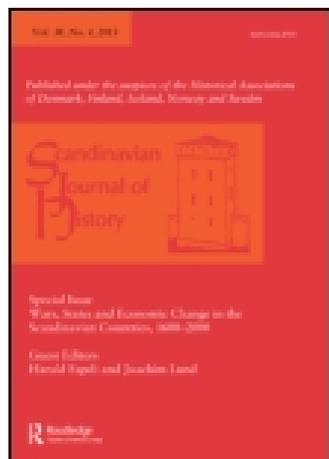


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## Scandinavian Journal of History

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/shis20>

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Published online: 05 Nov 2014.

To cite this article: Steinunn Kristjánsdóttir, Inger Larsson & Per Arvid Åsen (2014) The Icelandic medieval monastic garden - did it exist?, *Scandinavian Journal of History*, 39:5, 560-579, DOI: [10.1080/03468755.2014.946534](https://doi.org/10.1080/03468755.2014.946534)

To link to this article: <http://dx.doi.org/10.1080/03468755.2014.946534>

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# Steinunn Kristjánsdóttir

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### THE ICELANDIC MEDIEVAL MONASTIC GARDEN – DID IT EXIST?

*In the multidisciplinary project presented here, 12 known monastic grounds in Iceland were surveyed by a group of medievalists from different fields in the summers of 2009, 2010 and 2011. The aim of the survey was to increase knowledge of the Icelandic monastic garden and of the plants that were known and used there; to look for possible medieval cultural relict plants; to observe continental influence on the island; and to vitalize discussion and research. Landscape and plants were surveyed at the 12 monastic sites, and full botanical investigations made. Many of the plants found have a medieval past as medicinal and utility plants, and some of their properties may have been common knowledge to medieval Icelanders. An investigation of written sources and archaeological and archaeobotanical findings from excavated sites added to the investigators' knowledge. So were there monastic gardens in Iceland in the Middle Ages? The answer is a rather confident yes. With all the evidence combined, the investigators were able to trace the deliberate use of medicinal, food and utility plants in the monastic contexts. Whether they were cultivated, tended in situ, gathered growing wild or imported is another matter. Continental influence was more evident than has previously been observed.*

**Keywords** Icelandic monasteries, medieval gardening, cultural relict plants, historic plant names, medicinal plants, utility plants, ornamental plants

The colonization of Iceland began in the late 9th century, and around the years 999–1000 a decision was taken at the Alþing assembly to adopt Christianity as the official religion of the country in accordance with the regulations of the Catholic Church. The first bishopric was established in Skálholt in 1056 and another 50 years later in Hólar. The Catholic Church in Iceland, headed as elsewhere on the Continent by the Pope in Rome, belonged to the archbishopric of Hamburg-Bremen until 1104, when the first Nordic archbishopric was established in Lund. In 1153, the archbishopric of Niðarós was established and the two bishoprics in Iceland, Skálholt and Hólar, became part of it, along with the Norwegian provinces Bergen, Stavanger, Oslo and Hamar, Kirkjubær in the Faroe Islands, Kirkjubúg (Kirkwall) in the Orkney Islands, the Isle of Man, the



**FIGURE 1** Map of Iceland showing monastic sites and the bishoprics of Hólar and Skálholt.

Hebrides, and Garðar in Greenland (Figure 1). The archbishopric of Niðarós existed until 1537, but was abolished that year because of the Lutheran Reformation.<sup>1</sup>

During the Middle Ages thousands of monasteries were founded all over Europe. Around 70 monasteries were established in Denmark, some 50 in Sweden, around 30 in Norway and 12–15 in Iceland. Various kinds of monastic utility gardens are known to have existed, and eventually gardening became highly developed. The cultivation of medicinal and utility plants was important to meet the material needs of the monastic institutions, but no physical garden has yet been found and excavated in either Scandinavia or Iceland. Our present concept of the medieval monastic garden is mainly based on later re-creations of monastic gardens, earlier writings and written evidence, and sometimes even myths.<sup>2</sup>

This article is based on results from the multidisciplinary Nordic project ‘Icelandic Medieval Monastery Sites: Vegetation and Flora, Cultural Plants and Relict Plants, Contemporary Plant-Names’. The aim has been to increase our knowledge of the Icelandic monastic garden – its cultivation, shape, plant materials and contemporary plant names – in order to be able to compare, interpret and position these results with prevailing opinions about the monastic garden, its cultivation and the plant material found in similar contexts in other parts of northern Europe. What were conditions in Iceland like? What cultivated plants and garden plants were known and used in the medieval Icelandic monastic context? Will new research into the relatively uninvestigated and largely untouched medieval Icelandic monastic sites increase our knowledge of the forms and plants of the North European monastic gardens?

