scorpions	A86 Toxic effect non-medicinal substance	POI	2	1
<i>Foeniculum vulgare</i> Mill. subsp. <i>piperitum</i> (Ucria) Cout. (ALBA 10389)	<i>hinojo</i>	ME	Phoenician torgrass swards	ABN ALC, HOR,	fruit flowering aerial parts	decoction infusion	drink wash	<i>mal de ojo</i> <i>aclarar la vista</i>	F43.0 Acute stress reaction H10 Conjunctivitis	P02 Acute stress reaction F71 Conjunctivitis allergic	NER EYE	1 3	1 3

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI									
<i>Petroselinum crispum</i> (Mill.) Fuss	<i>perejil</i>	ME	Subsistence garden areas	RET	fruit	decoction	drink	<i>costipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	2									
				DAI, FER																		
				LUC										flower	decoction	drink	<i>dolor de garganta</i>	J02.9 Acute pharyngitis, unspecified	R72 Strep throat	RES	1	1
				DAI										fruit	decoction	drink	<i>aumentar la leche</i>	O92.4 Hypogalactia	W95 Breast disorder in pregnancy/puerperium other	GYN	1	1
				FER										fruit	decoction	drink	<i>mal cuerpo</i>	K59.1 Functional diarrhoea	D11 Diarrhoea	GAS	2	1
				CRC										fruit	infusion	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
				RET										fruit	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
<i>Pimpinella anisum</i> L.	<i>anis</i> , <i>anis en grano</i> <i>anis</i>	ME	Imported	DAI, FER, RET	fruit	decoction or infusion	drink	<i>gases</i>	R14 Flatulence and related conditions	D08 Flatulence/gas/belching	GAS	6	4									
				NAV										leaf	infusión highly concentrated	drink	<i>pa desbaratar barrigas</i>	O06 Unspecified abortion	W82 Abortion spontaneous	GYN	3	1
				CRC										fruit	infusion	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	1	1
<i>Scandix australis</i> L. (ALBA 10473)	<i>guijones</i>	ME	Mediterranean annual communities of shallow soils	ALC, FER	fruit	infusion	drink	<i>gases</i>	R14 Flatulence and related conditions	D08 Flatulence/gas/belching	GAS	5	3									
				ALC, HNT, HOR, RET										fruit	infusion	drink	<i>catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	5	4
				LAM										aerial part	fill bottles with sour cherries and water of "guijones"	drink	<i>dolor de vientre, dolores de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	4	2
Apocynaceae <i>Nerium oleander</i> L. (ALBA 10192)	<i>adelfa</i>	WI	Oleander galleries	VIM	root	decoction	wash	<i>piojos</i>	B85.0 Pediculosis due to <i>Pediculus humanus capitis</i>	S73 Pediculosis/skin infestation other	PAR	2	1									
Asparagaceae <i>Asparagus acutifolius</i> L. (ALBA 6101)	<i>esparraguera</i>	ME	Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	DAI	underground bud and shoot	decoction	eat	<i>riñón</i>	N23 Unspecified renal colic	U14 Kidney symptom/complaint	URO	2	1									
				ALC	whole plant	infusion	drink	<i>cistitis</i>	N30 Cystitis	U71 Cystitis/urinary infection other	URO	1	1									
				ALC,	underground	decoction	eat	<i>pa la retención</i>	R33 Retention of	U08 Urinary retention	URO	3	2									

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI	
<i>Asparagus officinalis</i> L. <i>Drimys maritima</i> (L.) Stearn (ALBA 6005)	<i>espárrago de huerta cebolla albarrana, cebolla almorranera, ceborranchas</i>	WI	Subsistence garden areas Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	RET ALC	bud and shoot underground bud and shoot bulb	decoction	eat	<i>de orina pa la retención de orina almorranas</i>	urine R33 Retention of urine K64.9 Haemorrhoids, unspecified	U08 Urinary retention	URO	2	1	
		ME		ALC, DAI		direct	carry along			K96 Haemorrhoids	GAS	3	3	
				HOR		bulb	direct	place under the bed	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	2	2
				FON		bulb	crush	apply	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	3	1
				LUC		bulb	fry in oil	apply	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	1	1
				VIH		bulb	decoction	apply	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	3	1
				LOS		bulb	onion is crushed and a poultice made with cloth	apply	<i>golondrinos</i>	L73.2 Hidradenitis suppurativa	S92 Sweat gland disease	DER	1	1
				LOS		bulb	crush	apply	<i>grano o herida</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1
	FER	bulb	decoction and poultice	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1				
Aspleniaceae <i>Ceterach officinarum</i> L. (ALBA 6087)	<i>culantrillo</i>	WI	Mediterranean wet inland cliffs	HNT	whole plant	decoction	drink	<i>para abortar</i>	O06 Unspecified abortion	W82 Abortion spontaneous	GYN	12	1	
Boraginaceae <i>Alkanna tinctoria</i> (L.) Tausch (ALBA 6250)	<i>pata de perdiz</i>	ME	Grasslands and lands dominated by forbs, mosses or lichens	DAI	root	macerate in olive oil in a glass container	apply	<i>desinfectar de heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	10	1	
<i>pata de perdiz</i>	VIO			root	macerate the root in alcohol (which would turn red)	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	9	1		
<i>pataperdiz</i>	CRC			whole plant	macerate in oil	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1		
<i>tintorera</i>	VIO			whole plant	ointment	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1		

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Brassicaceae									region				
<i>Capsella bursa-pastoris</i> (L.) Medik. (ALBA 5360)		WI	Mediterranean annual communities of shallow soils	DAI	whole plant	infusion	drink	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
<i>Sinapis alba</i> L. (ALBA 4979)	<i>mostaza</i>	EU	Arable land with unmixed crops grown by low-intensity agricultural methods	ALC	fruit	crush	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	12	1
				FON, RET	fruit	decoction and poultice	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	2	2
				NAE	fruit	crush	apply	<i>catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				FON, NAV	leaf	crush and make poultice	apply	<i>hinchazones</i>	R60.9 Oedema, unspecified (Fluid retention NOS)	K07 Swollen ankles/oedema	MET	2	2
<i>Sinapis arvensis</i> L.	<i>mostaza</i>	EU	Arable land with unmixed crops grown by low-intensity agricultural methods	NAV	aerial parts	crush	apply	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
	<i>jaramago borriquero</i>			FON, NAV	leaf	crush and make poultice	apply	<i>hinchazones</i>	R60.9 Oedema, unspecified (Fluid retention NOS)	K07 Swollen ankles/oedema	MET	2	2
				RET	fruit	infusion	steeping the sick fingers	<i>dedos malos, uñeros</i>	L03.0 Cellulitis of finger and toe (paronychia)	S09 Infected finger/toe	INF	1	1
				FON, RET	whole plant	decoction and poultice	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	2	2
Cactaceae													
<i>Opuntia ficus-indica</i> (L.) Mill.	<i>higos chumbos, chumbera</i>	WI	Subsistence garden areas	CAB	stem	puts the trunk in glass jars with alcohol and is left one year	apply	<i>para los dolores de huesos</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
Cannabaceae													
<i>Cannabis sativa</i> L.	<i>suela de alpargata</i>	WI	Subsistence garden areas	VIO	stem	decoction	rinse	<i>para el dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	9	1

Caprifoliaceae

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Lonicera periclymenum</i> L. subsp. <i>hispanica</i> (Boiss. & Reuter) Nymaqr (ALBA 6117)	<i>mariserva, mariselva</i>	ME	Garrigue	ALC, HOR, NAE	flowering aerial parts	infusion	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	3
<i>Lonicera implexa</i> Ait (ALBA 10241)	<i>mariserva, mariselva</i>	ME	Garrigue	ALC, HOR, NAE	flowering aerial parts	infusion	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	3
Caryophyllaceae <i>Paronychia argentea</i> Lam. (ALBA 6011)	<i>hierba de la sangre</i>	ME	Mediterranean annual communities of shallow soils	SPM	flowering aerial parts	infusion	drink	<i>hervor de la sangre</i>	A38 Scarlet fever	A78 Infectious disease other/NOS	INF	2	1
	<i>manzanilla, hierba sanguínea</i>			ALH	flowering aerial parts	infusion	apply	<i>para lavar los ojos</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	3	1
	<i>Sanguinaria, hierba de la sangre</i>			DAI, FER, VSC	flowering aerial parts	infusion	drink	<i>bajar la tensión, para la tensión</i>	Hypertensive diseases (I10-I15)	K86 Hypertension uncomplicated and K87 Hypertension complicated	CAR	7	6
	<i>hierba platera</i>			LAS, VIM	flowering aerial parts	infusion	drink	<i>disminuir la sangre</i>	I10 Essential (primary) hypertension	K86 Hypertension uncomplicated	CAR	6	3
	<i>sanguinaria</i>			FER, FER	flowering aerial parts	infusion	drink	<i>circulación de la sangre</i>	I70 Atherosclerosis	K92 Atherosclerosis/peripheral vascular disease	CAR	5	2
	<i>sanguinaria</i>			FER	flowering aerial parts	infusion	drink	<i>varices</i>	I83 Varicose veins of lower extremities	N/A	CAR	3	1
	<i>sanguinaria</i>			MAL	flowering aerial parts	infusion	drink	<i>sistema circulatorio</i>	IX Diseases of the circulatory system, unspecified	K27 Fear of cardiovascular disease other	CAR	1	1
	<i>manzanilla plateá, sanguinaria</i>			NAE, VIH	flowering aerial parts	infusion	drink	<i>resfriados, catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	2
				DAI	flowering aerial parts	infusion	drink	<i>afecciones de garganta</i>	J02.9 Acute pharyngitis, unspecified	R72 Strep throat	RES	1	1
	<i>sanguinaria</i>			HOR	flowering aerial parts	infusion	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	1	1
	<i>sanguinaria, yerba sanguinaria</i>			ALC, ELR, HNT, HOR, NAE, NAV, RET	flowering aerial parts	infusion	drink	<i>para la subida de la sangre, purificar la sangre</i>	L50 Urticaria	S98 Urticaria	DER	9	8
	<i>yerba sanguinaria</i>			NAV	flowering aerial parts	infusion	drink	<i>para cuando ye salen granos en la piel</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	3	1
	<i>manzanilla,</i>			ALH	flowering	infusion	apply	<i>para lavar las</i>	T14.1 Open wound	S13 Animal/human bite	DER	3	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Paronychia echinulata</i> Chater	<i>hierba sanguínea sanguinaria</i>	ME	Mediterranean annual communities of shallow soils		aerial parts			<i>heridas</i>	of unspecified body region				
				LOS	flowering aerial parts	infusion	drink	<i>para las piedras del riñón</i>	N20.0 Calculus of kidney	U95 Urinary calculus	URO	2	1
	DAI			flowering aerial parts	infusion	drink	<i>dolor de riñón</i>	N23 Unspecified renal colic	U14 Kidney symptom/complaint	URO	1	1	
	FON, RET			flowering aerial parts	infusion	drink	<i>pa la retención de orina</i>	R33 Retention of urine	U08 Urinary retention	URO	2	2	
	HOR			flowering aerial parts	infusion	to wash	<i>cortar las hemorragias de la mujer</i>	N92.6 Irregular menstruation, unspecified	X07 Menstruation irregular/frequent	GYN	1	1	
	HOR, VIH			flowering aerial parts	infusion	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	4	2	
	VIM			flowering aerial parts	direct	fresh plant placed on the hut	<i>dolor de cabeza</i>	R51 Headache	N01 Headache	NER	2	1	
	ALH			flowering aerial parts	infusion	drink	<i>mareos</i>	R42 Dizziness and giddiness	N17 Vertigo/dizziness	NER	3	1	
	FON			flowering aerial parts	infusion	drink	<i>fuego en el cuerpo</i>	R50.9 Fever, unspecified	A03 Fever	NER	3	1	
	VIH			flowering aerial parts	decoction	drink	<i>dolores</i>	R52.9 Pain, unspecified	A01 Pain general/multiple sites	SKE	3	1	
<i>Spergularia rubra</i> (L.) J. Presl & C. Presl (ALBA 10184)	<i>sanguinaria</i>	ME	Mediterranean annual communities of shallow soils	NAV	flowering aerial parts	infusion	drink	<i>pa la circulación de la sangre</i>	I70 Atherosclerosis	K92 Atherosclerosis/peripheral vascular disease	CAR	4	2
				HOR	flowering aerial parts	infusion	wash	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	2	2
				FON, RET	flowering aerial parts	infusion	drink	<i>pa la retención de orina</i>	R33 Retention of urine	U08 Urinary retention	URO	2	2
				HOR	flowering aerial parts	infusion	to wash	<i>cortar las hemorragias de la mujer</i>	N92.6 Irregular menstruation, unspecified	X07 Menstruation irregular/frequent	GYN	1	1
<i>Cistus crispus</i> L. (ALBA 10187)	<i>jarilla</i>	ME	Tall cistus maquis	HOR	whole plant	infusion	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	2	1
				VIO	whole plant	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	9	1
				ELT, HIN	whole plant	decoction	apply	<i>dolor de estómago</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	6	3
<i>Cistus ladamifer</i> L. (ALBA 3556)	<i>jara</i>	ME	Tall cistus maquis	ALC	fruit	infusion	drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	2	1
				HOR, NAE	bud	decoction single or with	drink	<i>para los constipados</i>	J00 Acute nasopharyngitis	R74 Upper respiratory infection acute	RES	2	2

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Compositae <i>Achillea ageratum</i> L. (ALBA 6109)	árnica	ME	Tall Mediterranean amphibious communities	ALM	whole plant	<i>Genista tridentata</i> cooked to make vapors	inhalation	<i>para los constipados</i>	(common cold) J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				ALC	bud	cooked to make vapors with holm oak bark decoction	vapors	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	1	1
				ELT	whole plant		apply	<i>dolor piernas</i>	M79.6 Pain in limb	L09 Arm symptom/complaint	SKE	2	1
				VIM	leaf	crush jara leaves, retama shoots and salt, add vinegar and made into poultice	apply	<i>pies torcios</i>	S93.4 Sprain and strain of ankle	L80 Dislocation/subluxation	SKE	2	1
				VIO	bud	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	9	1
				ALM, DAI, SCV	whole plant	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	5	3
				DAI, ELR, FON, SCV	whole plant	rockrose and rosemary cooked in water	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	8	4
				FON	flowering aerial parts	infusion	drunk on an empty stomach	<i>constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
				ALC	flowering aerial parts	syrup	take a few spoonfuls every morning	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				FON, HOR	flowering aerial parts occasionally with <i>Mentha pulegium</i> or chamomille	infusion	drink	<i>asientos, estómago sucio</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	3	2
				HOR, RET	inflorescence	ointment	apply	<i>asientos</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	3	2
				HOR	flowering aerial parts	fried in olive oil	apply	<i>inflamaciones</i>	M60.9 Myositis, unspecified	L18 Muscle pain	SKE	1	1
				ALC, HOR	flowering aerial parts	decoction and poultice	apply	<i>contusiones</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	2
DAI, NAV	flowering aerial parts	macerate in alcohol	rub	<i>contusiones</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	2				

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Anacyclus clavatus</i> (Desf.) Pers. (ALBA 10092)	<i>margaza</i>	ME	Bare tilled, fallow or recently abandoned arable land	FON, HOR, FON, NAV, RET, ALC	flowering aerial parts	fry or macerate in olive oil and make ointment	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	7	5
				flowering aerial parts	macerate in brandy	wash	<i>picaduras de avispa</i>	X23 Contact with hornets, wasps and bees	S12 Insect bite/sting	DER	1	1	
				DAI, HOR, NAE, NAV, SPM; VIM	flowering aerial parts	macerated in alcohol or brandy	wash or apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	20	7
				flowering aerial parts	fried in olive oil	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	4	2	
				NAE, NAV, RET, HOR	flowering aerial part	macerate in oil	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	3	3
				flowering aerial part	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1	
				ALC	flowering aerial parts	macerate in oil	apply	<i>dolores</i>	R52.9 Pain, unspecified	A01 Pain general/multiple sites	NER	2	1
				ALC, PUE, ALC	flowering aerial parts	infusion	drink	<i>medicinal</i>	N/A	N/A	N/A	2	2
				flowering aerial parts	decoction	drink	<i>digestivas</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1	
				VIM	flowering aerial parts	infusion	rinse mouth	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	1
<i>Anthemis arvensis</i> L. (ALBA 10079)	<i>manzanilla del campo</i>	EU	Bare tilled, fallow or recently abandoned arable land	DAI	flowering aerial parts	infusion	drink	<i>ansiedad</i>	F41 Other anxiety disorders	P74 Anxiety disorder/anxiety state	NER	1	1
				DAI	flowering aerial parts	infusion	drink	<i>infecciones oculares</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	1	1
				DAI	flowering aerial parts	infusion	wash the eye	<i>infecciones oculares</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	1	1
				FER	flowering aerial parts	infusion	inhalation	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
				DAI	flowering aerial parts	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				FER	flowering aerial parts	infusion	inhalation	<i>dolor de garganta</i>	J02.9 Acute pharyngitis,	R72 Strep throat	RES	3	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Artemisia verlotiorum</i> Lamotte (ALBA 6130)	té	EU	Mediterranean halo-nitrophilous scrubs	DAI	flowering aerial parts	infusion	drink	<i>digestivo</i>	unspecified K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
				DAI	flowering aerial parts	infusion	drink	<i>gases</i>	R14 Flatulence and related conditions	D08 Flatulence/gas/belching	GAS	1	1
				FON, NAV	flowering aerial parts	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	5	3
<i>Bidens aurea</i> (Aiton) Scherff. (ALBA 11060)	té	WI	Domestic gardens of villages and urban peripheries	ALC, NAE, NAV	flowering aerial parts	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	4	4
<i>Bombycilaena discolor</i> (Pers.) M.Laínz	algodón	ME	Mediterranean annual communities of shallow soils	LAM	whole plant	liquorice cooked, sabuco leaves and cotton	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				LAM	whole plant	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
<i>Centaurea melitensis</i> L. (ALBA 2315)	arzolla	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	HOR, NAV	root	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	3	2
				HOR, NAV	root	decoction	apply	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	2
<i>Centaurea ornata</i> Willd. (ALBA 6012, 6167)	cardo arzollo	ME	Arable land with unmixed crops grown by low-intensity agricultural methods	LOS	root	decoction	wash	<i>purificar la sangre</i>	L50 Urticaria	S98 Urticaria	DER	2	1
				FER	root	decoction	drink	<i>purificar la sangre</i>	L50 Urticaria	S98 Urticaria	DER	3	1
	cardo arzollo		FER	whole plant	decoction and poultice	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	10	1	
	arzolla		ALC, ELR, HOR, NAV, SPM, NAV	root	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	6	5	
	arzolla		NAV	whole plant	decoction	wash	<i>heridas agangrenadas</i>	T79.3 Post-traumatic wound infection, not elsewhere classified	S11 Skin infection post-traumatic	INF	1	1	

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<i>Chamaemelum nobile</i> (L.) All. (ALBA 6163)	<i>manzanilla</i>	EU	Subsistence garden areas	FER	flowering aerial parts	infusion	drink	<i>sistema digestivo</i>	Diseases of the digestive system (K00-K93)	D27 Fear of digestive disease other	GAS	2	1
	<i>manzanilla serranilla</i>			DAI	flowering aerial parts	decoction	wash	<i>para lavar los ojos</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	2	1
	<i>manzanilla, manzanilla serranilla</i>			DAI, FER, Mota del Cuervo, VIC	flowering aerial parts	infusion	drink	<i>nauseas</i>	R11 Nausea and vomiting	D09 Nausea	GAS	7	4
	<i>manzanilla</i>			HOR	flowering aerial parts	thyme, chamomile and orange peel infusion	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
<i>Cichorium intybus</i> L. (ALBA 2323)	<i>achicoria amarga</i>	ME	Subsistence garden areas	HOR	leaf	an onion is cooked with leaves of chicory and artichoke leaves	drink	<i>el azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	1	1
				DAI	root	decoction	drink	<i>el azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	1	1
				ALC, FON	whole plant	infusion	drink	<i>pa la retención de orina</i>	R33 Retention of urine	U08 Urinary retention	URO	2	2
				ALC	whole plant	infusion	drink	<i>cistitis</i>	N30 Cystitis	U71 Cystitis/urinary infection other	URO	1	1
<i>Cynara humilis</i> L. (ALBA 10213)	<i>alcachofa</i>	EU	Bare tilled, fallow or recently abandoned arable land	HOR	whole plant	decoction	drink	<i>el azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	1	1
<i>Cynara cardunculus</i> L.	<i>cardo</i>	ME	Subsistence garden areas	HOR, SPM	leaf	decoction	drink	<i>el azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	2	2
<i>Cynara scolymus</i> L.	<i>alcachofa</i>	ME	Subsistence garden areas	HOR	leaf	an onion is cooked with leaves of chicory and artichoke leaves	drink	<i>el azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	1	1
<i>Helichrysum stoechas</i> (L.) Moench (ALBA 6118)	<i>escobilla</i>	ME	Phoenician torgrass swards	ALH	flower	decoction	wash	<i>quemaduras</i>	Burns and corosions (T20-T32)	S14 Burn/cald	DER	1	1
	<i>manzanilla basta, manzanilla del campo</i>			ALC, HOR, RET	flower	decoction	drink	<i>dolor de vientre, dolores de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	5	3
<i>Lactuca serriola</i> L. (ALBA 10100)	<i>combrios</i>	WI	Old town walls	FER	latex	direct	apply	<i>quemaduras</i>	Burns and corosions (T20-T32)	S14 Burn/cald	DER	2	1
<i>Matricaria aurea</i>	<i>manzanilla</i>	EU	Mediterranean	VIH	flowering	infusion	drink	<i>resfriado</i>	J00 Acute	R74 Upper respiratory	RES	3	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
(L.) Sch.Bip.	<i>del campo</i>		annual communities of shallow soils		aerial parts				nasopharyngitis (common cold)	infection acute			
<i>Matricaria chamomilla</i> L. (ALBA 6110)	<i>manzanilla</i>	EU	Subsistence garden areas	FER	flowering aerial parts	infusion	drink	<i>calenturas maltas</i>	A23 Brucellosis	A78 Infectious disease other/NOS	INF	2	1
	<i>manzanilla</i>			ALC, CRC, DAI, HON, NAV, VIM	flowering aerial parts	infusion	wash eyes	<i>ojos</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	11	6
	<i>manzanilla</i>			DAI, HOR, LOS, NAV; RET	flowering aerial parts	infusion	drink	<i>digestivo, limpiar el estómago, purgante</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	10	7
	<i>manzanilla</i>			ARG	flowering aerial parts	boil <i>Mentha pulegium</i> and <i>Matricaria chamomilla</i>	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
	<i>manzanilla</i>			LUC	flowering aerial parts	infusion	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
	<i>manzanilla</i>			LAS	flowering aerial parts	infusion	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	4	1
	<i>manzanilla</i>			FER	flowering aerial parts	infusion with <i>Thymus mastichina</i> , <i>Lavandula pedunculata</i> , <i>Eucalyptus camaldulensis</i> soaked in water for 24 hours	drink	<i>para coger fuerza</i>	R53 Malaise and fatigue	A04 Weakness/tiredness general	NER	2	1
<i>Onopordum nervosum</i> Boiss. (ALBA 10333)	<i>toba</i>	ME	Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	HIN	flower		drink	<i>calenturas</i>	A01 Typhoid and paratyphoid fevers	D70 Gastrointestinal infection	INF	2	1
<i>Santolina pectinata</i> Lag. (ALBA 6182)	<i>manzanilla, manzanilla del campo manzanilla</i>	ME	Garrigue	RUI	flower	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
				RET	flowering aerial parts	infusion	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	1
<i>Scolymus hispanicus</i> L. (ALBA 5236)	<i>cardillo</i>	ME	Bare tilled, fallow or recently abandoned arable land	RET, SPM	flower	infusion	drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	2	2

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	<i>cardillos</i>			ARG	flower	decoction	drink	<i>dolor de vientre</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
<i>Silybum marianum</i> (L.) Gaertn. (ALBA 2348)	<i>cardo borriquero</i>	ME	Bare tilled, fallow or recently abandoned arable land	HOR	leaf	macerate in brandy	apply	<i>artrosis</i>	Arthrosis (M15-M19)	L91 Osteoarthritis other	SKE	1	1
				DAI	leaf	decoction	drink	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
	<i>cardo borriquero</i>			ALH	leaf	decoction	drink	<i>pedras del riñón</i>	N20.0 Calculus of kidney	U95 Urinary calculus	URO	3	1
<i>Taraxacum obovatum</i> DC. (ALBA 6218)	<i>cardo diente de león</i>	ME	Perennial calcareous grassland and basic steppes	FER	leaf	decoction	drink	<i>Dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	2	1
				ALC, HOR	leaf	Infusión	drink	<i>fiebre</i>	R50.9 Fever, unspecified	A03 Fever	NER	3	3
Crassulaceae <i>Hylotelephium spectabile</i> (Boreau) H.Ohba	<i>hoja de grano, hoja de callo, hoja callera, planta callera, sanalotó sanalotó</i>	EU	Domestic gardens of villages and urban peripheries	DAI, FER, HOR, PIE	leaf	peel the leaf's epidermis	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	6	5
				ALC, FNT, HOR, RET	leaf	peel the leaf's epidermis	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	16	5
				HOR, RET	leaf	peel the leaf's epidermis	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	2	2
<i>Sedum mucizonia</i> (Ortega) Raym.-Hamet	<i>uva de gato</i>	ME	Garrigue	VIO	whole plant	macerate in anise or in a bottle of brandy	drink	<i>para los dolores de la regla</i>	N94.6 Dysmenorrhoea, unspecified	X02 Menstrual pain	GYN	9	1
<i>Umbilicus rupestris</i> Salisb. & Dandy (ALBA 6125)	<i>embudillos de monte, embudillos</i>	EU	Old town walls	PIE	leaf	peel the leaf	apply	<i>sabañones</i>	T69.1 Chilblains	A88 Adverse effect physical factor	DER	2	2
	<i>góngoros</i>			HOR	leaf	peel the leaf	apply	<i>granos con pus</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	2	1
	<i>hóngoros</i>			HOR, RET	leaf	peel the leaf	apply	<i>callos</i>	L84 Corns and callosities	S20 Corn/callosity	DER	3	2
Cucurbitaceae <i>Bryonia cretica</i> subsp. <i>dioica</i> (Jacq.) Tutin (ALBA 6086)	<i>argenciana</i>	ME	Southwestern Iberian tamujares	RET	root	infusion	drink	<i>empachos</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
	<i>esparraguera</i>			SPM	root	direct	rub	<i>picaduras de araclanes</i>	X22 Contact with scorpions	A86 Toxic effect non-medicinal substance	POI	2	1

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				NAE, NAV, SPM, VIM	root	boil, crush and poultice	apply	<i>picaduras de araclanes</i>	X22 Contact with scorpions	A86 Toxic effect non-medicinal substance	POI	3	3
	<i>agenciana</i>			VIM	root	decoction with reduction to a black dense juice which with flour is made into pastles decoction	eat	<i>calenturas palúdicas</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	2	1
				VIM	root	decoction	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
<i>Cucumis melo</i> L.	<i>melón</i>	AS	Subsistence garden areas	DAI	fruit	syrup is made from baked melon	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
<i>Cucumis sativus</i> L. (ALBA 10391)	<i>pepino en aguardiente</i>	AS	Subsistence garden areas	ALC, FER, RET	fruit	cucumber macerated in brandy	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	3
Cupressaceae <i>Cupressus sempervirens</i> L. (MUB 30283)	<i>acipreses</i>	ME	Domestic gardens of villages and urban peripheries	ALC, LUC	fleshy cone	direct	carry along	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
<i>Juniperus oxycedrus</i> L. (ALBA 6094)	<i>nebros</i>	ME	Juniper matorral	NAV	fleshy cone	direct	are introduced into the teeth with decay	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	1
				DAI	"miera" resin	direct	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
Ephedraceae <i>Ephedra major</i> Host (ALBA 10055)	<i>pinillo</i>	ME	Garrigue	DAI	whole plant	decoction	drink	<i>para costipaos malos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
	<i>pinillo</i>			DAI	whole plant	infusion with Teucrium, mallow / flower, liquorice / root, marshmallow / root, and sugar	drink	<i>para costipaos malos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
	<i>pinillo</i>			DAI	whole plant	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	2
Equisetaceae <i>Equisetum</i>	<i>cola de</i>	WI	Moist or wet	FER	aerial part	infusion	drink	<i>la usaban como</i>	Human medicine,	Human medicine,	N/A	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>ramosissimum</i> Desf. (ALBA 10408) Ericaceae	<i>caballo</i>		eutrophic and mesotrophic grassland					<i>medicinal</i>	unspecified	unspecified			
<i>Arbutus unedo</i> L. (ALBA 6122)	<i>madroña</i>	ME	Acidiphile western Mediterranean holm-oak matorral	DAI	root	decoction	drink	<i>sífilis</i>	A53.9 Syphilis, unspecified	X70 Syphilis female	INF	1	1
				RET	root	decoction	wash	<i>infección vaginal</i>	B37.3 Candidiasis of vulva and vagina	X72 Genital candidiasis female	INF	1	1
				RET	root	decoction	drink	<i>mal de la próstata</i>	N41 Inflammatory diseases of prostate	U05 Urination problems other	URO	1	1
				FER	root	decoction	drink	<i>catarros, resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	11	2
				DAI	root	decoction	drink	<i>quitar los dolores cólicos</i>	M79.1 Myalgia	L18 Muscle pain	SKE	1	1
				ELR, FON, RET	root	decoction	drink		R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	6	3
				ALC, FON, RET	root	decoction	wash	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	DER	3	3
				FER	root	the root is cooked, it is left outside overnight	drink on an empty stomach for three mornings	<i>golondrinos</i>	L73.2 Hidradenitis suppurativa	S92 Sweat gland disease	DER	6	4
				FER	root	the root is cooked, it is left outside overnight	taken on an empty stomach for three mornings	<i>urticaria, granos</i>	L50 Urticaria	S98 Urticaria	DER	1	1
				FER	root	Madroña root is boiled and allowed to cool overnight	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	14	3
	<i>madroña</i>			DAI	root	decoction	drink	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
Euphorbiaceae													
<i>Euphorbia nicaensis</i> All. (ALBA 10766)	<i>lechiterna</i>	EU	Woodland, forest and other wooded land	DAI	latex	direct	apply	<i>verrugas</i>	B07 Viral warts	S03 Warts	INF	1	1
<i>Euphorbia serrata</i> L. (ALBA 6227)	<i>lecherines, lechiterna</i>	ME	Phoenician torgrass swards	CRC, VIO	latex	direct	apply	<i>verrugas</i>	B07 Viral warts	S03 Warts	INF	3	2
	<i>lechiterna</i>			DAI	whole plant	decoction	rinse	<i>para el dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures	D82 Teeth/gum disease	INF	1	1

