

Medical ethnobotany of the Tabarkins, a Northern Italian (Ligurian) minority in south-western Sardinia

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Abstract A medico-ethnobotanical study was conducted among the Tabarkin communities living in Calasetta and Carloforte, in south-western Sardinia. These communities represent a Ligurian minority who have resided in Sardinia since their forebears migrated from Tabarka in Tunisia in the second half of the 18th Century, having previously migrated to Tabarka from Genoa in 1544. In this study, we conducted more than 200 interviews and recorded 53 botanical taxa and 72 folk pharmaceutical preparations, which represent the folk medicine of the Tabarkins. The folk phytotherapy of the Tabarkins living in Calasetta and Carloforte is quite restricted compared with other folk phytotherapy recorded in similar recent ethnobotanical studies conducted in Sardinia. This could indicate that there has been a remarkable erosion of Traditional Knowledge (TK) within these two communities. Of particular interest are a few local medical uses we recorded that have never or only very rarely been documented in Italy; namely the use of *Dittrichia*

graveolens (L.) Greuter as an anti-haemorrhoidal, of *Centaurea calcitrapa* L. as a remedy for malaria, of *Glycyrrhiza glabra* L. in ophthalmic treatments, and of *Urtica dioica* L. as an antiviral in cases of German measles. Most of the botanical species quoted in this research are referred to in the two centres using a local Ligurian idiom. Most of the medico-botanical uses we recorded are very similar to those collected in other ethnobotanical surveys carried out in Liguria and south-western Sardinia. Because there was no evidence in this research of any substantial ethnobotanical traces related to the communities' North-African experience, it would appear that the Tabarkins have readily adopted their host culture's use of medicinal plants and have retained their own traditional cognitive concepts and knowledge of the natural plant world through the language only.

Keywords Ethnic minority groups · Ethnobotany · Ligurians · Sardinia · Tabarkins

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Introduction

In recent years, researchers conducting field ethnobotanical studies in Southern Europe have shifted their focus from merely documenting locally used medicinal or food plants, to more comparative and/or quantitative analyses, which were aimed to understand how Traditional Plant Knowledge (TPK)

changes over time and space (Pieroni et al. 2006; Pieroni and Quave 2005, 2006a, b; Leonti et al. 2006; Ghirardini et al. 2007; Rivera et al. 2007; Pardo de Santayana et al. 2007; Hadjichambis et al. *in press*).

On the other hand, ethnobotanical studies conducted among ancient and new migrant communities and diasporas have shown how TPK can be seen as one of several different tools that “newcomers” may utilise in the cultural negotiations with their hosts. For example, TK can be used to strengthen a community’s “original” cultural identity, or to help it adapt to new natural and social environments (Balick et al. 2000; Reiff et al. 2003; Pieroni et al. 2005; Sandhu and Heinrich 2005; Pieroni and Torry 2007; Pieroni and Vandebroek [and chapters therein] 2007; Pieroni et al. *in press*; Pieroni and Gray *in press*).

In this research, the Tabarkin communities of Calasetta and Carloforte in south-western Sardinia provided a unique scenario for studying the dynamics of TPK because of their very peculiar history. These communities are in fact a Northern Italian (Ligurian) minority in Sardinia, whose forebears moved from Genoa to Tabarka on the Tunisian coast in the 16th Century, and from there to south-western Sardinia in the 18th Century. After five centuries Tabarkins still speak a Genoese dialect, which is very distinct from the Sardinian spoken elsewhere in Sardinia.

The area has also been the focus of plant genetic resources explorations (Laghetti et al. 1999; Hammer and Laghetti 2006).

The objectives of this study were:

- to record the medical ethnobotany of the Tabarkin communities of Calasetta and Carloforte;
- to compare the collected data with those available in the ethnobotanical literature of Liguria, Sardinia and Tunisia; and
- to point out trajectories of eventual cultural adaptation processes in the traditional use of medicinal plants that the Tabarkins may have been faced with during the last five centuries.

Methods

Historical and ethnographic background

The Tunisian island of Tabarca – or Tabarka as it is known today – is the only Christian enclave along the

coast of Maghreb. Its history began in 1544, when a Ligurian family, the Lomellinis, was granted exclusive rights to fish and market coral on the island. Almost immediately, scores of Genoese families moved from Pegli and the neighbouring centres (Toso 2002) to colonise the island, which was run according to a delicately balanced politico-economic system based on its remarkable logistic importance. At the beginning of the 18th century, Tunis gained significant economic importance, and with overpopulation and the success of the Husainid dynasty (1710), relations between Tabarca and the interior became so strained that some of the island’s inhabitants were forced to flee to the island of San Pietro in south-western Sardinia where they founded the city of Carloforte. Those who remained on Tabarca were taken prisoner by the Bey of Tunis, and finally ransomed after 15 years of slavery. Some of these ex-slaves founded the city of Nueva Tabarca in Spain in 1769, while others founded Calasetta on the island of Sant’Antioco in south-western Sardinia in 1770 (Fig. 1).