Another aim of the project has been to vitalize discussion and research on the contents and shape of the medieval monastic garden as well as to trace foreign influence. The specific questions the project seeks to answer are: Which cultivated

plants in general – and medicinal, utility and ornamental plants in particular – were known and used in the medieval Icelandic monastic context? Is it possible to find medieval cultural relict plants in connection with the Icelandic monastic sites? And is it possible to trace foreign influences on the knowledge of plants in medieval Iceland?<sup>3</sup>

Evidence for medieval monastic gardening in the Nordic countries is scant and scattered. Therefore, many different sources of information need to be consulted and combined. In this project archaeological, botanical, pharmacological, ethnobotanical and linguistic sources have been used as well as garden history and *in situ* observations of plants.<sup>4</sup> Landscapes and plants at all the major monastic grounds were surveyed in the summers of 2009, 2010 and 2011 in search of possible medieval cultural relict plants, and a complete inventory was made of all plants (Keldnaklaustur was not known to us then). The area surveyed at each monastic site varied depending on the landscape but covered approximately between 30,000 and 40,000 m<sup>2</sup>. To contextualize the inventory all existing archaeological, archaeobotanical and documentary information that could be relevant to the question of monastic gardening and its plants was used. Additional information on plants and vernacular plant names from medieval Icelandic written sources was included. Finally, the importance and possibilities of new and complementary investigations in Iceland were assessed.

In this article the most important results of our investigations are presented, and their contribution to our knowledge of Icelandic monastic gardening discussed.<sup>5</sup>

### The Icelandic monasteries and nunneries

The monasteries and nunneries operating in Iceland during medieval times are assumed to have belonged to either the Augustinian or the Benedictine orders. Inevitably, some of them were only run for a few years, while others continued to operate for centuries. The earliest one to be established was Þingeyrarklaustur in 1133; the latest one, Skriðuklaustur, was founded in 1493. Indications are preserved, however, of at least three short-term monasteries in addition to the other 10 fully recognized ones, that is, at Bær in Borgarfjörður, Saurbær in Eyjafjörður and Keldur in Rangárvellir. The monastery at Bær is presumed to have been established as early as the 11th century but closed some decades later (Table 1).<sup>6</sup> This endeavour may have failed due to a lack of support from the surrounding community, which was essential in order for the monastic institution to thrive, so soon after the country's official conversion. All monasteries and nunneries in Iceland were closed down during the Lutheran Reformation (in the period approximately 1541–1554). Catholicism was forbidden in Iceland until 1874 (Table 1).<sup>7</sup>

The history and presence of the numerous monastic institutions in Iceland during the Roman Catholic period shows that Iceland was not immune from the spread and development of monasticism, in spite of its geographically remote location on the frontier of Western Europe. Nevertheless, knowledge on their buildings and operation in Iceland is still uncertain due to a lack of research. The prevailing view has been a rather nationalistic one, assuming that Icelandic monasteries and nunneries functioned somewhat differently to their counterparts elsewhere in the Roman Catholic world. Their significance for Icelandic medieval society has usually been regarded as having been minor, with their few inhabitants living their own cloistered life separately from the rest of society.

Of the monastic sites in Iceland only Skriðuklaustur has been fully excavated. Viðeyjarklaustur and Kirkjubæjarklaustur have been partly excavated, but have not

**TABLE 1** The monasteries and nunneries run in Iceland in the Middle Ages

<i>Monastic institution</i>	<i>Operation</i>	<i>Bishopric</i>	<i>Order</i>	<i>Comments</i>
Bær	1030–1049	Hamburg- Bremen		Founded before the first Icelandic bishopric
Þingeyrarklaustur	1133–1551	Hólar	Benedictines	Monastery
Munkaþverárklaustur	1155–1551	Hólar	Benedictines	Monastery
Hítardalsklaustur	1166–1207?	Skálholt	Benedictines	Monastery
Þykkvabæjarklaustur	1168–1551	Skálholt	Augustinians	Monastery
Flateyarklaustur – moved to Helgafellsklaustur	1172–1187 1187–1551	Skálholt	Augustinians	Monastery
Kirkjubæjarklaustur	1186–1551	Skálholt	Benedictines	Nunnery
Keldnaklaustur	1193–c. 1200	Skálholt	Not known	Monastery
Saurbæjarklaustur	1200–1210?	Hólar	Augustinians	Monastery
Viðeyjarklaustur	1225–1551	Skálholt	Augustinians	Monastery
Reynistaðaklaustur	1295–1551	Hólar	Benedictines	Nunnery
Möðruvallaklaustur	1296–1551	Hólar	Augustinians	Monastery
Skriðuklaustur	1494–1554	Skálholt	Augustinians	Monastery

revealed any specific monastic buildings as yet. The presence of mounds was detected at both these sites, preserving the mixed remains of various activities resulting from their long and complicated histories. Some important finds were made at both sites, such as imported altar stones and relics. Of particular importance for the project presented in this article is a small statue of St Dorothy, the patron saint of horticulture, brewers, brides, florists and gardeners, found during the excavations of Viðeyjarklaustur (Figure 4).<sup>8</sup> This finding may be an indication that gardening was part of the work at the monastery there.