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	<i>lechiterna</i>			LAM	whole plant	another herb and cooked lechiterna on a rag, crush it direct	apply	<i>ampollas</i>	(Toothache NOS) R23.8 Other and unspecified skinchanges (blister)	S04 Lump/swelling localized	DER	2	1
	<i>lechiterna</i>			RUI	whole plant	direct	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
	<i>lechiterna</i>			LAM	whole plant	decoction	apply	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	1
<i>Mercurialis tomentosa</i> L. (ALBA 10424)	<i>rompehuesos</i>	ME	Garrigue	TOR	aerial part	cooked with salt and vinegar direct	wash	<i>espolón</i>	M77.3 Calcaneal spur	L87 Bursitis/tendinitis/synovitis NOS	SKE	1	1
<i>Ricinus communis</i> L.		WI	Moist or wet eutrophic and mesotrophic grassland	DAI	oil	direct	drink	<i>purgante</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
Fagaceae													
<i>Quercus faginea</i> Lam. subsp. <i>faginea</i> (ALBA 6253)	<i>agalla</i>	ME	Woodland, forest and other wooded land	HOR, SPM	gall	the galls are cooked in a pot	the vapors are applied in the piles	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	3	3
<i>Quercus rotundifolia</i> Lam. (ALBA 6228)	<i>bellota</i>	ME	Woodland, forest and other wooded land	ALC, NAE, RET	fruit	baked or raw	eat	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	4	3
				NAE, RET	fruit	decoction	drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	2	2
	<i>chapparra encina</i>			LOS, DAI	leaf bark	direct decoction	rub the vapors are applied in the piles	<i>verrugas almorranas</i>	B07 Viral warts K64.9 Haemorrhoids, unspecified	S03 Warts K96 Haemorrhoids	INF GAS	1 2	1 1
	<i>encina</i>			VIO	bark	decoction	apply	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	1	1
	<i>encina</i>			FER	bark	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
	<i>chapparra</i>			ALC, ELR	bark	decoction with buds of rockrose and rosemary	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	2
<i>Quercus x morisii</i> Borzı (= <i>Q. x mixta</i> Vill. ex Colm., <i>Q. rotundifolia</i> Lam. x <i>Q. suber</i> L.) (ALBA 6000, 6015)	<i>mesto</i>	ME	Woodland, forest and other wooded land	NAE	bark	decoction	apply	<i>quebrancías, quebraos</i>	Hernia (K40-K46)	Hernia (D89-D91)	N/A	1	1
	<i>mesto</i>			ELR, NAE	branch	direct	take a garment of the child or sick person. A	<i>quebrancías</i>	Hernia (K40-K46)	Hernia (D89-D91)	N/A	4	2

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
								cut is made on the branch of the mesto and a piece of clothing is put. apply					
	<i>mesto</i>			ALC	leaf	decoction		<i>quebrancías, quebraos abortar</i>	Hernia (K40-K46)	Hernia (D89-D91)	N/A	1	1
				ALC, HNT, HOR, NAE, SPM, RET	bark	decoction	drink		O06 Unspecified abortion	W82 Abortion spontaneous	GYN	19	6
<i>Quercus suber</i> L. (ALBA 10025)	<i>alcornoque</i>	ME	Woodland, forest and other wooded land	ALC, ELR	bark	decoction with buds of rockrose and rosemary	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	2
Gentianaceae <i>Centaurium erythraea</i> Rafn. (ALBA 6168)	<i>hiel de la tierra</i>	ME	Periodically inundated shores with pioneer and ephemeral vegetation	RET	flowering aerial parts	infusion	drink	<i>calenturas</i>	A01 Typhoid and paratyphoid fevers	D70 Gastrointestinal infection	INF	1	1
	<i>hiel de tierra</i>			ALC, HOR, NAE	flowering aerial parts	infusion	drink	<i>fiebres maltas</i>	A23.9 Brucellosis, unspecified	A78 Infectious disease other/NOS	INF	3	3
	<i>hiel de tierra</i>			RET	flowering aerial parts	decoction and pills made with flour	eat	<i>fiebres maltas</i>	A23.9 Brucellosis, unspecified	A78 Infectious disease other/NOS	INF	2	2
	<i>hierba amargosa</i>			FON	flowering aerial parts	infusion	taken on an empty stomach	<i>lengua sucia</i>	B37.0 Candidial stomatitis	D83 Mouth/tongue/lip disease	INF	3	1
	<i>hiel de la tierra, hierba amargosa</i>			ALC, HOR, NAE, POZ	flowering aerial parts	Infusión or decoction	drink	<i>paludismo, calenturas tercianas</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	5	4
				NAE	flowering aerial parts	Infusión or decoction	drink	<i>calenturas malta</i>	A23 Brucellosis	A78 Infectious disease other/NOS	INF	1	1
	<i>hierba amargosa</i>			ALC	flowering aerial parts	decoction	drink	<i>constipado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
	<i>hiel de la tierra</i>			MOR	flowering aerial parts	infusion	drink	<i>azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	2	1
				DAI	flowering aerial parts	infusion	drink	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
	<i>hierba amargosa</i>			ALC	flowering aerial parts	infusion	drink	<i>circulación de la sangre</i>	I70 Atherosclerosis	Atherosclerosis/peripheral vascular disease	CAR	1	1
	<i>clavelillos</i>			CRC	flowering aerial parts	infusion	drink	<i>fiebre</i>	R50.9 Fever, unspecified	A03 Fever	NER	1	1
	<i>hierba</i>			DAI,	flowering	infusion	drink	<i>abrir el apetito,</i>	R63.0 Anorexia	T03 Loss of appetite	NER	7	5

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Centaurium maritimum</i> (L.) Fritsch ex Janch	<i>amargosa, yerba amargosa</i>			HOR, NAV	aerial parts			<i>abrir las ganas de comer, aperitivo</i>					
	<i>amargosa, yerba amargosa</i>			HOR, NAV	flowering aerial parts	macerate in wine	drink	<i>abrir las ganas de comer</i>	R63.0 Anorexia	T03 Loss of appetite	NER	4	2
	<i>hierba amargosa</i>	ME	Periodically inundated shores with pioneer and ephemeral vegetation	ALC	flowering aerial parts	decoction	drink	<i>constipado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				HOR, NAV, HOR, NAV	flowering aerial parts	macerate in wine	drink	<i>abrir las ganas de comer</i>	R63.0 Anorexia	T03 Loss of appetite	NER	4	2
				HOR, NAV	flowering aerial parts	infusion	drink	<i>abrir las ganas de comer</i>	R63.0 Anorexia	T03 Loss of appetite	NER	4	2
Geraniaceae <i>Pelargonium hortorum</i> L.H.Bailey	<i>geranio</i>	WI	Domestic gardens of villages and urban peripheries	ALC, SPM	leaf	petiole of the leaf smeared in olive oil	got into the anus of babies to evacuate the belly	<i>estreñimiento</i>	K59.0 Constipation	D12 Constipation	GAS	2	1
<i>Pelargonium peltatum</i> (L.) L'Hér.	<i>geranio</i>	WI	Domestic gardens of villages and urban peripheries	ALC, SPM	leaf	petiole of the leaf smeared in olive oil	got into the anus of babies to evacuate the belly	<i>estreñimiento</i>	K59.0 Constipation	D12 Constipation	GAS	2	1
Hypericaceae <i>Hypericum perforatum</i> L. (ALBA 10107)	<i>hipérico, pericón</i>	WI	Phoenician torgrass swards	VIM, VIO	flower	macerate in oil	apply or wash	<i>quemaduras</i>	Burns and corrosions (T20-T32)	S14 Burn/cald	DER	3	2
	<i>pericón</i>			VIM	flower	macerate in oil	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
	<i>hipérico</i>			VIO	flower	macerate in oil	apply	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	1	1
Iridaceae <i>Crocus sativus</i> L. (ALBA 5994)	<i>azafrán</i>	ME	Arable land with unmixed crops grown by low-intensity agricultural methods	DAI	stigmata	mixture of honey and saffron	apply	<i>encías</i>	K05 Gingivitis and periodontal diseases	D82 Teeth/gum disease	INF	1	1
<i>Iris xiphium</i> L. (ALBA 10644)	<i>baya</i>	ME	Phoenician torgrass swards	HNT, NAE	bulb	decoction	wash	<i>quemaduras</i>	Burns and corrosions (T20-T32)	S14 Burn/cald	DER	3	3
Juglandaceae <i>Juglans regia</i> L. (ALBA 6234)	<i>nogal</i>	WI	Walnut groves	HIN	fruit	chestnuts and walnuts	eat	<i>debilidad</i>	R53 Malaise and fatigue	A04 Weakness/tiredness general	NER	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
	<i>noguera</i>			LOS	leaf	crushed, in water decoction	to wash	<i>sabañones</i>	T69.1 Chilblains	A88 Adverse effect physical factor	DER	2	1
Juncaceae <i>Juncus maritimus</i> Lam. (ALBA 10350)	<i>junco</i>	EU	Interior Iberian salt pan meadows	CRC	stem	decoction	drink	<i>sistema digestivo</i>	Diseases of the digestive system (K00-K93)	D27 Fear of digestive disease other	GAS	1	1
Lamiaceae <i>Ajuga iva</i> (L.) Schreb.	<i>hierba de clin</i>	ME	Garrigue	ELR, HOR, NAE	flowering aerial parts	infusion	drink	<i>dólicos, dolor de tripa</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	4	4
<i>Ballota hirsuta</i> Benth.	<i>marrubio rojo</i>	ME	Phoenician torgrass swards	VIO	flowering aerial parts	infusion	drink	<i>el rojo se está usando como planta medicinal empachos</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
<i>Clinopodium nepeta</i> (L.) Kuntze (ALBA 6221)	<i>nieta, ñota</i>	EU	Phoenician torgrass swards	FON, HOR, VIM	flowering aerial parts	infusion	drink		K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	6	3
				HNT	flowering aerial parts	macerate in schnapps	wash	<i>quemaduras</i>	Burns and corrosions (T20-T32)	S14 Burn/cald	DER	1	1
<i>Lavandula latifolia</i> Medik. (ALBA 10805)		ME	Garrigue	DAI	whole plant	infusion	drink	<i>constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				DAI	whole plant	infusion	drink	<i>para coger fuerza conservar la vista</i>	R53 Malaise and fatigue	A04 Weakness/tiredness general	NER	1	1
<i>Lavandula pedunculata</i> (Mill.) Cav. (ALBA 6104, 6178)	<i>tomillo</i>	ME	Garrigue	FER	flowering aerial parts	Smoke	inhalation		Diseases of the eye and adnexa (H00-H59)	N/A	EYE	3	1
				FER, FON, RET	flowering aerial parts	infusion (with honey)	drink	<i>constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	7	3
				FER	flowering aerial parts	decoction	inhalation	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				DAI, FER	flowering aerial parts	infusion	drink	<i>para coger fuerza conservar la vista</i>	R53 Malaise and fatigue	A04 Weakness/tiredness general	NER	3	2
<i>Lavandula stoechas</i> L. (ALBA 6177)	<i>tomillo</i>	ME	Garrigue	FER	flowering aerial parts	smoke	inhalation		Diseases of the eye and adnexa (H00-H59)	N/A	EYE	3	1
				FON, RET	flowering aerial parts	infusion with honey	drink	<i>constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	4	2
				NAE	flowering aerial parts	decoction with dry figs and origan or rosemary	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				HOR	flowering	decoction	rub	<i>reúma</i>	M79.0 Rheumatism,	L18 Muscle pain	SKE	1	1

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					aerial parts	with thyme and rosemary decoction	soak ther feet	<i>los pies hinchao</i>	unspecified				
	<i>tomillo morao, tomillo cantueso</i>			FON, HNT, HOR, SCV	flowering aerial parts	decoction	wash	<i>heridas</i>	R60.0 Localized oedema (feet)	K07 Swollen ankles/oedema	MET	4	4
					flowering aerial parts	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
<i>Marrubium supinum</i> L. (ALBA 10791)	<i>manrubio</i>	ME	Phoenician torgrass swards	ALC, SPM, DAI	flowering aerial parts root	infusion	drink	<i>lombrices</i>	B82 Unspecified intestinal parasitism	D96 Worms/other parasites	PAR	2	2
					root	it was baked in wine with a caltrop root	drink	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and suporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
<i>Marrubium vulgare</i> L. (ALBA 10027)	<i>manrubio</i>	ME	Phoenician torgrass swards	TOR	flowering aerial parts	infusion	drink	<i>gripe</i>	J11 Influenza, virus not identified	R80 Influenza	RES	1	1
				DAI	root	it was baked in wine with a caltrop root	drink	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and suporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
				DAI	flowering aerial parts	it was baked in wine with a caltrop root	drink	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and suporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
				DAI	flowering aerial parts	infusion	drink	<i>fiebre</i>	R50.9 Fever, unspecified	A03 Fever	NER	1	1
<i>Melissa officinalis</i> L. (ALBA 3870)	<i>hierba limonera</i>	ME	Domestic gardens of villages and urban peripheries	CRC, DAI, LAS, SCV	leaf	infusion	drink	<i>resfriado, resfriaos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	8	6
	<i>hierba limonera</i>			ALH	leaf	infusion	drink	<i>para tratar el mal cuerpo</i>	K59.1 Functional diarrhoea	D11 Diarrhoea	GAS	1	1
	<i>hierba limonera</i>			DAI	leaf	infusion	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
	<i>hierba limonera</i>			SCV	leaf	infusion	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	2	1
	<i>toronjil</i>			HOR	leaf	infusion	drink	<i>tranquilizante</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	1	1
<i>Mentha × rotundifolia</i> (L.) Huds.	-	ME	Domestic gardens of villages and urban peripheries	DAI	aerial part	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
	<i>menta-del pantano</i>			CRC	flowering aerial parts	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1

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<i>Mentha aquatica</i> L. (ALBA 6149)	<i>té de río</i>	ME	Tall Mediterranean amphibious communities	CRC, LUC	flowering aerial parts	infusion	drink	<i>dolor de estómago</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	4	3	
	<i>té de río</i>			CRC	flowering aerial parts	infusion	drink	<i>dolores de la regla</i>	N94.6 Dysmenorrhoea, unspecified	X02 Menstrual pain	GYN	1	1	
<i>Mentha cervina</i> L. (ALBA 6124)	<i>poleo, poledos, poleo fino</i>	ME	Tall Mediterranean amphibious communities	FON	aerial part	pennyroyal, arnica and marjoram infusion	drink	<i>constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1	
				ALC, HOR, NAV, TOR, RET	aerial part	infusion	drink	<i>digestión</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	6	5	
<i>Mentha pulegium</i> L. (ALBA 6022)	<i>poleo</i>	ME	Short Mediterranean amphibious communities	ABN, FON, NAE, PUE	flowering aerial parts	infusion	drink	<i>catarros, resfriados, constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	6	4	
				NAE	flowering aerial parts	decoction with spearmint, and <i>Genista tridentata</i> infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1	
				NAE	flowering aerial parts	infusion	bath	<i>circulación de las piernas</i>	I83 Varicose veins of lower extremities	N/A	CAR	1	2	
	<i>poleo</i>				MAL	flowering aerial parts	infusion	drink	<i>infección de estómago</i>	K25 Gastric ulcer	D83 Mouth/tongue/lip disease	GAS	1	1
					ALC, DAI, ELR, ELT, FON, FLL, FER, HOR, LAS, LUC, MAL, NAE, PIE, RET, VIM	flowering aerial parts	infusion	drink	<i>digestión, dolor de estómago, digestivo, para el estómago, empacho</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	30	17
					FER	flowering aerial parts	infusion	drink	<i>dolor de barriga, para los cólicos</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	2
	<i>poleo</i>				ALC, ARG	aerial part	<i>Mentha pulegium, Matricaria</i> infusion occasionally	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	2	2

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
						with rosemary and <i>Thymus mastichina</i> infusion	drink	<i>relajante</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	1	1
				FER	aerial part	Infusión mixed with <i>Genista tridentata</i> and rosemary infusion	drink	<i>para la subida de la sangre, purificar la sangre</i>	L50 Urticaria	S98 Urticaria	DER	2	2
<i>Mentha spicata</i> L. (ALBA 6076)	<i>hierbabuena, hierba buena</i>	WI	Domestic gardens of villages and urban peripheries	FER	flowering aerial parts	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	5	2
<i>Mentha suaveolens</i> Ehrh. (ALBA 10149)	<i>té del río, poleo basto</i>	EU	Tall Mediterranean amphibious communities	FER, VIM	aerial part	infusion	drink	<i>para el estomago, empacho</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	4	2
				FER	aerial part	<i>Rosmarinus officinalis, Phlomis lychnitis</i> and <i>Mentha x suaveolens</i> infusion	drink	<i>para el estomago</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	2	1
				VIM	flowering aerial parts	decoction	wash	<i>piojos</i>	B85.0 Pediculosis due to <i>Pediculus humanus capitis</i>	S73 Pediculosis/skin infestation other	PAR	2	1
<i>Origanum vulgare</i> subsp. <i>virens</i> (Hoffmanns. & Link) Ietsw. (ALBA 10269)	<i>orégano</i>	ME	Garrigue	FON, HNT, MAL, RET, VIM, NAE	flowering aerial parts	infusión with honey	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	8	5
				NAE	flowering aerial parts	Decoction with dry figs and thyme	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
<i>Phlomis lychnitis</i> L. (ALBA 6001)	<i>hierba del cólico, hierba del cólico miserere. savia</i>	ME	Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	FON, MAL, SPM	flowering aerial parts	infusion	drink	<i>Sistema digestivo</i>	R52.9 Pain, unspecified	A01 Pain general/multiple sites	NER	2	1
				ALD, ARG, CRC, DAI, HER,	flowering aerial parts	infusion	drink	<i>digestiones pesadas, para la digestión</i>	K30 Functional dyspepsia	D27 Fear of digestive disease other	GAS	9	4
	<i>yerba del cólico, yerba de los dolores, té moruno</i>								K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	13	9

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
				NAV, VIC, VIM VIO	flowering aerial parts	infusion	drink	<i>para el cólico y el mal cuerpo</i>	K52.3 Indeterminate colitis	D99 Disease digestive system other	GAS	9	1
				FON	whole plant	infusion	drink	<i>cólico miserere</i>	K56 Paralytic ileus and intestinal obstruction without hernia	D99 Disease digestive system other	GAS	3	1
				CRC, DAI, FER	flowering aerial parts	infusion	drink	<i>dolor de tripa, dolor de vientre, para los dolores de vientre</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	6	4
				ALC, CRC, ELR, HOR FER	flowering aerial parts	infusion	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	18	5
	<i>té del cerro</i>			VIO	flowering aerial parts	infusion	drink	<i>para angustias y mal cuerpo</i>	R11 Nausea and vomiting	D09 Nausea	GAS	2	1
	<i>tila</i>			HOR, NAV MAL	flowering aerial parts	infusion	drink	<i>paralís</i>	F43.0 Acute stress reaction	P02 Acute stress reaction	NER	1	1
				DAI	flowering aerial parts	infusion	drink	<i>relajante</i>	G81 Hemiplegia	N18 Paralysis/weakness	NER	3	2
				ALC, ARG, HOR	flowering aerial parts	infusion	drink	<i>fiebre</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense A03 Fever	NER	1	1
				ALC	flowering aerial parts	infusion	drink	<i>para el dolor de cabeza</i>	R50.9 Fever, unspecified R51 Headache	N01 Headache	NER	3	3
				DAI	flowering aerial parts	infusion	drink	<i>mareos</i>	R42 Dizziness and giddiness	N17 Vertigo/dizziness	NER	3	1
				CRC, NAV	flowering aerial parts	infusion	drink	<i>nerviosismo</i>	Z73.3 Stress, not elsewhere classified I70 Atherosclerosis	P29 Psychological Symptom/complaint other K92 Atherosclerosis/peripheral vascular disease	NER	1	1
				ALD, VSC	flowering aerial parts	infusion	drink	<i>pa la circulación de la sangre</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	CAR	5	2
				HOR, NAV, RET LAS	flowering aerial parts	infusion	drink	<i>resfriado</i>	R33 Retention of urine	U08 Urinary retention	RES	4	2
	<i>tila del campo</i>			FER	flowering aerial parts	rosemary, sanguinaria, green tea and spearmint	drink	<i>pa la retención de orina</i>	Human medicine, unspecified	Human medicine, unspecified	URO	5	3
<i>Plectranthus verticillatus</i> Druce	<i>planta del dinero</i>	WI	Domestic gardens of	CRC	leaf	infusion the leaf is peeled	apply	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	4	1
								<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	2	1
								<i>granos</i>	R23.8 Other and unspecified skin	S04 Lump/swelling localized	DER	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Rosmarinus officinalis</i> L. (ALBA 6093)	romero	ME	villages and urban peripheries Western rosemary garrigues	FON	flowering aerial parts	smoke	inhalation	<i>peste</i>	A20 Plague	A78 Infectious disease other/NOS	INF	1	1
				ARR	flowering aerial parts	smoke	inhalation	<i>ojos</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	1	1
				ALC, FER	flowering aerial parts	infusion	drink	<i>circulación de la sangre</i>	I70 Atherosclerosis	K92 Atherosclerosis/peripheral vascular disease	CAR	4	2
				NAV	flowering aerial parts	infusion	drink	<i>sistema circulatorio</i>	IX Diseases of the circulatory system, unspecified	K27 Fear of cardiovascular disease other	CAR	3	1
				CAB, FER, MAL	flowering aerial parts	infusion	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	10	5
				LAS	flowering aerial parts	thyme and rosemary syrup	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	4	1
				FER	flowering aerial parts	decoction	inhalation	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				DAI	flowering aerial parts	infusion	drink	<i>digestivas</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	2	2
				LUC	flowering aerial parts	infusion	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
				DAI	flowering aerial parts	rosemary spirit	apply	<i>dolores articulares</i>	M13.9 Arthritis, unspecified	L91 Osteoarthritis other	SKE	1	1
				DAI	flowering aerial parts	decoction	apply	<i>dolores articulares</i>	M13.9 Arthritis, unspecified	L91 Osteoarthritis other	SKE	1	1
				HOR	flowering aerial parts	decoction with thyme and rosemary	rub	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
				DAI, PUE, RUI	flowering aerial parts	rosemary spirit	apply	<i>dolores musculares</i>	M79.1 Myalgia	L18 Muscle pain	SKE	3	3
				DAI	flowering aerial parts	decoction	apply	<i>dolores musculares</i>	M79.1 Myalgia	L18 Muscle pain	SKE	1	1
				DAI	flowering aerial parts	rosemary spirit	apply	<i>cicatrizante</i>	T01.9 Multiple open wounds, unspecified	A81 Multiple trauma/injuries	SKE	1	1
				DAI	flowering aerial parts	decoction	wash	<i>cicatrizante</i>	T01.9 Multiple open wounds, unspecified	A81 Multiple trauma/injuries	SKE	2	2
				DAI, ELR, FON, SCV	flowering aerial parts	decoction	wash or apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	8	4
				LOS	flowering aerial parts	macerate in alcohol and oil	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
				ELT	flowering aerial parts	decoction	to wash	<i>cuando se quedaban</i>	T33.8 Superficial frostbite of ankle and	A88 Adverse effect physical factor	DER	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
				ALC, NAE	bud and shoots	Infusión mixed with pennyroyal and <i>Genista tridentata</i> infusion	drink	<i>helados los pies para la subida de la sangre, purificar la sangre</i>	foot L50 Urticaria	S98 Urticaria	DER	2	2
<i>Salvia officinalis</i> L.	<i>salvia</i>	ME	Domestic gardens of villages and urban peripheries	DAI	leaf	infusion	apply	<i>inflamaciones</i>	M60.9 Myositis, unspecified	L18 Muscle pain	SKE	1	1
				DAI	leaf	infusion	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
<i>Sideritis paulii</i> Pau (ALBA 10511)	<i>rabo gato</i>	ME	Garrigue	FER	flowering aerial parts	infusion	drink	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	2	1
	<i>rabogato</i>			FER	flowering aerial parts	infusion	drink	<i>es medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	2	1
<i>Stachys officinalis</i> (L.) Trevis.	<i>bretónica</i>	ME	Garrigue	VIM	flowering aerial parts	infusion	drink	<i>malparir</i>	O06 Unspecified abortion	W82 Abortion spontaneous	GYN	2	1
<i>Teucrium pseudochamaepitys</i> L. (ALBA 10007)	<i>hierba iva</i>	ME	Garrigue	ALH	flowering aerial parts	infusion	drink	<i>calenturas malas</i>	A23 Brucellosis	A78 Infectious disease other/NOS	INF	3	1
				LAS	flowering aerial parts	macerate in water	drink	<i>desgana</i>	R63.0 Anorexia	T03 Loss of appetite	NER	4	1
<i>Thymus mastichina</i> (L.) L. subsp. <i>mastichina</i> (ALBA 6103)	<i>mejorana</i>	ME	Garrigue	CIU, MAL	flowering aerial parts	fry in oil	to wash	<i>quemaduras</i>	Burns and corosions (T20-T32)	S14 Burn/cald	DER	6	2
				SCV	flowering aerial parts	infusion	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
				HOR	flowering aerial parts	decoction with thyme and rosemary	rub	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
				PIE, VIM	flowering aerial parts	infusion	drink	<i>catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	2
	<i>mejorana</i>			FON	flowering aerial parts	pennyroyal, arnica and marjoram infusion	drink	<i>constipados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
	<i>mejorana, mejorada, almoraduz, tomillo mejorana</i>			CAB, FON, FUE, FER, HIN, MAL, PIE, PUE	flowering aerial parts	infusion	drink	<i>constipados, resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	15	8
	<i>mejorana</i>			FER	flowering aerial parts	infusion	drink	<i>tos</i>	R05 Cough	R05 Cough	RES	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
	<i>almaradú</i>			CIU	flowering aerial parts	infusion	drink	<i>sistema digestivo</i>	Diseases of the digestive system (K00-K93)	D27 Fear of digestive disease other	GAS	5	1
	<i>ajedrea</i>			PIE	flowering aerial parts	infusion	drink	<i>problemas del estómago digestivo</i>	K25 Gastric ulcer	D83 Mouth/tongue/lip disease	GAS	1	1
	<i>ajedrea, almoraduz, almoraduz, mejorana, tomillo sansero</i>			ALC, ELR, FON, HNT, HOR, NAV, PIE, RET	flowering aerial parts	infusion	drink		K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	10	8
	<i>ajedrea, almaraduz, mejorana, tomillo sansero mejorana</i>			ALC, ELR, HOR, LUC, PIE	flowering aerial parts	infusion	drink	<i>dolor de barriga, dolor de tripa, dolor de vientre</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	8	6
				ALC, HIN	flowering aerial parts	infusion	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	3	2
				ALC	flowering aerial parts	infusion	drink	<i>vómitos</i>	R11 Nausea and vomiting	D09 Nausea	GAS	1	1
				FER	flowering aerial parts	infusion with <i>Matricaria, Lavandula pedunculata, Eucalyptus camaldulensis</i>	drink	<i>para coger fuerza</i>	R53 Malaise and fatigue	A04 Weakness/tiredness general	NER	2	1
				HOR	flowering aerial parts	infusion	to wash	<i>pies hinchaos</i>	R60.0 Localized oedema (feet)	K07 Swollen ankles/oedema	MET	1	1
	<i>mejorana</i>			LOS	flowering aerial parts	infusion	drink	<i>es medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	2	1
	<i>mejorana</i>			RUI	flowering aerial parts	infusion	drink	<i>se lo llevan para hacer medicina medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
<i>Thymus vulgaris</i> L. (ALBA 10009)	<i>tomillo</i>	ME	Garrigue	RUI	flowering aerial parts	infusion	drink		Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
<i>Thymus zygis</i> L. subsp. <i>sylvestris</i> (Hoffmans. & Link) Cout. (ALBA 10054)	<i>Tomillo, tomillo pequeñito</i>	ME	Central Iberian gypsum scrubs	DAI, FUE	flowering aerial parts	infusion	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	2
				LAS	flowering aerial parts	thyme and rosemary syrup	drink	<i>resfriaos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	4	1
				DAI	flowering aerial parts	infusion	drink	<i>tos</i>	R05 Cough	R05 Cough	RES	1	1
				DAI	flowering aerial parts	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
	<i>tomillo sansero</i>			HOR	flowering aerial parts	thyme, chamomile	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	3