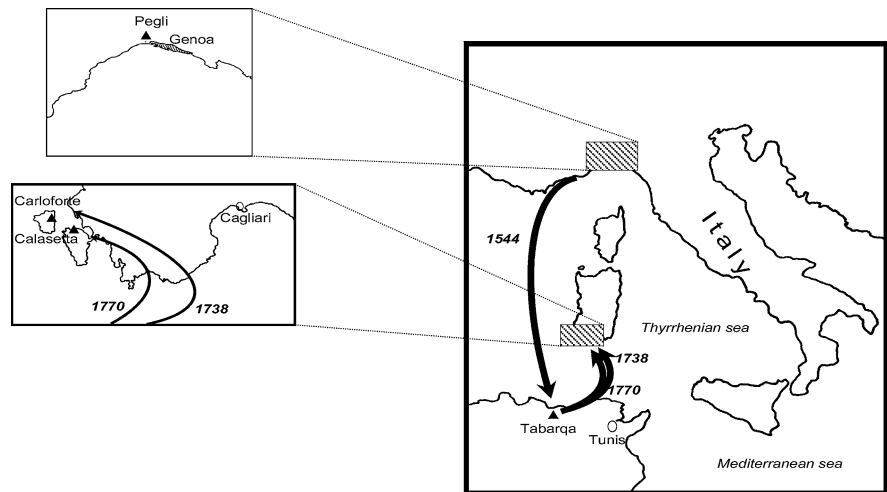
Calasetta (*Câdesédda* in the local Ligurian idiom) is today a municipality of approximately 2,500 inhabitants, while Carloforte (*U Pàize* in the local Ligurian idiom) has around 6,500 inhabitants. Both municipalities are included in the new province of Carbonia-Iglesias in south-western Sardinia.

Environmental background

The island of Sant’Antioco is characterised by its predominantly volcanic geological structure, and is made up mainly of Oligo-Miocenic magmatic flows with margins of Jurassic-Cretaceous limestone formations on the eastern coast, and the peculiar presence of Comendite, a type of volcanic rock that is found only in one locality: on the islands of Sulcis, which are called Le Comende, from which the rock takes its name. The Aeolian deposits of marine sands, which at times form dunal nuclei on the northern coast of the island of Sant’Antioco, date back to the Quaternary (Milia and Mossa 1976).

The isles of Sant’Antioco and San Pietro present a high cliff morphology, especially in the south-western part of the island of Sant’Antioco, often in a winding trend alternating with creeks. The climate in general corresponds to the climatic characteristics

Fig. 1 Location of the study area and historical trajectories of the Tabarkins



of southern Sardinia, and according to Emberger's classification is ascribable to the semi-arid Mediterranean bioclimate.

From the floristic point of view, the islands are characterised by their typical Mediterranean vegetation, and present a coastal strip with undergrowth of *Juniperus phoenicea* L. and *Juniperus oxycedrus* L. ssp. *oxycedrus*, and thickets of *Erica arborea* L., *Arbutus unedo* L., *Chamaerops humilis* L., *Pistacia lentiscus* L., and *Olea europea* L. var. *sylvestris* Hoffnugg. et Link.

In the past, the prevalent economic activities on the islands were agriculture, most of which have now been abandoned. Today the economies of Calasetta and Carloforte centre around service industries, particularly tourism, but these are insufficient to guarantee an adequate income to support the population, which continues to be affected by the phenomenon of youth emigration.

Field studies

A field ethnobotanical investigation of the territories of Calasetta and Carloforte was carried out from 2001 to 2006. Local informants over 60 years of age were interviewed ($n = 125$ in Calasetta; $n = 115$ in Carloforte) about traditional/local uses of medicinal plants. Prior informed consent (PIC) was obtained verbally before commencing each interview and ethical guidelines adopted by the American Anthropological Association (1998) were rigorously followed. Questions about the use of various food

plants were asked using classical means of ethnobotanical analysis (Alexiades and Sheldon 1996; Cotton 1996; Berlin and Berlin 2005) and the data were collected using pre-formulated cards, according to indications of Waller (1993). The species indicated were framed systematically and taxonomically as suggested by Angiosperm Phylogeny Group (APG 2003) and the most recent checklist of the Italian vascular flora (Conti et al. 2005).

Data analysis

The data collected during the field study were reported in Microsoft® Excel, and a comparison with ethnobotanical data available in the scientific literature was conducted using field studies previously conducted in the Pegli/Genoa area and in related inland territories in Liguria (Gastaldo et al. 1979), south-western Sardinia (Ballero and Fresu 1991; Atzei et al. 1994; Ballero et al. 2001), and Tunisia (Boukef 1986; Chaieb et al. 2002a, b).

For the ethnolinguistic part of the study, data were also compared with the standard work for Italian folk botanical taxonomy (Penzig 1924).

Results and discussion

The Tabarkin medical ethnobotany

Table 1 shows the plant-based folk pharmacopoeia of Calasetta and Carloforte. It contains the 53 botanical

