Plants in the Songbooks of Castilla y León, Spain

M. Cardaño and B. Herrero

Research

Abstract

Man's relationship with plants is reflected in cultural manifestations such as music. This work aims to present the most important plants in the traditional songs of Castilla y León, Spain. Thirty-three publications were reviewed, from which 7012 songs collected from the oral tradition were transcribed and information about the botanical quotations in these songs was extracted. Plant species were listed in 1316 songs, and 2756 botanical quotes were collected, alluding to 150 species. The most frequently mentioned plants were rose (12.7%), grape (7.1%), carnation (6.3%), and wheat (5.1%). In 32.7% of the citations, the use of the plants could be deduced, and in 64.6% of the citations, the plant organ alluded to was determined. The most frequently mentioned plants symbolize values of beauty or they are plants of significant economic value in the region of study. Food and decoration are the uses most frequently mentioned, the fruit or flower being alluded to most in the songs.

Resumen

La relación del hombre con las plantas alcanza manifestaciones culturales como la música. Este trabajo tiene por objeto presentar las plantas más importantes en las canciones tradicionales de Castilla y León. Se revisaron 33 publicaciones donde están transcritas 7.012 canciones que han sido recogida de la tradición oral, y se extrajo la información sobre las citas botánicas que se encuentran en dichas canciones. En 1.316 canciones se mencionan especies vegetales, se recogieron 2.756 citas botánicas aludiendo a 150 especies. Las especies más mencionadas fueron: rosa (12,7%), vid (7,1%), clavel (6,3%), y trigo (5,1%). En el 32,7% de las citas se dedujo el uso que tenían las plantas y en el 64,6% de las menciones se determinó el órgano vegetal al que se aludía. Las plantas más mencionadas simbolizan valores de hermosura y belleza o plantas de significativo valor económico en la región de estudio. El uso alimentario o decorativo son los más mencionados aludiendo en las canciones al fruto o a la flor.

Introduction

Ethnobotany is an integrative, multi-disciplinary field of learning. One of the many branches of investigation that draws on cultural knowledge and that begins with the prefix "ethno" is ethnomusicology, the study of the music and dance of different cultures and the musical instruments those cultures make and use, which are often made of plant materials. The use of plants to produce musical instruments has been addressed in several studies (Keller 2010, Puri & Chaturvedi 2008).

Ethnobotany is the science that describes the relationship between human and plants, but the factors that influence that relationship are not well defined. The interdisciplin-

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ary approach is well known in ethnobotany (Etkin & Elisabetsky 2005) and can help us to understand what factors may interact and have a decisive influence on the selection of plants used by humans (Akerreta *et al*. 2007).

Thus the tools of ethnobotanical investigations are many: botany, mycology, taxonomy, anthropology, ethnography, archaeology, comparative folklore, religious studies, medicine, chemistry, and pharmacology (Harris 2008, Holman 2002). Sometimes, in ethnobotanical inquiry, we call upon ancient history, or colonial socio-economic histories, or we even examine the roots of our modern social movements.

Studies on plants in musical compositions are scarce; one example is the study by Causapé and De la Torre (2009) on plants in a Christmas carol. References to plants in significant texts such as the Bible and works of Cervantes have also been analyzed (Moldenke & Moldenke 2002, Pardo de Santayana *et al*. 2006).

The aim of this paper is to highlight the importance of plants in cultural manifestations such as music, to determine which plants form part of the musical stanzas, which plant has a greater presence in the songs of Castilla y León, which uses are attributed to these plants in the musical texts, and which parts of the plants are referenced.

Material and Methods

A search of the folk songs of the region was carried out. Thirty-three popular songbooks were located, representing the musical works of provinces, districts, and towns located in the regional context of Castilla y León. The musical works include verses as text, not musical scores. These works are listed in Appendix I.

The authors of the songbooks have collected the songs according to ethnographic methodology, transcribing into written texts the songs that have been passed down by oral tradition over the centuries.

The following sources were consulted to attain the songbook material: the library archives of the Faculty of Arts at the University of Valladolid, the provincial archive of Palencia, the Joaquín Díaz Foundation Library in Urueña (Valladolid), the Network of Libraries of Castilla y León, and internet document searches.

The various songs compiled in the songbooks were reviewed one by one, noting the following details: town, province, song title, song type, time of year represented, the fragment of the song where plant species appear, any by-products mentioned (such as white or black bread or wine), and the context. With this information the data were organized in the following fields: the common name of the plant mentioned, the number of times it is cited in a song, the part of the plant referred to, and the use or uses of the plant in the text. Assignment to the categories of use was carried out according to the criteria of the Iberian ethnobotanical group (Pardo de Santayana 2008).

To relate the common name with the scientific name, a number of publications were used (Ceballos Jiménez 1986, Morales *et al*. 1996, Sánchez 1991). In the case of common names that relate to various botanical species, we chose to assign the most common plant in the region, and in some cases we chose to associate the common name with a scientific genus since we were not able to add further detail. The scientific names of the plants were then updated to the currently accepted names listed in public taxonomic databases (The Plant List 2013, Tropicos 2014). Hereafter we use the term “species” understanding that in some cases we also speak of several species of one genus. Also, for each plant referenced, the status of presence and life-form were noted following the criteria of Mateo and Crespo (1995) and Ruiz de la Torre (2006).

If the same song appeared in several locations, the songs were merged into one record. When the verses alluded to more than one use of a plant, we recorded as many citations as uses mentioned.

Area of study

Castilla y León spans a total area of 94,147 km^2. It is situated in the northern Iberian Peninsula, in southwestern Europe. It is a scarcely populated territory. Half of its 2.6 million inhabitants live in rural settlements. It is therefore a rural society whose economy is maintained by agriculture and natural resources.

Being an inland region, Castilla y León experiences irregular rains and drought during the summer, corresponding to a Mediterranean climate. However, the region also includes a Mediterranean forest dominated by *Quercus ilex* L. and *Quercus faginea* Lam. In northern outlying mountainous areas, an Atlantic clime is found, with alpine conditions at the highest elevation. In these conditions one finds an Atlantic forest dominated by *Fagus sylvatica* L. and *Quercus petraea* (Matt.) Liebl. Rainfalls range from 400 to 1500 mm/year. Nearly 40% of the land is devoted to crops while 25% is covered by pastures and 30% by woodlands (Cardaño 2009).