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI		
<i>Ziziphora hispanica</i> L. (ALBA 10315)	tomillo			HOR	flowering aerial parts	and orange peel infusion	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	1	1		
				DAI	flowering aerial parts	infusion	rinse	<i>halitosis</i>	R19.6 Halitosis	D20 Mouth/tongue/lip symptom/complaint	GAS	1	1		
				ALH	flowering aerial parts	infusion	drink	<i>mareos</i>	R42 Dizziness and giddiness	N17 Vertigo/dizziness	NER	3	1		
				DAI	flowering aerial parts	infusion	apply	<i>antiséptico</i>	T79.3 Post-traumatic wound infection, not elsewhere classified	S11 Skin infection post-traumatic	INF	1	1		
	poleo	ME	Garrigue	ALC, SPM, RUI	flowering aerial parts whole plant	infusion	drink	<i>lombrices</i>	B82 Unspecified intestinal parasitism	D96 Worms/other parasites	PAR	2	2		
				DAI	flowering aerial parts	infusion	drink	<i>dolor de costado con toses</i>	J18 Pneumonia, organism unspecified	D27 Fear of digestive disease other	GAS	1	1		
				DAI	flowering aerial parts	infusion	drink	<i>dolor de costado</i>	M60.9 Myositis, unspecified	R81 Pneumonia	RES	2	1		
Leguminosae <i>Cicer arietinum</i> L. (ALBA 4812)	garbanzo	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	LAM	seed	Toasted chickpeas with poultice for diarrhea.	eat	<i>diarrea</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1		
				RUI	flowering aerial parts whole plant	infusion	drink	<i>dolor de tripa</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	2	1		
<i>Genista tridentata</i> L. (ALBA 6074)	carquesa	ME	Central Iberian [Cytisus] fields	ALC, ELR, FON, FUE, NAE, HOR, NAV, PIE, PUE, RET	flowering aerial parts	infusion	drink	<i>catarros, constipados, resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	32	19		
				HOR	bud and shoots	decoction	rinse and gargle	<i>dolor de garganta</i>	J02.9 Acute pharyngitis, unspecified	R72 Strep throat	RES	1	1		
				ALC	flowering aerial parts	decoction	inhalation	<i>resfriados, constipado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	2		
				HOR	flowering aerial parts	infusion	drink	<i>ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1		
				ALC	flowering aerial parts	infusion	drink	<i>asma</i>	J45 Asthma	R96 Asthma	RES	1	1		

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Glycyrrhiza glabra</i> L. (ALBA 11045)	<i>paloduz,</i> <i>regaliz</i>	WI	Short Mediterranean amphibious communities	ALC, ELR	flowering aerial parts	decoction with figs and eucalyptus infusion	drink	<i>tos</i>	R05 Cough	R05 Cough	RES	14	2
				HOR	bud and shoots		drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	2	2
				HNT, RET, SPM	flowering aerial parts	decoction and make ointment	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	INF	3	3
				HOR, NAE	flowering aerial parts	infusion	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	2	2
				HOR, NAE	bud and shoots	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	2	2
				ALC, NAE	bud and shoots	infusion	drink	<i>pa la retención de orina</i>	R33 Retention of urine	U08 Urinary retention	URO	2	2
				ALC, NAE	whole plant	infusion	drink	<i>cistitis</i>	N30 Cystitis	U71 Cystitis/urinary infection other	URO	2	2
				ALC, NAE	bud and shoots	infusión mixed with pennyroyal and rosemary	drink	<i>para la subida de la sangre, purificar la sangre</i>	L50 Urticaria	S98 Urticaria	DER	2	2
				ALC	flowering aerial parts	infusión or decoction	drink	<i>calenturas epidémicas</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	2	1
				DAI	root	infusion of <i>Teucrium</i> , mallow flower, liquorice, marshmallow root, and sugar	drink	<i>para costipaos malos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				ALC	root	decoction with dry figs, raisins, <i>Achillea ageratum</i> and mallow flowers	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				ALH	root	decoction	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
				LAM	root	liquorice cooked, sabuco leaves and cotton	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
ALC, ARG, DAI, LAM, VIH	root	decoction	drink	<i>resfriado, ablandar el pecho</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	9	6				
CRC, DAI,	root	infusion	drink	<i>resfriados, para costipaos malos</i>	J00 Acute nasopharyngitis	R74 Upper respiratory infection acute	RES	7	5				

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
				LAM					(common cold)				
				LAM	root	mixed with elderberry is cooked	drink	<i>resfriaos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				ARG	root	sucked like a cigar	suck	<i>ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1
				HIN	root	decoction	drink	<i>ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	2	1
				HIN	root	liquorice is cooked with dried figs to make a syrup infusion	drink	<i>ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	2	1
<i>Lupinus albus</i> L. (ALBA 1207)	<i>altramuces, altamuces, altramuces, altrambez</i>	ME	Inundated or inundatable croplands, including rice fields	HOR	seed		drink	<i>calenturas</i>	A01 Typhoid and paratyphoid fevers	D70 Gastrointestinal infection	INF	1	1
				MAL	seed	decoction	drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	1	1
				ALC	seed	decoction	drink	<i>calenturas</i>	A23 Brucellosis	A78 Infectious disease other/NOS	INF	1	1
				ALC, HOR; NAE	seed	Infusión or decoction	drink	<i>calenturas tercianas, paludismo, tercianas</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	6	5
				VIM	seed	direct	chewed	<i>paludismo</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	2	1
<i>Lupinus angustifolius</i> L. (ALBUS 10181)	<i>altramuces locos</i>	ME	Inundated or inundatable croplands, including rice fields	ELR, NAE	flowering aerial parts	Infusión or decoction	drink	<i>calenturas epidémicas</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	3	2
<i>Lupinus micranthus</i> Guss.	<i>altramuces locos</i>	ME	Inundated or inundatable croplands, including rice fields	ELR, NAE	flowering aerial parts	Infusión or decoction	drink	<i>calenturas epidémicas</i>	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	3	2
<i>Medicago sativa</i> L. (ALBA 6089)	<i>mielgas, armiergas</i>	WI	Phoenician torgrass swards	DAI	flowering aerial parts	chewed, grinded or crushed	apply	<i>para cortar las hemorragias, para que no se enconen las heridas, cortar la sangre úlceras</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	4	3
	<i>alfalfa</i>			HOR, NAE	bud	collected with dew at sunrise	chew and swallow the juice		K25 Gastric ulcer	D83 Mouth/tongue/lip disease	GAS	2	2
<i>Retama sphaerocarpa</i> (L.) Boiss. (ALBA 6089)	<i>retama</i>	ME	Yellow retama brush	ALC	branch	direct	make knots in the branches	<i>verrugas</i>	B07 Viral warts	S03 Warts	INF	1	1
				DAI	branch	crush	apply	<i>se usaba</i>	T14.1 Open wound	S13 Animal/human bite	DER	2	2

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
				VIM	branch	crush jara leaves, retama shoots and salt, add vinegar and made into poultice	apply	<i>también para las heridas, machacando la planta se ponía sobre la herida y se vendaba pies torcidos</i>	of unspecified body region S93.4 Sprain and strain of ankle	L80 Dislocation/subluxation	SKE	2	1
Malvaceae													
<i>Althaea officinalis</i> L. (ALBA 6215)	<i>malvavisco</i>	ME	Marsh mallow screens	DAI	root	decoction	drink	<i>sistema endocrino</i>	IV Endocrine, nutritional and metabolic diseases, unspecified	T27 Fear of endocrine/metabolic disease other	MET	1	1
	<i>malvavisco</i>			DAI	root	infusion with Teucrium, mallow / flower, liquorice / root, marshmallow / root, and sugar	drink	<i>para costipaos malos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
	<i>malvadisco, malvarisco, malvavisco</i>			ALH, CRC, CRI, CIU, DAI, FLL, FER, HIN, RUI, SCV, VIH	root	decoction	drink	<i>catarras, resfriados, resfriaos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	37	19
	<i>malvavisco</i>			RUI	root	decoction	drink	<i>ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1
	<i>marvarisco</i>			CRC	root	decoction	drink	<i>se usaba como medicamento para los cortes</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
<i>Gossypium herbaceum</i> L.	<i>algodón</i>	WI	Imported	DAI	seed	poultice of herbs and cotton	apply		T01.9 Multiple open wounds, unspecified	A81 Multiple trauma/injuries	SKE	1	1
<i>Malva sylvestris</i> L. (ALBA 6083)	<i>malva, marva</i>	EU	Phoenician torgrass swards	ALC, CIU, CRC, DAI, FON, VIH, VIO	flower	Decoction or infusion	drink	<i>constipados, resfriados, para costipaos malos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	26	13

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
				DAI	flower	infusion with <i>Teucrium</i> , mallow flower, liquorice, marshmallow, and sugar	drink	<i>para costipaos malos</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				ALC	flower	arnica, raisin, liquorice, fig, and mallow	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				DAI	flower	flower syrup mallow flower, figs and liquorice	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				CRI	flower	decoction and poultice	apply	<i>dolor de costado</i>	J18 Pneumonia, organism unspecified	R81 Pneumonia	RES	2	1
				ALC	flower	decoction and poultice with flour	apply	<i>bronquitis</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1
				CRC	flower	decoction and poultice	apply	<i>flemón</i>	K05.2 Acute periodontitis	D82 Teeth/gum disease	INF	2	1
				SPM	leaf	petiole of the leaf smeared in olive oil	got into the anus of babies to evacuate the belly	<i>estreñimiento</i>	K59.0 Constipation	D12 Constipation	GAS	2	1
				HIN	flower	decoction	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	2	1
				ALC, CAL, ELR, HOR, ELR	whole plant	decoction and poultice	apply	<i>inflamaciones</i>	M60.9 Myositis, unspecified	L18 Muscle pain	SKE	7	4
					flower	decoction and poultice	apply	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	1
				NAV	whole plant	decoction and poultice	apply	<i>para los golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	3	1
				CRI	flower	decoction and poultice	apply	<i>dolor de costado¹</i>	M60.9 Myositis, unspecified	L18 Muscle pain	SKE	2	1
				ELR, RET, FER	flowering aerial parts	decoction and poultice	apply	<i>quemaduras</i>	Burns and corrosions (T20-T32)	S14 Burn/cald	DER	2	2
					whole plant	mallows cooked and pigeon excrements made into poultices	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1
				NAV, RET	whole plant	decoction and poultice	apply	<i>granos feos</i>	L02 Cutaneous abscess, furuncle and	S10 Boil/carbuncle	DER	2	2

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Tilia platyphyllos</i> Scop.	<i>tilo</i>	EU	Domestic gardens of villages and urban peripheries	ALC	whole plant	decoction and poultice	apply	<i>granos</i>	carbuncle R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	12	1
				FON	whole plant	crush	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	3	1
				VIM	aerial part	crushed and made ointment with lard	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	2	1
				FUE, HOR, NAV, SPM	flower	decoction and poultice	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	9	8
				ALC	flower	decoction	wash	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
				ALM	flower	decoction	drink	<i>dolor de cabeza</i>	R51 Headache	N01 Headache	NER	2	1
				ALC, ELR, HOR	whole plant	decoction and poultice	apply	<i>hinchazones</i>	R60.9 Oedema, unspecified (Fluid retention NOS)	K07 Swollen ankles/oedema	MET	3	3
				CRC	flower	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	2	1
				ALC, NAV, RET	flower	infusion	drink	<i>tranquilizante</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	4	4
				Moraceae <i>Ficus carica</i> L. (ALBA 1361)	<i>higos, higuera</i>	ME	Fruit orchards	ALC, ELR, FER	latex	direct	apply	<i>verrugas</i>	B07 Viral warts
				CRC, DAI, VIH	fruit	decoction or infusion	drink	<i>resfriado</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	5	3
				ALC	fruit	syrup	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	2
				HIN	fruit	liquorice and dried figs cooked to make a syrup	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				VIM	fruit	decoction with oregano and honey	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
Myrtaceae <i>Eucalyptus camaldulensis</i> Dehnh. (ALBA 2091)	<i>eucalipto, ocalito</i>	PA	Eucalyptus plantations	ALC, ARG, DAI, ELR,	leaf	decoction	inhalation	<i>despejar la nariz y la garganta, resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	8	8

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI					
<i>Eucalyptus globulus</i> Labill. (ALBA 5998)	ocalito, ucálito	PA	Eucalyptus plantations	LUC, MAL, PIE	flowering aerial parts	decoction with figs and <i>Genista tridentata</i>	drink	tos	R05 Cough	R05 Cough	RES	2	2					
				ALC, ELR					DAI	leaf	macerate leaves in oil	apply	laxante	K59.0 Constipation	D12 Constipation	GAS	2	2
				FER					leaf	decoction	drink	para coger fuerza	R53 Malaise and fatigue	A04 Weakness/tiredness general	NER	2	1	
				HOR, NAV					leaf	decoction with honey	drink	resfriados	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	5	2	
				ALC, NAE, SPM					leaf	decoction	drink	pa la retención de orina	R33 Retention of urine	U08 Urinary retention	URO	3	3	
				ALC, DAI, ELR, FON, HOR, LUC, NAV, PIE, VIO					leaf	decoction	inhalation	costipaos, despejar la nariz y la garganta, resfriados	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	16	11	
				PIE					leaf	decoction	inhalation	bronquitis	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1	
				ALC, ELR					flowering aerial parts	decoction with figs and <i>Genista tridentata</i>	drink	tos	R05 Cough	R05 Cough	RES	2	2	
				HOR, NAV					leaf	decoction with honey	drink	resfriados	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	5	2	
				DAI					fruit	decoction	drink	los bolos de los machos del eucalipto se hacía un cocimiento del que tomabas un vaso por la mañana y te daba fuerzas para todo el día.	R45.3 Demoralization and apathy	P03 Feeling depressed	NER	1	1	
<i>Myrtus communis</i> L. (ALBA 10307)	arraigán, arraiganera	ME	Riverine willow woodland	ALC, NAE, SPM	aerial parts	crushed	apply	escocíos	R33 Retention of urine	U08 Urinary retention	URO	3	3					
				HNT, RET					T14.0 Superficial injury of unspecified body region (excoriation)	S17 Abrasion/scratch/blister	DER	13	2					
				ALC					aerial parts	infusion	drink	diarrea	A09.9 Gastroenteritis	D73 Gastroenteritis	INF	1	1	

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
									and colitis of unspecified origin	presumed infection			
Oleaceae													
<i>Fraxinus angustifolia</i> Vahl (ALBA 6203)	fresno	ME	Riverine willow woodland	NAE	root	decoction	drink	paludismo, calenturas	B50 Plasmodium falciparum malaria	A73 Malaria	PAR	3	3
				NAE	root	decoction	drink	fiebre	R50.9 Fever, unspecified	A03 Fever	NER	3	3
<i>Olea europaea</i> L. (cultivars) (ALBA 6123)	aceite de oliva	ME	Evergreen orchards and groves	MAL	fruit	fry <i>mejorana</i> in oil	to wash	quemaduras	Burns and corosions (T20-T32)	S14 Burn/cald	DER	2	2
				ALC	fruit	olive oil and chicken egg white, beat thoroughly to a cream	apply	quemaduras	Burns and corosions (T20-T32)	S14 Burn/cald	DER	1	1
				DAI	leaf	infusion	drink	hipoglucemiente	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	1	1
	olivo			ALC, FER	oil	direct	throw in water	mal de ojo	F43.0 Acute stress reaction	P02 Acute stress reaction	NER	2	2
	aceite			MAL	oil	direct	apply	dolor de oído	H66.9 Otitis media, unspecified	H71 Acute otitis media/myringitis	N/A	1	1
	olivo			HOR	oil	almonds are fried in olive oil and crushed	drop a few drops in the ear	dolor de oídos	H66.9 Otitis media, unspecified	H71 Acute otitis media/myringitis	N/A	1	1
	olivo			NAV	leaf	infusion	drink	bajar la tensión	I10 Essential (primary) hypertension	K86 Hypertension uncomplicated	CAR	1	1
	olivo			DAI	leaf	infusion	drink	hipotensor	I10 Essential (primary) hypertension	K86 Hypertension uncomplicated	CAR	1	1
	aceite			HOR	oil	macerate arnica in oil and make a poultice	apply	asientos	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	2	1
	aceite			HOR	oil	direct	drink	asientos	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	2	1
	aceite			ALC, CRC, HOR	oil	direct or with macerated herbs	massage	empacho	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	4	4
	aceite			HOR	oil	fry the rue and the henbane in olive oil	massage	empachos	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
				SPM	oil	smear geranium petiole and oil	got into the anus of babies to evacuate the belly	estreñimiento	K59.0 Constipation	D12 Constipation	GAS	2	1
				DAI, VIM	oil	direct	drink one spoonful on an	estreñimiento	K59.0 Constipation	D12 Constipation	GAS	3	2

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
	<i>aceite de oliva</i>			LUC	fruit	fry in oil	empty stomach apply	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	1	1
				ALC	oil	ointment	the belly is rubbed with the frying oil the rue	<i>dolores de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
				ALC	oil	fry rue and make ointment	apply	<i>dolores de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
				DAI	oil	ointment	apply	<i>dolores musculares piernas doloridas</i>	M79.1 Myalgia	L18 Muscle pain	SKE	1	1
				HOR	oil	fried henbane with rue in olive oil	rub		M79.6 Pain in limb	L09 Arm symptom/complaint	SKE	2	1
				ALC, LUC	fruit	macerate or fry herbs in oil	apply	<i>dolores</i>	R52.9 Pain, unspecified	A01 Pain general/multiple sites	SKE	3	2
				NAE	fruit	overripe fruit macerated in oil	eat	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
				DAI	oil	ointment	apply	<i>suavizar la piel</i>	L85.3 Xerosis cutis	S99 Skin disease other	DER	1	1
				FON	oil	fry <i>árnica</i> and make ointment	apply	<i>granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	3	1
				DAI	oil	ointment	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
				SPM	oil	macerate <i>arnica</i> in oil and make a poultice	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
				LOS	fruit	macerate rosemary in alcohol and oil	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
				DAI	oil	direct	apply	<i>para curar las heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
	<i>oliva</i>			HOR	oil	fried in olive oil and that oil is filtered	apply	<i>picaduras de araclanes</i>	X22 Contact with scorpions	A86 Toxic effect non-medicinal substance	POI	1	1
<i>Olea europaea</i> L. (wild) (ALBA 10191)	<i>acibuche</i>	ME	Garrigue	HOR	fruit	fasting during a novena	eat	<i>la tensión</i>	I10 Essential (primary) hypertension	K86 Hypertension uncomplicated	CAR	1	1
	<i>acibuche</i>			HNT, NAE	leaf	infusion	drink	<i>la tensión</i>	I10 Essential (primary) hypertension	K86 Hypertension uncomplicated	CAR	2	2
Orobanchaceae <i>Odontitella virgata</i> (Link) Rothm.	<i>linillo, amargosilla</i>	ME	Garrigue	NAE	whole plant	direct	rub	<i>para la subida de la sangre</i>	L50 Urticaria	S98 Urticaria	DER	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Orobanche purpurea</i> Jacq. (ALBA 6092) Paeoniaceae	<i>rabo de lobo</i>	EU	Garrigue	ALH	whole plant	infusion	drink	<i>riñón</i>	N23 Unspecified renal colic	U14 Kidney symptom/complaint	URO	3	1
<i>Paeonia broteri</i> Boiss. & Reut. (ALBA 10467) Papaveraceae	<i>flor del diablo</i>	ME	Garrigue	ALC	whole plant	direct	poison	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	12	1
<i>Chelidonium majus</i> L. (ALBA 1402)	<i>repiquete, jabón de golondrina</i>	EU	Old town walls	LOS	latex	direct	apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	1	1
<i>Papaver rhoeas</i> L. (ALBA 6214)	<i>Amapoles, amapola</i>	WI	Mediterranean annual communities of shallow soils	ALH, DAI	flower	infusion	drink	<i>para cuando no duermes</i>	G47.0 Disorders of initiating and maintaining sleep (insomnias)	P06 Sleep disturbance	NER	4	2
				VIM	fruit	decoction	drink	<i>conciliar sueño</i>	G47.0 Disorders of initiating and maintaining sleep (insomnias)	P06 Sleep disturbance	NER	2	1
				ALC	flower	infusion	drink	<i>tranquilizante</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	1	1
				VIM	fruit	decoction	drink	<i>quitar nerviosismo</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	2	1
				HOR	flower	Infusión mixed with figs and <i>Genista tridentata</i>	drink	<i>ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1
<i>Papaver somniferum</i> L. (ALBA 6060)	<i>dormidera</i>	WI	Mediterranean annual communities of shallow soils	DAI, HOR	flower	infusion	drink	<i>conciliar sueño, pa dormir</i>	G47.0 Disorders of initiating and maintaining sleep (insomnias)	P06 Sleep disturbance	NER	4	3
				VIM	fruit	decoction	drink	<i>conciliar sueño</i>	G47.0 Disorders of initiating and maintaining sleep (insomnias)	P06 Sleep disturbance	NER	2	1
				DAI, HOR, NAE, VIM	flower	infusion	drink	<i>nerviosismo</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	3	3
	<i>dormidera</i>			HOR	fruit	infusion	steeping the sick fingers	<i>quitar nerviosismo para calmar el dolor</i>	R45.0 Nervousness	P01 Feeling anxious/nervous/tense	NER	2	1
	<i>adormidera</i>			HOR	flower	infusion	drink	<i>Dolor de muelas</i>	R52.9 Pain, unspecified K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	A01 Pain general/multiple sites D82 Teeth/gum disease	INF	2	1
	<i>adormidera</i>			HOR	fruit	infusion	steeping the sick fingers	<i>dedos malos, uñeros</i>	L03.0 Cellulitis of finger and toe	S09 Infected finger/toe	INF	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Plantaginaceae									(paronychia)				
<i>Plantago lanceolata</i> L. (ALBA 10113)	<i>bandolina</i>	WI	Mediterranean annual communities of shallow soils	RUI	seed	macerate in water	apply	<i>para sentar el pelo</i>	L65.9 Nonscarring hair loss, unspecified	S23 Hair loss/baldness	DER	1	1
				ALC, HOR, DAI	aerial parts	decoction	wash	<i>aclarar la vista</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	2	2
<i>Plantago major</i> L. (ALBA 3192)	<i>llantel</i>	EU	Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	DAI	leaf	direct	apply	<i>Piel y tejido celular subcutáneo</i>	XII Diseases of the skin and subcutaneous tissue	N/A	DER	1	1
				ALC, HOR	aerial parts	decoction	wash	<i>aclarar la vista</i>	H10 Conjunctivitis	F71 Conjunctivitis allergic	EYE	2	2
Plumbaginaceae													
<i>Plumbago europaea</i> L. (ALBA 6248)	<i>belesa</i>	ME	Mediterranean halo-nitrophilous scrubs	ALH	leaf	crush	apply	<i>callos</i>	L84 Corns and callosities	S20 Corn/callosity	DER	3	1
Poaceae													
<i>Arundo donax</i> L. (ALBA 2540)	<i>cañas</i>	WI	Oleander galleries	DAI	reed	extract the marrow	apply	<i>para desinfectar las heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
<i>Avena sativa</i> L. (ALBA 6229)	<i>avena</i>	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	HOR, NAE	fruit	decoction	bath	<i>circulación de las piernas</i>	I83 Varicose veins of lower extremities	N/A	CAR	2	2
<i>Cynodon dactylon</i> (L.) Pers. (ALBA 6216)	<i>grama</i>	WI	Dry grasslands	ALC, HOR, Mota del Cuervo, SPM	rhizome	decoction	drink	<i>piedras en el riñón</i>	N20.0 Calculus of kidney	U95 Urinary calculus	URO	4	4
				ALC, NAE, VIO	rhizome	decoction	drink	<i>pa la retención de orina</i>	R33 Retention of urine	U08 Urinary retention	URO	3	2
<i>Oryza sativa</i> L.	<i>arroz</i>	WI	Inundated or inundatable croplands, including rice fields	VIO	fruit	cooked or eaten in blood sausage	eat	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	9	1
				RET, SPM	fruit	decoction	drink	<i>diarrea</i>	A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	2	2
<i>Phalaris canariensis</i> L.	<i>alpiste</i>	WI	Subsistence garden areas	ALC, ELR, RET	fruit	decoction	drink	<i>el azúcar</i>	Diabetes mellitus (E10-E14)	T89 Diabetes insulin dependent or T90 Diabetes non-insulin dependent	MET	4	3