Table 1 Plant-derived remedies recorded in the Tabarkin folk medicine

Botanical taxa and family	Voucher specimen number	Local/folk name(s)	Part(s) used	Preparation(s)	Folk therapeutic use(s) or ailment(s) treated
Alliaceae <i>Allium sativum</i> L.	8/2	Aggiu	Bu	Compress, inhalation, direct application Decoction	Antiseptic, lenitive (to treat insect stings) Anti-helminthic
Anacardiaceae <i>Pistacia lentiscus</i> L.	280	Ventris-cu	Br	Topical application	Antiseptic, vulnery
Apiaceae <i>Foeniculum vulgare</i> Miller	592	Fennüggiu	AP	Decoction, direct ingestion	Galactagogue, appetizer, digestive, nutraceutical
<i>Petroselinum crispum</i> (Mill.) Nym. ex A. W. Hill	572	Pursemmu	Le Rt	Compress Decoction	Lenitive (for insect stings) Diuretic
Araliaceae <i>Hedera helix</i> L.	635	Edera	Le	Cataplasm	Varicose veins
Asphodelaceae <i>Asphodelus ramosus</i> L. ssp. <i>ramosus</i>	1405	Viulin-Purassa	Tu Rh	Direct application Compress	To bleach skin Emollient
Asteraceae <i>Artemisia arborescens</i> L.	734	Megu	Le, Ft	Infusion	Stomachic, digestive
<i>Centaurea calcitrapa</i> L.	781	Centaurea	AP	Decoction	Anti-malarial (fever)
<i>Cichorium intybus</i> L.	826	Cicòria	Le	Decoction, direct ingestion	Depurative, diuretic, antihypertensive, nutraceutical
<i>Dittrichia graveolens</i> (L.) Greuter	707	Nasc-che	Le	Compress, cataplasm Compress	Anti-haemorrhoidal Vulnery
<i>Matricaria chamomilla</i> L.	745	Camomilla	Fl	Infusion	Sedative Digestive, antispasmodic
Brassicaceae <i>Raphanus raphanistrum</i> L.	60	Armussa	AP	Direct ingestions	Antihypertensive, nutraceutical
Cactaceae <i>Opuntia ficus-indica</i> L.	781	Fighe d'India	AP	Topical application	Skin-anti-inflammatory

Table 1 continued

Botanical taxa and family	Voucher specimen number	Local/folk name(s)	Part(s) used	Preparation(s)	Folk therapeutic use(s) or ailment(s) treated
Clusiaceae					
<i>Hypericum perforatum</i> L.	234	Erba de San Giuàanne	Le	Inhalation of the vapours obtained by boiling the leaves with roasted coffee beans and orange peel	Anti-hypertensive, for common cold
Ericaceae					
<i>Arbutus unedo</i> L.	878	Armun	Le	Decoction	Kidney stones
Euphorbiaceae					
<i>Ricinus communis</i> L.	1224	Ricci	Se	Oil	Depurative, laxative
Fabaceae					
<i>Glycyrrhiza glabra</i> L.	392	Recanissu	Rt	Decoction	Eyes inflammation
Lamiaceae					
<i>Lavandula stoechas</i> L.	6/13	Se-pigu	Fl	Infusion (with <i>Laurus nobilis</i> leaves)	Digestive, anti-emetic, anti-diarrhoeal, intestinal antispasmodic, sedative
<i>Melissa officinalis</i> L.	1085	Cedrina	AP	Infusion (with <i>Laurus nobilis</i> leaves) Decoction Decoction, in compresses Decoction (with <i>Laurus nobilis</i> and <i>Melissa officinalis</i>) Decoction, in compress Decoction	Sedative, antipyretic, anti-depressive Digestive Anti-inflammatory Stomach and intestinal pain, digestive, skin lenitive Skin anti-inflammatory Digestive
<i>Mentha × piperita</i> L.	6/19	Menta peperinna	Le	Decoction, in oral washes	To whiten and strengthen the teeth
<i>Mentha pulegium</i> L.	1072	–	Le	Decoction	Anti-hypotensive, abdominal pains
<i>Ocimum basilicum</i> L.	122/7	Baxeicò	Le	Decoction, Infusion	For toothache and stomach-ache
<i>Rosmarinum officinalis</i> L.	1091	Rumarin	Le	Decoction	Digestive, anti-emetic
<i>Salvia officinalis</i> L.	1087	Salvia	Le	Decoction (with <i>Laurus nobilis</i> leaves and <i>Citrus lemon</i> rind)	

Table 1 continued

Botanical taxa and family	Voucher specimen number	Local/folk name(s)	Part(s) used	Preparation(s)	Folk therapeutic use(s) or ailment(s) treated
<i>Vicia faba</i> L.	432/c	Föva	Fl Se	Decoction Direct ingestion	Diuretic, litholitic Gastritis, nutraceutical
Lauraceae <i>Laurus nobilis</i> L.	1192	Oufégu	Le	Decoction	Intestinal pain, dysmenorrhoea, carminative, anti-diarrhoeal Digestive
Linaceae <i>Linum usitatissimum</i> L.	45/15c	Lin	Se	Cataplasm	Cough suppressant, expectorant, respiratory diseases Vulnerary
Malvaceae <i>Lavatera arborea</i> L.	224	–	Le	Decoction	Vulnerary, anti-haemorrhoidal, anti-inflammatory
<i>Malva sylvestris</i> L.	219	Vorma	Le	Cataplasm, enema, decoction, direct ingestion, infusion	Vulnerary, anti-haemorrhoidal, laxative, digestive, lenitive, nutraceutical
Moraceae <i>Ficus carica</i> L.	46/42	Figa	AP	Decoction, in cataplasm Topical application	Vulnerary, anti-inflammatory Cicatrizing
Myrtaceae <i>Eucalyptus globulus</i> Labill.	514/9	Eucalittu	Le	Decoction	Anti-malarial (fever)
<i>Myrtus communis</i> L.	514	Murtin	Le	Decoction	Bechic, cold
Oleaceae <i>Olea europaea</i> L.	880	Ouvivu	Le	Decoction, inhalation	Antihypertensive, common cold, intestinal stimulant
Papaveraceae <i>Papaver rhoeas</i> L.	48	Papoviu	Fr Pe	Oil Decoction Infusion	Ear-ache Sedative Hypnotic
Poaceae <i>Arundo donax</i> L.	1530	Canna	St	Direct application	Vulnerary