Results

Thirty-three publications with a combined total of 7012 songs were reviewed and analyzed, yielding 1316 songs (19%) that mentioned plants in their verses. These songs contained 2756 references to plant species. Figure 1 shows the number of plants that are cited in the songs. The maximum number of plants mentioned in one song was 17, corresponding to a wedding song from Alcozar

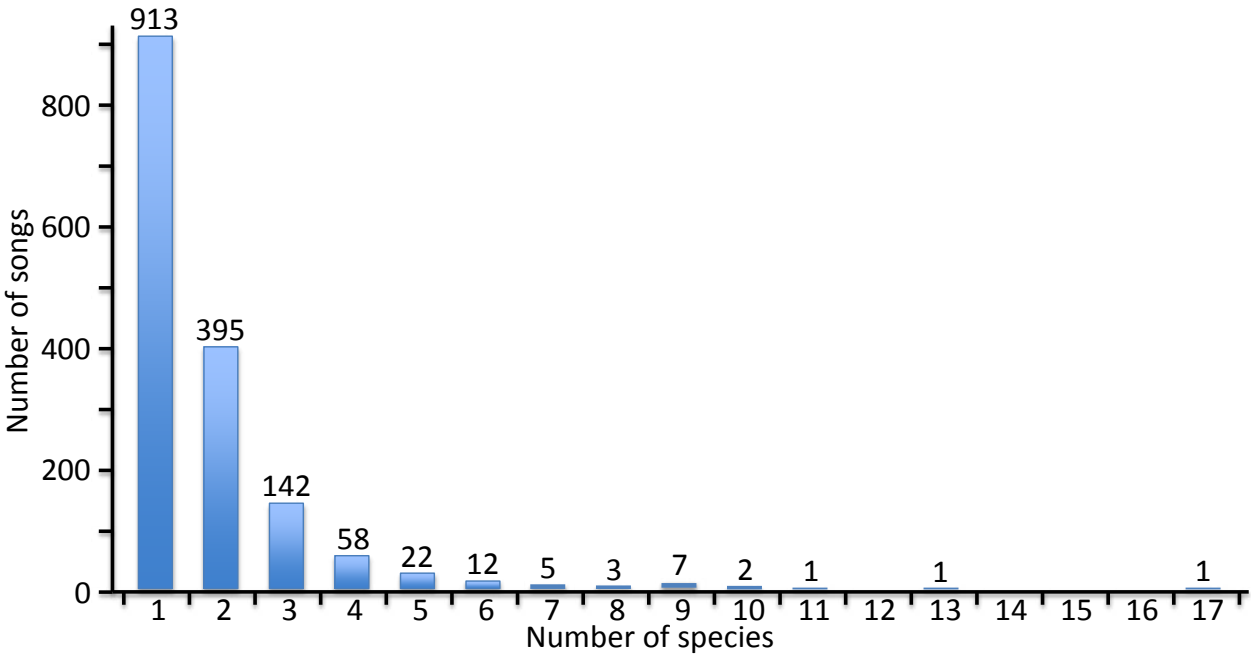

Figure 1. Distribution of the songs of Castilla y León, Spain, according to the number of plants mentioned.

(Soria). This song mentions the following plant species: palm, olive, wheat, mint, parsley, grape, flax, rosemary, blackthorn, elm, lavender, rose, turnip, carnation, tobacco, cocoa, and hazelnut. Of the songs mentioning plants, a majority (59%) referenced a single species, with 26% mentioning 2 species.

Table 1 shows the 150 plants mentioned in the songs. Fifty-five species had more than 10 citations. The most mentioned plants were rose (*Rosa* spp.), grape (*Vitis vinifera* L.), carnation (*Dianthus caryophyllus* L), and wheat (*Triticum* spp.).

Of the plants mentioned, 43.2% are cultivated crops, 38.6% are wild species, 10% are absent (they are not rep-

Table 1. Plants mentioned in songbooks of Castilla y León, Spain.

Scientific name	Local name	Citations	Presence	Life-form
Amaranthaceae				
Beta vulgaris L.	**remolacha**	3	crop	hemicryptophyte
Amaryllidaceae				
Allium ampeloprasum L.	**puerro**	9	crop	geophyte
Allium cepa L.	**cebolla**	14	crop	geophyte
Allium sativum L.	**ajo**	24	crop	geophyte
Allium schoenoprasum L.	**cebollino**	1	crop	geophyte
Apiaceae				
Cuminum cyminum L.	**comino**	2	wild	hemicryptophyte
Daucus carota L.	**zanahoria**	2	crop	hemicryptophyte
Eryngium campestre L.	**cardo corredor**	1	wild	hemicryptophyte
Petroselinum crispum (Mill.) Fuss	**perejil**	40	crop	hemicryptophyte
Pimpinella anisum L.	**anís**	3	wild	hemicryptophyte
Araliaceae				
Hedera helix L.	**hiedra**	11	wild	phanerophyte
Arecaceae				
Phoenix dactylifera L.	**palmera**	18	absent	phanerophyte

Scientific name	Local name	Citations	Presence	Life-form
Roystonea regia (Kunth) O.F.Cook	**palma real**	1	absent	phanerophyte
Asparagaceae				
Asparagus officinalis L.	**espárrago**	1	crop	geophyte
Asteraceae				
Anthemis spp.; *Matricaria* spp.	**manzanilla**	3	wild	therophyte
Bellis perennis L.	**margarita**	4	wild	hemicryptophyte
Calendula arvensis M.Bieb.	**maravilla**	2	wild	therophyte
Carduus spp.; *Cirsium* spp.	**cardo**	4	wild	hemicryptophyte
Cichorium endivia L.	**escarola**	1	crop	hemicryptophyte
Cichorium intybus L.	**achicoria**	1	wild	hemicryptophyte
Cynara scolymus L.	**alcachofa**	1	crop	hemicryptophyte
Dahlia × *hortensis* Guillaumin	**dalia**	1	decorative	geophyte
Helichrysum stoechas (L.) Moench	**siempreviva**	2	wild	chamaephyte
Lactuca sativa L.	**lechuga**	28	crop	hemicryptophyte
Betulaceae				
Corylus avellana L.	**avellano**	45	wild	phanerophyte
Brassicaceae				
Brassica napus L.	**nabo**	13	crop	chamaephyte
Brassica oleracea L.	**berza**	1	crop	chamaephyte
	coliflor	4	crop	chamaephyte
	repollo	8	crop	chamaephyte
Erysimum × *cheiri* (L.) Crantz	**alhelí**	7	decorative	chamaephyte
Nasturtium officinale R.Br.	**berro**	7	wild	hemicryptophyte
Burseraceae				
Boswellia sacra Flueck.	**incienso**	1	absent	phanerophyte
Commiphora myrrha (Nees) Engl.	**mirra**	1	absent	phanerophyte
Cannabaceae				
Cannabis sativa L.	**cáñamo**	3	crop	phanerophyte
Caryophyllaceae				
Dianthus caryophyllus L.	**clavel**	173	crop	hemicryptophyte
Cistaceae				
Cistus spp.	**jara**	1	wild	phanerophyte
Cucurbitaceae				
Citrullus lanatus (Thunb.) Matsum. & Nakai	**sandía**	6	crop	therophyte
Cucumis melo L.	**melón**	18	crop	therophyte
Cucumis sativus L.	**pepino**	11	crop	therophyte
Cucurbita pepo L.	**calabaza**	39	crop	therophyte
Cupressaceae				
Cupressus sempervirens L.	**ciprés**	5	decorative	phanerophyte
Cyperaceae				
Schoenoplectus lacustris (L.) Palla	**junco marino**	1	wild	geophyte