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Stipa tenacissima</i> L. (ALBA 6232)	<i>papel de esparto</i>	ME	Alpha ([<i>Stipa tenacissima</i>]) steppes	ARG	leaf	brown paper spread with fuel to soften the breast	apply	<i>para ablandar el pecho</i>	J20 Acute bronchitis	R78 Acute bronchitis / bronchiolitis	RES	1	1
<i>Triticum aestivum</i> L. (ALBA 10052)	<i>trigo chamorro</i>	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	LAM	fruit	Chamorro wheat soaked in water, scraped with a tile until it was white	eat	<i>almorrana</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	2	1
				ALC	honey and flour	mix	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	INF	1	1
				ALC	honey and flour	mix	apply	<i>golondrinos</i>	L73.2 Hidradenitis suppurativa	S92 Sweat gland disease	DER	1	1
				ALC, RET, DAI	honey and flour	mix	apply	<i>acné</i>	L70 Acne	S96 Acne	DER	2	2
				DAI	fruit	poultice	apply	<i>una cataplasma pasta de harina de esta planta</i>	XII Diseases of the skin and subcutaneous tissue	N/A	DER	1	1
Polygonaceae <i>Rumex induratus</i> Boiss. & Reuter (ALBA 10048)	<i>vinagreras</i>	ME	Garrigue	LAS	branch	decoction	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	4	1
<i>Rumex pulcher</i> L. subsp. <i>pulcher</i> (ALBA 6164)	<i>cagaduro, colleja-romanza, romanza, yerba de la cagueta arromanza</i>	EU	Mediterranean saltmarsh driftlines	ALC, DAI, FER, HIN, MAL, SPM	fruit	decoction	drink	<i>diarreas, diarrera</i>	A09.0 Other and unspecified gastroenteritis and colitis of infectious origin	D73 Gastroenteritis presumed infection	INF	17	11
				ALC, SPM	fruit	decoction	drink	<i>cólicos</i>	R10.4 Other and unspecified abdominal pain (not otherwise stated)	D01 Abdominal pain/cramps general	GAS	3	2
Pteridaceae <i>Adiantum capillusveneris</i> L. (ALBA 6135)	<i>Culandrillo, culantrillo</i>	WI	Mediterranean wet inland cliffs	NAV	whole plant	infusión highly concentrated	drink	<i>pa desbaratar barrigas</i>	O06 Unspecified abortion	W82 Abortion spontaneous	GYN	3	1
ALC, HOR				whole plant	decoction	drink	<i>retrasos en la regla</i>	N91 Absent, scanty and rare menstruation	X05 Menstruation absent/scanty	GYN	3	3	
ALC, HOR				whole plant	decoction	drink	<i>hemorragias prolongadas en la regla</i>	N92 Excessive, frequent and irregular menstruation	X06 Menstruation excessive	GYN	3	3	
ALC, HOR				whole plant	decoction	drink	<i>regular el periodo</i>	N92.6 Irregular menstruation, unspecified	X07 Menstruation irregular/frequent	GYN	3	3	
Rosaceae <i>Crataegus</i>	<i>espinos</i>	EU	Central Iberian	PUE	flower	infusion	drink	<i>sistema digestivo</i>	Diseases of the	D27 Fear of digestive	GAS	3	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>monogyne</i> Jacq. (ALBA 10218)			sub-Mediterranean deciduous thickets		flower	infusion	drink	<i>tranquilizante</i>	digestive system (K00-K93) R45.0 Nervousness	disease other P01 Feeling anxious/nervous/tense	NER	5	3
<i>Prunus avium</i> L. (ALBA 10731)	<i>guindas</i>	EU	Fruit orchards	DAI, HOR, NAV, HOR, ELR, LAM, SPM	fruit	macerate cherries in water or brandy	drink	<i>dolor de barriga, dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	8	5
<i>Prunus domestica</i> L. (ALBA 10159)	<i>ciruelas</i>	EU	Fruit orchards	ALC	fruit	direct	eat	<i>estreñimiento</i>	K59.0 Constipation	D12 Constipation	GAS	2	1
<i>Prunus dulcis</i> var. <i>amara</i> (DC.) Buchheim (ALBA 10106)	<i>almendra amarga</i>	ME	Almond groves	ELR, HOR, SPM, RET	fruit	almonds are fried in olive oil and crushed	drop a few drops in the ear	<i>dolor de oídos</i>	H66.9 Otitis media, unspecified	H71 Acute otitis media/myringitis	N/A	4	4
	<i>almendras amargas</i>			ELR, HOR, SPM, RET, CRC	fruit	chewed and mixed with saliva	drop a few drops in the ear	<i>dolor de oídos</i>	H66.9 Otitis media, unspecified	H71 Acute otitis media/myringitis	N/A	4	4
					fruit	decoction	drink	<i>las partían y las vendían peladas a la gente que venía a comprarlas, para luego usarlas como medicina diarrea</i>	N/A	N/A	N/A	1	1
<i>Pyrus bourgaeana</i> Decne. (ALBA 6112)	<i>piruétano</i>	ME	Southwestern Iberian tamujares	ALC, HOR	fruit	direct	eat		A09.9 Gastroenteritis and colitis of unspecified origin	D73 Gastroenteritis presumed infection	INF	3	2
<i>Rosa canina</i> L. (ALBA 6006)	<i>tapaculeros</i>	EU	Western Iberian sub-Mediterranean deciduous thickets	ALC, DAI	fruit	decoction	drink	<i>diarreas</i>	A09.0 Other and unspecified gastroenteritis and colitis of infectious origin	D73 Gastroenteritis presumed infection	INF	5	3
<i>Rosa blanda</i> ex Déségl.	<i>tapaculeros</i>	EU	Western Iberian sub-Mediterranean deciduous thickets	ALC	fruit	decoction	drink	<i>diarreas</i>	A09.0 Other and unspecified gastroenteritis and colitis of infectious origin	D73 Gastroenteritis presumed infection	INF	2	2
<i>Rubus caesius</i> L.	<i>zarzamora</i>	ME	Oleander galleries	HOR, NAV	shoot	decoction	rinse and gargle	<i>para las llagas de la boca</i>	K12 Stomatitis and related lesions	D83 Mouth/tongue/lip disease	INF	3	2
				NAV	shoot	decoction	drink	<i>coolesterol</i>	E78.0 Pure hypercholesterolemia	T93 Lipid disorder	MET	3	2
<i>Rubus ulmifolius</i> Schott (ALBA 6207)	<i>zarza</i>	ME	Oleander galleries	NAV	shoot	decoction	drink	<i>coolesterol</i>	E78.0 Pure hypercholesterolemia	T93 Lipid disorder	MET	3	2
				HOR, NAV	shoot	decoction	rinse and gargle	<i>para las llagas de la boca</i>	K12 Stomatitis and related lesions	D83 Mouth/tongue/lip disease	INF	3	2
<i>Sanguisorba minor</i>	<i>pimpinela</i>	EU	Mediterranean-	VIH	flowering	poultice	apply	<i>heridas</i>	T14.1 Open wound	S13 Animal/human bite	DER	3	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
Scop. (ALBA 3377)			montane grassland	VIM	aerial parts leaves	chewed	apply	heridas	of unspecified body region T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	1
<i>Sanguisorba verrucosa</i> (Link ex G.Don) Ces. (ALBA 6157)	pimpinela	EU	Mediterranean-montane grassland	FON	flowering aerial parts	infusion	drink	constipados	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
				ALH, MOR	flowering aerial parts	crush	apply	heridas	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	5	2
				HNT, SPM	flowering aerial parts	infusion	to wash	golpes	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	2	2
Rutaceae													
<i>Citrus aurantium</i> L.	naranja	WI	Evergreen orchards and groves	NAV	flower	infusion	drink	para los nervios	Z73.3 Stress, not elsewhere classified	P29 Psychological Symptom/complaint other	NER	3	1
<i>Citrus limon</i> (L.) Osbeck	limón	WI	Evergreen orchards and groves	HIN	fruit	honey poured into a half lemon then squeezed	drink	para los resfríos	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	2	1
				VIM	fruit	sliced lemon	apply	verrugas	B07 Viral warts	S03 Warts	INF	2	1
				VIM	fruit	sliced lemon	rub	cabrillas en las piernas	L59.0 Erythema ab igne [dermatitis ab igne]	S80 Solar keratosis/sunburn	DER	2	1
<i>Citrus sinensis</i> (L.) Osbeck	naranja	WI	Evergreen orchards and groves	FON	rind	cooked orange and oregano	drink	resfriados	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
				HOR	rind	thyme or pennyroyal, chamomile and orange peel infusion	drink	dolor de barriga	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	3
<i>Ruta angustifolia</i> Pers. (ALBA 10587)	ruda	ME	Mediterranean halo-nitrophilous scrubs	RUI	flowering aerial parts	decoction	apply	para dársela en las piernas	I80 Phlebitis and thrombophlebitis	K94 Phlebitis/thrombophlebitis	CAR	1	1
				HOR	flowering aerial parts	Fry the rue and the henbane in olive oil	apply	empachos	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
<i>Ruta graveolens</i> L. (ALBA 10139)	ruda	ME	Domestic gardens of villages and urban peripheries	ALC	flowering aerial parts	decoction	apply	medicinal	Human medicine, unspecified	Human medicine, unspecified	N/A	12	1
				RET	whole plant	infusion	drink	regular el periodo	N92.6 Irregular menstruation, unspecified	X07 Menstruation irregular/frequent	GYN	1	1
<i>Ruta montana</i> (L.)	ruda, rua	ME	Garrigue	CRC	flowering	macerate in	apply	quemaduras	Burns and corrosions	S14 Burn/cald	DER	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
L. (ALBA 6133)					aerial parts	oil			(T20-T32)				
				CRC	flowering	Poultice	place a poultice on the abdomen	<i>ataques epilépticos epilepsia</i>	G40 Epilepsy	N88 Epilepsy	NER	2	1
				DAI	flowering	decoction	drink		G40 Epilepsy	N88 Epilepsy	NER	1	1
				VIO	flowering	infusion	drink	<i>para los mareos</i>	R42 Dizziness and giddiness	N17 Vertigo/dizziness	NER	9	1
				CRC	flowering	macerate in oil	massage	<i>empacho</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
				HOR	flowering	fry henbane and rue	massage	<i>empacho</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
				ALC, CRC	flowering	fry in olive oil and ointment	massage	<i>dolor de tripa, dolores de barriga, dolor de tripa en niños</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	3	3
				FER	flowering	direct	rubs with rue on the abdomen	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
				CRC, FER	flowering	infusion	drink	<i>dolor de tripa</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	5	2
				HOR	flowering	fry henbane and rue	massage	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
				DAI	leaf or flowering	macerate	massage	<i>dolores musculares</i>	M79.1 Myalgia	L18 Muscle pain	SKE	3	3
				HOR	flowering	alcohol or oil	rub	<i>piernas doloridas</i>	M79.6 Pain in limb	L09 Arm symptom/complaint	SKE	2	1
				MAL	flowering	olive oil	apply	<i>golpes</i>	T14.8 Other injuries of unspecified body region (contusion)	A80 Trauma/injury NOS	SKE	1	1
				RET	whole plant	infusion	drink	<i>regular el periodo</i>	N92.6 Irregular menstruation, unspecified	X07 Menstruation irregular/frequent	GYN	1	1
				DAI	flowering	macerate in alcohol	drink	<i>dolores menstruales</i>	N94.6 Dysmenorrhoea, unspecified	X02 Menstrual pain	GYN	1	1
				NAV	flowering	infusion	apply	<i>antídoto para las picaduras de víboras</i>	X20 Contact with venomous snakes and lizards (viper)	A86 Toxic effect non-medicinal substance	POI	2	1
				FON, HOR, NAV	flowering	direct	carry on	<i>preventivo para las picaduras de víboras</i>	X20 Contact with venomous snakes and lizards (viper)	A86 Toxic effect non-medicinal substance	POI	3	3
				LOS	flowering	infusion	N/A	<i>medicinal</i>	Human medicine, unspecified	Human medicine, unspecified	N/A	1	1
Salicaceae													
<i>Populus alba</i> L. (ALBA 10236)	<i>alamo blanco</i>	EU	Riverine willow woodland	HIN	bark	fry in oil	apply the oil	<i>almorranas</i>	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	2	1
Sapindaceae													
<i>Aesculus hippocastanum</i> L. (ALBA 4600)	<i>castaño</i>	ME	Domestic gardens of villages and	DAI	fruit	direct	carry in the pocket.	<i>para el dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting	D82 Teeth/gum disease	INF	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
			urban peripheries						structures (Toothache NOS)				
Scrophulariaceae <i>Verbascum sinuatum</i> L. (ALBA 6219)	<i>yerba de león</i>	ME	Bare tilled, fallow or recently abandoned arable land	RET	flower	infusion	drink	<i>catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
<i>Verbascum pulverulentum</i> Vill.	<i>verdelobo</i>	ME	Bare tilled, fallow or recently abandoned arable land	NAE	flower	infusion	drink	<i>catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				NAE	seeds	decoction and syrup with honey	drink	<i>tos</i>	R05 Cough	R05 Cough	RES	1	1
				NAE, RET	seeds	decoction	rinse	<i>dolor de muelas</i>	K02 Dental caries	D82 Teeth/gum disease	INF	2	2
				NAE, RET	seeds	direct	are introduced into the teeth with decay	<i>dolor de muelas</i>	K02 Dental caries	D82 Teeth/gum disease	INF	2	2
<i>Verbascum virgatum</i> Stokes (ALBA 10175)	<i>verdelobo</i>	ME	Bare tilled, fallow or recently abandoned arable land	NAE	flower	infusion	drink	<i>catarros</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				NAE	seeds	decoction and syrup with honey	drink	<i>tos</i>	R05 Cough	R05 Cough	RES	1	1
				NAE, RET	seeds	decoction	rinse	<i>dolor de muelas</i>	K02 Dental caries	D82 Teeth/gum disease	INF	2	2
				NAE, RET	seeds	direct	are introduced into the teeth with decay	<i>dolor de muelas</i>	K02 Dental caries	D82 Teeth/gum disease	INF	2	2
Solanaceae <i>Capsicum annuum</i> L.	<i>pimientos</i>	WI	Subsistence garden areas	VIM	fruit	made a poultice with spider web and powdered chili pepper	apply	<i>inflamaciones</i>	M60.9 Myositis, unspecified	L18 Muscle pain	SKE	2	1
<i>Hyoscyamus albus</i> L.	<i>benignos</i>	ME	Old town walls	DAI, LOS	whole plant or seeds	burn	inhalation	<i>dolor de muelas, para sanear las muelas.</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
	<i>beleño</i>			HOR	whole plant	Fry the rue and the henbane in olive oil	apply	<i>empachos</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
	<i>beleño</i>			HOR	whole plant	fried henbane with rue in olive oil	rub	<i>piernas doloridas</i>	M79.6 Pain in limb	L09 Arm symptom/complaint	SKE	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
<i>Hyoscyamus niger</i> L. (ALBA 4623)	<i>Benignos, vinosos</i>	WI	Old town walls	CRC, FER	seed	burn	inhalation	<i>gusanillo de la caries, dolor de muelas, gusanos en las muelas, muelas picás</i>	K02 Dental caries	D82 Teeth/gum disease	INF	3	2
				NAE, SPM, HOR	infructescence	decoction	rinse		K02 Dental caries	D82 Teeth/gum disease	INF	2	2
					flowering aerial parts	fry henbane and rue	rub	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	1	1
				NAE	flowering aerial parts	crush and make ointment	apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	INF	1	1
				HOR	flowering aerial parts	fried in olive oil with rue and made a poultice	apply half an hour ("treznar")	<i>dolor de estómago</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	1	1
<i>Lycopersicon esculentum</i> Mill. (ALBA 10390)	<i>tomate</i>	WI	Subsistence garden areas	BRA, VIC	fruit	direct	squeeze and apply	<i>para reventar granos</i>	R23.8 Other and unspecified skin changes (pimple)	S04 Lump/swelling localized	DER	4	2
				ALC, RET	fruit	direct	squeeze and apply	<i>diviesos</i>	L02 Cutaneous abscess, furuncle and carbuncle	S10 Boil/carbuncle	INF	3	2
<i>Nicotiana tabacum</i> L.	<i>tabaco</i>	WI	Subsistence garden areas	HIN	leaf	ferment, dry and chop	eat	<i>para echar una sanguijuela que tenía en la garganta</i>	B83.4 Internal hirudiniasis	D96 Worms/other parasites	PAR	2	1
				ALC	leaf	ferment, dry and chop	apply	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
				HOR, NAV	leaf	direct	apply	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
				HON	seed	direct	apply	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
<i>Nicotiana rustica</i> L.	<i>tabaco</i>	WI	Subsistence garden areas	HOR, NAV	leaf	direct	apply	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
				HON	seed	direct	apply	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
<i>Solanum nigrum</i> L.	<i>ceñígllos</i>	WI	Arable land	NAE	flowering	crush and	apply	<i>clavos</i>	L02 Cutaneous	S10 Boil/carbuncle	INF	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
(ALBA 10131)			with unmixed crops grown by low-intensity agricultural methods		aerial parts	make ointment with lard			abscess, furuncle and carbuncle				
<i>Solanum tuberosum</i> L. (ALBA 4707)	patata	WI	Arable land with unmixed crops grown by low-intensity agricultural methods	DAI	tuber	bake and crush	eat	para el dolor de garganta	J02.9 Acute pharyngitis, unspecified	R72 Strep throat	RES	1	1
	patata patata			DAI LAM	tuber tuber	N/A bake and crush	apply eat	anginas almorrana	J03 Acute tonsillitis K64.9 Haemorrhoids, unspecified	R76 Tonsillitis acute K96 Haemorrhoids	RES GAS	2 2	1 1
Thymelaeaceae <i>Daphne gnidium</i> L. (ALBA 6098)	torvisca	ME	Garrigue	NAV	bark	direct	bark put as strap around the abdomen	dolor de barriga	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	2	1
				HON, RET	bark	reduce to fibres	are introduced into the teeth with decay	dolor de muelas	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	2	2
Typhaceae <i>Typha domingensis</i> Pers. (ALBA 10359)	anea	WI	Oleander galleries	VIM	fruit	decoction with quicklime	wash	almorrana	K64.9 Haemorrhoids, unspecified	K96 Haemorrhoids	GAS	2	1
Urticaceae <i>Urtica dioica</i> L. (ALBA 6189)	ortigas	WI	Riverine willow woodland	DAI	whole plant	decoction	to wash	para bajar inflamaciones	I80 Phlebitis and thrombophlebitis	K94 Phlebitis/thrombophlebitis	CAR	1	1
				HOR, SPM	whole plant	infusion	drink	para los dolores de la regla	N94.6 Dysmenorrhoea, unspecified	X02 Menstrual pain	GYN	2	2
				HOR	whole plant	infusion	drink	hemorragias prolongadas en la regla	N92 Excessive, frequent and irregular menstruation	X06 Menstruation excessive	GYN	1	1
<i>Urtica urens</i> L. (ALBA 6153)	ortiga	WI	Mediterranean halo-nitrophilous scrubs	ALD, VIO	whole plant	decoction	to wash	para que coja fuerza el pelo, para que no se cayera el pelo	L65.9 Nonscarring hair loss, unspecified	S23 Hair loss/baldness	DER	12	2
	ortigas			NAE	whole plant	infusion	to wash	cortar las hemorragias de la mujer	N92.6 Irregular menstruation, unspecified	X07 Menstruation irregular/frequent	GYN	1	1
				HOR, SPM	whole plant	infusion	drink	para los dolores de la regla	N94.6 Dysmenorrhoea, unspecified	X02 Menstrual pain	GYN	2	2
				HOR	whole plant	infusion	drink	hemorragias	N92 Excessive,	X06 Menstruation	GYN	1	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
								<i>prolongadas en la regla</i>	frequent and irregular menstruation	excessive			
	<i>ortigas</i>			VIH	whole plant	decoction	apply	<i>reúma</i>	M79.0 Rheumatism, unspecified	L18 Muscle pain	SKE	3	1
Verbenaceae <i>Aloysia citriodora</i> Palau	<i>hierba luisa, hierba morisca, hojas moriscas</i>	WI	Domestic gardens of villages and urban peripheries	ALC, RET	leaf	infusion	drink	<i>digestivo</i>	K30 Functional dyspepsia	D07 Dyspepsia/indigestion	GAS	3	3
				NAV	leaf	infusion	drink	<i>para el dolor de cabeza</i>	R51 Headache	N01 Headache	NER	1	1
Vitaceae <i>Vitis vinifera</i> L. (ALBA 6231)	<i>uva, uva pasa, vid</i>	WI	Vineyards	HOR	schnapps	macerate thistle in brandy	apply	<i>artrosis</i>	Arthrosis (M15-M19)	L91 Osteoarthritis other	SKE	1	1
				ALC	fruit	arnica, raisin, liquorice, fig, and mallow flower syrup	drink	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				ALC	fruit	direct	eat	<i>resfriados</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	1	1
				DAI	wine	decoction	rinse	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
				NAE	vinegar	direct	rinse	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
				NAE	schnapps	direct	rinse	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and supporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1
				ALD	vinegar	vinegar and salt	to wash	<i>para las llagas de la boca</i>	K12 Stomatitis and related lesions	D83 Mouth/tongue/lip disease	INF	3	1
				PIE	brandy	infusion	drink	<i>problemas del estómago</i>	K25 Gastric ulcer	D83 Mouth/tongue/lip disease	GAS	1	1
				VIO	alcohol	alcohol, eggshell, mothballs	apply	<i>para el reuma</i>	M79.0 Rheumatism, unspecified	N/A	N/A	9	1
				DAI	alcohol	macerate <i>Ruta</i> in alcohol	apply	<i>dolores musculares</i>	M79.1 Myalgia	L18 Muscle pain	SKE	1	1
				VIM	vinagre	crush jara leaves, retama shoots and	apply	<i>pies torcios</i>	S93.4 Sprain and strain of ankle	L80 Dislocation/subluxation	SKE	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
						salt, add vinegar and made into poultice							
				DAI, VIO	schnapps	macerate <i>Sedum sediforme</i> in anise or brandy	drink	<i>dolores menstruales, para los dolores de la regla</i>	N94.6 Dysmenorrhoea, unspecified	X02 Menstrual pain	GYN	10	2
				HOR	schnapps	direct	drink	<i>dolor de barriga</i>	R10 Abdominal and pelvic pain	D01 Abdominal pain/cramps general	GAS	1	1
				HIN	vinegar	direct	wash bites	<i>picotazos de los mosquitos</i>	T14.0 Superficial injury of unspecified body region (insect bite)	S12 Insect bite/sting	DER	2	1
				DAI, LOS	alcohol	macerate rosemary in alcohol and oil	wash or apply	<i>heridas</i>	T14.1 Open wound of unspecified body region	S13 Animal/human bite	DER	2	2
				FER	alcohol	direct	apply	<i>resfrios</i>	J00 Acute nasopharyngitis (common cold)	R74 Upper respiratory infection acute	RES	3	1
Xanthorrhoeaceae													
<i>Aloe vera</i> (L.) Burm.f.	<i>aloevera</i>	WI	Domestic gardens of villages and urban peripheries	CRC	leaf	direct	apply	<i>manchas en la piel</i>	L57.0 Actinic keratosis	S80 Solar keratosis/sunburn	DER	1	1
	<i>acíbar</i>			CRC	leaf	extract of the leaf epidermis	smear the juice on the nipples	<i>quitar el chupete a los niños</i>	Persistent use of pacifier in children	N/A	N/A	1	1
	<i>acíbar</i>			CRC	leaf	extract of the leaf epidermis	smear the juice on the nipples	<i>destetas a los niños pequeños</i>	Weaning babies	N/A	N/A	1	1
<i>Asphodelus aestivus</i> Brot. (ALBA 6156)	<i>gamonita, gamón, gamonito</i>	ME	Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	ALC, HOR, NAE	root	direct	is rubbed directly on the damaged area	<i>empaines</i>	L01 Impetigo	S84 Impetigo	INF	3	3
				ALC, HOR, NAE	root	direct	is rubbed directly on the damaged area	<i>eczemas</i>	L30.9 Dermatitis, unspecified	S88 Dermatitis contact/allergic	DER	3	3
	<i>perrigallo</i>			ALC, NAE	root	crush	apply	<i>picaduras de araclanes</i>	X22 Contact with scorpions	A86 Toxic effect non-medicinal substance	POI	1	1
				ALC	root	burnt to ashes and reduced to small balls	apply	<i>dolor de muelas</i>	K02 Dental caries	D82 Teeth/gum disease	INF	2	1
<i>Asphodelus cerasiferus</i> J. Gay	<i>gamonita</i>	ME	Dry mediterranean lands with unpalatable non-vernal	ALC	root	burnt to ashes and reduced to small balls	apply	<i>dolor de muelas</i>	K02 Dental caries	D82 Teeth/gum disease	INF	2	1

Scientific Names, Vouchers and Families	Vernacular	PR	Habitat	Locality	Part	Preparation	Administration	Emic	ICD_10	ICPC 2e7.0 Pathology	Broad Use	NIT	INI
	<i>perrigallo</i>		herbaceous vegetation	NAE	root	crush	apply	<i>picaduras de araclanes</i>	X22 Contact with scorpions	A86 Toxic effect non- medicinal substance	POI	1	1
Zygophyllaceae <i>Tribulus terrestris</i> L. (ALBA 3474)	-	WI	Mediterranean halo- nitrophilous scrubs	DAI	root	root of manrubio and root of abrojo cooked in wine	drink	<i>dolor de muelas</i>	K08.8 Other specified disorders of teeth and suporting structures (Toothache NOS)	D82 Teeth/gum disease	INF	1	1

Table 6. Most frequent ingredient species (plants, animals)

Note: represented those species with 10 records or more by independent informants (Tables 1 and 5). Fungi, Mineral substances and Pesticides present lower frequencies.

Plants	Independent Informants Records
<i>Malva sylvestris</i>	49
<i>Phlomis lychnitis</i>	43
<i>Genista tridentata</i>	42
<i>Thymus mastichina</i> subsp. <i>mastichina</i>	38
<i>Olea europaea</i> (wild and cultivated)	37
<i>Paronychia argentea</i>	37
<i>Rosmarinus officinalis</i>	33
<i>Achillea ageratum</i>	32
<i>Mentha pulegium</i>	31
<i>Centaurium erythraea</i>	24
<i>Ruta montana</i>	24
<i>Althaea officinalis</i>	23
<i>Arbutus unedo</i>	21
<i>Eucalyptus globulus</i>	20
<i>Glycyrrhiza glabra</i>	19
<i>Eucalyptus camaldulensis</i>	18
<i>Matricaria chamomilla</i>	17
<i>Vitis vinifera</i>	17
<i>Cistus ladanifer</i>	17
<i>Foeniculum vulgare</i> subsp. <i>piperitum</i>	15
<i>Sambucus nigra</i>	15
<i>Thymus zygis</i>	14
<i>Rumex pulcher</i> subsp. <i>pulcher</i>	13
<i>Hylothelephium spectabile</i>	12
<i>Lavandula stoechas</i>	12
<i>Drimia maritima</i>	11
<i>Adiantum capillus-veneris</i>	10
<i>Melissa officinalis</i>	10
<i>Quercus x morisii</i> (= <i>Q. rotundifolia</i> x <i>Q. suber</i>)	10
<i>Papaver somniferum</i>	10
Animals	Independent Informants Records
<i>Sus domesticus</i>	13
<i>Apis mellifera</i>	12

Table 7. Most frequent habitats where medicinal species are collected

Note: are represented only those habitats with 5 records or more. **Abbreviations. Type:** B, buildings. D, Dry woodland, grasslands, plantations and fields. WD, watered fields and gardens. WP, wetlands, bogs and riverine habitats. N/A, not determined. Eunis codes as in EUNIS (2018).

TYPE	EUNIS	Habitat	Records
D	F6	Garrigue	111
D	E1.2A	Phoenician torgrass swards	66
D	E1.C	Dry mediterranean lands with unpalatable non-vernal herbaceous vegetation	54
D	E1.313	Mediterranean annual communities of shallow soils	51
D	F6.12	Western rosemary garrigues	30
D	G2.81	Eucalyptus plantations	25
D	F3.256	Central Iberian [Cytisus] fields	24
D	I1.3	Arable land with unmixed crops grown by low-intensity agricultural methods	19
D	G	Woodland, forest and other wooded land	17
D	I1.5	Bare tilled, fallow or recently abandoned arable land	16
D	FB.4	Vineyards	15
D	F5.112	Acidiphile western Mediterranean holm-oak matorral	14
D	F5.23	Tall cistus maquis	14
D	F6.71	Central Iberian gypsum scrubs	10
D	F6.82	Mediterranean halo-nitrophilous scrubs	10
D	F3.222	Western Iberian sub-Mediterranean deciduous thickets	8
B	J1.31	Old town walls	10
B	J1	Buildings of cities, towns and villages	5
N/A	N/A	Imported	6
WD	I2.22	Subsistence garden areas	53
WD	G2.9	Evergreen orchards and groves	37
WD	X24	Domestic gardens of villages and urban peripheries	32
WD	G1.D4	Fruit orchards	13
WP	C3.421	Short Mediterranean amphibious communities	42
WP	C3.422	Tall Mediterranean amphibious communities	27
WP	E5.4113	Marsh mallow screens	23
WP	C3.5	Periodically inundated shores with pioneer and ephemeral vegetation	17
WP	C	Inland surface waters	12
WP	A2.513	Mediterranean saltmarsh driftlines	10
WP	I1.4	Inundated or inundatable croplands, including rice fields	7
WP	A2.551	[Salicornia], [Suaeda] and [Salsola] pioneer saltmarshes	5

Table 8. Forms of preparation and administration

Preparation	Uses	Records	Administration	Uses	Records
decoction or tea	423	815	drinks	349	683
direct	114	173	applied	212	311
oil extract	51	71	washings	56	99
crushing	39	53	rubbed	33	46
poultice	31	52	vapors inhaled	19	41
tincture	22	41	eaten	22	29
baked	12	19	rinses	14	19
syrup	10	11	carried along	10	17
macerated	8	11	baths	9	15
other	6	7	other	12	14
ointment	6	7	chewed	3	4
burn to ashes	4	6			
burnt to smoke	4	4			
vapors	2	2			
fermentation	2	2			

Table 9. Medicinal species reported in the Relaciones de los Pueblos of Felipe II (16th century)

Note: data extracted from the 23, 28, and 48 chapters of the formulary (Campos, 2009)

Scientific name	Vernacular	Locality of use	Uses
Animalia			
<i>Hirudo troctina</i>	<i>Sanguijuelas</i>	Torre de Juan Abad	Hidradenitis suppurativa, pneumonia
Mineralia			
Mineral water	<i>Fuentes</i>	Valenzuela de Calatrava	There is another fountain one league from this village to the west, on the edge of the Dehesa de la Nava, very abundant with sour water. In a great way its quality is very remarkable; it is clear and clean, it does not allow any live thing or leeches to be raised in it, but even if they are thrown in, they die, empty their stomachs, and if they drink in fasting, they make the anger go away
	<i>Baños</i>	Fuencaliente	that water comes and goes piped through the said church and goes to the said bath in which many people who come to them from different parts bathe, crippled, and have improvement in their illnesses, for which they come to the said baths and come in pilgrimage to the said church
	<i>Fuente de la Parra</i>	Malagón	the source of the Vine that is to four leagues of the town to the west; runs against North wind, send for it for the sick that is very healthy
	<i>Hervideros</i>	Bolaños de Calatrava	there are two sources that are called today the Hervideros, ... next to the river Jabalón, two leagues from Almagro, ..., because, drinking, you do not feel until you have finished drinking; it is rusted, ... While I was sick of stone I had it brought and it made me profit, although brought home it loses the rust and it is not so rough.

