

Edible and medicinal plants in the cloister gardens of West Europe (800s – 900s AD)*

Kalina Y. Boseva¹ & Yulia Z. Bosseva²

¹ Faculty of Medicine, Sofia University St. Kliment Ohridski, Kozyak Str. 1, 1407 Sofia, e-mail: kalbo@abv.bg

² Department of Plant and Fungal Diversity, Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, Acad. G. Bonchev Str. 23, 1113 Sofia, e-mail: julibos@abv.bg

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Abstract. *Capitulare de Villis* by Charlemagne, the poem *De cultura hortarum* by Walahfrid Strabo and the *Plan of St. Gall* are some of the most comprehensive sources of information about the diversity of edible and medicinal plants in the 8th – 9th century monastery gardens of West Europe. Examination of these sources reveals that the diet of the mediaeval European consisted of about 100 cultivated plants before the introduction of the now dominant staple plant species from the Americas.

Key words: *Capitulare de Villis*, culinary plants, healing herbs, mediaeval garden, medical garden, monastery garden, *Plan of St. Gall*, Walahfrid Strabo

Introduction

The document *Capitulare de Villis* by Charlemagne, the poem *De cultura hortarum* by Walahfrid Strabo (1834) and the *Plan of St. Gall* (Horn & Born 1979) are among the most comprehensive sources of information about the diversity of edible and medicinal plants in the 8th to 9th century monastery gardens of West Europe.

Capitulare de Villis, dated roughly between 771 and 800 AD, see Schneider (1968) and Loyn & Percival (1975), is one of several capitularies issued by Carolingian royalty about the organisation and management of their estates. It offers valuable clues to Carolingian culture and the administrative and social reforms carried out in that period. The document sets out rules and regulations on how to manage lands and animals, as well as how to dispense justice. It offers

some governing principles on the overall administration of the King's property and assets. Chapter LXX lists 72 medicinal, aromatic and honey plants and 16 fruit trees, which should be planted in the royal gardens and estates.

Walahfrid Strabo was a celebrated poet and theologian of the 9th century. He lived and studied mainly in Reichenau, a monastery in modern Germany. His education covered the Scripture, the writings of the Holy Fathers, as well as Latin, Greek, geography, poetry and the liberal arts. Strabo became a monk circa 822 and later served as preceptor to Prince Charles at the court of Louis the Pious. In 838 he succeeded Erlebold as Abbot of Reichenau. After a short political exile he was allowed to return to the monastery, where he lived until his death in 849. Walahfrid's numerous works, written in Latin, consist of theological treatises in prose and many poems on different subjects.

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Among them is a poem on gardening and the medicinal uses of the plants titled *De cultura hortorum* – “On the cultivation of gardens”. For biography of Strabo see Mckitterick (1995) and Riché (1993).

The *Plan of St. Gall* is an architectural blueprint of the ideal monastery. Created in Reichenau Monastery circa 820, it is drawn and annotated in meticulous detail on five sewn-together pieces of parchment. It includes 340 notes clarifying the functioning of all buildings, rooms and even furniture. There are sketches of some forty structures, including a church, a scriptorium, lodgings for visiting monks, a monastic dormitory, a refectory, a kitchen, a bake-and-brew house, a guest house, the Abbot's residence, and numerous fields and industrial outbuildings, medicinal and kitchen gardens, a house for the gardener, various fences and walls, a road, and an orchard in the graveyard. In the spirit of the Order of St. Benedict there was also an infirmary: a place for the sick to recover, where bloodlettings were performed and healing baths prepared. There was a house for the physician, a pharmacy, and a place for drying and storage of herbs.

Material and methods

The Latin texts of *Capitulare de Villis*, Strabo's poem and the annotations of the *Plan of St. Gall* were compared in order to prepare an authentic list of plants used for healing and nutrition during the specified

period. The gardening plans provided by the *Plan of Saint Gall* and the description of plant uses provided by Strabo's poem complement *Capitulare de Villis* and contribute to a more comprehensive compilation of plant names as presented by the article.

The original texts were sourced from the following editions: Strabo (1834), Payne (1966), Horn & Born (1979), Schneider (1968).

Plant names were identified through a comparative analysis of relevant entries in a selection of reference works as follows: Strank & Meurers-Balke (2008), Horn & Born (1979), Payne (1966), Wyrting (2015).