Table 1 continued

Botanical taxa and family	Voucher specimen number	Local/folk name(s)	Part(s) used	Preparation(s)	Folk therapeutic use(s) or ailment(s) treated
<i>Avena sativa</i> L.	1547	Biòva	Fr	Decoction	Reconstituent, galactagogue
<i>Elymus repens</i> (L.) Gould	1625	Gramègna	Rh	Decoction	Antihypertensive
<i>Hordeum vulgare</i> L.	1637	Ordùu	Fr	Compress	Diuretic
<i>Oryza sativa</i> L.	1478/a	Risu	Se	Decoction	Skin lenitive
<i>Triticum durum</i> Desf.	1629	Gràn	Sh	Decoction, syrup	Antipyretic, anti-diarrhoeal
Rosaceae					Laxative, antipyretic, cough sedative
<i>Prunus domestica</i> L.	150/5-B	Erbu de prugne	Re	Topical application	Anti-inflammatory
<i>Prunus dulcis</i> (Mill.) D.A. Webb	463	Amandua	Fr	Oil	Emollient, lenitive
<i>Rosa sempervirens</i> L.	481	Reusa	Pe	Compress	For headache
Rubiaceae			Fr	Collyrium	Ophthalmic
<i>Coffea arabica</i> L.	168/1/11	Caffè	Se	Infusion, inhalation	Expectorant, mucolytic, nervous stimulant
Rutaceae					
<i>Citrus limon</i> (L.) Burm. f.	11/19	Limùn	Fr	Direct ingestion, compress	Anti-diarrhoeal, astringent, for headache, nutraceutical
<i>Ruta chalepensis</i> L.	11/20	Rùa	Le	Infusion	Dysmenorrhoeal
Smilacaceae			Fr	Inhalation, massage	Ophthalmic, antiparasitic agent
<i>Smilax aspera</i> L.	1414	Ligabose-cu	Le	Infusion, compress	Antihypertensive, skin lenitive
Solanaceae			Rt	Decoction	Hypertensive, anti-tumour
<i>Solanum lycopersicum</i> L.	105	Pumota	Fr	Massage	Vulnerary
<i>Solanum tuberosum</i> L.	106/6e	Patata	Tu	Direct application	Ophthalmic
Urticaceae			AP	Decoction	Laxative
<i>Parietaria judaica</i> L.	1246/b	Canigèa	Le	Decoction	Anti-hypertensive
<i>Urtica dioica</i> L.	1239	Ortiga	WP	Decoction, infusion	Antiviral (<i>Rubella</i>), hypoglycaemic

Table 1 continued

Botanical taxa and family	Voucher specimen number	Local/folk name(s)	Part(s) used	Preparation(s)	Folk therapeutic use(s) or ailment(s) treated
Verbenaceae <i>Lippia triphylla</i> (L'Hér.) Kuntze	1125/a	Marialuisa	AP	Infusion	Digestive, anti-emetic, intestinal and stomach antispasmodic
Vitaceae <i>Vitis vinifera</i> L.	242/a	Oùga	Fr	Compress, cataplasm, syrup	Digestive Antiseptic, stomatitis, vulnery
			Le	Decoction	Ophthalmic

Br: branches; Le: leaves; WP: whole plant; AP: aerial parts; Fr: fruits; Fl: flowers; Ft: flowering tops; Se: seeds; Rh: rhizome; Sh: sharp parts (thorns or prickles); Rt: roots; Bu: bulbs; Tu: tuber; Pe: petals; St: stems

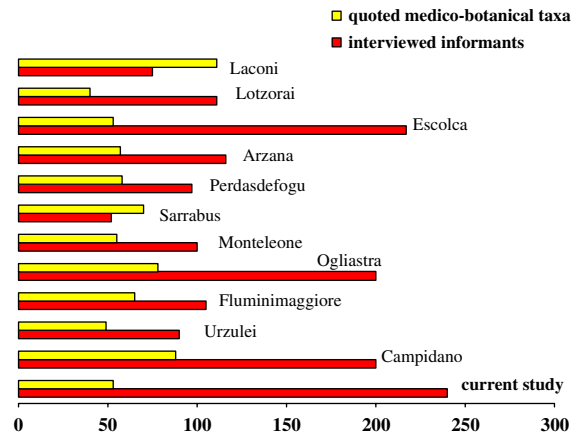


Fig. 2 Number of interviewed informants and quoted medico-botanical taxa in the present study, compared with those from other ethnobotanical studies conducted in Sardinia during the last 15 years (Ballero et al. 1994, 1997a, b, 2001; Ballero and Fresu 1998; Bruni et al. 1997; Palmese et al. 2001; Loi et al. 2004, 2005)