Scientific name	Local name	Citations	Presence	Life-form
Ericaceae				
Arbutus unedo L.	**madroño**	3	wild	phanerophyte
Fabaceae				
Arachis hypogaea L.	**cacahuete**	1	crop	therophyte
Ceratonia siliqua L.	**algarrobo**	2	decorative	phanerophyte
Cicer arietinum L.	**garbanzo**	13	crop	therophyte
Cytisus scoparius (L.) Link	**retama**	19	wild	phanerophyte
Genista florida L.	**piorno**	1	wild	phanerophyte
Genista spp.	**aulaga**	3	wild	phanerophyte
Lathyrus sativus L.	**almorta**	6	crop	therophyte
Lens culinaris Medik.	**lenteja**	7	crop	therophyte
Lupinus albus L.	**altramuz**	1	wild	therophyte
Phaseolus vulgaris L.	**judía**	10	crop	therophyte
Pisum sativum L.	**guisante**	3	crop	therophyte
Tamarindus indica L.	**tamarindo**	1	absent	phanerophyte
Trifolium spp.	**trébol**	12	wild	hemicryptophyte
Ulex europaeus L.	**tojo**	2	wild	phanerophyte
Vicia ervilla Medik.	**yero**	1	crop	therophyte
Vicia faba L.	**haba**	16	crop	therophyte
Vicia hirsuta (L.) Gray	**arveja**	1	wild	therophyte
	legumbre	1		
Fagaceae				
Castanea sativa Mill.	**castaño**	25	wild	phanerrophyte
Quercus faginea Lam.	**roble carrasco**	1	wild	phanerrophyte
Quercus ilex L.	**encina**	31	wild	phanerrophyte
Quercus pyrenaica Willd.	**rebollo**	2	wild	phanerrophyte
Quercus spp.	**bellota**	9	wild	phanerrophyte
	roble	14	wild	phanerrophyte
Geraniaceae				
Pelargonium zonale (L.) L'Hér. ex Aiton	**geranio**	3	decorative	chamaephyte
Iridaceae				
Crocus sativus L.	**azafrán**	6	crop	geophyte
Iris spp.	**lirio**	44	wild	geophyte
Juglandaceae				
Juglans regia L.	**nogal**	39	crop	phanerophyte
Juncaceae				
Juncus spp.	**junco**	7	wild	geophyte
Lamiaceae				
Lavandula latifolia Medik.	**espliego**	4	wild	chamaephyte
Melissa officinalis L.	**melisa**	1	wild	hemicryptophyte
Mentha spicata L.	**hierbabuena**	27	crop	hemicryptophyte

Scientific name	Local name	Citations	Presence	Life-form
Ocimum basilicum L.	**albahaca**	5	absent	therophyte
Rosmarinus officinalis L.	**romero**	56	decorative	phanerophyte
Thymus mastichina (L.) L.	**mejorana**	1	wild	chamaephyte
Thymus spp.	**tomillo**	22	wild	chamaephyte
Lauraceae				
Cinnamomum cassia J.Presl.	**canela**	9	absent	phanerophyte
Laurus nobilis L.	**laurel**	79	wild	phenerophyte
Liliaceae				
Lilium candidum L.	**azucena**	47	decorative	geophyte
Linaceae				
Linum usitatissimum L.	**lino**	27	crop	therophyte
Lythraceae				
Punica granatum L.	**granado**	2	crop	phanerophyte
Malvaceae				
Gossypium hirsutum L.	**algodón**	3	absent	therophyte
Malva sylvestris L.	**malva**	5	wild	hemicryptophyte
Theobroma cacao L.	**cacao**	14	absent	phanerophyte
Moraceae				
Ficus carica L.	**higuera**	29	crop	phanerophyte
Morus spp.	**morera**	4	crop	phanerophyte
Myrtaceae				
Syzygium aromaticum (L.) Merr. & L.M.Perry	**clavo**	4	absent	phanerophyte
Oleaceae				
Fraxinus spp.	**fresno**	2	wild	phanerophyte
Jasminum fruticans L.	**jazmín**	9	wild	phanerophyte
Olea europaea L.	**olivo**	114	crop	phanerophyte
Papaveraceae				
Papaver rhoeas L.	**amapola**	9	wild	therophyte
Pinaceae				
Cedrus spp.	**cedro**	2	decorative	phanerophyte
Pinus halepensis Mill.	**pino carrasco**	1	crop	phanerophyte
Pinus pinaster Aiton	**pino resinero**	1	crop	phanerophyte
Pinus pinea L.	**pino piñonero**	4	wild	phanerophyte
Pinus spp.	**pino**	68	wild	phanerophyte
Piperaceae				
Piper nigrum L.	**pimienta**	13	absent	phanerophyte
Poaceae				
Arundo donax L.	**caña**	5	absent	geophyte
Avena sativa L.	**avena**	11	crop	therophyte
Cynodon dactylon (L.) Pers.	**grama**	1	wild	geophyte
Hordeum vulgare L.	**cebada**	60	crop	therophyte