Table 10. Medicinal species reported in the *Descripciones del Cardenal Lorenzana* (18th century)

Note: data extracted from the XIII chapter of the different responses to the standard formulary (Porres et al., 1986 and Al-Balatitha et al., 1985)

Scientific name	Vernacular	Locality of use	Uses
Animalia			
<i>Lytta vesicatoria</i> (Linnaeus, 1758)	<i>Parches de cantarias</i>	Escalonilla	Typhus fever, unspecified, Pneumonia, organism unspecified, rheumatism
Mineralia			
Mineral water	<i>Fuentes del Venero</i>	Hontanar	Functional dyspepsia
	<i>Fuentes</i>	Anchuras	Paralytic ileus and intestinal obstruction without hernia
	<i>Fuentes Becerra y Hedioando</i>	Marjaliza	Paralytic ileus and intestinal obstruction without hernia
	<i>Fuente Pontidueña</i>	Marjaliza	Deafness
	<i>Fuente de Jaralejo</i>	Navahermosa	Rheumatism
	<i>Fuente de la Pedriza</i>	Los Navalucillos	Aguas relumbrantes
	<i>El Hervidero</i>	Carrion de Calatrava	Paralytic ileus and intestinal obstruction without hernia
	<i>La Fuente</i>	Piedrabuena	Flatulence and related conditions, Abdominal and pelvic pain, Functional dyspepsia
	<i>Fuensanta</i>	Pozuelo de Calatrava	Herpesviral infection, unspecified and Scabies
Plantae			
<i>Anthyllis vulneraria</i> L.	<i>vulneraria</i>	Hontanar	Open wound of unspecified body region
<i>Artemisia absinthium</i>	<i>ajenjos</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria
<i>Bryonia dioica</i>	<i>raíz de esparraguera</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria
<i>Centaurea ornata</i>	<i>zentaurea</i>	Anchuras	<i>Plasmodium falciparum</i> malaria
<i>Centaureum erythraea</i>	<i>hiel de la tierra</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria
<i>Chamaemelum nobile</i>	<i>manzanilla</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria
<i>Cichorium intybus</i>	<i>achicoria</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria
<i>Cinchona calisaya</i> Wedd.	<i>quina</i>	Escalonilla	<i>Plasmodium falciparum</i> malaria
	<i>quina</i>	Aldea de Calatrava	<i>Plasmodium falciparum</i> malaria
	<i>quina</i>	Argamasilla de Alba	<i>Plasmodium falciparum</i> malaria
	<i>quina</i>	Granátula de Calatrava	<i>Plasmodium falciparum</i> malaria
	<i>quina</i>	Manzanares	<i>Plasmodium falciparum</i> malaria
	<i>quina</i>	Picón	<i>Plasmodium falciparum</i> malaria
	<i>quina</i>	Torralba de Calatrava	<i>Plasmodium falciparum</i> malaria
	<i>quarango</i>	Pozuelo de Calatrava	<i>Plasmodium falciparum</i> malaria
	<i>polvos peruvianos</i>	Fernán Caballero	<i>Plasmodium falciparum</i> malaria
	<i>Genista tridentata</i>	<i>carquesa</i>	San Pablo de los Monres
<i>Petroselinum crispum</i>	<i>perejil</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria

<i>Scorzonera hispanica</i>	<i>escorzonera</i>	Robledo del Mazo	<i>Plasmodium falciparum</i> malaria
<i>Brassica oleracea</i>	<i>col</i>	Robledo del Mazo	Pleural condition, unspecified
<i>Cuminum cyminum</i>	<i>cominos</i>	Robledo del Mazo	Pleural condition, unspecified and Abdominal pain
<i>Genista tridentata</i>	<i>carquesa</i>	Navahermosa	Rheumatism
<i>Nicotiana rustica</i>	<i>hoja de tabaco</i>	Robledo del Mazo	Abdominal pain
<i>Olea europaea</i>	<i>aceite</i>	Robledo del Mazo	Abdominal pain

Table 11. Medicinal species of Daimiel reported in 1905

Note: data extracted from the manuscript of the *Topografía Médica de Daimiel y su Partido* (Fisac, 1905a)

Scientific name	Vernacular	Part	Uses
Fungi			
<i>Calvatia gigantea</i> (Batsch) Lloyd	<i>cuesco de lobo</i>	Sporocarp	Open wound of unspecified body region
Plantae			
<i>Adiantum capillus-veneris</i> L.	<i>culantrillo de pozo</i>	Whole plant	Widely used, but uses not specified
<i>Althaea officinalis</i> L.	<i>malvavisco</i>	Root	Root extensively collected from wetlands and riverine habitats for exportation to foreign pharmacies
<i>Cistus ladanifer</i> L.	<i>jara, ládano</i>	Exudate resin	Resin used for abdominal pain
<i>Cytisus scoparius</i> (L.) Link	<i>escobas</i>	Whole plant	Purgative
<i>Daphne gnidium</i> L.	<i>torvisco</i>	Whole plant	Used by female healers for magical practices
<i>Drimys maritima</i> (L.) Stearn	<i>cebolla albarrana</i>	Bulb	Diuretic, expectorant, emetic
<i>Filipendula vulgaris</i> Moench	<i>filipéndula</i>	Roots	Astringent
<i>Malva sylvestris</i> L.	<i>malvavisco</i>	Leaves and flowers	Flowers extensively collected for exportation to foreign drug stores
<i>Paeonia broteri</i> Boiss. & Reut.	-	Roots	Roots used by shepherds and coalmen as a laxative
<i>Papaver rhoeas</i> L.	<i>amapola</i>	Flowers	Flowers extensively collected for exportation to foreign drug stores
<i>Papaver setigerum</i> L.	<i>adormidera</i>	Capsules	Being much less active than the cultivated forms of <i>P. somniferum</i> was not used
<i>Scorzonera hispanica</i> L.	<i>escorzonera</i>	Roots	Diuretic, depurative, and ingredient in anti-infective decoctions

Guadiana

Fig. 1. Localization of the research area

A. Ciudad Real Province (Spain) in Western Europe. **B.** Hydrological networks and main research areas associated to the Upper Guadiana River: 1 Cabañeros National Park, 2 Tablas de Daimiel National Park, 3 Lagunas de Ruidera Natural Park

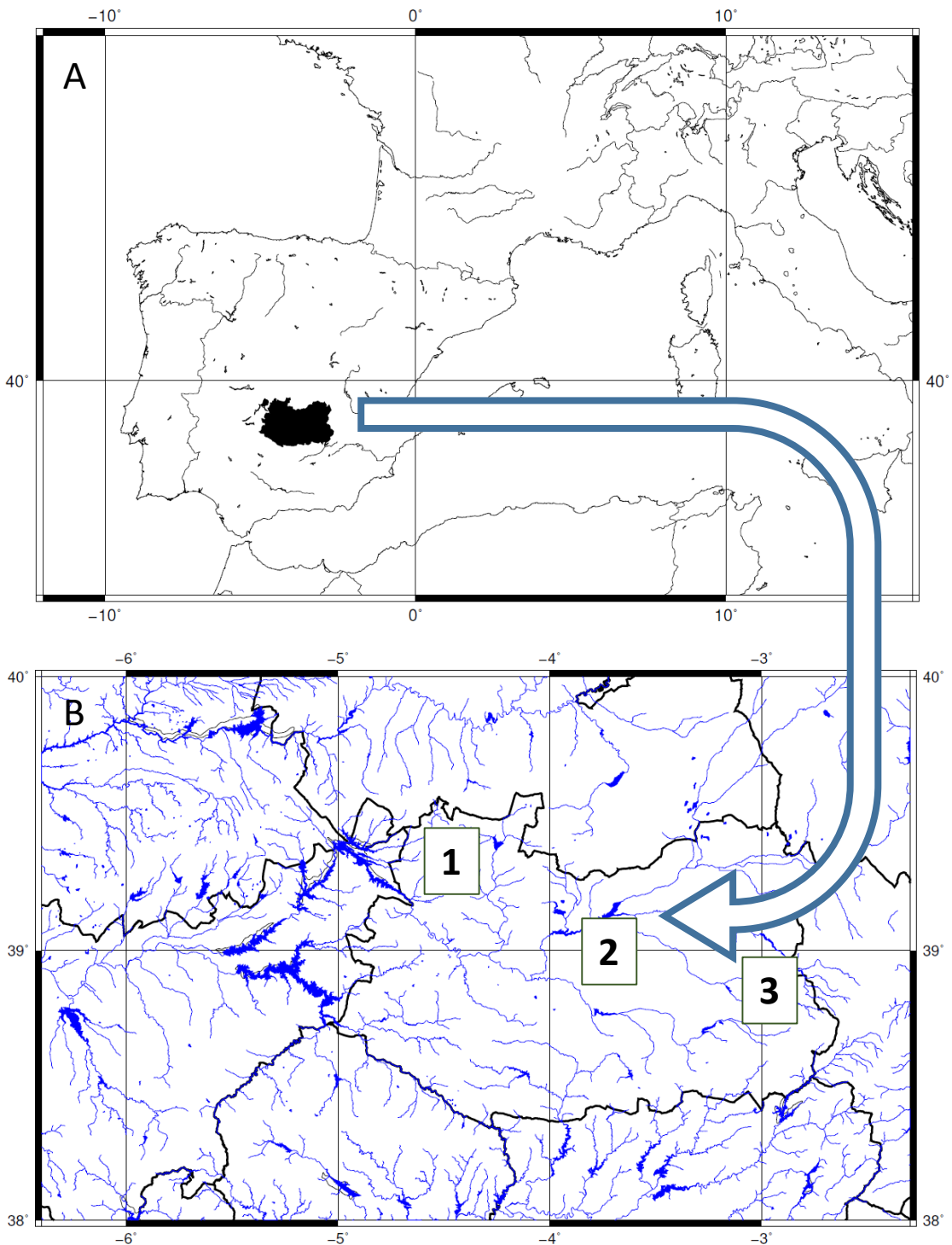


Fig. 2. Sequence followed for determining / interpreting ingredients and pathologies

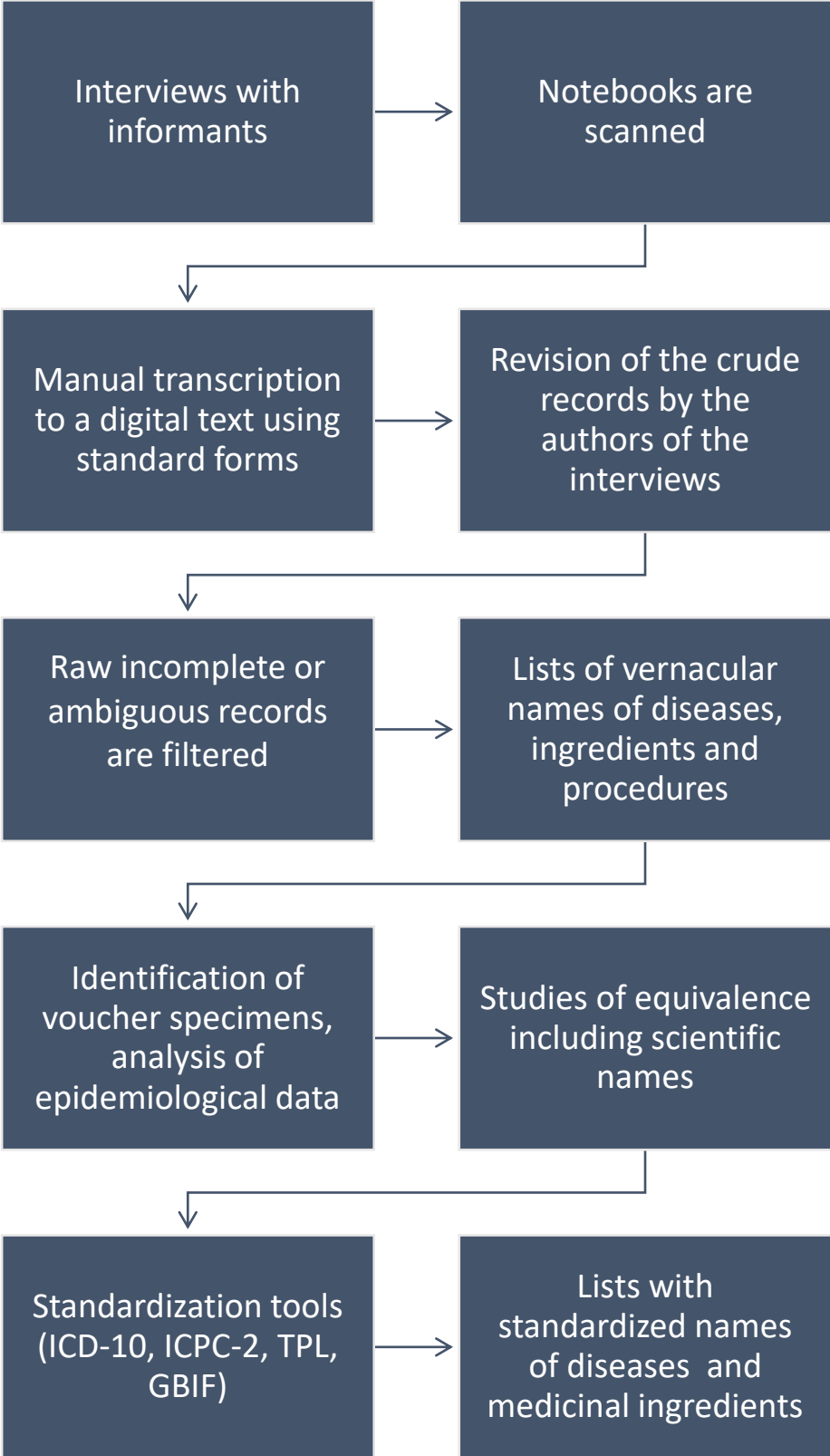


Fig. 3. Field work effort and records: chronology and localities

A. Chronology. **B.** Distribution by Sectors: **Note:** surface of circles is directly proportional to the number of records in the locality

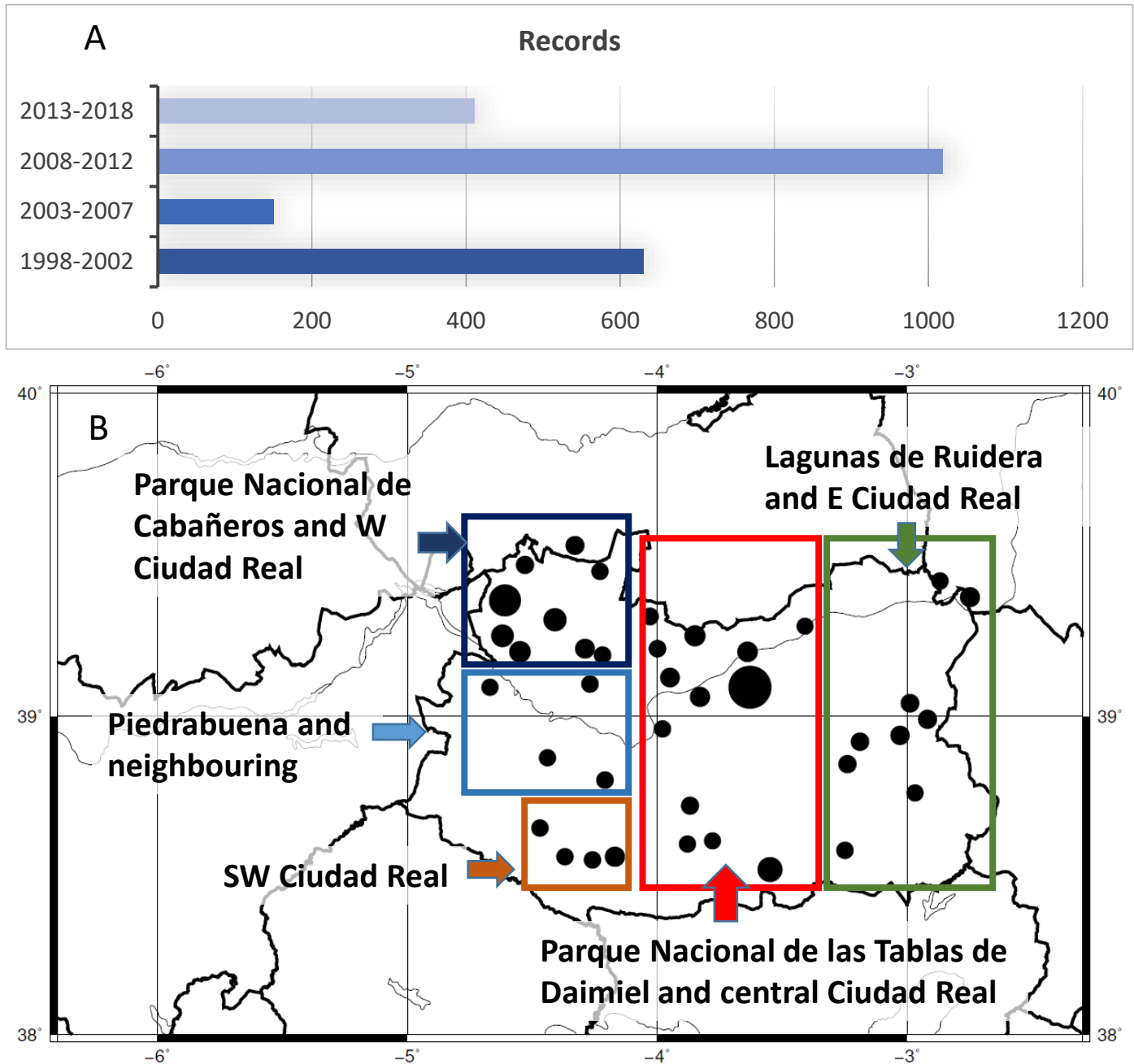


Fig. 4. Informants' sharing of knowledge

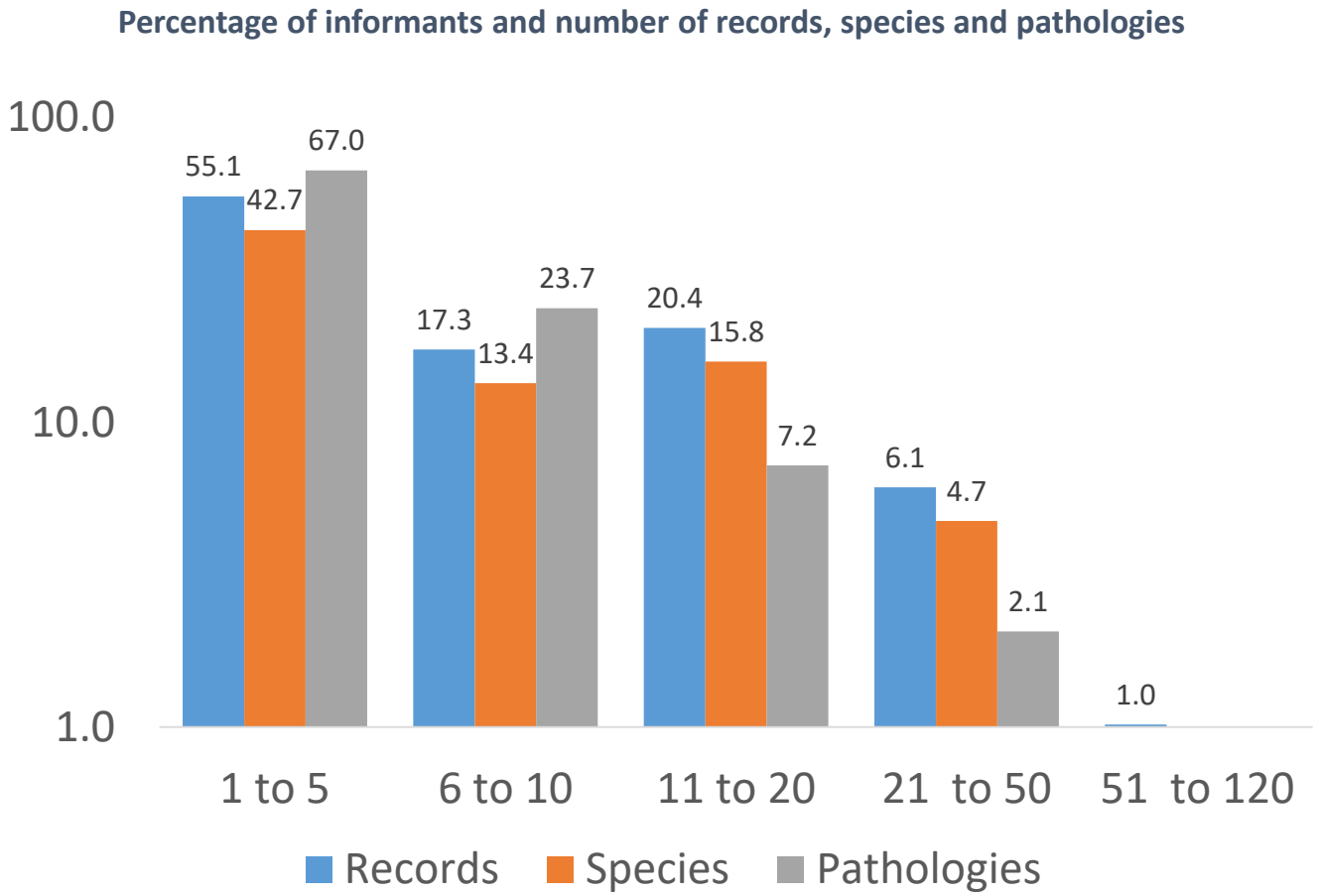


Fig. 5. Frequency of ICD-10 and ICP 2e7.0 pathologies

Note: differences in most categories are mainly lexical

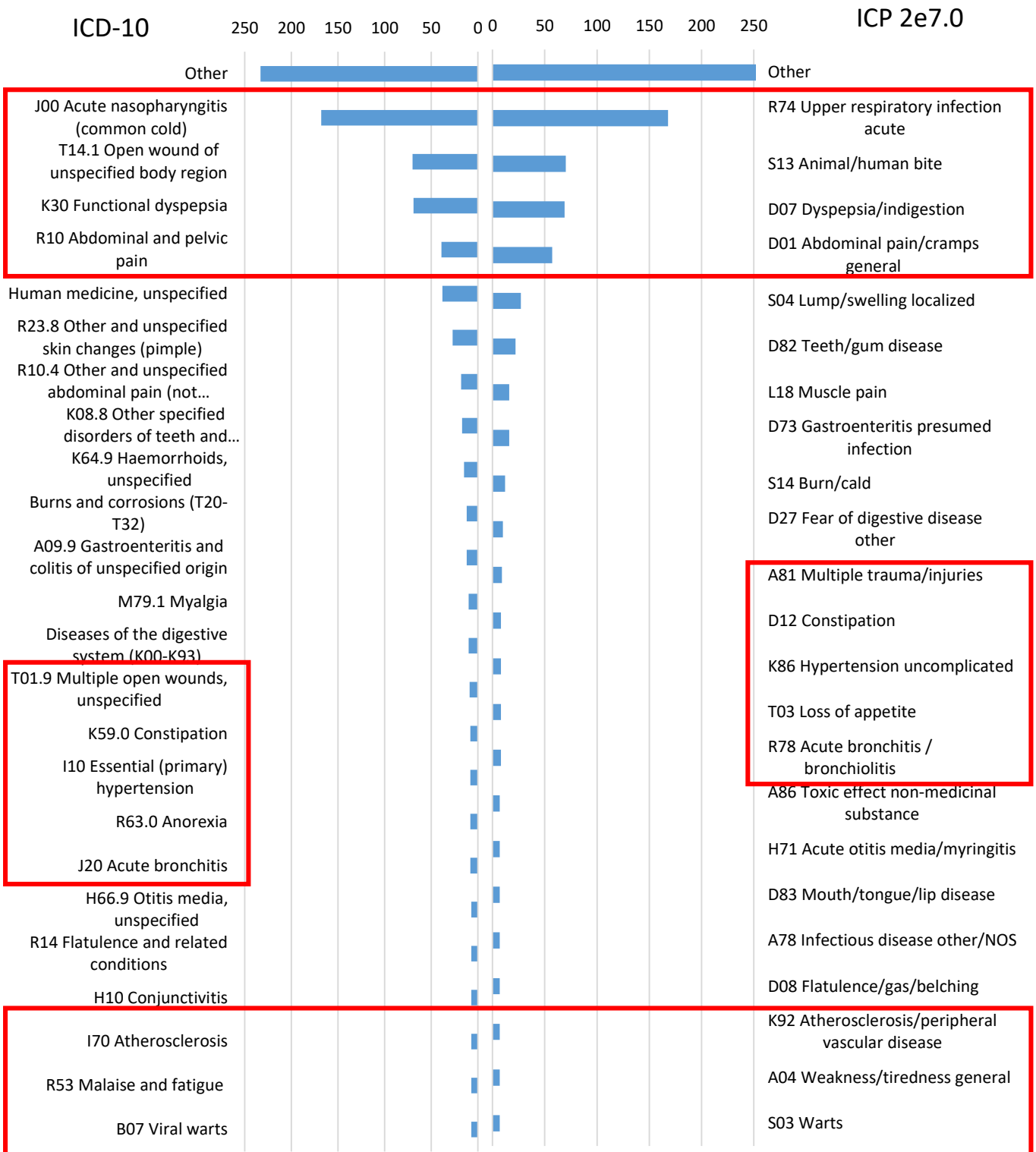


Fig. 6. Relative frequency of broad use groups and relevant species

Broad Use Codes: CAR: Cardiovascular diseases, DER: Dermatologic disorders, EYE: Ophthalmic problems, GAS: Gastrointestinal problems, GYN: Gynecology, INF: Infections (antibacterial, antifungal, anti plasmodial, anti-viral, dental plaque inhibitor), MET: Metabolic syndromes including immunological-inflammatory and related diseases, NER: Nervous system, PAR: Parasites, POI: Poisons (insecticide and others), RES: Respiratory complaints, SKE: Skeleto muscular system, URO: Urology. **Note:** Species represented are those with five to ten different uses within the corresponding groups. Species with known toxicity are marked in bold red characters.

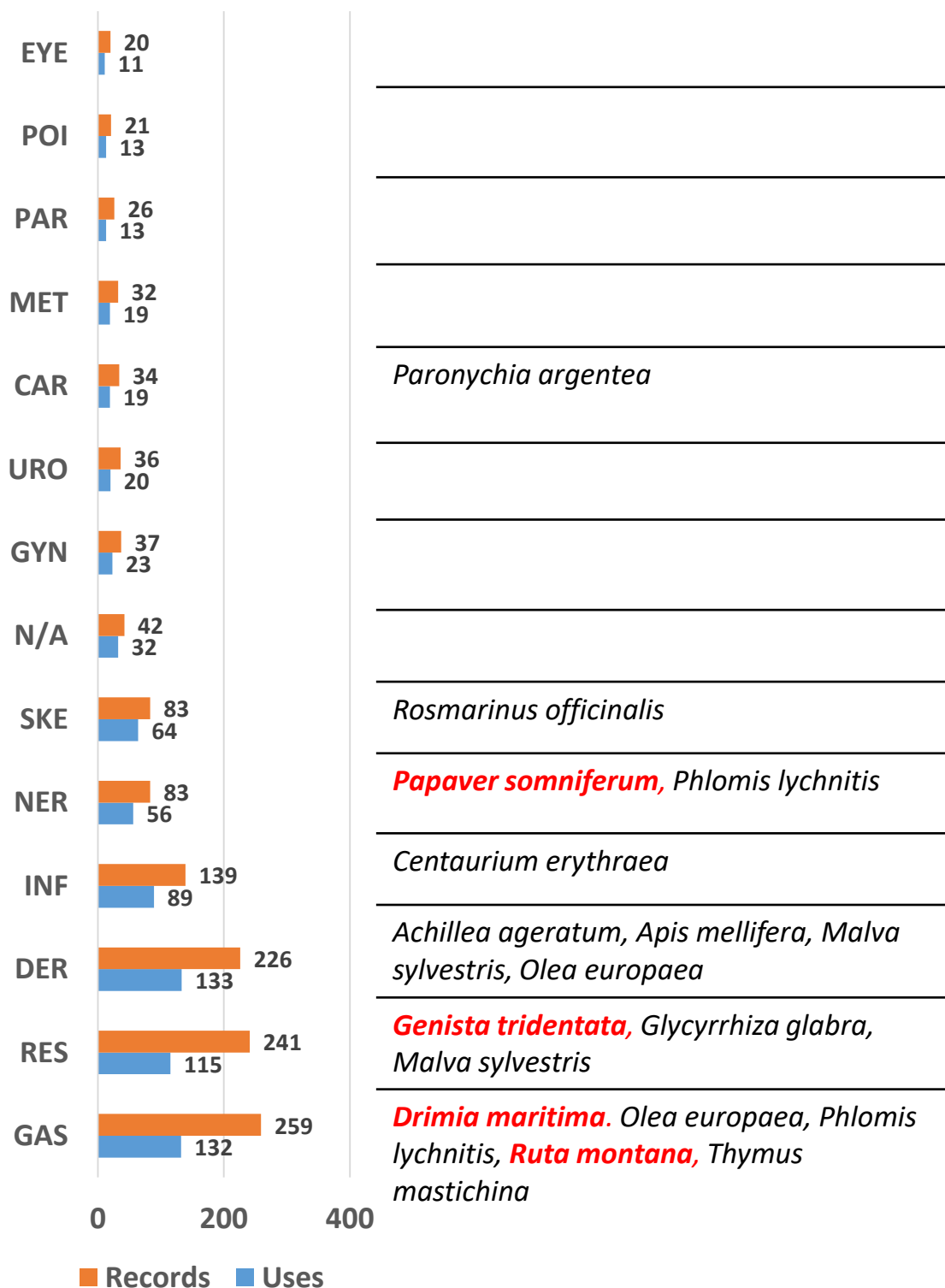


Fig. 7. Ingredients, relevance of the different kingdoms or types

Note: x-axis represented in logarithmic scale.