The situation at the site of Skriðuklaustur was different from the other two because the ruins appear to have remained intact from the time the monastery was closed during the Reformation (Figure 2). The excavation there, lasting from 2000–2012, revealed ruins of a building that consisted of several small cells, a church and a cloister garden with fountain, that is to say, all the basic structural elements a monastery needed to fulfil the requirements of the liturgical ideal.<sup>9</sup> In total 298 graves were found in the monastic cemetery, providing important information about the residents of the monastery at Skriðuklaustur, since all monastic houses had to bury those who died in their charge. The graves were both secular and clerical, and in them were discovered the bones of foetuses, neonates, young children, adolescents and adults – men and women – notably not only the brethren. Interestingly enough, the symptoms of various chronic diseases, illnesses or traumas were identified on half of the skeletons, but only in those buried closest to the monastic houses.

In addition, among the findings from the site are 18 different lancets, scalpels and pins, which may have been used for surgical purposes. Moreover, an effigy of St Barbara was discovered in the choir of the church, which was produced in Utrecht in the Netherlands in the 15th century. St Barbara was known as one of the Fourteen Holy Helpers, a group of saints that was venerated for their protection against



**FIGURE 2** Layout of the monastery at Skriðuklaustur.

diseases.<sup>10</sup> The skeletons found at the site, notably of both secular and clerical individuals, together with the findings of the surgical equipment, have broadened the view of the central function of the monastery at Skriðuklaustur, since they indicate strongly that the monastery may have functioned as a hospital.

Finally, both pollen and seeds from some well-known healing plants and herbs were found in samples from the site; vegetables from the *Brassicaceae* family point towards gardening being carried out in the monastery at Skriðuklaustur. To date, this is the earliest known example of vegetables grown in Iceland (see below).

### *Medieval cultural relict plants and botanical investigations*

Medieval cultural relict plants are considered living remnants from medieval times, i.e. they have survived at a certain locality since medieval times, when they were cultivated as vegetables, for medicine or for other utility purposes.<sup>11</sup> Bernt Løjtnant

has investigated the relict flora of 300 medieval castle ruins in Denmark.<sup>12</sup> He has shown that a particular medieval relict flora exists which, in his opinion, dates back to medieval times. A similar investigation of 31 medieval monastic sites in Norway has recently been carried out, and several possible medieval relict plants were recorded.<sup>13</sup>

With these investigations in mind, the general landscape on each monastic site in Iceland was roughly surveyed and analyzed by Kjell Lundquist; at the same time a complete inventory of the local flora was undertaken by Lundquist and Per Arvid Åsen in order to check for possible medieval cultural relict plants.<sup>14</sup>

All the sites were strongly influenced by cultivation, and the dense growth of grass obviously made it difficult for smaller herbs to establish themselves in this environment. Most often the actual sites were grazed by sheep, and therefore the herb flora was highly depleted. As sheep graze heavily on herbs, this produces rather uniform grass fields without herbs. Building and cultivation histories were both extensive, and the Icelandic monastic sites are no less disturbed than the other monastic localities in Scandinavia. There are no visible traces of the monasteries above ground, and the medieval cultivation history is completely hidden by intensive farming and well-fertilized meadows. Because of this, our investigations concentrated on marginal areas where sheep grazing was minimal or absent – that is, churchyards, border zones and other more inaccessible areas.

Even if we did find a few plants that could possibly have been cultivated since medieval times, as well as used as medicinal plants, the inventory gave no straight answer to our question of what kind of plants could have been important utility plants in medieval Iceland. However, archaeobotanical data from other, separate investigations at Skriðuklaustur<sup>15</sup> and Viðeyjarklaustur<sup>16</sup> indicate both the use of and possible cultivation of utilitarian plants at these two monasteries. In order to get a more exact answer, our inventories must be compared with both pollen and macrofossil data from all the monastic sites and coupled with archaeological investigations. So far, we do not have this, but the following utility plants are worth mentioning.

Madwort (*Asperugo procumbens*) could possibly have been cultivated in Icelandic monastic gardens, as it was found at Þingeyrarklaustur. It is interesting to note that this plant was known from the same location in 1929. No other location is known in Iceland, but madwort is also known from three Norwegian medieval monastic sites.<sup>17</sup> At Bær, which could be the site of Iceland's oldest monastery, we found field garlic (*Allium oleraceum*). The plant is known from this area since 1783, not only from Bær but also from Skáney, close to Bær. Pollen of *Allium* has also recently been recorded at Skriðuklaustur.<sup>18</sup> White dead-nettle (*Lamium album*), which was found at Reynistaðaklaustur, could be a possible medicinal relict plant. The first Icelandic record is from 1933,<sup>19</sup> however, a nutlet of *Lamium* sp. was recorded at Skálholt (18th century).<sup>20</sup> The nutlet could represent *Lamium album*, but other *Lamium* spp. are also possible. Flixweed (*Descurainia sophia*) was found at Saurbær. Although flixweed has been used as a medicinal plant with possible medieval cultivation in Europe, it is difficult to have an opinion concerning its present status in Iceland. It is characterized as a neophyte by Wasowicz et al.,<sup>21</sup> with the first Icelandic record in 1889. No pollen record exists for either *Lamium* or *Descurainia*, so conclusions are rather tentative. We found sweet cicely (*Myrrhis odorata*) at five monastic sites, but since no pollen and no older (including medieval) names exist for this highly conspicuous plant it is perhaps best considered a late introduction to Iceland. The first Icelandic record is from

1936.<sup>22</sup> Caraway (*Carum carvi*) was also found at five monastic sites. According to Hallgrímur J. Ámundason<sup>23</sup> it was probably introduced to Iceland at the end of 17th century, but this is contradicted by pollen finds at Mývatn from the period 1000–1300.<sup>24</sup> Only a single Icelandic name (*kúmen*) is known for caraway, which, in turn, suggests a late introduction. More archaeobotanical data would be most welcome.