Scientific name	Local name	Citations	Presence	Life-form
Oryza sativa L.	**arroz**	11	absent	therophyte
Phyllostachys spp.	**bambú**	2	decorative	phanerophyte
Secale cereale L.	**centeno**	24	crop	therophyte
Stipa tenacisima L.	**esparto**	7	wild	chamaephyte
Triticum spp.	**trigo**	142	crop	therophyte
Zea mays L.	**maíz**	2	crop	therophyte
Primulaceae				
Primula veris L.	**flor de San José**	2	wild	hemicryptophyte
Primula vulgaris Huds.	**primavera**	1	wild	hemicryptophyte
Rosaceae				
Crataegus monogyna Jacq.	**espino albar**	21	wild	phanerophyte
Cydonia oblonga Mill.	**membrillo**	3	crop	phanerophyte
Malus domestica Borkh.	**manzano**	71	crop	phanerophyte
Malus sylvestris (L.) Mill.	**camueso**	3	wild	phanerophyte
Prunus armeniaca L.	**albaricoquero**	2	crop	phanerophyte
Prunus avium (L.) L.	**cerezo**	17	crop	phanerophyte
Prunus cerasus L.	**guindo**	14	crop	phanerophyte
Prunus domestica L.	**ciruelo**	14	crop	phanerophyte
Prunus dulcis (Mill.) D.A.Webb	**almendro**	24	crop	phanerophyte
Prunus persica (L.) Batsch	**melocotonero**	7	crop	phanerophyte
Prunus spinosa L.	**endrino**	7	wild	phanerophyte
Pyrus communis L.	**peral**	50	crop	phanerophyte
Rosa gallica L.	**rosa de Jericó**	1	wild	phanerophyte
Rosa spp.	**rosal**	351	decorative	phanerophyte
Rubus ulmifolius Schott	**zarzamora**	34	wild	phanerophyte
Rubiaceae				
Coffea arabica L.	**café**	8	absent	phanerophyte
Rutaceae				
Citrus aurantiifolia (Christm.) Swingle	**lima**	1	absent	phanerophyte
Citrus limon (L.) Osbeck	**limonero**	63	crop	phanerophyte
Citrus sinensis (L.) Osbeck	**naranjo**	64	crop	phanerophyte
Ruta graveolens L.	**ruda**	1	wild	chamaephyte
Salicaceae				
Populus alba L.	**chopo blanco**	4	crop	phanerophyte
Populus spp.	**chopo**	37	crop	phanerophyte
Salix × *fragilis* L.	**mimbrera**	4	wild	phanerophyte
Salix babylonica L.	**saúce llorón**	1	decorative	phanerophyte
Salix caprea L.	**salguera**	1	wild	phanerophyte
Salix spp.	**saúce**	1	wild	phanerophyte
Solanaceae				
Capsicum annuum L.	**guindilla**	5	crop	therophyte
	pimiento	29	crop	therophyte

Scientific name	Local name	Citations	Presence	Life-form
Hyoscyamus niger L.	**beleño**	2	wild	therophyte
Lycopersicon esculentum Mill.	**tomate**	12	crop	therophyte
Nicotiana tabacum L.	**tabaco**	24	crop	therophyte
Solanum melongena L.	**berenjena**	1	crop	therophyte
Solanum tuberosum L.	**patata**	21	crop	geophyte
Taxaceae				
Taxus baccata L.	**tejo**	1	wild	phanerophyte
Theaceae				
Camellia sinensis (L.) Kuntze	**té**	1	absent	chamaephyte
Ulmaceae				
Ulmus minor Mill.	**olmo**	11	wild	phanerophyte
Verbenaceae				
Verbena officinalis L.	**verbena**	3	wild	hemicryptophyte
Violaceae				
Viola × *wittrockiana* Gams	**pensamiento**	2	decorative	hemicryptophyte
Viola spp.	**violeta**	6	wild	hemicryptophyte
Vitaceae				
Vitis vinifera L.	**vid**	197	crop	phanerophyte
Not defined/[ferns]				
	helecho	2	wild	geophyte

resented in the region), and 8.2% are decorative (they only appear in gardens, plant pots, or bouquets of flowers). In relation to the number of citations, cultivated plants make up more than half of the citations (55.1%), followed by decorative species (23.5%), wild plants (18.2%), and absent species (3.2%). Weeds associated with cereal crops, such as poppy and malva, registered few quotations.

Regarding plant life-forms, 45.4% species were phanerophytes, 21.1% were therophytes, 15.8% were hemicryptophytes, 9.2% were geophytes, and 8.5% were chamaephytes. Regarding the number of citations for each life-form, the percentage of phanerophytes was highest, representing 60.3%, followed by therophytes (18.3%) and hemicryptophytes (12.1%).

Table 2 shows the citation data grouped by botanical family, with 2756 total quotes observed. The number of species that were cited in each family is also mentioned. The plants mentioned correspond to 48 botanical families, and

Table 2. Families mentioned in songbooks of Castilla y León, Spain, noting the number of citations (cites) and species (spp) mentioned.

Families	Number	
	cites	spp
Amaranthaceae	3	1
Amaryllidaceae	48	4
Apiaceae	48	5
Araliaceae	11	1
Arecaceae	19	2
Asparagaceae	1	1
Asteraceae	47	12
Betulaceae	45	1
Brassicaceae	40	4

Families	Number	
	cites	spp
Burseraceae	2	2
Cannabaceae	3	1
Caryophyllaceae	173	1
Cistaceae	1	1
Cucurbitaceae	74	4
Cupressaceae	5	1
Cyperaceae	1	1
Ericaceae	3	1
Fabaceae	100	17

Families	Number	
	cites	spp
Fagaceae	82	5
Geraniaceae	3	1
Iridaceae	50	2
Juncaceae	7	1
Juglandaceae	39	1
Lamiaceae	116	7
Lauraceae	88	2
Liliaceae	47	1
Linaceae	27	1

Table 2 cont. Families mentioned in songbooks of Castilla y León, Spain, noting the number of citations (cites) and species (spp) mentioned.

Families	Number	
	cites	spp
Lythraceae	2	1
Malvaceae	22	3
Moraceae	33	2
Myrtaceae	4	1
Oleaceae	125	3
Papaveraceae	9	1
Pinaceae	76	5
Piperaceae	13	1

Families	Number	
	cites	spp
Poaceae	265	10
Primulaceae	3	2
Rosaceae	619	15
Rubiaceae	8	1
Rutaceae	129	4
Salicaceae	48	6
Solanaceae	94	7
Taxaceae	1	1

Families	Number	
	cites	spp
Theaceae	1	1
Ulmaceae	11	1
Verbenaceae	3	1
Violaceae	8	2
Vitaceae	197	1
Not defined/[ferns]	2	
Total	2756	150

2 citations allude to ferns but do not provide enough detail to deduce the species. The families that recorded the largest number of citations were Rosaceae (619 citations), Poaceae (265 citations), and Vitaceae (197 citations).