Whether a certain plant is used for culinary or medicinal purposes is determined by cross references in the following sources: Strabo (1834), Horn & Born (1979), Dioscurides (1906), Plinius Maior (1858), Sammonicus (1662), Plinius Valerianus (1875), Apuleius Platonicus (1528), Wyrting (2015), Usher (1974).

Results

Capitulare de Villis enumerates 90 plant names, the *Plan of St. Gall* – 47, and Strabo's poem describes 24 plants. After removal of the duplicates and variant names, the list consists of 31 culinary plants and spices, 30 medicinal plants, and 22 plants used for both purposes, 11 fruit trees and five nut trees. Some of these are less popular in the present day, and others are completely out of use. See Table 1

Table 1.

Scientific name (Family)	Latin name in the original source	Source*	Use**
<i>Artemisia abrotanum</i> L. (Asteraceae)	abrotanum	CS	M
<i>Artemisia absinthium</i> L. (Asteraceae)	absinthium	S	M
<i>Atriplex hortensis</i> L. (Chenopodiaceae)	adripias	C	E
<i>Agrimonia eupatoria</i> L. (Rosaceae)	agrimoni	S	M
<i>Allium sativum</i> L. (Alliaceae)	alia (alias)	CP	EM
<i>Althaea officinalis</i> L. (Malvaceae)	altaea	C	M
<i>Artemisia vulgaris</i> L. (Asteraceae)	ambrosiam	S	M
<i>Meum athamanticum</i> Jacq. (Apiaceae) / <i>Ammi majus</i> L.	ameum	C	EM
<i>Pimpinella anisum</i> L. (Apiaceae)	anesum	C	EM
<i>Anethum graveolens</i> L. (Apiaceae)	anetum	CP	EM
<i>Apium graveolens</i> L. (Apiaceae)	apium	CPS	EM
<i>Allium cepa</i> L. var. <i>ascalonicum</i> (Alliaceae)	ascalonias (ascalonias)	CP	E
<i>Beta vulgaris</i> L. ssp. <i>vulgaris</i> (Chenopodiaceae)	betas	CP	E
<i>Amaranthus blitum</i> L. (Chenopodiaceae)	blidas	C	E
<i>Allium schoenoprasum</i> L. (Alliaceae)	britlas	C	E
<i>Cynara cardunculus</i> L. (Asteraceae) / <i>Dipsacus sativus</i> (L.) Scholl. (Dipsacaceae)	cardones	C	E

Table 1. Continuation.