Yarrow (*Achillea millefolium*) and meadowsweet (*Filipendula ulmaria*) were found at several monastic sites. Both were probably utilized in Iceland in the Middle Ages, and pollen records exist for *Achillea* sp. as well as for *Filipendula ulmaria* from several localities. Greater plantain (*Plantago major*) is another medicinal herb that was known in the Middle Ages, but it is rare in Iceland today. Pollen records are known from several sites, including Skriðuklaustur and Viðey. The garden angelica (*Angelica archangelica*) of today grows all over Iceland; perhaps in the Middle Ages it was cultivated in the special angelica gardens (*hvangarðar*) mentioned in the old laws. Also for this taxon, pollen records are known from several sites. According to Wasowicz et al.,<sup>25</sup> the presence of valerian (*Valeriana officinalis*) in Iceland is confirmed and certain, with the first Icelandic record from 1892. Only *Valeriana sambucifolia* was recorded in our investigations (at four monasteries). The two species can very easily be confused with each other, and most probably both were used as medicine. In older writings, *Valeriana officinalis* is the one most often mentioned, but without a proper herbarium specimen the correct species cannot be determined. Medieval *Valeriana* pollen has been recorded from two sites. The pollen records mentioned here (except for Viðeyjarklaustur) are summarized in the full project report. However, we do not know whether these plants' medicinal qualities were common knowledge to the Icelanders, or if they were just special plants cultivated in the monastic gardens. The problem of which Icelandic plants we can call archaeophytes still remains an important question.<sup>26</sup>

### Written sources and the naming of plants

Written sources are important when investigating the history of plants. They reveal which plants were judged important enough in the local society to be written about and given vernacular names. Plants of no use were not talked about and did not need to be distinguished from other plants by a unique name. Crucial for the analysis is that the correct plant can be identified behind a certain name, a task which caused countless misunderstandings before the publication of Linnaeus' *Species Plantarum* in 1753, in which each plant was attributed a distinct scientific name for the first time.<sup>27</sup>

The translated or original instructive texts on plants and plant use show us what was regarded important in the local Icelandic community at a certain time. The legal codes protect plants of economic or nutritional value from theft, and fictional texts may mention plants and plant names in various situations. By analysing the historic vernacular plant names we get information on what plants were known and how they might have been used, as well as possible foreign influence on plant material, plant use and local knowledge of plants. Examples of this are shown in the Icelandic names for *Angelica archangelica* and *Plantago major* discussed below.

The mere fact that a plant is mentioned in a historic Icelandic text is by no means a guarantee that the plant was known by that name by anyone other than the translator, compiler or author of the text. The translators or authors of the first texts in a vernacular language had to solve the problem of what to call a plant when its name

was going to be written down for the first time. Was the plant native or foreign? Did it already have a name in the language in question? If the writer did not know a name for it in the language he was writing in, what was it to be called? On the other hand, lack of written records about a certain plant does not indicate that the plant was not known.

Regarding plants and their names in Icelandic, at least one of the following conditions always applies (Table 2):

In Iceland most medieval writing took place in monastic settings, and the Icelandic sources written in the vernacular are more frequent than in any of the other Nordic countries, for example, in the saga literature. There are, however, only 14 different plants referred to using vernacular names in this literature (Table 3).<sup>28</sup> Some of them are medicinal and utility plants; others we do not know for sure if or how they were used.

More important as sources to Icelandic medieval vernacular plant names are the law codes and medicinal and herbal manuscripts. The medieval laws, *Grágás* (written down in the 1120s), *Járnsíða* (1271–1273) and *Jónsbók* (1281) are important since we

**TABLE 2** Relations between plants, knowledge about how to use the plants and their names in Icelandic

<i>Plant, name, knowledge</i>	<i>Comments</i>	<i>Examples</i>
Plant	Plant observed and used by the natives and named by people living in the local community	<i>fuskuleggir</i> (referring to the roots) for <i>Leymus arenarius</i>
Name	Name was brought to Iceland by the colonizers, generally a Scandinavian vernacular folk name, for a plant growing in the country	<i>birki</i> for <i>Betula</i> spp.
Name	Name was borrowed into Icelandic for a plant growing in the country. Either a direct loan or a translation of a foreign name	<i>englajurt</i> (angel's herb) for <i>Angelica archangelica</i> .
Name and knowledge of how to use the plant	Name and knowledge was borrowed, often but not always, from a literary source, for a plant growing in the country	<i>mjaðjurt</i> (mead-herb) for <i>Filipendula ulmaria</i>
Plant, name and knowledge	Plant, name and knowledge was brought into the country by the colonizers. Usually a vernacular Scandinavian name for a plant growing in their homelands	<i>græðisúra</i> ('accrete +sorrel') for <i>Plantago major</i> .
Plant, name and knowledge	Plant, name and knowledge was borrowed, usually mediated by a foreign literary source	<i>kúmen</i> for <i>Carum carvi</i> and <i>dill</i> for <i>Anethum graveolens</i> .