The families with the greatest number of species mentioned in the songs were Fabaceae with 17 species, Rosaceae with 15 species, and Poaceae with 10 species, data that are consistent with their agricultural importance and the weight of this sector in the cultural heritage of this region. We also found families that, although represented by one single species, had a high number of citations, such as Vitaceae, Caryophyllaceae, and Betulaceae.

It was possible to extract information alluding to the use of the plant for 901 of 2756 plant mentions. We distinguished 67 applications, which have been grouped into 7 different categories. Figure 2 shows the most frequent categories and subcategories. The following uses were specified *inter alia*: food for different animals; shelter for animals, specifying whether it is a snake, pigeon, or hare; or for wood to create different utensils.

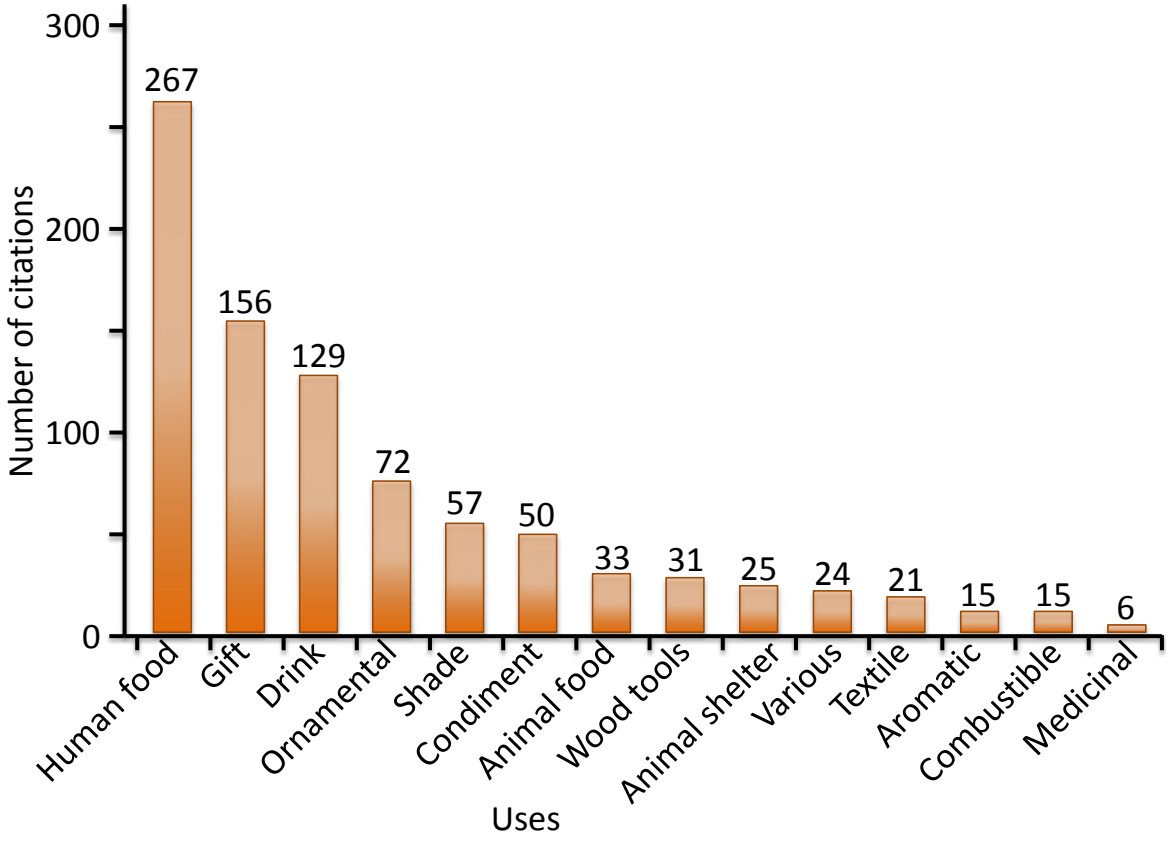

Figure 2. Uses of the plants mentioned in songbooks of Castilla y León, Spain.

Table 3 shows 35 plants that have 7 or more mentions that allude to their utility. Out of all citations, 32.6% reflected the usefulness of the plant. The species with the highest number of citations indicating utility are *Rosa* spp., *Vitis vinifera* L., *Dianthus caryophyllus* L., and *Triticum* spp. As for plants with the greatest diversity of uses, the following were mentioned: *Citrus limon* (L.) Osbeck, *Olea europaea* L., and *Rosmarinus officinalis* L. The other 66 species had less than 7 citations. Utility of the plant was not reflected in 1855 citations. A total of 49 plants were referred to with one single use.

Regarding the part of the plant mentioned, the whole plant (without specifying any part) garnered 976 citations, followed by the fruit and flower, representing 30.2% and 22.6%, respectively (Figure 3). Other parts such as the bark, resin, and seeds were also mentioned, totaling 7 citations. The citations referring to a combination of more than one organ of the plant such as stem-leaf, stem-fruit, or leaf-flower-fruit represent 6.4%.

Table 3. The use of the plants with the highest number of citations (species having 7 or more citations) in the songbooks of Castilla y León, Spain. The table concludes with the number of use citations for these species (Sum) and the total number of citations mentioned for the use in songbooks analyzed (Total).