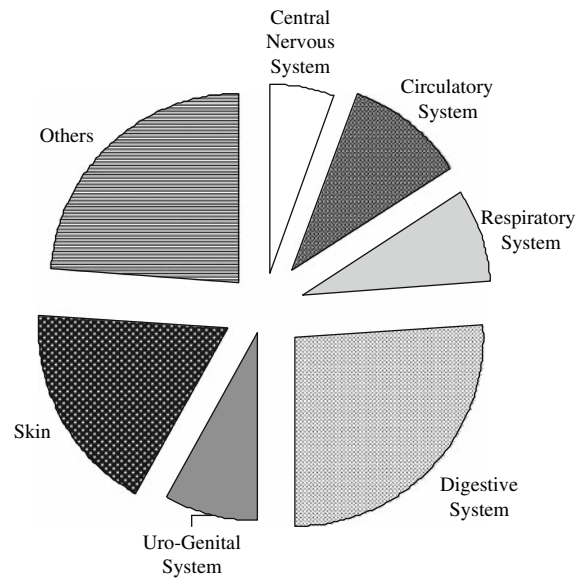


Fig. 3 Local therapeutical uses of quoted botanicals in Calasetta and Carloforte

taxa and 72 preparations that were quoted by our interviewees.

The number of quoted botanical taxa is very low compared with those of other ethnobotanical studies conducted in Sardinia over the last 20 years (Fig. 2), which may indicate that a remarkable erosion of TPK has taken place, possibly because most Tabarkins are no longer involved in traditional agricultural activities.

Table 2 Comparison between the Tabarkin folk names of the medicinal plants recorded in the field study and the correspondent Ligurian and Sardinian folk names

Botanical taxon	Tabarkin folk name(s) recorded in Calasetta and Carloforte	Ligurian folk name(s) used in the Pegli/Genoa area (Penzig 1924; Gastaldo 1979)	Sardinian folk name(s) used in south-western Sardinia (Penzig 1924; Ballero and Fresu 1991; Ballero et al 2001)
<i>Allium sativum</i> L.	<u>Aggiu</u>	<u>Aggiu</u>	Allu
<i>Arbutus unedo</i> L.	<u>Armun</u>	<u>Armun</u>	Olioni
<i>Arundo donax</i> L.	<u>Canna</u>	<u>Cana</u>	<u>Kanna</u>
<i>Artemisia arborescens</i> L.	Megu	–	Sentsu
<i>Asphodelus ramosus</i> L. ssp. <i>ramosus</i>	Viulìn- <u>Purassa</u> ^{CAL}	Asfodelo, Candere, <u>Pourassa</u>	Kadrilloni
<i>Avena sativa</i> L.	<u>Biòva</u>	Avena <u>Biava</u>	Ena
<i>Centaurea calcitrapa</i> L.	<u>Gordu reuza</u> ^{CAL}	Boessai, <u>Gardu santu</u> , Spinnuin, Spinun, Scannabecchi	Kaddhattu
<i>Ditricchia graveolens</i> (L.) Greuter	<u>Nasc-che</u>	<u>Naschetta</u>	Erba pudescia
<i>Elymus repens</i> (L.) Gould	<u>Gramègna</u>	<u>Gramègna</u>	Kannajone
<i>Cichorium intybus</i> L.	<u>Cicòria</u>	Radiccia, Radicciun	<u>Cicoria</u>
<i>Citrus limon</i> (L.) Burm. f.	<u>Limùn</u> ^{CAL}	<u>Limùn</u>	Limoni
<i>Eucalyptus globulus</i> Labill.	<u>Eucalittu</u> ^{CAL}	–	<u>Eucalittu</u>
<i>Ficus carica</i> L.	<u>Figa</u>	<u>Figo</u>	<u>Figu</u>
<i>Foeniculum vulgare</i> Miller	<u>Fennùggiu</u> <u>savergu</u> ^{CAL}	<u>Fenùggiu</u>	<u>Fenugu</u>
<i>Glycyrrhiza glabra</i> L.	<u>Recanissu</u> ^{CAL}	–	Arregolitzia
<i>Hedera helix</i> L.	<u>Edera</u>	Lèllua	<u>Ellera</u>
<i>Hordeum vulgare</i> L.	<u>Ordiu</u>	<u>Orziu</u>	<u>Orgiu</u>
<i>Hypericum perforatum</i> L.	<u>Erba de San Giuàne</u> ^{CAL}	Gàmba d'fèru, <u>Erba de San Gianbattista</u>	<u>Erba de Santu Giuanni</u>
<i>Laurus nobilis</i> L.	<u>Ofeuggiu</u> ^{CAL} / <u>Oufègiu</u> ^{CAR}	<u>Aufoggiu</u>	Lau
<i>Lavandula stoechas</i> L.	<u>Sc-pigu</u>	<u>Spigu</u>	Abioi
<i>Lavatera arborea</i> L.	<u>Vorma</u> ^{CAR}	<u>Vàrma</u>	Malva arburi, Narba arborea
<i>Linum usitatissimum</i> L.	<u>Lin</u> ^{CAL}	<u>Lìn</u>	Linu
<i>Lippia triphylla</i> (L'Hér.) O. Kuntze	<u>Maria Luisa</u>	<u>Erba Luisa</u>	<u>Eivaluisa</u>
<i>Malva sylvestris</i> L.	<u>Vorma</u> ^{CAL} / <u>Vorma ros</u> ^{CAR}	<u>Vàrma</u> , Marva	Narbeddha
<i>Matricaria chamomilla</i> L.	<u>Camamilla</u>	<u>Camemilla</u>	<u>Kamamilla</u>
<i>Melissa officinalis</i> L.	<u>Cedrina</u> ^{CAL} / <u>Melissia</u> ^{CAR}	Setrunin-a	<u>Menta de abis</u>
<i>Mentha × piperita</i> L.	<u>Menta</u>	<u>A mènta</u>	<u>Menta longa</u>
<i>Myrthus communis</i> L.	<u>Murtin</u>	<u>Murtin</u>	<u>Murta</u>
<i>Ocimum basilicum</i> L.	<u>Baxeicò</u> ^{CAL} / <u>Baxaicò</u> ^{CAR}	<u>Baxaicò</u>	Basilicu
<i>Olea europaea</i> L.	<u>Ouvivu</u> ^{CAL}	Ulivu	Ollastru
<i>Opuntia ficus-indica</i> L.	<u>Fighe d'India</u> ^{CAR}	<u>Figo d'India</u>	<u>Figu d'India</u>
<i>Papaver rhoeas</i> L.	<u>Papoviu</u> ^{CAL} / <u>Papovau russu</u> ^{CAR}	<u>Papàvo</u>	Babaioi
<i>Parietaria judaica</i> L.	<u>Canigea</u> ^{CAL} / <u>Caniggea</u> ^{CAR}	Scanigéa, <u>Canigea</u>	Erba de bentu
<i>Petroselinum sativum</i> Hoffm.	<u>Pursemmu</u> ^{CAL}	<u>Pursemu</u>	Perdusemini
<i>Pistacia lentiscus</i> L.	<u>Ventrisc-cu</u>	<u>Lentiscu</u> , Fistecchu sarvegu, Carubba sarvaega, Murta	Modditzi
<i>Prunus domestica</i> L.	Erba de <u>prugne</u> ^{CAL}	Brigna	<u>Pruna</u>