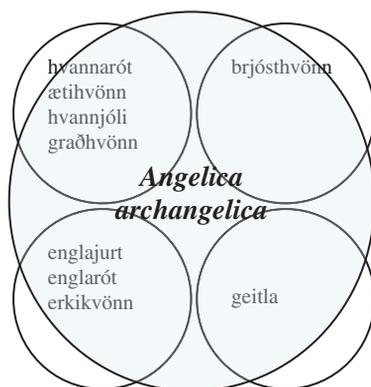
**TABLE 3** Plants mentioned in the Icelandic saga literature

<i>Plant name</i>	<i>Known use in Iceland or abroad</i>	<i>Plant name</i>	<i>Known use in Iceland or abroad</i>
<i>arfi</i> ( <i>Stellaria</i> )	Medicinal and food	<i>birki</i> ( <i>Betula</i> )	Utility plant
<i>einir</i> ( <i>Juniperus</i> )	Medieval miracle plant	<i>ffill</i> ( <i>Taraxacum</i> sp.)	Food plant
<i>góibeytill</i> ( <i>Equisetum arvense</i> )	Medicinal plant	<i>hvönn</i> ( <i>Angelica</i> )	Food plant
<i>laukr</i> ( <i>Allium</i> sp.)	Food and medicinal plant	<i>litunargras</i> (unidentified) (‘colouring+grass’)	Utility plant
<i>lyng</i> ( <i>Calluna</i> )	Utility plant	<i>melr</i> ( <i>Leymus arenarius</i> )	Food and utility plant
<i>reynir</i> ( <i>Sorbus aucuparia</i> )	Medicinal and utility plant	<i>sef</i> ( <i>Juncus</i> , <i>Scirpus</i> )	?
<i>viðir</i> ( <i>Salix</i> )	Medicinal and utility plant	<i>þistill</i> ( <i>Cirsium</i> )	Religious literature

may assume that they reflect reality. This is at least true regarding Norwegian and Swedish medieval laws and circumstances, but the situation in Iceland is more complicated. Medieval Icelandic laws, especially *Jónsbók*, are heavily influenced by Norwegian law, and it is therefore not possible to determine for sure whether the paragraphs dealing with the protection of plants were applicable in Iceland or not.<sup>29</sup> When *Jónsbók* mentions *eplagarður* (apple garden) this is not reliable proof that apple gardens existed in Iceland in medieval times, while the information we get about the *hvanngarður* (*Angelica* garden) in the same law is more reliable since it is supported by many other sources.

The medicinal and herbal literature in Icelandic to a large extent consists of translations of *Den danske urtebog* (The Danish Herbal), which is assumed to have been compiled by the Danish physician and canon Henrik Harpestræng at the beginning of the 13th century. Through Harpestræng classical herbalism and *Materia medica* reached northern Europe. A large proportion of *Den danske urtebog* consists of a copy and translation into Danish of the Latin hexameter poem *De viribus (virtutibus) herbarum* or *Macer floridus* from c.1100. In *Macer floridus* the author refers to sources such as Pliny the Elder (23–79) and Galen (129–c.210) but also Dioscorides and Hippocrates. Harpestræng’s other main source is *De gradibus Simplicium* by Constantinus Africanus (c. 1018–1087). Other sources that also can be traced in Harpestræng’s writings are *Antidotarium Nicolai* and Matthaeus Platearius’ *Circa instans*. Apart from Icelandic, Harpestræng’s works were translated into Swedish and German, and seem to have been highly esteemed in northern Europe during the Middle Ages.<sup>30</sup>

Early-modern sources and later texts contain a large number of historical plant names, both native Icelandic and names borrowed primarily from the other Scandinavian languages or German.<sup>31</sup> An illustrative example is the different names attributed to *Angelica archangelica*, which has been well known and much appreciated in



**FIGURE 3** The different Icelandic vernacular names of *Angelica archangelica*.

Iceland and Norway at least since the Middle Ages (Figure 3). The medieval Icelandic name is *hvönn*, *hvann-*, and the plant is frequently referred to in laws and other literature.

Judging by its many different names, there is no doubt that *Angelica* has been an important food plant in Iceland since the Middle Ages:

*hvannarót* the root (*hvanna*+root)

*ætihvönn* food – there are similar looking plants that do not taste as good (edible +*hvönn*)

*hvannjóli* *jól* or *njól* refers to the thick and hollow stem. The *Angelica* referred to as *hvannjóli* is very likely not to have been *vossakvann* (known in Norway) which has a filled stem.

*graðhvönn* refers to the plant in the autumn when the stem has become thick and juicy.