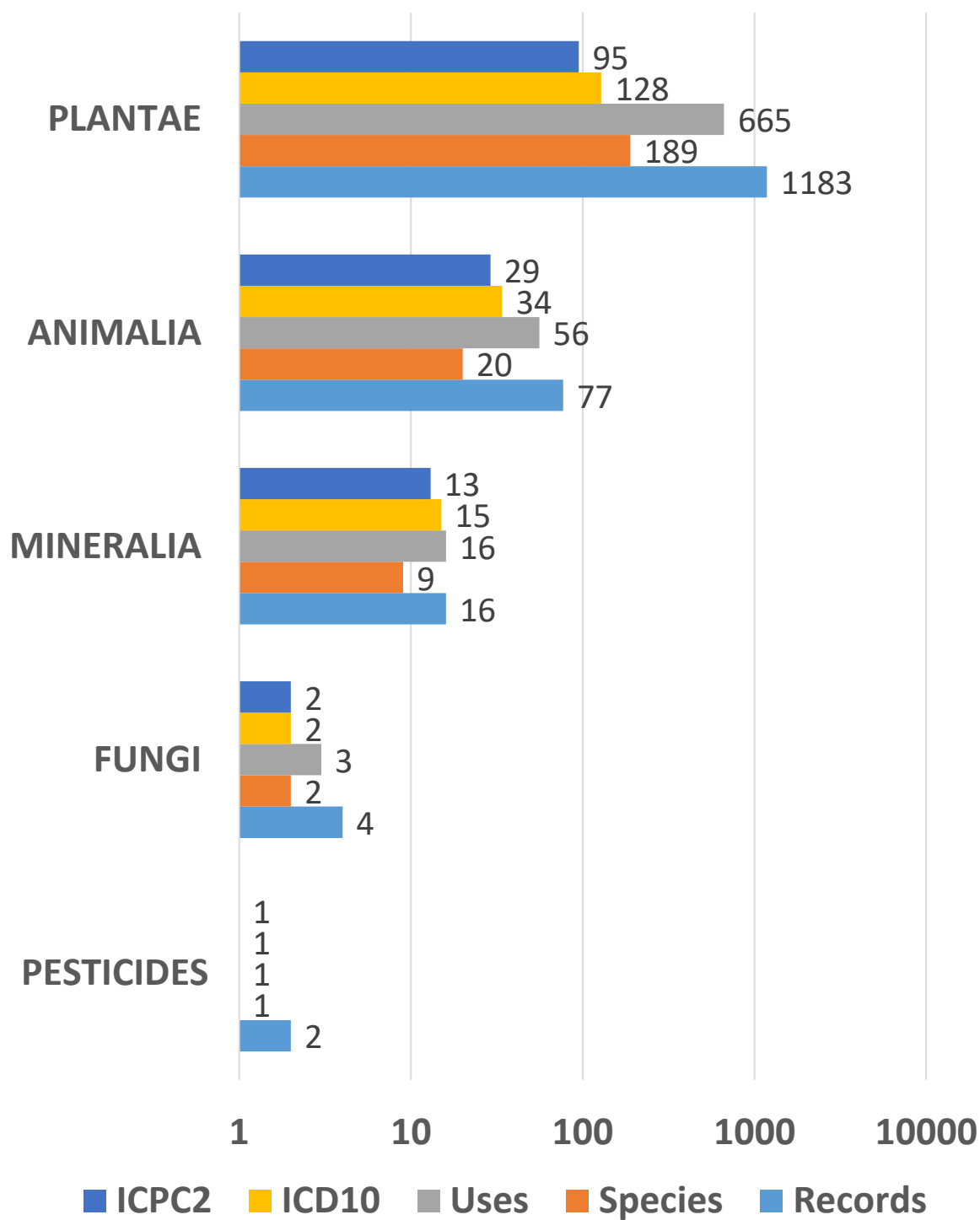


Fig. 8. Main families of plant ingredients

Note: families with less than five records are not represented.

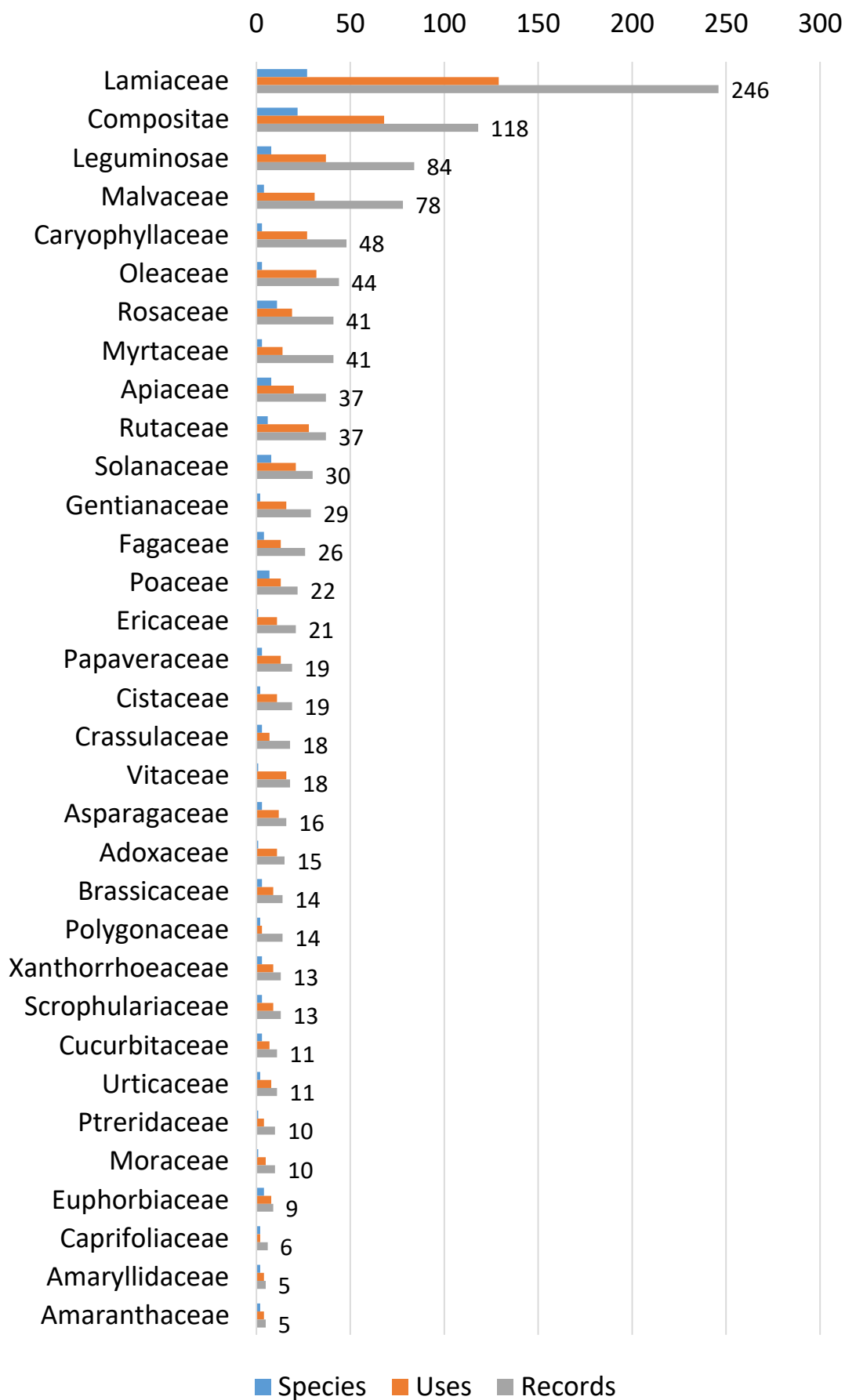


Fig. 9. Relevant plant species

1. *Cistus ladanifer*. 2. *Phlomis lychnitis*. 3. *Thymus mastichina*. 4. *Althaea officinalis*. 5. *Malva sylvestris*. 6. *Genista tridentata*. 7. *Rumex pulcher*. 8. *Matricaria chamomilla*, 9. *Achillea ageratum*. 10. *Rosmarinus officinalis*. 11. *Paronychia argentea*. 12. *Thymus zygis*. 13. *Olea europaea*. 14. *Vitis vinifera*. 15. *Arbutus unedo*. Photo: 7, 12 C. Obón. 1-6, 8-11, 13-15 D. Rivera.



Fig. 10. Ingredients: frequency of parts used

Codes: **A**, Animalia; **M**, Mineralia; **F**, Fungi.

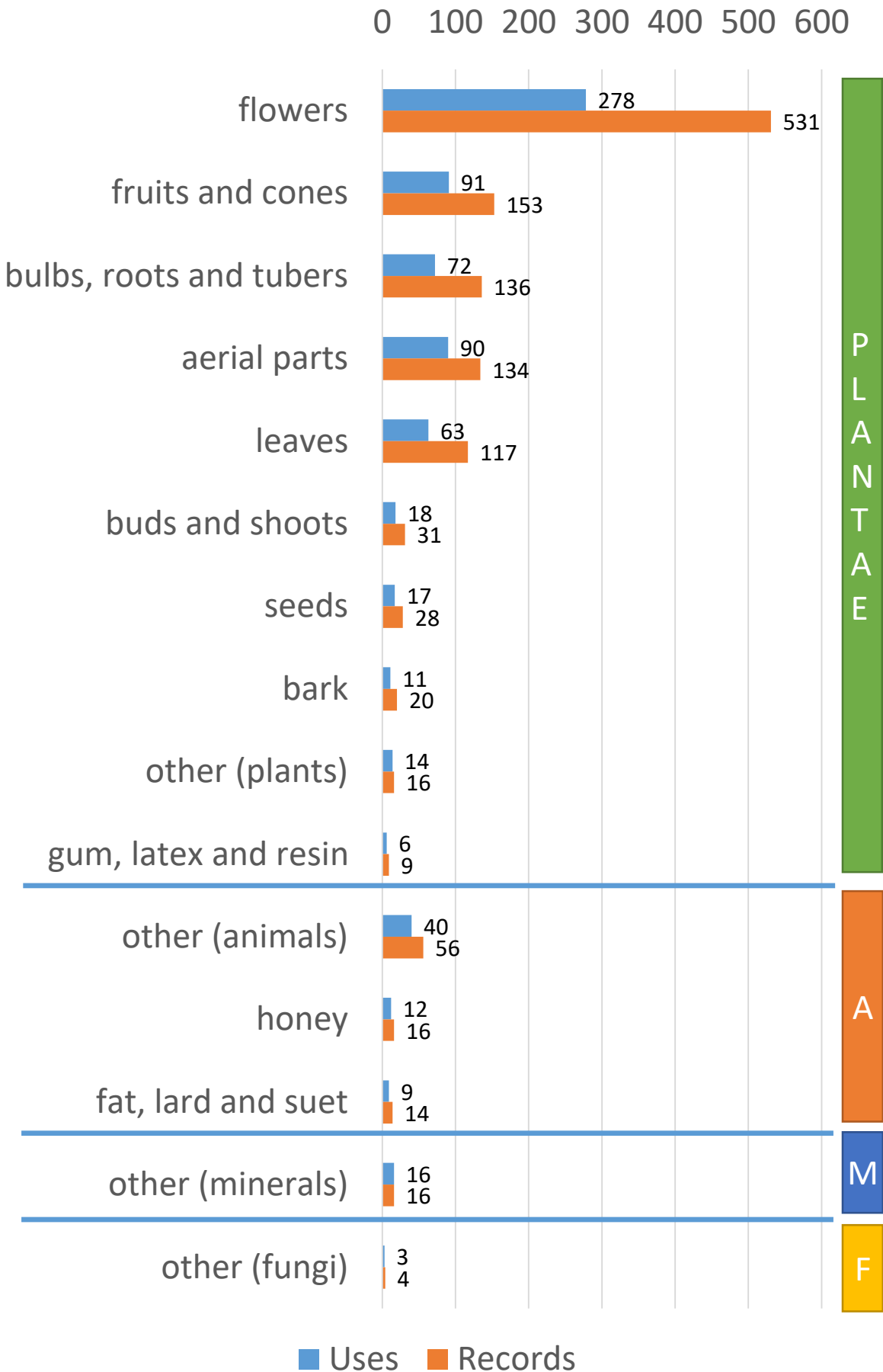
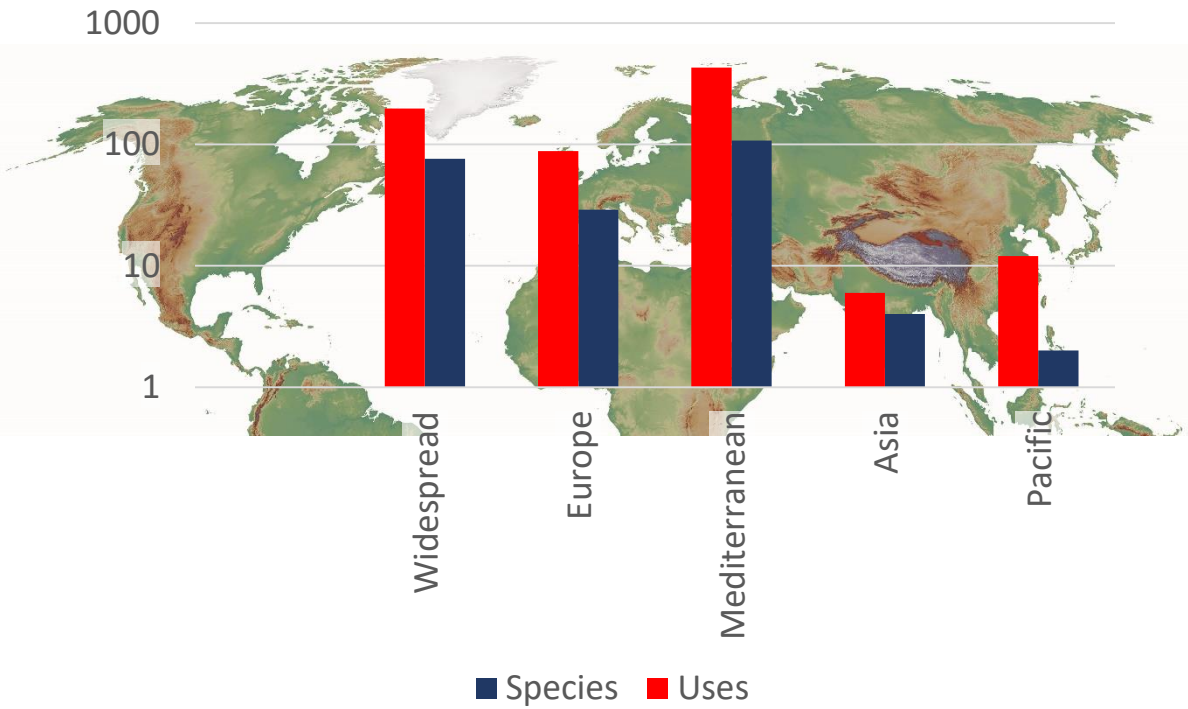


Fig. 11. Origin and habitats of ingredients

A: geography, scale of axis logarithmic; **B:** main types of habitats. Uses refers to medicinal uses

A Provenance



B Habitats

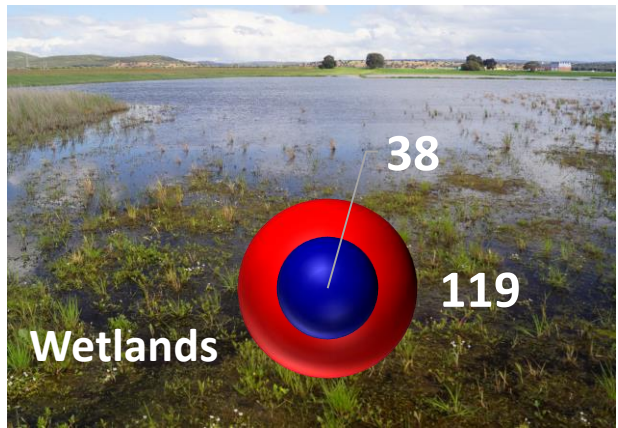
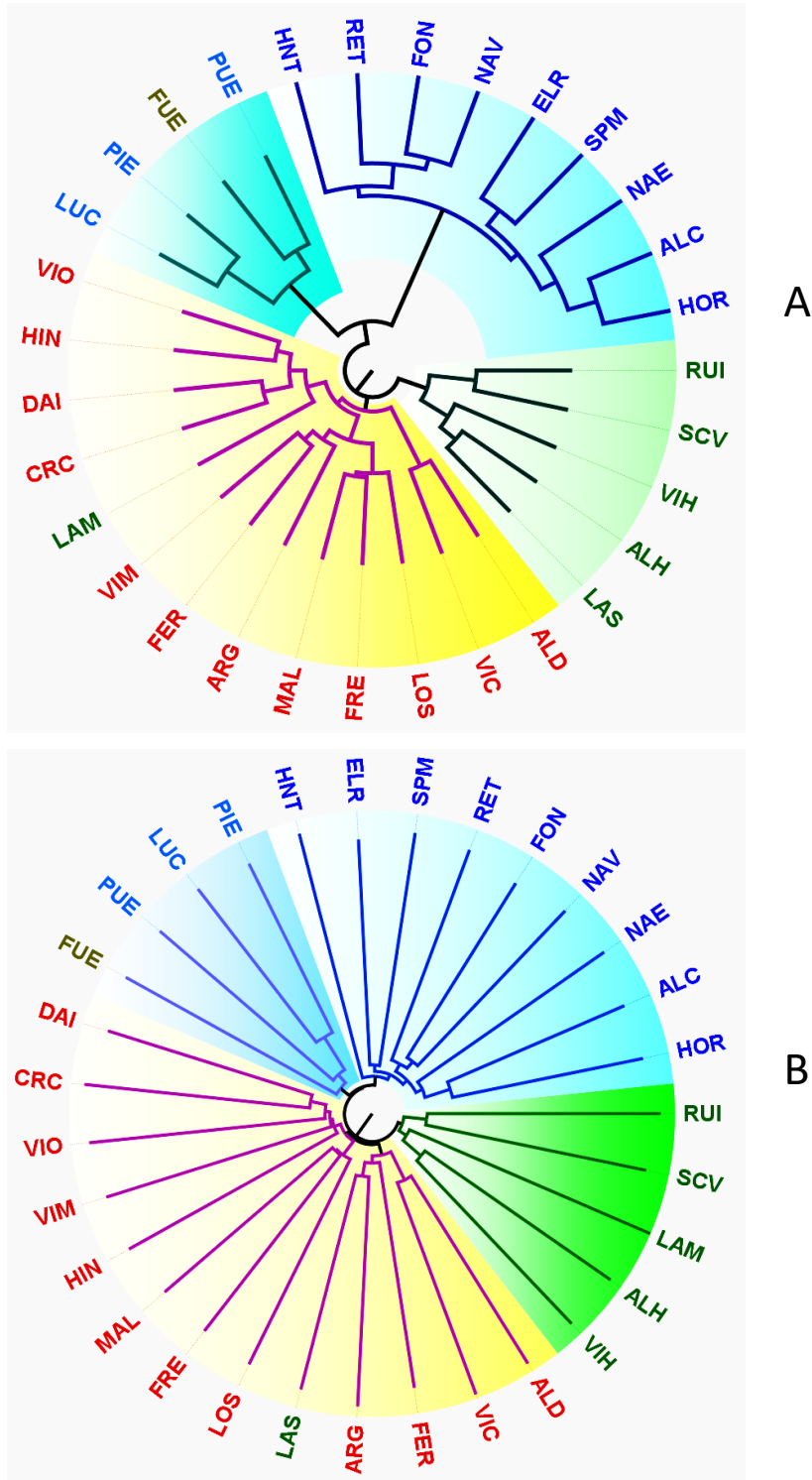


Fig. 12. Geographical groups

A. Ward's minimum variance hierarchical tree. B. Weighted neighbor joining tree.



Note: based on ingredients, **Localities:** ALC, Alcoba. ALD, Aldea del Rey. ALH, Alhambra. ARG, Argamasilla de Calatrava. CRC, Carrión de Calatrava. DAI, Daimiel. ELR, El Robledo. FER, Fernán Caballero. FON, Fontanarejo. FUE, Fuencaliente. FRE, Fuente el Fresno. HIN, Hinojosas de Calatrava. HNT, Hontanar. HOR, Horcajo de los Montes. LAS, La Solana. LAM, Las Mesas. LOS, Los Cortijos. LUC, Luciana. MAL, Malagón. NAE, Navas de Estena. NAV, Navalpino. PIE, Piedrabuena. PUE, Puebla de Don Rodrigo. RET, Retuerta del Bullaque. RUI, Ruidera. SCV, San Carlos del Valle. SPM, San Pablo de los Montes. VIH, Villahermosa. VIC, Villamayor de Calatrava. VIM, Viso del Marqués. VIO, Villarrubia de los Ojos. **Colors of text:** blue, Cabañeros and Montes de Toledo; red, Daimiel and Calatrava; dark green, Ruidera and E part; dark golden rod, Valle de Alcudia and SW part.

Ethnopharmacology in the Upper Guadiana River area (Castile-La Mancha, Spain)

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ABSTRACT:

Ethnopharmacological relevance: Determining traditional remedies for human pathologies is relevant, when compared with the standard materia medica of the pharmacopoeias and dietary supplement databases, because we can assess the species and uses that have been previously studied and target understudied species for further pharmacological investigation.

Background: The aim of this study was to systematically record and analyze medicinal uses of natural resources (Plantae, Animalia, Fungi and minerals), mostly local, in the territories adjoining the upper Guadiana River and its tributaries.

We were particularly interested in recording resources and pathologies linked to wetland areas, especially in the National Parks Las Tablas de Daimiel and Cabañeros. Wetlands are interesting because they present a double face in relation with human health: Wetlands furnish hydration, safe water, nutrition, and medicinal resources; are places from which people derive their livelihood. However wetlands are also sites of exposure to pollution or toxicants, and infectious diseases; and sites of physical hazards.

We wanted to identify procedures for preparation of medicinal formulae and routes of administration. We also intended to detect whether a geographical pattern exists or not in our records in relation to the use of local resources.

Methods: We used semi-structured interviews with one-to-one informants or groups, from 1998 to 2018. Raw data were introduced in a Firebird database and analyzed. To identify ingredients and pathologies we consulted local floras and epidemiological literature. Finally, we compared documented pathologies, remedies and ingredients in the historical context of medicinal uses of natural resources in Castile-La Mancha and especially in Ciudad Real.

Results: 126 pathologies and 220 species furnishing ingredients have been recorded from the interviews. In total, 188 are plants and 20 animals. The most commonly used species include *Malva sylvestris*, *Phlomis lychnitis*, *Genista tridentata* and *Thymus mastichina*. Most records refer to flowers, or fruits, of locally available plant species, classified as Mediterranean, European or widespread that belong to the Lamiaceae, Compositae or Leguminosae. Ingredients which are collected in open shrublands,

known as “*garrigue*”, and dry grasslands furnish a relevant proportion of records while the imported ingredients remain marginal. The contribution of wetlands, riverine habitats and irrigated fields and gardens as a source of medicinal resources is 36% of the records. It is relatively high considering its limited presence in terms of total extension within the study area. The most frequently reported diseases are respiratory, gastrointestinal, dermatological and infectious or parasitic.

Conclusions: Along the Guadiana River in the Ciudad Real province exists a wide and deep knowledge of traditional remedies for the treatment of common pathologies, based fundamentally on the use of local flora, fauna and mineral resources. The uses and ingredients documented are useful for further pharmacological investigation to improve health care for a wide range of pathologies.

Keywords:

Ethnobotany; herbals; medicinal plants; traditional medicine; wetlands

Abbreviations

ICD-10 – International Statistical Classification of diseases and Related Health Problems 10th Revision

RANME – Real Academia Nacional de Medicina.

TKS – Traditional Knowledge System.

TPL – The Plant List.

1 Introduction

In rural areas of Castilla-La Mancha (Spain) there were several systems of alternative and / or complementary medicine since at least the fifteenth century, along with the official academic system accepted by the authorities (Blázquez, 1985 and 1989; Rivera et al. al., 2017). These systems ended up being fused in a complex of practices and beliefs during the XIX and XX centuries, in what is called "Folk Medicine" (Baer et al., 2006, Kuschick, 1989 and 1995, Press, 1973).

The folk medicine of Castile-La Mancha is part of the Mediterranean TKS (Traditional Knowledge System). This involved the use of, essentially, local resources for the subsistence of rural population, small towns and cities and gradually faded since the 1950s (Rivera and Obón, 1996). Ethnobotany and ethnopharmacology of Castile-La Mancha has been subject of different studies, articles and books (Fajardo et al.,

2000, 2007; Rivera et al., 2005; 2006; Rubio et al., 2013; Verde 2002; Verde et al., 1998, 2000, 2008).

The Guadiana River crosses the province of Ciudad Real in Castilla-La Mancha. The main course of the Guadiana River and its tributaries form a group of wetlands with peculiar characteristics that were, during centuries, habitats of medicinal resources, but also for diverse vectors of diseases and pathogenic organisms (Fisac, 1905 a). Wetlands present a double face in relation with human health: they are contributors to hydration, safe water and nutrition; places from which people derive their livelihood; settings for mental health and psycho-social well-being; places that enrich people's lives, enable them to cope and to help others; and sites from which medicinal and other products can be derived; but they are also sites of exposure to pollution or toxicants, and to infectious diseases; and sites of physical hazards (Dale & Connelly, 2012; Horwitz & Finlayson, 2011; Zimmerman, 2001).

Wetlands are the loci for communicable diseases classifiable in two main categories: vector-borne (vectors of human disease can be snails, mosquitoes, and flies among others), and water-borne (produced by cyanobacterial toxins, tapeworm, *Fasciola*, bacteria, protozoa and viruses) (Horwitz et al., 2012). Hunting species, such as deer, are abundant in the area and, increasingly, host pathogens, such as the Hepatitis E Virus (Boadella et al., 2010). In parallel, preventive measures have led to a decrease in the incidence of hepatitis A, B and C infections (Pachón and Shouval, 2007).

Infectious diseases were relatively frequent until the mid of 20th century and occasionally reached the level of epidemic, as measles, typhoid fever, tuberculosis, malaria, diphtheria, anthrax, and influenza (Castejón, 2015; Fisac, 1904, Fisac, 1905 a, Fisac 1905 b). The Spanish flu (H1N1 influenza virus) deeply impacted Daimiel in the years 1918 to 1920 (García-Consuegra, 2013). Picó (1977) mentions in the adjacent San Clemente town: petechiae, smallpox, measles, whooping cough, and different malaria types. Most of these were eradicated during the 20th century through systematic vaccination and the elimination of such vectors as *Anopheles* mosquito.

Medicinal plants were, and still are, abundant in the area (Fisac, 1905 a; Mestre, 1865; Porres et al., 1986; Torres, 1821). Mineral medicinal resources in this area are diverse, ranging from salt mines (Carrasco and Hueso, 2006; Zubiri, 2010) to springs of carbonated water ("*hervideros*") (Bañares, 1820; Mestre, 1865; Torres, 1821).

Numerous healers, notably women, existed in this area, in particular in the zones of Daimiel and Cabañeros, (Fig. 1), which attracted the interest of the Inquisition tribunals from the 15th to the 19th centuries (Cirac, 1942; Longobardo et al., 1997). Here several places are called “*Las Curanderas*” (the female healers) (BOP, 2008) because of the existence of them in that locality even in modern times.

Still in the second half of the 20th century (García, 2002) several healers, mainly women, lived in the Motilla, Herrera and adjacent streets of Daimiel. They were and continue to be consulted by sick people from the towns and villages of La Mancha. However, although this practice continues to exist in 2019, it is always difficult to interview such healers exhaustively since they are reluctant to share information with foreigner people, like most of us, who identified themselves as researchers at the university or, even, with local people who say that the results of this research will be published.

Studying ethnopharmacology in this area is interesting given the particular environmental constrains for resources and pathologies associated to wetland and riverine habitats. Most studies available for the area are of general ethnobotany and lack of detailed ethnopharmacological information especially concerning preparation and administration of medicines. Another aspect missing in the literature for the area is the ensemble of ingredients of animal and mineral origin. Finally, the existence of historical evidence for medicinal resources used in this area, although fragmentary, offered the opportunity to identify their persistence, losses and changes comparing with modern ethnopharmacological data.

This paper has seven objectives:

1. Recording traditional formulas of folk medicine which were used during the second half of the 20th and the beginnings of the 21st centuries by the inhabitants of the Upper Guadiana Rivera area. It consists of systematically interviewing persons who are likely hold local TK (Traditional Knowledge), in particular about ethnopharmacology. We focus on the remedies and their formulations that have been used by the interviewees or their parents in the area.
2. Another objective is to determine the diseases mentioned by our informants and their relative importance in terms of remedies recorded.

3. We also intend to identify in terms of scientific nomenclature the different ingredients, not only those of plant origin but also those of animal or mineral origin. We expect to quantify the relative relevance of plants, animals and minerals and set focus on the key species widely used which merits further investigation.
4. We have special interest in determining the relevance in the area of local resources and especially of plants and animals associated to wetlands and riparian habitats.
5. We want to identify procedures for preparation of medicinal formulae and routes of administration.
6. We intend to detect whether a geographical pattern exist or not in our records in relation to the use of local resources.
7. Finally, we aim to compare documented pathologies, remedies and ingredients in the historical context of uses of medicinal plants in Castile-La Mancha and especially in Ciudad Real.

Our first hypothesis is that the repertory of medicinal ingredients (not only plants but also of zoological and mineral origins, or even synthetic pesticides) in a determined period, and zone, and their relative frequency, in terms of medicinal uses or presence in formulations, provides a unique sequence that represents the characteristics of each medical-pharmaceutical system (Rivera et al., 2017). In this case the period and area are: 1998-2018 and the Upper Guadiana River.

Therefore we hypothesize that ingredients and pathologies related to wetlands and riverine areas will play a significant role in the local *materia medica*, and that historically documented practices will be reflected in the information recorded given the long tradition these have in the Guadiana River area. Ethnopharmacology can be approached in a diachronic perspective, and historical data about local therapeutics can help to understand the dynamism of traditional knowledge on pathologies and medicinal resources. Lastly we hypothesize that the repertory of uses and species will offer interest for further pharmacological investigations.

2 Material and Methods

2.1 Data collection

2.1.1 Geographical coverage

This paper focuses on the area covered by the Guadiana River along Castilla-La Mancha region (central Spain) in the Ciudad Real Province (Fig. 1).