Table 2 continued

Botanical taxon	Tabarkin folk name(s) recorded in Calasetta and Carloforte	Ligurian folk name(s) used in the Pegli/Genoa area (Penzig 1924; Gastaldo 1979)	Sardinian folk name(s) used in south-western Sardinia (Penzig 1924; Ballero and Fresu 1991; Ballero et al 2001)
<i>Prunus dulcis</i> (Mill.) D.A. Webb	<u>Amandua</u> ^{CAL}	<u>Amanuda, Amanduotu</u>	<u>Amendula</u>
<i>Raphanus raphanistrum</i> L.	Armuassa	Ravizzùn	Ambuatsa
<i>Ricinus communis</i> L.	<u>Ricci</u>	Faxoe d'India	<u>Ricinu</u>
<i>Rosa sempervirens</i> L.	Reuza ^{CAL}	Grattacu	Arrosa
<i>Rosmarinus officinalis</i> L.	<u>Rumarin</u>	<u>Rumanin</u>	Arrosumarino
<i>Ruta graveolens</i> L.	<u>Rùà</u> ^{CAL}	<u>Rua</u>	Rura
<i>Salvia officinalis</i> L.	<u>Salvia</u> ^{CAL} / <u>Sovia</u> ^{CAR}	<u>Sàrvia</u>	<u>Salvia</u>
<i>Smilax aspera</i> L.	Ligabosc-cu ^{CAL}	Grattanaso, Grattacù	Tintioni
<i>Solanum lycopersicum</i> L.	<u>Pumota</u>	<u>Tumàte Pomidou</u>	<u>Tamatika</u>
<i>Solanum tuberosum</i> L.	<u>Patata</u> ^{CAL}	<u>Patatta</u>	<u>Patata</u>
<i>Triticum durum</i> Desf.	<u>Gràn</u>	<u>Gran</u>	Trigu
<i>Urtica dioica</i> L.	<u>Ortiga</u>	<u>Urtiga, Ortiga</u>	Pitsienti
<i>Vicia faba</i> L.	<u>Fòva</u>	Basana	<u>Faa</u>
<i>Vitis vinifera</i> L.	<u>Ouga</u> ^{CAL}	<u>Uga</u>	Bide

Correlated phytonyms referred to a given taxon are underlined

CAL: folk name recorded only in Calasetta; CAR: folk name recorded only in Carloforte

Only around one fifth of the folk remedies overall were quoted in both centres, demonstrating that TPK about medicinal plants has evolved in quite different ways in the two communities since their forebears' move from the Tunisian coast in the 18th Century.

When we consider all the recorded local therapeutic uses of the quoted botanicals, it appears that most were quoted in relation to skin and digestive dysfunctions (Fig. 3).

Rare or new medical uses of local plants

We recorded several uncommon medical uses of local plants, but we have focused our attention on those of only four species: namely, *Dittrichia graveolens* (L.) Greuter, *Centaurea calcitrapa* L., *Glycyrrhiza glabra* L., and *Urtica dioica* L.

Dittrichia graveolens (L.) Greuter's use internally against colds, and externally against burns and bruises, has been documented only in isolated cases in Sardinia (Atzei 2003; Guarrera 2006). Its use as an anti-haemorrhoidal, which we documented in Calasetta, has to our knowledge never been recorded before, so it would be well worth while carrying out

further bio-scientific investigation of this species, since it is used only in a few Mediterranean areas (for example, in Crete in folk veterinary practices: Pieroni et al. 2005) and very little is known of its chemistry and pharmacology.