Scientific name (Family)	Latin name in the original source	Source*	Use**
<i>Carum carvi</i> L. (Apiaceae)	careium	C	E
<i>Daucus carota</i> L. (Apiaceae)	carvitas	C	E
<i>Brassica oleracea</i> L. (Brassicaceae)	caulos (caulas)	CP	E
<i>Allium cepa</i> L. var. <i>cepa</i> (Alliaceae)	cepas	CP	E
<i>Anthriscus cerefolium</i> (L.) Hoffm. (Apiaceae)	cerfolium (cerefolium)	CPS	E
<i>Cicer arietinum</i> L. (Fabaceae)	cicerum italicum	C	E
<i>Cuminum cyminum</i> L. (Apiaceae)	ciminum (cumino)	CP	E
<i>Citrullus colocynthis</i> (L.) Schrad. (Cucurbitaceae) / <i>Bryonia alba</i> L.	coloquentidas	C	ME
<i>Coriandrum sativum</i> L. (Apiaceae)	coriandrum (coliandrum)	CP	EM
<i>Tanacetum balsamita</i> L. (Asteraceae)	costum (costa)	CPS	EM
<i>Cucumis sativus</i> L. (Cucurbitaceae)	cucumeres	C	E
<i>Cucurbita lagenaria</i> L. = <i>Lagenaria siceraria</i> (Mol.) Standl. (Cucurbitaceae)	cucurbitas	CS	E
<i>Dictamnus albus</i> L. (Rutaceae)	diptamnum	C	M
<i>Artemisia dracunculus</i> L. (Asteraceae) / <i>Polygonum bistorta</i> L. (Polygonaceae)	dragantea	C	E
<i>Eruca sativa</i> Mill. (Brassicaceae)	eruca alba	C	E
<i>Vicia faba</i> L. (Fabaceae)	fabas maiores	C	E
<i>Vigna unguiculata</i> (L.) Walp. (Fabaceae) / <i>Dolichos lablab</i> L.	fasiolum (fasciolus)	CP	E
<i>Centaurium erythraea</i> Rafn (Gentianaceae) / <i>Tanacetum parthenium</i> (L.) Schultz Bip. (Asteraceae)	febrefugiam	C	M
<i>Foeniculum vulgare</i> Mill. (Apiaceae)	feniculum (foeniculum)	CSP	EM
<i>Trigonella foenum-graecum</i> L. (Fabaceae)	fenigrecum (fena greca)	CP	E
<i>Nigella sativa</i> L. (Ranunculaceae)	git (gitto)	CP	EM
<i>Gladiolus italicus</i> Mill. (Iridaceae/Iridaceae)	gladiolum	C	M
<i>Cichorium intybus</i> L. (Asteraceae)	intubas	C	E
<i>Sempervivum tectorum</i> L. (Crassulaceae)	Jovis barbam	C	M
<i>Euphorbia lathyris</i> L. (Euphorbiaceae)	lacteridas	C	M
<i>Lactuca sativa</i> L. (Asteraceae), <i>Lactuca virosa</i> L.	lactucas (lactuca)	CP	E
<i>Levisticum officinale</i> W.D.J.Koch (Apiaceae)	levisticum (lubestico)	CSP	EM
<i>Lilium candidum</i> L. (Liliaceae)	lilium	CSP	M
<i>Iris germanica</i> L. (Iridaceae/Iridaceae)	lilium (gladiola)	CSP	M
<i>Papaver sp.</i> (Papaveraceae)	magones	P	M
<i>Malva sylvestris</i> L. (Malvaceae)	malvas	C	M
<i>Marrubium vulgare</i> L. (Lamiaceae)	marrubium	S	M
<i>Mentha spicata</i> L. (Lamiaceae) / <i>Mentha aquatica</i> L., <i>Mentha crispa</i> L.	mentam (menta)	CSP	EM
<i>Mentha longifolia</i> L. (Lamiaceae)	mentastrum	C	EM
<i>Nasturtium officinale</i> R.Br. (Brassicaceae)	nasturtium	C	E
<i>Nepeta cataria</i> L. (Lamiaceae)	nepetam	CS	M
<i>Smyrniolum olusatrum</i> L. (Apiaceae) / <i>Angelica archangelica</i> L.	olisatum	C	M
<i>Papaver somniferum</i> L. (Papaveraceae)	papaver	CPS	ME
<i>Arctium lappa</i> L. (Asteraceae)	parduna	C	ME
<i>Pastinaca sativa</i> L. (Apiaceae)	pastenacas (pastinachus)	CP	E
<i>Cucumis melo</i> L. (Cucurbitaceae)	pepones	CS	E
<i>Petroselinum crispum</i> (Mill.) Nym. ex A.W.Hill (Apiaceae)	petresilinum (petrosilium)	CP	E
<i>Pisum sativum</i> L. (Fabaceae)	pisos Mauriscos	C	E
<i>Allium porrum</i> L. (Alliaceae)	porros	CP	E
<i>Mentha pulegium</i> L. (Lamiaceae)	puledium (puleium/pulegium)	CSP	M
<i>Raphanus sativus</i> L. var. <i>niger</i> (Brassicaceae)	radices (rafanus)	CPS	EM
<i>Brassica oleracea</i> var. <i>gongyloides</i> L. (Brassicaceae) / <i>Brassica rapa</i> L. emend. Metzg. ssp. <i>rapa</i>	ravacaulos	C	E
<i>Rosmarinus officinalis</i> L. (Lamiaceae)	ros marinum (ros marino)	CP	ME

Table 1. Continuation.