Species	Uses														
	Medicinal	Human food	Drink	Condiment	Animal food	Combustible	Wood tools	Textile	Aromatic	Ornament	Gift	Animal shelter	Shade	Various	Total uses
Allium sativum L.		8		6											14
Capsicum annuum L.		7		4											11
Castanea sativa Mill.		14													14
Citrus limon (L.) Osbeck	1	6	1						1	1	6	2	2		20
Citrus sinensis (L.) Osbeck	1	8									8		1		18
Corylus avellana L.		7									5				12
Crataegus monogyna Jacq.		1					1					2	6		10
Cucurbita pepo L.		8												1	9
Cytisus scoparius (L.) Link									1			3	1	2	7
Dianthus caryophyllus L.										13	21				34
Ficus carica L.		8									1	3	1		13
Hordeum vulgare L.		3			14										17
Iris spp.										8	7			1	16
Juglans regia L.		6					11				1		1		19
Lactuca sativa L.		15													15
Laurus nobilis L.				5							9		22		36
Lilium candidum L.									1	7	3				11
Linum usitatissimum L.								17							17
Malus domestica Borkh.	1	15									10				26
Olea europaea L.		2				2	1				2	2	8		17
Petroselinum crispum (Mill.) Fuss				9							9				18
Phoenix dactylifera L.										1	4		3		8
Pinus spp.		2					13				1	2	4		22
Piper nigrum L.				8											8

Species	Uses														
	Medicinal	Human food	Drink	Condiment	Animal food	Combustible	Wood tools	Textile	Aromatic	Ornament	Gift	Animal shelter	Shade	Various	Total uses
Prunus dulcis (Mill.) D.A.Webb		9								1	1			1	12
Pyrus communis L.		20									1	1			22
Quercus ilex L.		1				7						2			10
Rosa spp.	2								4	27	37			2	72
Rosmarinus officinalis L.				1					3	1	5	1		2	13
Secale cereale L.		11			2										13
Theobroma cacao L.		9									1			1	11
Thymus spp.					1				3	1	3				8
Triticum spp.		24			10						1				35
Vicia faba L.		7													7
Vitis vinifera L.		7	128								2		3		140
Sum	5	198	129	33	27	9	26	17	13	60	138	18	52	10	735
Total	6	267	129	50	33	15	31	21	15	72	156	25	57	24	901

Discussion

The songs comprised mostly anonymous poetry, created from the seventeenth to the twentieth century, which were popularized and preserved by oral tradition to the present day (Alín 1991). The number of plants found in this study is similar to that found by Pardo de Santayana *et al*. (2006) in the work of a single author. In the case of the

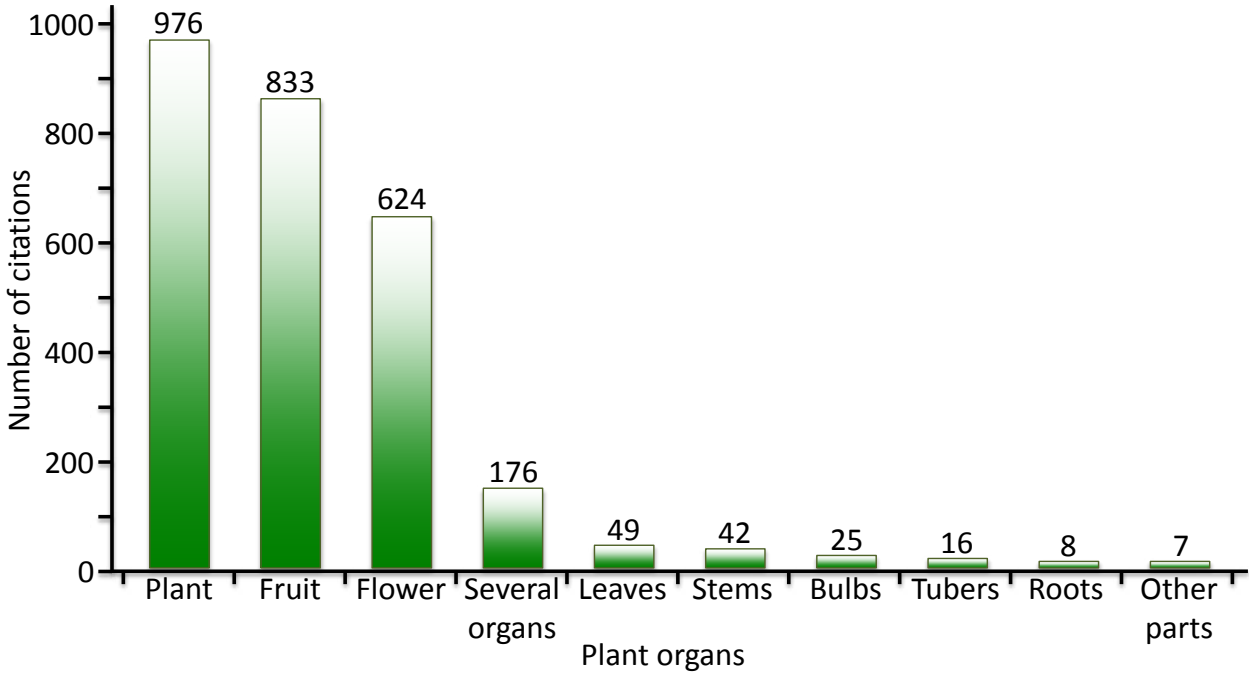

Figure 3. Plant organs referenced in song verses of Castilla y León, Spain.

songbooks analyzed here, despite the fact that the number of authors is greater, the number of plants mentioned has not increased.

The importance of plants in the economy of rural societies is evident in cultural manifestations such as music, a fact also found in sculpture and painting (Fischer *et al*. 2011). The high number of citations of crop plants is not surprising, especially in a rural society where cultivated plants are at the center of daily life. Plants associated with crop plants as weeds, which have high representation in paintings and tapestries in the European Mediterranean (Kandeler & Ullrich 2009), do not appear cited in this songbook.

Exotic species such as frankincense, myrrh, tamarind, cinnamon, clove, palm, royal palm, bamboo, cocoa, and tea are cited in the songbooks, similar to results found by Pardo de Santayana *et al*. (2006) in a study of ethnobotany in the works of Miguel de Cervantes, which attributes the mention of exotic species to the author's intention to make the literary text more attractive. These species are either mentioned in connection to faraway places, are associated with biblical events, or are provided as reference to the purchasing power of people that have certain spices at their disposal, possibly reminiscent of the ancient spice trade and travel to the Americas. Moldenke & Moldenke (2002) also highlighted as significant the exotic species found in the Bible.

It is worth noting that, despite representing only 9% of the plant diversity in the region (Velasco 2009), the presence of phanerophytes and chamaephytes was much higher in the musical texts, comprising 63% of the plants mentioned, which shows that they are more easily recognized by the region inhabitants.

It is also worth mentioning that the plants that have more relevance to the habits and customs of the region are cited in greater numbers. It is curious that the Rutaceae, with species such as orange, lemon, and lime, has so many mentions given that presence in the community is low. This family also has importance in the work of Cervantes (Pardo de Santayana *et al*. 2006). Taxaceae, Cupressaceae, and Cistaceae have very few citations despite the fact that they are known colloquially among the people, they are substantial in size, and their recognition is not difficult.