Fig. 1 approx. here.

The Guadiana River stretches along 818 km in southern Spain and Portugal with an average flow in the Spanish stretch of 26 m³ /s. Part of its course is subterranean and spring from its three main sources: Pinilla River, Ruidera Lagoons and “*Ojos del Guadiana*” from there it runs on surface to its mouth between Ayamonte (Spain) and Vila Real do Santo Antonio (Portugal). This supposes that between Ruidera and Ojos the presence of wetlands and riverine habitats is scarce on account of disappearing water from the surface.

Our ethnopharmacological research concentrates in the areas neighboring the Upper Guadiana River, and its tributaries (Azuer, Cigüela, Estena, and Zánacara River), especially in two National Parks, those of Cabañeros and Las Tablas de Daimiel, and the Natural Park of Lagunas de Ruidera in Ciudad Real province (Spain) and close localities of Albacete, Cuenca and Toledo Provinces (Fig. 1).

Population of the province concentrates in the localities of Ciudad Real, Puertollano, Tomelloso, Alcazar de San Juan and Valdepeñas. The municipalities where our research is concentrated have less than 1000 inhabitants each, with the exception of Daimiel. Density of population is particularly low in the area of Cabañeros with 1.4 to 3 inhabitants per km². The proportion of aged population (>65) reached in 2008 48.5 % in localities such as Fontanarejo. Ageing is a generalized phenomenon in smaller nuclei of population. The incorporation of young foreigners, fundamentally from Rumania, is in part compensating the loss of population in the northern part of the province. By 2001 illiteracy reached a 25.5% for the whole province with peaks in Fontanarejo (89%) and Granátula de Calatrava (68%). Agriculture is the main occupation of the population in the area with values of 53% in Fontanarejo, 44% in Arroba de los Montes and 42 % in Navas de Estena (BBVA, 2008).

We draw maps using GMT (2014).

2.1.2 *Sequence of the study*

We followed a logical sequence for recording, processing and standardizing data which is summarized in Fig. 2.

Fig. 2 approx. here.

Our study is based on c. 103 interviews, individual or with groups of people. The field work took place from 1998 to 2018 and comprised 46 localities (Fig. 3) and 141 informants from which 98 were independent (neither interviewed simultaneously nor belonged to the same family). The majority of the informants were men (113), while the women were only 24, other records were obtained by interviewing couples and, finally, some records were obtained from interviews with groups of three to eleven people.

We must mention that the interviews carried out generally covered a wide range of ethnobiological topics, of which, in the present work, only the records related to human medicine are analyzed.

We tried to cover the main areas (Cabañeros and Tablas de Daimiel) as continuously as possible throughout the investigation period, with some interruptions. The discontinuities are, unfortunately, often due to the death of our informants, given their ages.

Fig. 3 approx. here.

2.1.3 *Data from other ethnobotanical and historical sources*

In order to compare our results with other sources of evidence, we started with all the available manuscripts that were consulted to register medical formulations or references to medicinal plants and their uses. Fragmentary information on pathologies and their remedies in the 16th century is found in the *Relaciones Topográficas de Felipe II* (Campos, 2009). The Cardenal Lorenzana, archbishop of Toledo from 1772 to 1800, promoted the inventory of resources, climate, morbidity and mortality causes of the

different municipalities of his dioceses (Porres et al., 1986); some of the reports include information on local remedies.

We, particularly, have found relevant information in the “*Topografías Médicas*”. These are studies, carried out by regular doctors, of specific places and their populations, which are approached from a hygienic-sanitary perspective and that include, in general, the physical description of the locality: situation, climate, soil, hydrography, and the environment, flora and fauna; historical background, physical temperament and moral character of its inhabitants, their customs and living conditions, demographic movements and dominant pathologies (Casco, 2001). Among these *topografías* it was particularly helpful the manuscript of Doctor Gaspar Fisac, dated 1905, describing Daimiel (Fisac, 2005 a; RANME, 2018).

The ethnobotanical studies available with data on localities within the area include: Montes de Toledo (Blanco, 2004, Leblic 1988a, 1988b and 1994); south of Campo de Calatrava (Molero et al., 2001); Villarrubia de los Ojos (Arauzo et al., 2001); and, from the adjacent provinces: Badajoz (Vázquez et al., 1997), Barros Area (Vázquez et al., 1997), Fuenlabrada de los Montes (Blanco et al., 2000), Guadiana del Caudillo (Vallejo et al., 2005; 2008), and the area of Cañada Real Segoviana (Toledo) (Rojo, 2011).

The materials consulted for comparison with our interviews, which are useful due to the similarities of the areas in terms of vegetation and habitats, were from Andalusia (Benítez et al., 2010); and southern and central Portugal, in particular Arrabida (Novais et al., 2004) and Sao Mamede (Camejo et al., 2003).

2.1.4 *Systematization of data*

We recorded remedies, viz. formulas, each one with ingredients (single or in mixtures), forms of preparation and administration which were addressed to the treatment of one or several pathologies. For the purpose of our analyses formulas were broken down in their different ingredients. We name “use” (simplified for “use of the ingredient”) to each single combination of ingredient – preparation – administration and pathology. Therefore, we focus on the uses of each ingredient, although another approach is to establish the focus on mixtures (Gras et al., 2018). Each use can be recorded once or repeatedly, thus “record” is for us each “use” given by an independent informant. For this purpose we consider groups of people or families interviewed

together dependent informants represented in each case by one single independent informant (Tables 1 to 5).

The information collected from the informants during the interviews was introduced into a database. Both database design and specific software have been created to manage the ethnobiological information documented in the National Parks of Cabañeros and Tablas de Daimiel, and neighboring areas of the upper Guadiana River.

Firebird has been used as a Database Manager System (Firebird, 2018), which is Open Source, and therefore of free distribution. The software has been created using Delphi® 10.2 Tokyo Professional (Delphi, 2018). From this database an Excel compatible output was generated. Then a structured sheet with crude data of human medicine was generated. This sheet was filtered to generate a specific sheet on resources used to treat pathologies in humans. The sheet generated was again manually compared with data systematized from Montes de Toledo field work by Verde, Rivera and Obón from 1997 to 2002 (Verde, 2002) for missing data resulting in a final corrected sheet which consisted in independent records characterized with 17 variables (1 Standardized Kingdom, 2 Standardized Family, 3 Standardized Scientific Name, 4 Provenance, 5 Vernacular name, 6 Voucher, 7 Locality, 8 Standardized Locality, 9 Part standardized, 10 Preparation, 11 Administration, 12 Emic Use, 13 ICD_10, 14 Standardized ICPC 2e7.0 Pathology, 15 Broad Group of use, 16 Informants, 17 Habitat). In order to standardize vernacular nomenclature, especially for vernacular names of diseases and of ingredients of medicines some dictionaries were created in Excel, which were then applied to the automatic generation of the final text.

2.2 *Standardization of data*

Adherence to data standards will facilitate data consistency, exchange of data and comparative analyses. A number of botanical and taxonomic standards have been developed over the years, some of which could be incorporated into ethnopharmacological databases (Heinrich et al., 2009; Rivera et al., 2014).

2.2.1 *Inclusion criteria*

Regarding the inclusion criteria for these medicinal recipes, we included those recipes addressed to the treatment of human pathologies whose equivalences are defined by ICD 10 (2018) or eCIEMaps (2018). We excluded, therefore, veterinary formulas and references to toxic plants, poisonous animals and mineral substances of

known toxicity. This set constitutes sufficient material for a separate study. General dietary prescriptions not related to specific pathologies were also excluded from here.

2.2.2 *Dictionary of diseases*

To interpret the vernacular names of pathologies Ballano (1805-1807), DRAE (2017), Kuschick (1995), and Sánchez (2015) were consulted.

The pathologies were interpreted and named using two generalized coding systems for medical problems: ICPC-2 and ICD-10.

The International classification of primary care (ICPC-2) is an epidemiological tool for use by the primary care provider during the consultation (Direktoratet for e-helse, 2018) with relatively reliable results even when used by trained non-medical coders (Luna et al., 2001).

The International statistical classification of diseases and related health problems 10th (ICD-10) (WHO, 2018), and the Spanish version of the latter (eCIEMaps, 2018), is the foundation for the identification of health trends and statistics, globally, and the international standard for reporting diseases and health conditions (WHO, 2018). In this paper adscription to standard categories reflects our tentative interpretation of the reported pathologies.

Each classification system presents a structure that is its own and distinct from the rest, therefore some categories may differ for the same emic disease. Hence there is not an optimal option (Staub et al., 2015). Concerning pharmacological issues we followed the 17 broad-use categories proposed by Staub et al. (2015) for studies addressed to the development of plant-derived drugs (Tables 1 to 5).

2.2.3 *Dictionary of ingredients*

We collected voucher-specimens of plants and fungi which were deposited in the herbarium ALBA (Universidad de Castilla La Mancha, Albacete, Spain) as a rule, excepted the older samples which were deposited in MUB (Universidad de Murcia, Murcia, Spain). Further details on these herbaria are available at NYBG (2019). For animals we took photographs which are available at the repository of images (<http://ethnobiowetlands.es/etnofauna/>) of the “*Etnobiología de los humedales*” portal. The identity of plant ingredients was determined based on the collected specimens and with the use of existing standard regional floras, and the names were verified with the botanical literature available at BHL (2018), the WHO (2015) monographs, and

databases: Anthos (2018), Euromed (2011), Tropicos (2018), GRIN (2018), IPNI (2018), NCBI (2018), Fitoterapia.net (2018) and, most importantly, nomenclature was standardized according to The Plant List (TPL 2018) and to the procedures suggested by Rivera et al. (2014).

Concerning groups of plants and other ingredients with similar qualities and uses (i.e. ethnotaxonomic species complexes or pharmaceutical names of drugs), these were identified collectively using an inclusive scientific taxon name.

The drugs of zoological and mineral origin appear, with different relevance, in almost all the localities studied. The animals were identified in the field with our informants, according to the documents of the Fauna Ibérica project (Merino, 2019), but no samples were taken due to the capture restrictions imposed by Spanish legislation and because, lately, the use of animals is decreasing. We preferred photography instead of capturing animals. Specific literature consulted includes, for blister beetles (Meloidae), Percino et al. (2013).

We identified the mineral ingredients with the help of García-Guinea & Martínez (1992) and Maraver (2004). We updated nomenclature according to the New International Mineralogical Association List of Minerals (IMA, 2016, 2018) and Pubchem (2018) and the ingredients of zoological origin using the Global Biodiversity Information Facility (GBIF 2018) and García and Gisbert (2018).

The scientific names of biological species, with authorities, have been listed in alphabetical order of families, genera and species, in Tables 1, 2 and 5. For the species not mentioned there, the standardized acronyms of the authors have been added to the scientific names in the main text, when they appeared for the first time.

2.2.4 *Geographical origin and habitats of ingredients*

Each ingredient of the analysis was identified and classified in terms of the main biogeographical profiles and zones of origin divided in Widespread, Mediterranean, Europe, Spain, Asia, America, Pacific islands, Northern and Eastern Hemisphere, according to Rivera et al. (2012) and GBIF (2015).

Habitats were determined during the field work and collection of voucher specimens. These are named according to EUNIS (2018). The EUNIS habitat classification is a comprehensive pan-European system to facilitate the harmonized description and collection of data across Europe through the use of criteria for habitat

identification. It is hierarchical and covers all types of habitat from natural to artificial, from terrestrial to freshwater and marine (EUNIS, 2018).

2.3 Data Analysis

2.3.1 Ordination and classification of localities based on the lists of ingredients

In order to determine how different these 46 localities are, considering as a reference the 220 species documented (see chapter of results), we calculated the pairwise differences between samples in form of a dissimilarity matrix. However, we excluded ingredients recorded in one single locality and localities with less than 4 ingredients. Thus the filtered crude matrix was reduced to 31 localities and 139 species. Data were considered for each locality over the whole period 1998-2018. We adopted this approach since splitting into shorter periods produced unmanageable too small subsamples.

The crude matrix of presence/absence of ingredients was used to compute a dissimilarity matrix using Darwin 6 V.6.0.9 (2015-04-15) (Perrier, Flori & Bonnot, 2003; Perrier & Jacquemoud-Collet, 2006). The Sokal-Sneath dissimilarity index was calculated (un2) ($d_{ij} = 2(b+c) / a+2(b+c)$), where d_{ij} is the dissimilarity between samples i and j , a : number of variables where $x_i = \text{presence}$ and $x_j = \text{presence}$, b : number of variables where $x_i = \text{presence}$ and $x_j = \text{absence}$ and c : number of variables where $x_i = \text{absence}$ and $x_j = \text{absence}$. Dissimilarities are even and are Euclidean distances. The dissimilarity is =0 for two samples sharing the 139 species and =1 for two samples which present 0 species shared. This index concerns 'presence/absence' data where only 'presence' modality is informative, modality 'absence' expressing mainly an absence of information. These two modalities are not symmetrical and their exchange leads to a completely different dissimilarity value. This index considers that a common absence for two units is uninformative to measure their dissimilarity (Perrier & Jacquemoud-Collet, 2006). Therefore, similarity here reflects the number of coinciding species and dissimilarity is inversely proportional to this.

These pairwise dissimilarities can be represented in a multidimensional space, but, in order to obtain meaningful graphic representation of these relationships in a two-dimensional plane, we used cluster analysis (Kovach, 2007).

We used the agglomerative hierarchical method that arranges the clusters into a hierarchy so that the relationships between different groups are apparent. Minimum variance clustering (Ward's method) focuses on determining how much variation is within each cluster. In this way, the clusters will tend to be as distinct as possible, since the criterion for clustering is to have the least amount of variation (Kovach, 2007).

Ward's method produces a single tree, however, in order to further reducing the uncertainty in the structure of the tree, we used a bootstrapped matrix (500 bootstraps) and a tree construction method (weighted neighbor joining) (Saitou & Nei, 1987) that uses the trees inferred from these bootstrapped dissimilarities to assess the uncertainty of the tree structure. These methods provide a representation of the relationships among localities.

3 Results and discussion

3.1 Knowledge of the informants

The knowledge recorded during the interviews with our informants is highly variable: the number of medicinal records per informant ranges from 1 to 109 (on average 8.5), species used range from 1 to 48 (on average 6.7), and pathologies treated vary from 1 to 40 (on average 5.2). Over 50% of informants furnished 1 to 5 records, describing 1 to 5 pathologies and ingredients (Fig. 4). It is worth to notice here that we quantify the knowledge that the informants were willing to share with us and we were able to record using the semi-structured interviews but not their real knowledge. This is of application in most ethnobiological studies.

It is appropriate here to recall that our interviews covered a wide range of subjects and therefore we usually recorded also information on veterinary, agricultural diversity and practices, food and crafts, together with specific recipes for pathologies in humans. We did not proceed to monographic interviews with our informants on health issues. Interview sessions lasted between half and three hours and key informants were repeatedly interviewed.

The low proportion of women interviewed is related not to our sampling strategy, but to the difficulty of finding in this area people who are willing to be interviewed. This could be interpreted in terms of the role played locally by women as healers and the tradition of hiding this knowledge. For instance, "Las Curanderas" (the female healers) is the official name for a place and a local road in Daimiel (BOP, 2008) in the

vicinity of Puente Navarro. In this area in 2018 still lived female healers, but they were uniquely willing to talk about ornamental plants of their home gardens, and especially eluded to talk with us of healing practices. There is a long history of confrontation between official medicine and female healers in this region which could explain their reluctance to recognize their condition and to reveal and share their knowledge (Blázquez, 1985; Cantacalero, 1924; Fernández, 2014; Gómez, 2018; Moya & Fernández, 2016; Nieves, 2008; Salvador, 2015; Schmitz, 2016).

Concerning gender and quantity of information recorded, it was, on average, slightly higher from women (10.7 records) than from men (9.4). It is worth to note that, when the interviews involved simultaneously men and women, often husband and wife, the results were better (14.7 records on average).

Another aspect to consider is that the way in which questions are asked can lead to biased or incomplete responses. For example, during the first five years we used a general pattern of nonspecific questions where malaria was never cited. But when several years later we asked the same informants, that we had interviewed for years, about malaria (specifically about "*tercianas*" and "*paludismo*"), a disease that was declared eradicated in the 1960s, several mentioned various remedies experienced by themselves.

Fig. 4 approx. here.

We must emphasize that the profile of the knowledge of the Spanish population in the rural areas is suffering in the 21st century a profound change in the sense of a deep loss of knowledge associated with a trivialization (Rivera et al. 2017). This has led to the Spanish authorities to start the Spanish inventory of traditional knowledge related to biodiversity (Pardo et al., 2012, 2014, 2018a, 2018b, 2018c). However, the data collected in the villages of Ciudad Real from 1998 to 2018 still reflect a rich and diversified local culture, little influenced by globalization. This explains the high proportion of locally produced species.

3.2 Diseases

3.2.1 Relevant pathologies

We documented during our field-work 126 different ICD-10 types of pathologies, corresponding to 88 ICPC-2 diseases (Tables 1 to 5). Pathologies most frequently

registered belong to the categories of respiratory, gastro-intestinal, dermatological and infectious and parasitic (Fig. 5).

It is worth noting here that the use of ICD-10 or, alternatively, ICPC-2 to classify diseases leads to minor changes in the overall results (Tables 1 to 5), although most of the emic pathologies are classified in a similar way, with slight lexical variants, especially those that present a higher incidence (Fig. 5).

The common cold was the most frequent respiratory problem and was treated by our informants (Fig. 5) with decoctions or numerous herbal teas, alone or as mixtures, drinks or externally applied as poultices. These include fennel (*Foeniculum vulgare*), aniseed (*Pimpinella anisum*), mustard (*Sinapis alba*), *Paronychia argentea*, *Cistus ladanifer*, *Achillea ageratum*, *Anthemis arvensis*, *Ephedra major*, *Lavandula pedunculata*, *Mentha pulegium*, *Rosmarinus officinalis* and others. Some of these species and uses were previously documented by Blanco (2004) and Leblic (1994) in the province of Toledo. Leblic (1988b) documented the use of *Agrimonia eupatoria* in Montes de Toledo to treat sore throat, which we did not register.

The wounds were often reported (Fig. 5) and cured (Tables 1 to 2) with animal and fungal products, such as honey, heron feathers, boiled droppings of donkey or hen, human urine, snake skin, bacon or fungal spores.

Wounds were also treated with salt (Table 3), and numerous plant species (Table 5) such as reeds (*Arundo donax*), pimpinella (*Sanguisorba minor*), and elderflower (*Sambucus nigra*) tea, alkanet (*Alkanna tinctoria*) root macerated in olive oil, *Retama sphaerocarpa*, *Chelidonium majus*, mallow (*Malva sylvestris*) or alfalfa (*Medicago sativa*). *Paronychia argentea*, *Thymus mastichina*, *Thymus zygis* or *Salvia officinalis* were reported as useful for wound washing (Table 5). Decoctions of *Cistus crispus* or *Cistus ladanifer*, *Centaurea melitensis* or *C. ornata*, *Lavandula stoechas* or *Rosmarinus officinalis*, or of *Quercus rotundifolia* bark were also cited. *Achillea ageratum*, macerated in brandy or fried in olive oil, leaves of *Hylotelephium spectabile*, and resin of *Juniperus oxycedrus* were also used as remedies for wounds, externally applied (Table 5).

Leblic (1988a, 1988b and 1994) documented the use in the area of Montes de Toledo of *Artemisia absinthium*, *Lavandula latifolia*, *Verbena officinalis* L. and *Viola odorata* L. Porres et al. (1986) mention the uses for wounds of *Verbena officinalis*

boiled, in the eighteenth century, we have not recorded any medicinal use for this species.

Malaria was still present in the memory of our informants, and they mentioned several remedies when they were specifically asked about this disease. It was prevalent along the Guadiana River in the proximity of Las Tablas de Daimiel and the rice fields in the Azuer River (Fisac, 1905 a). Malaria was treated here by our informants or their parents by administering infusions, or decoctions, of bitter herbs, such as *Bryonia cretica* subsp. *dioica*, *Centaurium erythraea*, *Lupinus angustifolius*, *Lupinus micranthus* or *Genista tridentata*, or of seeds (*Lupinus albus*), or roots (*Fraxinus angustifolia*). Adams et al. (2011) mention *Centaurium* and *Fraxinus* species among the remedies for malaria in the European herbals of the sixteenth and seventeenth centuries, but not *Lupinus albus*.

It is striking how many antimalarial remedies were used in Ciudad Real area in the 18th century. These included some of species recorded during our study for the same use: *Bryonia cretica* subsp. *dioica*, *Centaurium erythraea*, and *Genista tridentata*; but also others.

Genista tridentata was used to treat “*las calenturas del paludismo*” (= malaria fever) in San Pablo de los Montes, in the 18th century (Porres et al., 1986), and we documented the persistence of this use, two centuries later, in the adjacent town of Alcoba.

Other anti-malarial species used in the 18th century were: *Artemisia absinthium*, *Centaurea ornata*, *Chamaemelum nobile*, *Cichorium intybus*, *Cinchona calisaya* Wedd., *Petroselinum crispum* and *Scorzonera hispanica* (Al-Balatitha et al., 1985; Porres et al., 1986). Leblic (1988a) mentions in Navahermosa, the use of *Artemisia vulgaris* L. against intermittent fevers. We did not record these uses in our interviews.

Helminthiases were only registered in our research in Alcoba and San Pablo de los Montes, treated with *Thymus zygis* or *Lavandula stoechas*, and Leblic (1988b) mentions *Artemisia absinthium* L. and *Lavandula stoechas* in the preparation of anthelmintic remedies. Scabies was treated with decoctions of the leaves of *Rumex* in the area of Montes de Toledo (Leblic, 1988b), once again, this pathology was not registered in our interviews.

Fig. 5 approx. here.

Numerous remedies were documented for menstrual pain and menstrual disorders. Surprisingly, we did not record any remedy for complicated delivery in childbirth, but to induce abortion we documented numerous resources, such as the use of decoctions of *Adiantum capillus-veneris*, *Ceterach officinarum*, *Petroselinum crispum* and *Quercus x morisii* (Table 5). The abortifacient use of *Ceterach officinarum* was also recorded by Ciudad (1985) in the area of Montes de Toledo. Oliver (2018) registered the use to assist delivery of olive oil, almond oil (*Prunus dulcis*), saffron (*Crocus sativus*), lavender (*Lavandula latifolia*), mallow (*Malva sylvestris*) or rockrose (*Cistus ladanifer*) decoction, among others. Nevertheless, we for these species did not documented these but other different uses. In Montes de Toledo, Leblic (1994) recorded the use of *Lonicera periclymenum* seeds macerated in wine to ease delivery and the application of decoctions of rue (*Ruta* sp.) to soften the breasts and facilitate breastfeeding.

Scorpion stings are treated with numerous ingredients, being the most impressive the oil of frying the scorpion itself, which is also recorded by González and Vallejo (2013a) in their review. Blanco (2004) recorded in Nava de Estena the direct application of the bulb of *Drimia maritima* and, in Navalucillos, of the roots of *Asphodelus* sp. pl. Leblic (1988b) registered this last use in Montes de Toledo. We also documented the use to treat scorpion stings of *Asphodelus aestivus*, garlic (*Allium sativum*), *Eryngium campestre* leaves, and *Bryonia cretica* subsp. *dioica* roots. In addition, our informants mentioned the use of *Ruta montana* as a repellent for scorpions and snakes, and the roots of *Eryngium campestre* as a deterrent for scorpion stings (Table 5). Leblic (1994) recorded bay leaves used to treat snake and dog bites. We did not find any of these uses in our interviews.

The use of *Hedera helix* L. was recorded by Leblic (1994) to cure cutaneous abscesses, furuncles and carbuncles, we did not record any use of *Hedera helix*.

Poultices made with several *Rumex* or *Hyoscyamus* species, or with *Solanum nigrum* were used in Nava de Estena (Blanco, 2004). We recorded for such pathologies the use of *Hyoscyamus niger*, *Solanum nigrum*, honey and wheat flour, mustard (*Sinapis alba*), teas of *Paronychia argentea*, and tomatoes (*Lycopersicon esculentum*) (Table 5). For eczema and rashes Leblic (1988b) mentions the use of raw *Asphodelus* roots directly applied, rubbed, we found this use in Alcoba, Horcajo and Nava de Estena.

Warts were treated in Montes de Toledo (Leblic 1988a and 1988b) with *Arum italicum* Mill., or ashes of grapevine shoots, and corns and calluses also with *Arum italicum* Mill. We recorded the use for warts of *Euphorbia characias* and *E. serrata*, holm oak (*Quercus rotundifolia*) leaves, and fig-tree (*Ficus carica*) latex. For corns we recorded the use of *Umbilicus rupestris* and *Plumbago europaea*. Chilblains were cured in Montes de Toledo with ashes of figs (*Ficus carica*) mixed with lard (*Sus domesticus*) (Leblic, 1994). We recorded the use of *Umbilicus rupestris* leaves and walnut (*Juglans regia*) leaves for the same purpose. Arauzo et al. (2001) recorded the use in Villarrubia of the oil in which the leaves of *Ecballium elaterium* A.Rich. were fried, as a topical anti-inflammatory, and of the leaves of *Heliotropium europaeum* L. to treat warts.

We recorded numerous remedies for cardiovascular diseases, however, these were not those reviewed by Mota (2016), but other plants that lack acute toxicity (*Centaurium erythraea*, *Paronychia argentea*, *Paronychia echinulata*, *Phlomis lychnitis* and *Rosmarinus officinalis*). We documented the use of *Paronychia argentea* or *Olea europaea* teas to treat hypertension (Table 5). Leblic (1988b) mentions the antihypertensive use of *Rumex acetosella* subsp. *angiocarpus* (Murb.) Murb., which we did not register. Arauzo et al. (2001) recorded in Villarrubia the use for circulatory diseases of water where it was macerated *Urtica dioica* L.

Our interviewees cited hemorrhoids with a relatively high frequency (Fig. 5). We recorded for the treatment of hemorrhoids the use of *Populus alba*, *Solanum tuberosum*, cold water, wheat milk (*Triticum aestivum*), bark of oak (*Quercus rotundifolia*), galls of *Quercus faginea*, buds of *Cistus ladanifer* and bulb of *Drimia maritima*. The most notable local anti-hemorrhoids is the *Drimia maritima* bulb, its use is also registered by Rojo (2011). Leblic (1994) records the antihemorrhoidal use of *Artemisia vulgaris* and *Mentha pulegium*.

We recorded the use of *Ruta montana* and *Coriandrum sativum* in cases of epilepsy (Table 5). Epilepsy and seizures were treated in Montes de Toledo using *Artemisia vulgaris*, *Drimia maritima*, *Laurus nobilis* L. or *Ruta montana* (Leblic, 1988b, 1994). Sedative teas were prepared with *Papaver rhoeas* petals or marshmallow in the Montes de Toledo (Leblic, 1988b) instead we recorded the use of *Melissa officinalis*, *Mentha pulegium*, *Phlomis lychnitis*, and *Crataegus monogyna*.

Leblic (1988b) list among the remedies for rheumatism *Borago officinalis*, *Cynodon dactylon*, and *Verbena officinalis*. We documented the use for the same

purpose of *Cervus elaphus*, *Malpolon monspessulanus*, and baths in carbonated water, *Urtica urens*, and brandy (Tables 1, 3 and 5).

Acorns are consumed to treat dysentery and colitis, here (Table 5), and in the adjoining provinces also (García and Pereira, 2013; Rojo, 2011). Other remedies of this type are a decoction of *Centaurium erythraea*, myrtle or peony leaves recorded by Leblic (1988b) and of *Althaea officinalis* leaves (Leblic, 1994). For this last species we have documented the use of roots not leaves (Table 5). Rojo (2011) mentions the use of unripe almonds or candied *Cydonia oblonga* fruits for colitis, we did not register medicinal uses for this last species. Arauzo et al. (2001) recorded in Villarrubia the use of *Rubus ulmifolius* fruits macerated in aquavit for abdominal pain.

There were also numerous remedies for diseases of the teeth / gums (Fig. 5). Some such as *Nicotiana tabacum* or *Cannabis sativa* (Table 5) are well-known acclaimed analgesics for oral medicine (Colvard et al., 2006). Others, such as *Crocus sativus*, *Marrubium* and *Hyoscyamus*, *Malva sylvestris*, *Papaver somniferum*, *Pistacia lentiscus*, honey, vinegar and spirits (Table 5), are widely used in Castilla-La Mancha (Verde, 2002), Andalucía (Benítez et al., 2010) and Murcia (Obón and Rivera, 1991). Finally, some are little known outside this area, such as gypsum (Table 3), *Euphorbia serrata*, *Juniperus oxycedrus* or *Tribulus terrestris* (Table 5). Leblic (1988b) recorded from Montes de Toledo the practice of burning *Asphodelus* stems to ashes and placing, on sore molars, balls made with these ashes.

We were surprised when several independent informants told us the use of some drops of a pesticide used in animal husbandry, known as Zotal™ (a mixture of biphenyl-2-ol 3%, chlorophene 1.5%, naphtha, solvents and excipients, add a sufficient quantity to make 100%), which is a strong biocide, to treat decaying teeth.