Scientific name (Family)	Latin name in the original source	Source*	Use**
<i>Rosa canina</i> L. / <i>Rosa galica</i> L. (<i>Rosaceae</i>)	rosas	CSP	EM
<i>Ruta graveolens</i> L. (<i>Rutaceae</i>)	rutam (ruta)	CSP	ME
<i>Salvia officinalis</i> L. (<i>Lamiaceae</i>)	salviam (salvia)	CSP	M
<i>Satureja hortensis</i> L. (<i>Lamiaceae</i>)	satureiam (sataregiam)	CP	EM
<i>Juniperus sabina</i> L. (<i>Cupressaceae</i>)	savinam	C	M
<i>Salvia sclarea</i> L. (<i>Lamiaceae</i>)	sclareiam	CS	M
<i>Laserpitium siler</i> L. (<i>Apiaceae</i>)	silum	C	M
<i>Sinapis alba</i> L. (<i>Brassicaceae</i>)	sinape	C	EM
<i>Sisymbrium officinale</i> (L.) Scop. (<i>Lamiaceae</i>)	sisimbrium (sisimbria)	CP	M
<i>Calendula officinalis</i> L. (<i>Asteraceae</i>)	solsequiam	C	M
<i>Urginea maritima</i> (L.) Baker (<i>Hyacinthaceae</i>)	squillam	C	E
<i>Tanacetum vulgare</i> L. (<i>Asteraceae</i>)	tanazitam	C	M
<i>Allium fistulosum</i> L. (<i>Alliaceae</i>) / <i>Allium ursinum</i> L.	uniones	C	E
<i>Betonica officinalis</i> L. (<i>Lamiaceae</i>)	Vettonica	S	M
<i>Asarum europaeum</i> L. (<i>Aristolochiaceae</i>)	vulgigina	C	M
<i>Rubia tinctorum</i> L. (<i>Rubiaceae</i>)	warentiam	C	M
Trees			
<i>Castanea sativa</i> Mill. (<i>Fagaceae</i>)	castanarios (castenarius)	CP	E
<i>Corylus avellana</i> L. (<i>Betulaceae</i>)	avellanarios (auellenarius)	CP	E
<i>Cydonia oblonga</i> Mill. (<i>Rosaceae</i>)	cotoniarios (guduniarius)	CP	E
div. Sorten <i>Malus domestica</i> Borkh. (<i>Rosaceae</i>) / <i>Citrus aurantium</i> L. (<i>Rutaceae</i>)	pomarios	C	E
<i>Ficus carica</i> L. (<i>Moraceae</i>)	ficus	CP	E
<i>Juglans regia</i> L. (<i>Juglandaceae</i>)	nucarios (nugarios)	CP	E
<i>Laurus nobilis</i> L. (<i>Lauraceae</i>)	lauros	CP	EM
<i>Malus sylvestris</i> L. varieties	gozmaringa, geroldinga, crevedella, sperauca (malarius)	CP	E
<i>Mespilus germanica</i> L. (<i>Rosaceae</i>)	mespilarios (mispolarius)	CP	E
<i>Morus nigra</i> L. (<i>Moraceae</i>)	morarios (murarios)	CP	E
<i>Pinus pinea</i> L. (<i>Pinaceae</i>)	pinos	C	E
<i>Prunus avium</i> L. (<i>Rosaceae</i>) / <i>Prunus cerasus</i> L. (<i>Rosaceae</i>)	ceresarios	C	E
<i>Prunus domestica</i> L. (<i>Rosaceae</i>)	prunarios	CP	E
<i>Prunus dulcis</i> (Mill.) D.A. Webb (<i>Rosaceae</i>)	amandalarios (amendelarius)	CP	E
<i>Prunus persica</i> (L.) Batsch (<i>Rosaceae</i>)	persicarios (persicus)	CP	E
<i>Pyrus communis</i> L.	pirarios (perarios)	CP	E
<i>Sorbus domestica</i> Borkh. (<i>Rosaceae</i>)	sorbarios	CP	E

* C – Capitulare de Villis; S – Strabo's De cultura horticorum; P – Plan of Sent Gall

** E – edible plant; M – medicinal plant

Discussion

Strabo's poem features numerous botanical, medicinal and poetical references in Greek and Latin, among them Pliny the Elder, Columella, Dioscorides, Celsus, Serenus Sammonicus, Plinius Valerianus, Apuleus Platonicus, Isidore of Seville, Virgil, Horace, Lucretius Carus, etc. Strabo is believed to have been chief gardener in Reichenau Monastery at some point in his life and his poem is unique for incorporating his personal fascination with gardening and his practical ex-

perience in the inherited literary tradition. With the rise and spread of the Benedictine Order, interest in ancient science and medicine rose again in the monasteries across Europe. Care for the sick was no longer just the dominion of prayer as in the early days of Christianity. The Benedictines built infirmaries, planted medicinal and kitchen gardens, bought and stored foreign herbs, studied and copied the ancient medical treatises and carried out their own research (For the Order of Saint Benedict see Payne-Carter (1985). The 24 plant descriptions in *De cultura horticorum* reflect

an existing cloister garden, and the so-called Strabo's garden has become a model of that type of gardening even in modern times.