Among the names for *Angelica* there is very little evidence for it having been used for medicinal purposes. The only name that implies such a use is *brjósthvönn*, which is likely to be a translation of the German *Brustwurzel* or Swedish *bröstört*. It probably does not reflect native use or knowledge, but says more about foreign influence on Icelandic plant names and the knowledge of their medicinal properties.

The third group of names – *englajurt*, *englarót* and *erkikvönn* – of course have their roots in the plant's Latin and later scientific names. Linnaeus named it *Angelica archangelica*, but in the 16th century it was called *Angelica Scandiacae* or *Archangelica*. These old Latin and scientific names illustrate well one of the difficulties when trying to find the motivation for a vernacular name: by whom was the Icelandic author influenced when he chose the names *englajurt*, *englarót* and *erkikvönn* (angel+ herb, root and *hvönn*) instead of the well-known native names? Or did he perhaps not recognize the plant in the foreign written source, and thought it was a new kind?

Another name, *geitla*, normally refers to the species *Angelica sylvestris*, *geithvönn*. When, if ever, used about *Angelica archangelica* it might have denoted a plant not as good as ordinary *hvönn*.

In contrast, a single vernacular name could be used to denote a number of plants used for the same purpose. The naming of plants in local (rural) societies is not a scientific naming but based on folk botanical classification of plants. The same plant name may refer to a group of plants that do not have to be scientifically related to each other at all, but that could be used for the same purpose and were therefore referred to by the same name. A well-known example of this is the Old Icelandic word *kál* (Old Swedish *kaal*, Scots *kail*) which was used, on the one hand, for all types of cabbage crops (*Brassica* sp.), but also for some species of *Malva* and *Rumex* and in an even wider sense to refer to ‘various plants with edible leaves’.<sup>32</sup>

### Evidence of Icelandic monastic plant-use and traces of gardening

The Icelandic archaeobotanical findings have not previously been summarized or presented in any overview. There are many studies, but not all the reports are published; in addition, the published reports may be hard to access. To date a large number of archaeobotanical surveys has been conducted, especially during the last 20 years. Of these, no less than 29 reports have been summarized in Appendix 2 in our full report. However, interest has mostly been directed towards Iceland’s colonization history; the only two monastic sites from which archaeobotanical information is available are Skriðuklaustur and Viðeyarklaustur.<sup>33</sup> Regarding the bishoprics, the two archaeobotanical reports known so far from Hólar have been included, whereas no reports concerning the Middle Ages were available from Skálholt.

Archaeological findings at Skriðuklaustur have shown its importance as a hospital in eastern Iceland, as stated above, whereas little is known about Viðeyarklaustur apart from the fact that it was a rich and important monastery. The monastic buildings have not been reliably located there. Table 4 shows a choice of archaeobotanical results together with our present-day findings of medicinal, utility and food plants on the two sites as well as comments on the possible use of the plants. Of these a few plants regarded as particularly interesting from the point of view of what we know about their usefulness have been further commented on below. It must be remembered though, that most plants that we know of could be used in a number of different ways in the Middle Ages.

*Allium oleraceum*, field garlic, is the only *Allium* growing wild in Iceland today, and it is known from a couple of places at least since 1783. One of them is Bær where, as mentioned above, the first monastery in Iceland is supposed to have been located c. 1030–1050. It might have been *Allium oleraceum* growing in the *laukagarðr* (‘leek garden’), for which there is written evidence, where the bishop of Hólar is said to have died in 1457. *Allium* was regarded almost as a miracle plant in northern Europe in medieval times, but pollen from a single place does not prove conclusively that it was grown in Iceland at the time. It is also debated which species of *Allium* was referred to by the word *laukr* (Old Icelandic and Norwegian), *löker* (Old Swedish) or *log* (Old Danish).

The findings of *Brassica* sp. seeds at Skriðuklaustur antedates the cultivation of *Brassica* in Iceland by at least 125 years. *Brassica* sp. includes many species that were important medicinal and food plants in the Middle Ages. Brassicas have to be grown from seed, which either have to be imported or taken from the plants growing *in situ*. The finding of seeds therefore supports the supposition that food and medicinal plants were cultivated in Skriðuklaustur.

**TABLE 4** Archaeobotanical findings of medicinal, utility and food plants on the two sites Skriðuklaustur and Viðeyjarklaustur compared with our own findings