Leblic (1988b) lists numerous remedies for urinary retention, cystitis or urinary calculi using chicory, *Allium porrum*, *Asparagus acutifolius*, *Ceterach officinarum*, *Cynodon dactylon*, *Genista tridentata* or *Polygonum aviculare* L. We did not find most of these uses among our informants, except for *Cynodon*, instead we recorded the use of *Phlomis lychnitis*, *Paronychia argentea*, and *Silybum marianum* (Table 5).

Fever is treated administering decoctions or teas of *Paronychia argentea*, *Centaurium erythraea*, *Marrubium vulgare*, or *Phlomis lychnitis*. Porres et al. (1986) list as febrifuge other species such as chicory (*Cichorium intybus*), chamomile

(*Matricaria chamomilla*) or *Artemisia absinthium*. Leblic (1988b) mentions *Taraxacum obovatum*.

Leblic (1988b) records the decoction of *Plantago* to treat conjunctivitis. We record the use of *Paronychia argentea*, *Anthemis arvensis*, *Chamaemelum nobile*, *Matricaria chamomilla*, and rosemary (Table 5).

In general, the pathologies recorded here represent a broader repertoire with respect to the range provided by previous studies in this and in neighboring areas. In general, many of the diseases previously reported in ethnobotanical and anthropological studies were also recorded in our interviews, although there were disparities in the species used and treatments.

3.2.2 Broad-use categories

Regarding the selection of species of pharmacological interest, Staub et al., (2015) applied a system of categories of general use to the classification of pathologies. Following this approach, aimed at the development of medicines derived from plants (and animals or minerals), the most frequent categories registered in the Upper Guadiana area were: respiratory diseases, gastrointestinal problems and dermatological disorders (Fig. 6).

Among the prominent species, due to the diversity of their uses, within one or several categories of wide use are some well-known: *Apis mellifera*, *Rosmarinus officinalis*, *Olea europaea*, *Malva sylvestris*, *Glycyrrhiza glabra*, *Papaver somniferum* or *Centaurium erythraea*. Others such as *Paronychia argentea*, *Phlomis lychnitis* or *Genista tridentata* are less known (Fig. 6). The anti-hemorrhoid use of a highly toxic *Drimys maritima* deserves further study.

Dermatological uses of *Achillea ageratum*, respiratory of *Genista tridentata*, gastrointestinal of *Thymus mastichina*, *Ruta montana* and *Phlomis lychnitis*, sedative of *Phlomis lychnitis*, and cardiovascular of *Paronychia argentea* merit further investigation (Fig. 6; Tables 1 and 5). *Achillea ageratum* was shown in previous studies to supply extracts with cytostatic (Gómez et al., 2001), anti-inflammatory (Gómez et al., 1999) and antimicrobial (El Bouzidi et al., 2012) activities. Herrera et al. (1992) have shown the mechanism of antispasmodic activity of the isoflavone genistein extracted from *Genista tridentata*. *Phlomis lychnitis* extracts presented antioxidant (López et al., 2010) and anti-inflammatory (Algieri et al., 2013) activities.

Fig. 6 approx. here.

Paronychia argentea reduced and prevented the growth of urinary stones in rats (Bouanani et al., 2010) however the active compounds are not yet identified. Sait et al. (2015) related the strong antioxidant activity of *Paronychia* extracts to the presence of a series of flavonoids. However, we did not trace any study of the cardiovascular properties of *Paronychia argentea* extracts.

Cutillas et al. (2018) investigated the antioxidant, anti-enzymatic and antimicrobial bioactivities of *Thymus mastichina* essential oil. Azzaza et al. (2016) verified that *Thymus mastichina* essential oil was a main scavenger of nitric oxide (NO) radicals. This and others of the above species deserve a European Union herbal monograph (formerly known as Community herbal monograph). These monographs contain the Committee on Herbal Medicinal Products scientific opinion on safety and efficacy data about an herbal substance and its preparations intended for medicinal use (EMA, 2019).

3.3 *Ingredients*

3.3.1 *Species, substances and uses*

Two hundred and twenty species and substances furnishing ingredients have been recorded from the interviews (Tables 1 to 5), of which most are plants (Fig. 7).

Plants stand out for their number of species that quadruples the group that follows them (animals) and for the number of uses (9 times) and records (15 times). However, the total number of pathologies is only 3.7 times that of those treated with animals (Fig. 7). This suggests that the abandonment of resources of animal origin is occurring more rapidly than that of plants, in recent times. Thus the lower number of records.

Fig. 7 approx. here.

It is relevant to notice that ingredients analyzed here were mainly those employed in conventional formulations administered topically, orally or as inhalation, not those merely used for rituals, even if these were with curative purpose. However, there were some (*Aesculus hippocastanum*, *Cervus elaphus*, *Cupressus sempervirens*, *Drimia maritima*, *Ruta montana*, lignite) simply carried or stored, especially in the pockets of

clothing, with the purpose of preventing or curing different pathologies and traumatism (Tables 1, 3 and 5).

Also it is relevant to mention that in the area our informants recognized as toxic several plant species such as *Nerium oleander*, *Paeonia broteri*, *Paeonia officinalis* L. and, finally *Taxus baccata* L., although some had local medicinal uses.

These ingredients belong to 87 different families of plants, animals and fungi and categories of mineral substances and synthetic chemicals. The most relevant in number of records, uses and species are Lamiaceae and Compositae (Fig. 8). Rosaceae present more species than Leguminosae and Malvaceae families, but are almost doubled by Leguminosae and Malvaceae in number of uses and records (Fig. 8). This recall us the debate on the differential ethnopharmacological relevance of plant families raised by Moerman (2003) and Weckerle et al. (2011).

Fig. 8 approx. here.

Formulations documented are presented by each one of the ingredients classified by kingdoms, families and species, in tables 1 to 5. Information includes: provenance, habitat, locality, part, preparation, and administration, standardized pathology (ICD-10, ICPC 2e7.0, and Broad Use). Additionally original spelling of Spanish names of ingredients and pathologies is retained in Tables 1 to 5 to facilitate comparison with other ethnographic sources.

Malva sylvestris, *Phlomis lychnitis*, *Genista tridentata* and *Thymus mastichina* are the ingredients more frequently recorded (Table 6 and Fig. 9). These are closely followed in number of records by *Thymus mastichina* subsp. *mastichina*, *Olea europaea*, *Paronychia argentea*, *Rosmarinus officinalis*, *Achillea ageratum*, and *Mentha pulegium*.

Fig. 9 approx. here.

3.3.2 Medicinal uses of animals and fungi

We determined the local use of leeches for hidradenitis suppurativa and hematoma in the 20th century (Table 1). During the 16th century the use of leeches was far more common in official medicine, and those from Torre de Juan Abad (southern Ciudad Real) were much prized (Campos, 2009). The presence of leeches in Tablas de Daimiel is confirmed by Muñoz and Soriano (2012). The leeches of Torre de la Higuera springs

of Villamanrique, 2 km from the Torre de Juan Abad were recognized at the time as singular: “it has leeches painted with dark and white and green wheels, and these leeches have such a virtue that any person who has suppurative abscesses in any part of the body ... heals the person of that abscess...doctors say that there are only of these leeches two sources throughout Africa and Europe” (Campos, 2009). This seems to correspond to *Hirudo troctina* instead of *H. medicinalis* (Linnaeus 1758) (cf. Utevsky et al., 2009; González and Vallejo, 2013b; Vallejo and González, 2015) or it is an extinct species. Note that they say “And in the other source that is next to where these leeches are, there are many leeches of the commons and there are none like those of the other source, nor do they have any virtue like the others, both sources being close together”. Thus, two different types of *Hirudo* were recognized with notable differences in efficacy.

Table 1 approx. here.

The use as a counter-poison of *Berberomeloe majalis* is an interesting record (Table 1), however we did not obtain the information on which specific poisoning was treated with the poison of this beetle. Percino et al. (2013) has not reported this use. González and Vallejo (2013b) reported dermatological use of secretions of this insect to burn warts.

Donkey milk is recorded here as a remedy for cough and this use is not included in the review by Vallejo and González (2014) on the role of equidae in ethnomedicine in Spain. The practice of frying the hair of a rabid dog and rubbing the oil on the bite in order to prevent rabies in humans is documented by Quave et al. (2010).

The medicinal uses of fungi in the Upper Guadiana area is reduced exclusively to the spores of Agaricaceae and Sclerodermataceae (Table 2).

Table 2 approx. here.

3.3.3 Medicinal uses of mineral substances

Nine medicinal resources of mineral origin were documented (Table 3).

Baths in the *hervideros*, of carbonated water were reported by physicians of the 19th and 20th centuries useful to treat herpesviral infections and mycobacteriosis, syphilis, rheumatism and other pathologies (Torres, 1821) we recorded among our informants their use in cases of rheumatism and diseases of the skin (Table 3).

Table 3 approx. here.

We recorded the use of salt to treat stomatitis, open wounds and sprain and strain of ankle (Table 3). Salt is used in Manzanares to cure warts and hordeolum (stye) (Martín, 2008). Styes (bacterial infection of an oil gland in the eyelid) are washed with chamomile tea and magically treated by passing threefold a gold ring (Martín, 2008). We were not able to document from our informants remedies for hordeolum.

Table 4 approx. here.3.3.4 *Medicinal uses of plants***Table 5 approx. here.**

Malva sylvestris, *Phlomis lychnitis*, *Genista tridentata*, *Thymus mastichina* subsp. *mastichina*, *Olea europaea* (wild and cultivated), *Paronychia argentea*, and *Rosmarinus officinalis* as said before are the more often used species (Table 6).

Table 6 approx. here.

We comment in the following paragraphs the discrepancies between our records and those from other sources referring to the research area and neighboring zones. We also include coincidences recorded from other areas of Spain and Portugal.

Malva sylvestris, especially its flowers, is widely used for common cold, pneumonia, acute bronchitis, acute periodontitis, constipation, abdominal pain, myositis, contusion, burns and corrosions, pimples, cutaneous abscess, furuncle and carbuncle, wounds, headache, and edema (fluid retention). Rojo (2011) mentions its use as a digestive. In the Mediterranean region is as remedy for numerous diseases especially due to the presence of flavonoids and mucilage (Gasparetto et al., 2011).

The presence of *Phlomis lychnitis* in western Iberian Peninsula is rare, occurring on isolated calcareous upwelling, however it is widely used there for medicinal purposes: malaise in Sao Mamede (Camejo et al., 2003), dyspepsia, urinary tract dysfunctions, pain and edema in Arrabida (Novais et al., 2004). Pardo et al. (2005) recorded the uses of *Phlomis lychnitis* for dyspepsia and nervousness. *Phlomis lychnitis* extracts displayed intestinal anti-inflammatory activity in experimental colitis in rats (Algieri et al., 2013). We recorded its use to treat common cold, fever, digestive diseases in general, abdominal pain/cramps, dyspepsia / indigestion, nausea, atherosclerosis s/ peripheral vascular disease, headache, vertigo / dizziness, paralysis / weakness, anxiety,

acute stress reaction, other psychological symptoms, upper respiratory infection and urinary retention.

Thymus mastichina is widely used by our informants for burns and corrosions, wounds of unspecified body region, rheumatism, common cold, cough, diseases of the digestive system, gastric ulcer, functional dyspepsia, abdominal and pelvic pain, nausea and vomiting, malaise and fatigue, and localized edema (feet). Rojo (2011) recorded its digestive use. Its extract presented high antioxidant activity (Delgado et al., 2014).

Paronychia argentea is a well-known panacea species, used for scarlet fever, conjunctivitis, hypertensive diseases, atherosclerosis, varicose veins of lower extremities, diseases of the circulatory system, common cold, acute pharyngitis, cutaneous abscess, furuncle and carbuncle, urticarial, pimples, wounds, calculus of kidney, renal colic, retention of urine, irregular menstruation, unspecified, abdominal and pelvic pain, dizziness and giddiness, fever and pain. Carmona et al. (2005) documented numerous uses of *Paronychia argentea* in different Mediterranean countries, and its presence in the *Zahraa* or *Zhourat* herbal mixture (Obón et al., 2014). Rojo (2011) recorded its dermatological and anti-allergic uses. Another local panacea is *Genista tridentata*, which also has many uses in Portugal. This species, with high levels of total phenolic compounds, shows significant antioxidant activity (Coelho et al., 2011). *Althaea officinalis* is used to treat endocrine and metabolic diseases, upper respiratory infections and bronchitis; the roots contain mucilage, flavonoids and glycosides (Shah et al., 2011).

Elderflower is here used for treating common cold, localized edema, wounds, myalgia, contusions, burns and corrosions. Rojo (2011) registered the analgesic and anti-inflammatory uses. The analgesic use of *Sambucus nigra* leaves is also recorded in Navarra (Calvo and Cavero, 2016).

Porrás et al. (1986) mention the use in the 18th century of *Anethum graveolens* L., fruits, in teas for flatulence. Leblic (1994) documented the use of *Artemisia vulgaris* L. for abdominal pain, and of *Amaranthus deflexus* L., for dyspepsia. We did not record any use for these species. However it is possible that Leblic (1994) misidentified *A. verlotiorum* in the sense of *A. vulgaris*.

Cucumber macerated in brandy is used to treat abdominal pain, this is also documented by Blanco (2004) from the Montes de Toledo area.

We recorded the use of *Arbutus* root decoction to treat syphilis and common cold among others. Antibacterial, antifungal and anti-parasitic activities of *Arbutus unedo* extracts were reviewed by Morgado et al. (2018) however there is no evidence of activity against *Treponema pallidum*. Anthocyanins and flavonoids are the major active substances in roots of *Arbutus* (Morgado et al., 2018).

Achillea ageratum is the “arnica” of the Upper Guadiana basin (Obón et al., 2012), here is used to treat common cold, functional dyspepsia, myositis, pimples, pain, wasps bites, open wounds and contusions. However, its documented biological activities are scarce in relation with other yarrow species (Nemeth et al., 2008).

Centaurea ornata is widely used in the area to treat urticarial and pimples, and to cure wounds, even when infected (Table 5). Vallejo et al. (2009) recorded these and other uses in Badajoz raising the concern of misidentification and confusion with the toxic species *Chamaeleon gummifer* (L.) Cass. Though, seemingly, this last species is not reported from the province of Ciudad Real (Anthos, 2018) the danger is lesser.

It is worth to notice here that digestive teas named “tê” are, in Cabañeros, not only *Artemisia verlotiorum* but also *Bidens aurea*. Both are naturalized alien species, presumably escaped from herb gardens during the 20th century. The former (*A. verlotiorum*) was introduced from China (James et al., 2000) and the latter (*B. aurea*) from Central America (Di Castri et al., 1990). Blanco (2004) and Rojo (2011) recorded the use of this last species in Montes de Toledo and López-Nieve et al. (2012) in Los Pedroches (Córdoba) as a sedative and digestive herbal tea. *Anthemis arvensis* is used in teas for anxiety disorders, conjunctivitis, common cold, functional dyspepsia, and flatulence and related conditions. Rojo (2011) recorded the use of this species in San Pablo de los Montes as a digestive. We recorded the use of *Matricaria aurea* to treat common cold and Rojo (2011) for conjunctivitis. A decoction of *Helichrysum stoechas* is used externally to treat burns and corrosions and orally administered for abdominal and pelvic pain. Rojo (2011) recorded its use as a digestive.

Pardo et al. (2005), in their review of plants known as tea in Spain, recorded the use of *Mentha aquatica* for dyspepsia but not for menstrual pain (Table 5). Rojo (2011) mentions its use as a digestive. *Mentha pulegium* is widely known and used for common cold, varicose veins, gastric ulcer, functional dyspepsia, abdominal and pelvic pain, nervousness and urticarial. Rojo (2011) recorded its use as a digestive and for abdominal pain. Local substitutes for pennyroyal are *Mentha cervina* and *Clinopodium*

nepeta. *Thymus zygis* is locally used for common cold, cough, functional dyspepsia, abdominal and pelvic pain, halitosis, dizziness and giddiness, post-traumatic wound infection, and intestinal parasitism. Rojo (2011) recorded its digestive use.

A Bermuda grass (*Cynodon dactylon*) rhizome decoction is here used to cure calculus of kidney and retention of urine, and Rojo (2011) mentions its use for rheumatism. We recorded the use of *Rumex pulcher* infructescences to treat gastroenteritis and colitis, and Rojo (2011) recorded the same use but for wilted flowers. Rojo (2011) recorded the use of wild rose leaves, crushed, to alleviate pruritus in children, we only recorded the use of rose hips (*Rosa canina*) to treat colitis.

Although the Rutaceae *Dictamnus hispanicus* Webb ex Nyman and *D. albus* L., grow in the upper part of the Guadiana River and are used in Cuenca and Albacete to treat bronchitis, helminthiasis and diseases of the nervous system (Martínez-Francés et al., 2015) we did not record any use from our informants. *Ruta montana* is another panacea species widely in use here for burns and corruptions, epilepsy, dizziness and giddiness, functional dyspepsia, abdominal and pelvic pain, rheumatism, myalgia, pain in limb, contusions, irregular menstruation, dysmenorrhea, and viper bites. Rojo (2011) recorded its use for fever, rheumatism, and functional dyspepsia, usually macerated in brandy or olive oil.

The use of *Daphne gnidium* bark to cure toothache is also recorded by Rojo (2011).

3.3.5 Provenance of ingredients and habitat of species

Plant parts most often involved in the formulations are flowering aerial parts 36% and roots 9% (Fig. 10). While animals appear with frequency of 1%, as whole animal, or lesser.

Fig. 10 approx. here.

Most records refer to species locally available classified as Mediterranean, European or Widespread (Fig. 11).

Ingredients locally collected in open shrublands, known as “garrigue”, and dry grasslands furnish a relevant proportion of records whereas imported ingredients play a marginal role (Table 7; Fig. 11).

Table 7 approx. here.

The contribution of wetlands, riverine habitats and, especially, watered fields and gardens as a source of medicinal resources is high, 36% of records (Fig. 11), given their

limited presence in terms of total extent within the study area. However, most of the genera typical of the local wetlands (*Carex*, *Cladium*, *Sparganium*, *Cyperus*, *Typha*, *Juncus*, *Scirpoides*, *Bolboschoenus*, *Potamogeton* or *Ranunculus*) (Cirujano and Medina, 2002) are scarcely represented or lacking in the list of medicinal ingredients.

Fig. 11 approx. here.

3.4 *Forms of preparation and administration*

The use of simples and drug formulations in the Upper Guadiana River area mostly involve the preparation of hydrolytes extracted with heat (tea or decoction) which are orally ingested as a drink or externally applied as poultices or washes. However the use of unprocessed raw material is not negligible (Table 8).

Table 8 approx. here

Extraction by frying or maceration in olive oil is also relatively frequent in terms of uses and records (Table 8).

3.5 *Geographical patterns*

Overall, the classification generated through hierarchical cluster using the Ward's minimum variance criterion, based on presence / absence of ingredients presented four groups (Fig. 12 A). A second method of tree building, the weighted neighbor joining, coincides in the four clusters structure (Fig. 12 B). These groups follow a distinct geographical pattern East to West of association for localities:

1. Western group, which clusters the villages of Cabañeros National Park area characterized by a landscape of open *Quercus* woodland on siliceous substrates and acidic bogs, and a very low population density.
2. Transitional group of localities, including Piedrabuena is recognized, with small mountain ranges.
3. The main group in terms of number of localities extends along central Ciudad Real, with two notable areas: Tablas de Daimiel national park and Campo de Calatrava. The area is more densely populated and characterized by the presence of volcano substrates but especially by the abundance of wetlands, lagoons and marshes, scattered or associated to the Guadiana River and its tributaries (Cigüela, Zánacara or Azuer).

4. Eastern group of localities, notably the Lagunas de Ruidera natural park, with open woodlands and grapevine plantations, on calcareous substrates.

This classification reflects the different availability of resources at local level and underlines the adaptive nature of traditional folk-medicine.

The western group presents a higher richness of ingredients, on average 38.8 per locality, followed by the central group with 17.5 ingredients per locality. These are the best characterized with the presence of exclusive species. Notably, *Bidens aurea*, *Sinapis alba* and *S. arvensis*, *Paronychia echinulata*, *Bryonia cretica* subsp. *dioica*, *Clinopodium nepeta*, *Mentha cervina*, *Cynodon dactylon* and *Quercus x morisii*, and others such as *Allium cepa*, *Allium sativum*, *Apium graveolens*, and *Pistacia lentiscus* characterize the western group. It is also characterized by the use of bee products (*Apis mellifera*), *Cervus elaphus*, and scorpions (*Buthus occitanus*) with a higher frequency than in the rest. Other representative species, shared with the central group, are *Achillea ageratum*, *Asparagus acutifolius*, *Centaurea ornata*, *Cuminum cyminum*, *Drimia maritima*, *Foeniculum vulgare*, *Malpolon monspessulanus*, *Pimpinella anisum*.

The central group, around Daimiel, uses animals such as *Ardea cinerea*, leeches (*Hirudo troctina*), *Mantis religiosa* and *Malpolon monspessulanus*. Characteristically it presents the use of plant species such as *Beta vulgaris*, *Alkanna tinctoria*, *Juglans regia* or *Mentha × rotundifolia*.

The eastern group is poor in species, on average 7.3 per locality. *Teucrium pseudochamaepitys* and *Althaea officinalis* (this last shared with the central group) are characteristic.

The transitional southwestern group is the poorest in species recorded, on average 6 per locality, characterized by the use of *Genista tridentata*, which is also distinctive of the western group.

This methodology for comparison between localities based on the ingredients used in the formulation of medicines has previously been used by Rivera et al. (2017 and 2019). However the classification obtained here is much clearer. The reason is the use here of a minimum threshold of ingredients per locality and of localities per ingredient, which reduces noise in the calculation process.

Three localities cluster outside the groups of their region. Fuencaliente clusters with the group of Piedrabuena and neighboring (transitional southwestern group) (Fig. 12 A and B) although the locality is geographically to the north somewhat separated from it.

Its location is, physically but also in terms of used resources, intermediate, between El Robledo (western Cabañeros group), with which it shares *Genista tritentata*, and Malagón (central Daimiel group) with which it shares *Malva sylvestris*. Therefore, this would explain its presence in the southwestern transitional group that alternately shares species with one or the other.

Las Mesas (eastern group, Fig. 12 B) shares the medicinal use of *Sambucus nigra* and *Triticum aestivum* with the central and western groups, *Prunus cerasus* with the western group, and *Solanum tuberosum* with the central group. Las Mesas is assigned to the central group in the Ward's tree (Fig. 12 A). The use of *Althaea officinalis* was not recorded in La Solana nor in Las Mesas (Table 5) in what they differ from the rest of localities of the eastern group. La Solana (eastern group, Fig 12 A) shares the use of *Mentha pulegium*, and *Phlomis lychnitis* with the central and western groups. La Solana is assigned to the central group in the neighbor joining tree (Fig. 12 B). Given the scarce number of species recorded in Las Mesas and La Solana, seven and eight respectively, the above peculiarities explain their eventual displacement in the clusters depending of the method followed to generate the tree (Fig. 12 A and B).

Fig. 12 approx. here

3.6 Relationships with historical evidence for Upper Guadiana area

Thymus mastichina, dill (*Anethum graveolens*), rosemary (*Rosmarinus officinalis*), lavender (*Lavandula latifolia*), *Lavandula stoechas* and *Teucrium* were part of a mixture used in Montes de Toledo during late 16th century to treat rheumatism (Blázquez, 1989). Ophthalmic remedies are documented in the area since the 17th century, based on *Globularia alypum* L. (Blázquez, 1985 and 1989; Longobardo et al., 1997), or a mixture of *Chelidonium majus* L., rue, myrtle, saffron, rosemary and roses (Blázquez, 1985 and 1989).

Campos (2009) reported in the *Relaciones de los pueblos* of Felipe II (16th century), for localities of present Ciudad Real province, the use of *Hirudo troctina* and he cites the use of numerous medicinal waters, either drinking or bathing in them (Table 9). We recorded the last remnants of this traditional use of medicinal waters within local population (Table 3) and, also, *Hirudo troctina* uses (Table 1). Recently, baths of “*El Hervidero*” in the vicinity of the ruins of Calatrava la Vieja (Carrión de Calatrava), were restored to make their use available to local population and tourism.

Table 9 approx. here

These *Relaciones* did not contain any information on medicinal plants unlike those of Chinchilla or Yeste in the neighboring province of Albacete (Rivera et al., 2017).

The *Descripciones del Cardenal Lorenzana*, 18th century, describe springs and water upwelling scattered in different villages and employed to treat dyspepsia, intestinal obstruction and flatulence which were still important (Table 10). Others were used for herpesviral infection, scabies and rheumatism (Al-Balatitha et al., 1985; Porres et al., 1986).

Table 10 approx. here

The use of cantharides is no longer recorded in our interviews (Table 1). Additional medicinal resources mentioned in the *Descripciones* include numerous antimalarial plant remedies and others for wounds (*Anthyllis vulneraria*), rheumatism (*Genista tridentata*), respiratory (*Brassica oleracea*, *Cuminum cyminum*) and digestive complaints (*Nicotiana rustica*, *Olea europaea*). During the 18th century decoctions of henbane (*Hyoscyamus*) or *Cynoglossum cheirifolium* L. were administered to treat pain (Porres et al., 1986). Only a small part of these uses persisted in our records (Table 5).

Porres et al. (1986) mention the use, in the 18th century, of bramble shoots to prepare a decoction to rinse oral cavity to cure sores, we found this use in Horcajo and Navalpino.

Fisac (1905a) in his “*Topografía Médica de Daimiel y su partido*” reports medicinal plant species and their uses in Daimiel (Table 11).

Table 11 approx. here.

Some of these were at the time a relevant source of income for dwellers of the wetlands zone. They collected, dried and exported *Althaea* roots or *Malva sylvestris* and *Papaver rhoeas* petals. *Althaea officinalis* roots were later exported, for instance from Villarrubia de los Ojos to the pharmacies of Valencia and Reus (Arauzo et al., 2001). *Malva sylvestris* is so far the most relevant plant species in the Guadiana area (Tables 5 and 6) and *Althaea officinalis* is widely used. The uses of *Papaver rhoeas* are presently restricted in the area to the treatment of insomnias, nervousness and acute bronchitis (Table 5).

The uses and species recorded in Table 11 are extremely interesting, since they suppose precedents of the records of our study. The use of fungal spores to heal wounds persisted a century later (Table 2) but, instead of *Calvatia*, we recorded *Lycoperdon perlatum*. Another interesting warning given by Fisac (1905a) is the existence in Daimiel of healers who used plants for magical practices.

Drimia maritima was reported as a diuretic, expectorant, and emetic (Fisac 1905a) we recorded its use for the treatment of hemorrhoids, hidradenitis suppurativa and pimples (Table 5) therefore there is no one coincidence in the uses. Have the local uses so deeply evolved within a century? Or is there some misidentification? However it is well-known the Squill Oxymel use for the treatment of asthma (Nejatbakhsh et al., 2017) therefore despite the toxicity of this plant the reference by Fisac (1905a) is likely right.

Cytisus scoparius, *Filipendula vulgaris*, *Scorzonera hispanica* are species no longer recorded as medicinal resources in our interviews (Table 5) although we cannot neglect the possibility that these were misidentified by Fisac (1905a).

In general, the historical evidence analyzed suggests the continuous presence in the area of healing practices, within the framework of popular medicine, which implies the use of local resources. Some of these were related to harvest activities and handling of raw medicines exported to pharmacies located in the large cities of Spain. Given the fragmentary nature of the available historical evidence, most of the uses recorded in our fieldwork (Tables 1 to 5) were not in the historical records (Tables 9 to 11). Other species and uses so far persisted and, finally, some disappeared.

4 Conclusions

The above analysis gives rise to a range of immediate and far-reaching conclusions relevant to ethnobotanists and ethnopharmacologists: Malaria is still present in the memory of our informants and was treated with *Centaurium erythraea*, *Lupinus albus* and *Fraxinus angustifolia*, however, in the Upper Guadiana the more frequent pathologies were respiratory (acute nasopharyngitis) and gastrointestinal problems which were treated with a wide range of simple or compound remedies involving numerous species of notably plants, animals and mineral substances.

The most documented species are *Malva sylvestris*, *Phlomis lychnitis*, *Genista tridentata* and *Thymus mastichina*, and the habitats where these plants were harvested

were dry woodland and grassland. Almost all medicinal species are local and of Mediterranean origin. A geographical pattern is detected from east to west in the list of ingredients used in each locality with two main centers: Cabañeros-Montes de Toledo and Daimiel-Campo de Calatrava. We found strong differences with other local sources analyzed in terms of resources and pathologies especially in the area of Montes de Toledo.

The wide-ranging ethnographic databases such as those we used are difficult to adapt for specialized ethnopharmacological research because the work of data cleansing requires much time, instead, it is advisable to use more specific tools. Therefore, the use of databases adapted for exclusively ethnopharmacological purposes is more sensible and recommendable.

Along the Guadiana River in the Ciudad Real province exists a wide and deep knowledge of traditional remedies for common pathologies, based fundamentally on the use of local flora, fauna and mineral resources. The uses and ingredients documented are useful for further pharmacological investigation to improve health care for a wide range of pathologies.

According with the results of the present study, we strongly recommend that ethnopharmacological studies in the future should include all ingredients actually used by the informants independently of their origin, not only plants. Ethnopharmacological studies restricted exclusively to plants, according to our data, miss nearly 15% of ingredients and misinterprets at least a 10% of uses.

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