In the medicinal garden described in the *Plan of St. Gall*, 16 plant species can be found, all of them also present in *Capitulare de Villis*, and nine mentioned in Strabo's poem too. The garden was situated near the infirmary and the place for storage and preparation of herbal remedies. Eight of the plant beds were in the center and were accessible from all sides, the other eight were adjacent to the wall. The vegetable garden was situated opposite the house of the gardener and, according to the blueprints, measured about 16 to 25 meters and was divided into 18 beds in two rows, each for a particular type of plant. The beds were framed with boards and had access paths along each side. Of the mentioned 18 species, five are also found in Strabo's poem, and 17 in *Capitulare de Villis*. Next to the fenced garden lay a cemetery with an orchard, which had 13 plots for planting 14 species of trees, and 14 graves. All of the tree species are found also in *Capitulare de Villis*, presumably suggesting that *Capitulare de Villis* was among the sources of the *Plan of St. Gall*. The depiction of a fireplace in the gardener's house is a sign of his elevated status in the monastic community, as all other staff dwellings lack this feature. The importance of his position probably stems from the fact that the diet of the monks consisted mostly of vegetables and he was responsible for rearing the staples of their daily meals.

However, gardens of such size would be too small to constitute a single source of food for the monastery, where on the average resided between 250 and 270 people. The trade archives of St. Gall reveal that fruit, nuts and certain other products were usually imported (Horn & Born 1979: 210-212). A document from 843, when Walahfrid was Abbot of Reichenau, deals with food issues at the monastery and reports that 40 vine growers near the Monastery needed to plant 12 rows of leek in the monastery garden (Staatsarchiv 1849). Some suggest that vegetables were planted not only in the garden, but anywhere between buildings where space permitted. (For mediaeval gardens see also Garland (1984), Aben & Wit (1999), Kleiner (2009) and Meyraert (1986)

The original names of the plants, as all common names in different languages, are inconsistent and sometimes ambiguous. They have many phonetic variations, sometimes several different names are used

for one plant or the same name is used to refer to several plants, and a name could have another grammatical gender or declination in the different sources. There are also names of non-Latin and non-Greek origin which do not follow the rules of Latin grammar. Therefore, the original names are better left as used in the texts despite the fact they are not all in nominative singular, which should be the basic form in a dictionary. This feature of the original common names also limits the exact identification of the plants: ultimately, the list of the recognized plant species includes some of the diverging suggestions, so the number of identified plants is higher than the number of common names in the sources.

The analysed sources suggest that the diet of the mediaeval European consisted of about 100 cultivated plants before the introduction of the currently dominant plant species of the New World. The present list, however, offers information mainly about what was cultivated in the period in question. More extensive research is required, using city and monastery archives, to broaden our scope and include valuable information about the trade in fruit, vegetables, nuts, herbs and other comestibles.

Some of the plants in the compiled list are not in popular use today in West Europe (Strank & Meurers-Balke 2008). The use of *Ruta graveolens* as a medicinal herb has declined in modern times due to its toxicity and bitterness of the taste. The herb was used more extensively in the past, but today is largely unknown to the general public and most chefs, and is unavailable in grocery stores. *Amaranthus blitum* has been replaced by spinach because of its bitter taste. *Atriplex hortensis* is not completely out of use, but is only seldom planted in the home gardens. As a drug, *Lactuca virosa* is no longer relevant in conventional medicine; however, the plant is still cultivated on a small scale for the production of pharmaceuticals against anxiety. *Laserpitium siler* is now fully out of use. This is probably because the plant – except for certain mountain areas – was always relatively rare and was hardly ever cultivated. *Ligusticum mutellinum* may still occasionally be used as a natural remedy in alpine regions, but generally no longer plays a role in medicine. *Mespilus germanica* is common in old cottage gardens. However, it is widely planted there only as ornamental tree because of its appealing blossoms and foliage. The lengthy and laborious process to puree, jam or ferment its fruit into wine is

seldom attempted by enthusiasts. *Meum athamanticum* was formerly cultivated for its edible root. Today, although almost all parts of the plant have medicinal or culinary applications, the plant is out of cultivation. *Rubia tinctorum* was previously grown in large quantities for the extraction of madder dye, but production has declined rapidly, as chemists can now synthetically produce the main dye alizarin.

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