<i>Scientific plant name</i>	<i>Skriðu- klaustur</i>	<i>Viðeyjar- klaustur</i>	<i>Comments</i>	<i>Growing today on monastic grounds?</i>
<i>Allium</i> sp. unidentified species	(Pollen)	-	Medieval miracle plant	A species growing in Bær and Skáney
<i>Juniperus einir</i> , juniperus	(Pollen)	(Pollen)	Medieval miracle plant	Common
<i>Anthemis</i> type incl. <i>Achillea millefolium</i> <i>vallhumal</i> , common yarrow	-	(Pollen)	Medicinal plant	Common
<i>Artemisia</i> spp. unidentified species	-	(Pollen)	Medicinal plants	Not found
<i>Borago officinalis</i> no Icelandic name, starflower	(Pollen)	-	Medicinal plant	Not found
<i>Linum catharticum villilín</i> , fairy flax	(Seed)	-	Medicinal plant	Found
<i>Plantago major græðisúra</i> , greater plantain	(Pollen)	(Pollen)	Medicinal plant	Found, rare today
<i>Sanguisorba officinalis</i> <i>blóðkollur</i> , great burnet	-	(Pollen)	Medicinal plant	Not found
<i>Valeriana officinalis</i> <i>garðabrúða</i> , valerian	-	(Pollen)	Medicinal plant	Not found, rare today
<i>Bistorta vivipara kórnsura</i> , alpine bistort	-	(Pollen)	Medicinal and food plant	Common
<i>Menyanthes trifoliata</i> <i>horblaðka</i> , bogbean	-	(Pollen)	Medicinal and food plant	Common
<i>Galium</i> sp. ( <i>Galium verum</i> ) <i>gulmaðra</i> , yellow bedstraw	(Pollen)	-	Medicinal and utility plants	Common
<i>Brassica</i> sp. unidentified species	(Seed)	-	Food plants	Cultivated today
<i>Myrica gale</i> no Icelandic name, bog myrtle	-	(Pollen)	Beer and mead ingredient, also used against vermin	Not found
<i>Argentina anserina</i> <i>tágamura</i> , common silverweed	-	(Pollen)	Utility and food plant	Common

*(Continued)*

**TABLE 4** (Continued)

Scientific plant name	Skriðu- klaustur	Viðeyjar- klaustur	Comments	Growing today on monastic grounds?
<i>Urtica urens</i> , <i>Urtica dioica</i> <i>netla</i> , nettle	(Seed)	(Pollen)	Utility and medicinal plant	Not found, rare today
<i>Malus sylvestris epli</i> , apple	(Seed)	-	Grown? or imported	Cultivated today, but very rare in Iceland

Sources: Table information of findings based on Bjarnadóttir, 'Viðey island'; Jensson, *Garðrækt í Skriðuklaustri*; Shaw, *Analysis of Soil Samples from Skriðuklaustur I*; Larsson, Åsen, Kristjánsdóttir, and Lundquist, *Medeltida klostergrunder på Island*. Ethnobotanical information is based on Brøndegaard, *Folk og flora*; Källman, *Vilda växter som mat och medicin*; Larsson, *Millefolium, rölika, näsegräs*; Åsen, 'Plants of Possible Monastic Origin'; Åsen, 'Viljeple, *Malus sylvestris*, i Norge'; Åsen, *Norske klosterplanter*.

*Filipendula ulmaria* (meadowsweet) might have been used in beer, mead and leather processing; it might also have been used as a medicinal plant. Whether it grew wild, was tended *in situ* or collected, it is likely to have been utilized in the monasteries, if only because of its many uses. As it is an important source of aspirin it may have been of great value at Skriðuklaustur, but so far there are no contemporary traces of it there.

Whether wild apples, *Malus sylvestris*, were grown in Iceland or not in the Middle Ages is unknown.<sup>34</sup> Today, apples are cultivated in a garden not far from Skriðuklaustur.

Pollen from *Myrica gale*, bog myrtle, has been found in Viðey as well as at three other places in Iceland.<sup>35</sup> Bog myrtle was important for making beer and mead, and it would have been important for the monastic kitchen. Bog myrtle grows wild in Sweden and Norway, and from Sweden it is known that marshes where bog myrtle grew had an economic value in the Middle Ages: the right to collect bog myrtle was even regulated in Sweden in medieval provincial law.<sup>36</sup> From Norway there are archaeobotanical findings of bog myrtle in Oslo, Bergen, Tønsberg and Trondheim.<sup>37</sup> At Hovedøya monastery in Oslo bog myrtle might have been cultivated.<sup>38</sup>

*Plantago major*, greater plantain, was an important medicinal plant in Scandinavia, and well known in the Middle Ages. Its vernacular names imply that its value as a medicinal plant was known before written evidence about the plant's virtues and properties reached us.<sup>39</sup> One of its many Icelandic names is *græðisúra*. In Swedish it was called *groblad*. Icelandic *græða* and Swedish *gro* both describe 'the process of healing of a wound'. The plant's healing properties were described by Pliny but it is, as far as we know, only in Swedish and Icelandic where these properties are directly reflected in a vernacular name describing exactly the process of a healing wound. In other languages it might have more abstract names like 'healing grass' or names that do not refer at all to its healing properties.

*Urtica* sp., nettle, was an important utility plant which could replace *Linum usitatissimum*, flax, to provide fibres for weaving costly material. Nettle seeds are found at Skriðuklaustur, which indicates that it was deliberately grown there.<sup>40</sup> To extract the valuable fibres, nettles had to be harvested late in the year.<sup>41</sup> It was also an important medicinal plant.