The use of *Centaurea calcitrapa* L. as an antimalarial remedy in the Tabarkin medical ethnobotany is also worthy of note. The young whorls of *C. calcitrapa* are consumed cooked in inland Southern Italy (Pieroni et al. 2002a), and its extracts have shown anti-oxidant activity (Pieroni et al. 2002b). Nevertheless, to date there have been no rigorous investigations on the chemistry, pharmacology and clinical use of this Asteracea.

Glycyrrhiza glabra L. is one of the worldwide most popular phytomedicines (against ulcers and respiratory troubles: Barnes et al. 2007), however its use in an ophthalmic treatment might need to be verified in laboratory-based essays and clinical studies.

Finally, *Urtica dioica* L., which the Tabarkin use as an antiviral in cases of German measles represents an extremely interesting finding, since very recently isolated lectins from roots of *Urtica* spp. have shown to have important anti-viral effects (Chrubasik et al. 2007).

Table 3 Occurrence of plant remedies recorded in Tabarkin folk medicine and in the folk phytotherapy of the Pegli/Genoa area in Liguria (Gastaldo et al. 1979) Tunisia (Boukef 1986; Chaieb et al. 2002a, b), and south-western Sardinia (Ballero and Fresu 1991; Atzei et al. 1994; Ballero et al. 2001)

Botanical species used in the Tabarkin folk phytotherapy	Liguria (Pegli/Genoa area)	Tunisia	South-western Sardinia
<i>Allium sativum</i> L.	×	×	×
<i>Arbutus unedo</i> L.	–	–	×
<i>Arundo donax</i> L.	–	–	×
<i>Artemisia arborescens</i> L.	–	–	×
<i>Asphodelus ramosus</i> L. ssp. <i>ramosus</i>	–	–	×
<i>Avena sativa</i> L.	–	–	–
<i>Centaurea calcitrapa</i> L.	–	–	×
<i>Cichorium intybus</i> L.	×	–	–
<i>Citrus limon</i> (L.) Burm. f.	–	–	×
<i>Coffea arabica</i> L.	–	–	×
<i>Dittrichia graveolens</i> (L.) Greuter	–	–	–
<i>Elymus repens</i> (L.) Gould	–	–	–
<i>Eucalyptus globulus</i> Labill.	–	–	–
<i>Ficus carica</i> L.	–	–	×
<i>Foeniculum vulgare</i> Miller	×	–	×
<i>Glycyrrhiza glabra</i> L.	–	–	×
<i>Hedera helix</i> L.	×	–	–
<i>Hordeum vulgare</i> L.	–	–	–
<i>Hypericum perforatum</i> L.	×	–	×
<i>Laurus nobilis</i> L.	×	–	×
<i>Lavandula stoechas</i> L.	–	–	–
<i>Lavatera arborea</i> L.	–	–	–
<i>Linum usitatissimum</i> L.	×	–	×
<i>Lippia triphylla</i> (L'Hér.) O. Kuntze	×	–	–
<i>Malva sylvestris</i> L.	×	–	×
<i>Matricaria chamomilla</i> L.	–	–	×
<i>Melissa officinalis</i> L.	×	–	×
<i>Mentha pulegium</i> L.	–	–	×
<i>Mentha × piperita</i> L.	×	×	–
<i>Myrtus communis</i> L.	–	–	×
<i>Ocimum basilicum</i> L.	–	–	–
<i>Olea europaea</i> L. var. <i>sylvestris</i> (Mill.) Rouy	×	×	×
<i>Opuntia ficus-indica</i> L.	–	–	×
<i>Oryza sativa</i> L.	–	–	–
<i>Papaver rhoeas</i> L.	×	–	×

Table 3 continued

Botanical species used in the Tabarkin folk phytotherapy	Liguria (Pegli/Genoa area)	Tunisia	South-western Sardinia
<i>Parietaria judaica</i> L.	–	–	–
<i>Petroselinum crispum</i> (Mill.) Nym. ex A. W. Hill	–	–	×
<i>Pistacia lentiscus</i> L.	×	–	×
<i>Prunus domestica</i> L.	–	–	–
<i>Prunus dulcis</i> (Mill.) D.A.Webb	–	–	–
<i>Raphanus raphanistrum</i> L.	–	–	×
<i>Ricinus communis</i> L.	–	–	–
<i>Rosa sempervirens</i> L.	–	×	×
<i>Rosmarinus officinalis</i> L.	×	×	×
<i>Ruta graveolens</i> L.	–	–	–
<i>Salvia officinalis</i> L.	×	–	×
<i>Smilax aspera</i> L.	–	–	×
<i>Solanum lycopersicum</i> L.	–	–	×
<i>Solanum tuberosum</i> L.	–	–	–
<i>Triticum durum</i> Desf.	–	–	×
<i>Urtica dioica</i> L.	×	–	×
<i>Vicia faba</i> L.	–	–	×
<i>Vitis vinifera</i> L.	–	–	×

Tabarkin, Ligurian, Sardinian, and Tunisian TPK: a comparison

Table 2 shows that most folk plant names are the same (or are very similar) in both communities, and that these are usually Genoese terms.