The economic importance of plants in human nutrition and the decorative value of flowers have been highlighted by Rivera and Obón (1991); this is also reflected in the songs studied here. Medicinal plants, however, play only a minor role in song texts, as was also observed by De Cleene and Lejeune (2002). Our findings of the cultural importance of the rose as a gift offering has also been highlighted by other authors (Turner 1988).

Wheat and grapes are staple crops in Mediterranean cultures and diet, and holm oak (*Quercus ilex*) is one of the most common trees in the landscape of the Iberian Mediterranean ecosystem. The frequency of references of these species is not due to a deliberate choice made by anonymous authors of traditional songs but rather reflects the importance of these plants in everyday life in the region and the general use of plant metaphors in the Spanish language.

The Rosaceae stands out as the plants that are mentioned most for food purposes, followed by Poaceae and Fabaceae, families that are also noted for their nutritional value by Leonti *et al*. (2006). Aromatic use is represented by plants of the Lamiaceae and Rosaceae, and medicinal use is attributed to plants of the Lamiaceae and Apiaceae, data that coincide with Akerretta *et al*. (2007).

In terms of alcoholic drinks, the grape (Vitaceae) is mentioned the most, and the Rutaceae (Citrus family) has a prominent role regarding non-alcoholic drinks. The Fagaceae stand out for use as fuel and Salicaceae for use in basket-weaving, data which coincide with other authors (Rivera & Obón 1991, Velasco 2009). The importance of flowers and fruit confirms their use as gifts and food, uses that are highlighted in other studies (Thompkins & Bird 1994, Leonti *et al*. 2006).

Conclusion

Almost one-fifth of the songs analyzed from the region mentioned plants, a fact that highlights the importance that plants assume in this type of artistic expression. The plants most frequently mentioned in the songs include the rose, grapes, carnation, and wheat, plants that symbolize values of attractiveness and beauty or economic importance due to their agricultural value. The nutritional and decorative uses are the most mentioned, data also corroborated by the fact that the fruits and flowers are the organs with the highest number of citations.

Literature Cited

Akerreta, S., R.Y. Cavero, V. López & M.I. Calvo. 2007. Analyzing factors that influence the folk use and phytonomy of 18 medicinal plants in Navarra. *Journal of Ethnobiology and Ethnomedicine* 3:16–30. dx.doi.org/10.1186/1746-4269-3-16

Alín, J.M. 1991. *Cancionero Tradicional*. Editorial Castalia, S.A., Madrid, Spain.

Cardaño, M. 2009. *Estudio Etnobotánico del Cancionero Popular de Castilla y León*. Trabajo Fin de Carrera, Ingeniería Técnica Agrícola, Universidad de Valladolid, Palencia, Spain.

Causapé, M.C.F. & F.R. De la Torre. 2009. Un villancico con numerosas plantas medicinales (Santa Fe de Bogotá, Colombia, ca. 1722). *Anales de la Real Academia Nacional de Farmacia* 75(5):639–678.

Ceballos Jiménez, A. 1986. *Diccionario Ilustrado de los Nombres Vernáculos de las Plantas en España*. Editorial ICONA, Madrid, Spain.

De Cleene, M. & M.C. Lejeune. 2002. *Compendium of Symbolic and Ritual Plants in Europe*. Man & Culture Publishers, Ghent, Beligum.

Etkin, N.L. & E. Elisabetsky. 2005. Seeking a transdisciplinary and culturally germane science: The future of ethnopharmacology. *Journal of Ethnopharmacology* 100(1–2):23–26. dx.doi.org/10.1016/j.jep.2005.05.025

Fischer, L.P., R. Verilhac, J.J. Ferrandis & F. Trépardoux. 2011. Les plantes médicinales et symboliques dans les jardins mystiques des retables médiévaux. *Histoire des Sciences Medicales* 45(3):295–301.

Harris, E.S.J. 2008. Ethnobryology: Traditional uses and folk classification of bryophytes. *Bryologist* 111(2):169–217. dx.doi.org/10.1639/0007-2745(2008)111[169:ETUAFC]2.0.CO;2

Holman, E.W. 2002. The relation between folk and scientific classifications of plants and animals. *Journal of Classification* 19(1):131–159.

Kandeler, R. & W.R. Ullrich. 2009. Symbolism of plants: Examples from European-Mediterranean culture presented with biology and history of art. *Journal of Experimental Botany* 60(7):1893–1895. dx.doi.org/10.1093/jxb/erp088

Keller, H.A. 2010. Plants used by “guaranies” from Misiones Province (Argentina) to make and improve musical instruments. *Darwiniana* 48(1):7–16.

Leonti, M., S. Nebel, D. Rivera & M. Heinrich. 2006. Wild gathered food plants in the European mediterranean: A comparative analysis. *Economic Botany* 60(2):130–142. dx.doi.org/10.1663/0013-0001(2006)60[130:WGFPIT]2.0.CO;2

Mateo, G. & M. Crespo. 1995. *Flora Abreviada de la Comunidad Valenciana*. Editorial Gamma, Alicante, Spain.

Moldenke, H.N. & A.L. Moldenke. 2002. *Plants of the Bible*. Kegan Paul, London, U.K.

Morales, R., M.J. Macía, E. Dorda & A. García-Villaraco. 1996. Nombres vulgares, II. *Archivos de Flora Ibérica* 7:1–325.

Pardo de Santayana, M. 2008. *Estudios Etnobotánicos en Campoo (Cantabria)*. Consejo Superior de Investigaciones Científicas, Madrid, Spain.

Pardo de Santayana, M., J. Tardío, M. Heinrich, A. Touwaide & R. Morales. 2006. Plants in the works of Cervantes. *Economic Botany* 60(2):159–181. dx.doi.org/10.1663/0013-0001(2006)60[159:PITWOC]2.0.CO;2

Puri, A.K. & A. Chaturvedi. 2008. Ethnobotanical approach on wild plants for manufacturing musical instruments by Gond and Koibu tribes of Vidarbha. *Indian Journal of Traditional Knowledge* 7(1):138–140.

Rivera, D. & C. Obón. 1991. *La Guía Incafo de las Plantas Útiles y Venenosas de la Península Ibérica y Baleares (Excluidas Medicinales)*. Ed. Incafo, Madrid, Spain.