Table 3 shows that the large majority (approximately two thirds) of the recorded Tabarkin medicinal plants also occur in the Sardinian folk phytotherapy, approximately one third only are used in the folk phytotherapy of the Genoan area in Liguria, and only a very small number are used in Tunisia. This is not surprising given that the flora “available” for the Tabarkin community is part of the Sardinian flora, so it is also the flora that is “available” for Sardinians.

However, it is worth mentioning that the link between the Tabarkin and Genovese medical ethnobotany could be underestimated, since modern ethnobotanical data on Genovese folk medicine are still very scarce.

The roots of the Tabarkin medical ethnobotany

Table 4 refers to Tabarkin medicinal plant uses, and shows that most uses have also been recorded in the Ligurian folk phytotherapy, and to a slightly smaller extent in the south-western Sardinian medical ethnobotany.

Very few plant uses recorded in our studies have also been recorded in Tunisia.

Given the fact that most of the recorded medicinal plant uses are common in both Liguria and Sardinia, it is very difficult to speculate on the process of cultural adaptation the Tabarkins have

undergone over the last five centuries. The Tabarkin ethnobotany has retained basically all the Ligurian botanical lexicon, and it probably still retains a few “original” botanical Ligurian uses, nevertheless a remarkable process of cultural adaptation should have taken place within the communities’ new Sardinian context. This is not very evident in terms of lexicon, but it is more clear if we look at the actual medicinal plant uses. It seems, however, that the North-African experience (1544–1738/1770) has not left any special traces in either the Tabarkins’ folk botanical nomenclature or their folk phytotherapy.

Table 4 Comparison between Tabarkin medical uses of the a few recorded species and the folk medical uses recorded in the Pegli/Genoa area in Liguria (Gastaldo et al. 1979), Tunisia

(Boukef 1986; Chaieb et al. 2002a, b), and south-western Sardinia (Ballero and Fresu 1991, Atzei et al. 1994; Ballero et al. 2001)

Species	Tabarkin folk medical use	Folk medicinal use also recorded
<i>Allium sativum</i> L.	Antiseptic, vermifuge	Liguria, Sardinia
<i>Allium sativum</i> L.	Anti-hypertensive	Tunisia, Liguria, and Sardinia
<i>Allium sativum</i> L.	To treat insect bites	Tunisia, Sardinia
<i>Arbutus unedo</i> L.	To treat kidney stones	Sardinia
<i>Cichorium intybus</i> L.	Depurative, diuretic	Liguria
<i>Foeniculum vulgare</i> Miller	Diuretic	Liguria, Sardinia
<i>Hedera helix</i> L.	To treat dysfunctions in blood circulation	Liguria
<i>Hypericum perforatum</i> L.	Anti-hypertensive	Liguria, Sardinia
<i>Laurus nobilis</i> L.	Antispasmodic (intestinal tract)	Liguria, Sardinia
<i>Linum usitatissimum</i> L./ <i>Linum suffruticosum</i> L.	Expectorant	Liguria, Sardinia
<i>Lippia triphylla</i> (L’Hér.) O. Kuntze	Digestive	Liguria
<i>Malva sylvestris</i> L.	Anti-inflammatory	Liguria, Sardinia
<i>Melissa officinalis</i> L.	Relaxant	Liguria, Sardinia
<i>Mentha × piperita</i> L./ <i>Mentha × dumetorum</i> Schultes	Digestive	Liguria
<i>Olea europaea</i> L.	Anti-hypertensive	Tunisia, Liguria, and Sardinia
<i>Papaver rhoeas</i> L.	Sedative	Liguria, Sardinia
<i>Rosmarinum officinalis</i> L.	Anti-hypotensive, to white and strengthen the teeth, to treat abdominal pains	Sardinia
<i>Salvia officinalis</i> L.	Antiodontalgic	Liguria, Sardinia
<i>Urtica dioica</i> L.	Antiviral	Liguria, Sardinia
<i>Crataegus azarolus</i> L./ <i>Crataegus monogyna</i> Jacq.	Anti-hypertensive	Tunisia, Liguria, and Sardinia
<i>Erica arborea</i> L./ <i>Erica herbacea</i> L.	To treat kidney stones	Tunisia, Liguria
<i>Mentha spicata</i> L./ <i>Mentha × dumetorum</i> Schultes	Digestive	Tunisia, Liguria
<i>Mentha × piperita</i> L./ <i>Mentha suaveolens</i> Ehrh.	Intestinal antispasmodic	Liguria, Sardinia
<i>Pistacia lentiscus</i> L.	Vulnerary	Liguria, Sardinia
<i>Rosa sempervirens</i> L./ <i>Rosa canina</i> L.	Ophthalmic	Liguria, Sardinia

Conclusions

The folk phytotherapy of the Tabarkins living in Calasetta and Carloforte in south-western Sardinia is quite restricted, compared with that recorded in similar recent ethnobotanical studies conducted in Sardinia. This may indicate that there has been a remarkable erosion of the TK among these communities.

While most of the folk names used locally for medicinal plants are Ligurian, most of the medicobotanical uses recorded in Calasetta and Carloforte have much in common with Liguria and Sardinian folk medicine. Furthermore, no substantial traces related to the communities' North-African experience were found. Our data therefore show how cultural adaptation among ancient migrant and diasporic communities may occur quite readily, but also how language may be extremely conservative in retaining communities' cognitive concepts and knowledge of local plant resources.

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