Ruiz de la Torre, J. 2006. *Flora Mayor*. Organismo Autonomo Parques Nacionales, Madrid, Spain.

Sánchez, E. 1991. *Flora Agrícola. Tomos I y II*. Editorial Ministerio de Agricultura, Pesca y Alimentación, Madrid, Spain.

The Plant List. 2013. *The Plant List*. Version 1.1. www.theplantlist.org Accessed 16 May 2014.

Tropicos. 2014. *Tropicos Plant Database*. Missouri Botanical Garden. www.tropicos.org Accessed 16 May 2014.

Tompkins, P. & C. Bird. 1994. *The Secret Life of Plants.* Harper & Row, New York, U.S.A.

Turner, N.J. 1988. “The importance of a rose”: Evaluating the cultural significance of plants in Thompson and Lillooet Interior Salish. *American Anthropologist* 90(2):272–290. dx.doi.org/10.1525/aa.1988.90.2.02a00020

Velasco, J.M. 2009. *Guía de las Plantas Útiles y Perjudiciales en Castilla y León*. Editorial Caja Duero, Salamanca, Spain.

Appendix I. Musical works analyzed from the songbooks of Castilla y León, Spain.

Blanco González, A. 1995. *Palabras Contra el Tiempo. Tradición Oral en Peñafiel y Pueblos Adyacentes*. Calatrava, Valladolid, Spain.

Caja Segovia. 2003. *De la Tierra: Canciones y Romances Segovianos de Ayer y Hoy*. Caja Segovia, Segovia, Spain.

Carril Ramos, A. & M. Manzano Alonso. 1955. *Páginas Inéditas del Cancionero de Salamanca*. Diputación de Salamanca, Salamanca, Spain.

Cortés Testillano, T. 1991. *Cancionero Abulense*. Caja de Ávila, Ávila, Spain.

Crespo Alcalde, G. 1991. *La Montaña Palentina*. *Tomo II La Lora*. Merino Artes Gráficas, Palencia, Spain.

Crespo Alcalde, G. 1991. *La Montaña Palentina*. *Tomo IV Fuentes Carrionas y La Peña*. Merino Artes Gráficas, Palencia, Spain.

Díaz, J. 1980. *Temas del Cancionero en Castilla y León*. Ayuntamiento de Valladolid, Valladolid, Spain.

Díaz, J. 1982. *Cancionero del Norte de Palencia I*. Institución Tello Téllez de Meneses-Diputación de Palencia, Palencia, Spain.

Díaz, J. 1983. *Cancionero de Palencia II*. Institución Tello Téllez de Meneses-Diputación de Palencia, Palencia, Spain.

Díaz, J., J. Delfín Val & L. Díaz de Viana. 1981. *Catálogo Folklórico de la Provincia de Valladolid. Vol. IV, cancionero musical primera parte*. Institución Cultural Simancas, Valladolid, Spain.

Díaz, J., J. Delfín Val & L. Díaz de Viana. 1982. *Catálogo Folklórico de la Provincia de Valladolid. Vol. IV, cancionero musical segunda parte*. Institución Cultural Simancas, Valladolid, Spain.

Díaz de Viana, L. 1993. *Música y Culturas*. Eudema, Madrid, Spain.

Díaz de Viana, L. & M. Manzano Alonso. 1989. *Cancionero Popular de Castilla y León. Romances, canciones y danzas de tradición oral*. Centro de Cultura Tradicional-Diputación de Salamanca, Salamanca, Spain.

Díaz de Viana, L. & M. Manzano Alonso. 1989. *Cancionero Popular de Castilla y León. Romances, canciones y danzas de tradición oral II*. Centro de Cultura Tradicional-Diputación de Salamanca, Salamanca, Spain.

Domínguez Berrueta, M. 1941. *Del Cancionero Leonés*. Diputación de León, León, Spain.

Fernández Núñez, M. 1931. *Folklore Leonés*. Asilo de Huérfanos del S.C. de Jesús, Madrid, Spain.

García de Andrés, P. & I. García de Andrés. 2008. *Cantos, Rimas y Juegos Populares*. Proyecto LIFE Tiermes, Soria, Spain.

Jiménez Juárez, E. 1992. *Cancionero Español*. Candeleda, Ávila. Manresa, Madrid, Spain.

Manzano Alonso, M. 1991. *Cancionero Leonés Vol. II Tomo II*. Diputación de León, León, Spain.

Manzano Alonso, M. 1991. *Cancionero Leonés Vol. III Tomo I Canto religiosos, ciclo de navidad*. Diputación de León, León, Spain.

Manzano Alonso, M. 1992. *Cancionero Zamorano*. Aeropuerto, Zamora, Spain.

Manzano Alonso, M. 1998. *Cancionero Leonés Vol. I Tomo I Ronda y canciones*. Diputación de León, León, Spain.

Manzano Alonso, M. 1998. *Cancionero Leonés Vol. I Tomo II Tonadas y baile*. Diputación de León, León, Spain.

Manzano Alonso, M. 2001. *Cancionero Popular de Burgos: Rondas y canciones, Tomo I*. Diputación de Burgos, Burgos, Spain.

Manzano Alonso, M. 2001. *Cancionero Popular de Burgos: Tonadas de bailes danza, Tomo II*. Diputación de Burgos, Burgos, Spain.

Manzano Alonso, M. 2003. *Cancionero Popular de Burgos: Canciones infantiles, Tomo IV*. Diputación de Burgos, Burgos, Spain.

Manzano Alonso, M. 2003. *Cancionero Popular de Burgos: Canciones del ciclo vital y anual, Tomo V*. Diputación de Burgos, Burgos, Spain.

Marazuela Bornos, A. 1997. *Cancionero de Castilla*. Endymión, Segovia, Spain.

Ricis, G. 1981. *Obra Musical Palentina del Maestro Guzmán Ricis*. Caja Palencia, Palencia, Spain.

Santos, C., L.D. Delgado & I. Sanz. 1992. *Folk Segoviano. I Rueda del año*. Caja Segovia, Segovia, Spain.

Santos, C., L.D. Delgado & I. Sanz. 1998. *Folk Segoviano. I La jota segoviana*. Caja Segovia, Segovia, Spain.

Sección Femenina. 1936–1975. *Fichas de Folklore*. Archivo Provincial de Palencia, Palencia, Spain.

Tejero Cobos, I. 1985. *Cancionero Popular de Segovia*. Gráficas Ceyde, Segovia, Spain.