The archaeobotanical findings from these two monasteries contain more medicinal and utility plants than might be expected. It is therefore quite likely that these plants were cultivated, tended *in situ*, gathered from the wild or imported to be used in the monasteries. Furthermore, the finding of seeds on the site at Skriðuklaustur strongly indicates that gardening was carried out there, not only of different kinds of *Brassica*, but equally importantly of healing plants which were not native to the Icelandic flora during medieval times (*Allium* and *Urtica dioica*). It is also noticeable that some of the plants found are well-known medicinal plants originating in southern Europe, for example, *Artemisia*, *Sanguisorba* and *Valeriana*, which indicates that the monastic settings were important for the mediation of Greek and Roman knowledge of *Materia medica* and herbalism to the countries in the north.<sup>42</sup>

## Conclusions

Our contributions to Icelandic monastery-garden history are that we are now able to present all monastic grounds in a common context as well as the plants growing there today.<sup>43</sup> The possibilities of finding medieval cultural relict plants have been investigated and discussed. Medicinal, utility and ornamental plants, known in Iceland and abroad, have been recorded growing on the monastic sites today, but their status as true medieval cultural relict plants cannot be fully determined at this stage of research. Similar research on medieval cultural relict plants is being conducted by Åsen on the Norwegian monastic sites, which will allow comparisons between Iceland and Norway and contribute to a wider understanding of monastic horticulture.

Many of the plants found today actually have a past as appreciated medicinal herbs such as *Angelica*, *Alchemilla*, *Allium*, *Filipendula*, *Plantago* and *Sanguisorba*. We also know that the flora of the Icelandic landscape was strongly affected by settlement.<sup>44</sup> Different grass species increased and shrub and tree vegetation decreased to the point of disappearing. Today the Icelandic monastic sites, as well as all Iceland, are dominated by farming, leaving little space for herbs to grow and survive.

The exceptional conditions in which a hitherto uninhabited island was colonized over some 100 years by people above all from Scandinavia, Denmark, the British Isles and Ireland bringing and adapting their knowledge of farming, cultivation and the use of plants for utility, medicines and pleasure, inevitably led to a situation where common knowledge eventually became integrated with the specific uses of plants and plant medicine in monastic contexts. In actual fact, some of the medicinal and utility plants are found in the archaeological layers immediately after colonization but before the founding of the monasteries, for example *Artemisia*, *Filipendula*, *Myrica gale* and *Plantago*.

During the Middle Ages the Icelanders continued to be in close contact with continental Europe, not least through the Catholic Church and its affiliations in



**FIGURE 4** A statue of St Dorothy, the patron saint of horticulture, brewers, brides, florists, and gardeners, found during the excavations of Viðeyjarklaustur. Photo by Steinunn Kristjánsdóttir.

Europe, such as the bishoprics in Hamburg-Bremen, Lund and lastly Niðarós. Besides this, pilgrimage is also believed to have contributed vastly to the spread of all kinds of knowledge during the Middle Ages.<sup>45</sup> It is known that over 40 Icelanders travelled as pilgrims along the most common pilgrim routes in Europe and studied in England, Germany, France and Italy, as most other Catholic Europeans at that time.<sup>46</sup> At least one medical doctor, Lazarus Mattheusson, is known to have been asked to come to Iceland from Germany in the late Middle Ages,<sup>47</sup> most likely bringing with him information about how to heal with herbs. Therefore we cannot establish for certain whether some of these plants' properties were not common knowledge to the Icelanders of the Middle Ages or were specific monastic plants.

The written sources have added to our historical knowledge about medicinal and utility plants known in Iceland, revealing native knowledge and practice, but also foreign continental influence on plant use and choice of plants. Besides this the archaeobotanical and archaeological findings such as pollen, seeds and the little statue of St Dorothy (Figure 4) revealed traces of deliberate use and possibly the existence of monastic gardening at Skriðuklaustur and Viðeyjarklaustur. This seems to have been similar to what is known and assumed about contemporary monastic sites outside Iceland, although in accordance with what was possible there with regard to the harsh environment on the island.

The first steps towards understanding Icelandic monastic gardening and the medicinal, food and utility plants used there have been taken. To get a full picture for Iceland as well as Scandinavia, more archaeological and archaeobotanical results from all monastic sites are needed. Archaeobotanical findings alone do not reveal the exact location of where a certain plant has been growing: pollen may drift in the wind and seeds can be carried around. The future is very promising though, as we have seen an increasing interest in garden archaeology in the past 10–15 years in all of Scandinavia, and new results are being published continually.

The underlying research materials for this article can be accessed at <http://pub.epsilon.slu.se/9033/>.

## Notes

- 1 Hugason, *Kristni á Íslandi*, vol. 1, 18–38; Sigurðsson, *Det norrøne samfunnet*, 66–77, 147–51.
- 2 Compare for example Landsberg, *The Medieval Garden*, 4–10; Larsson and Lundquist, ‘Icelandic Medieval Monastic Sites’.
- 3 Larsson et al., *Medeltida klostergrunder på Island*, passim.
- 4 See also Landsberg, *The Medieval Garden*, 4.
- 5 The full report of the project (Larsson, Åsen, Kristjánsdóttir, and Lundquist *Medeltida klostergrunder på Island*) is available in Swedish and Norwegian at: <http://pub.epsilon.slu.se/9033/>. Complete lists of the botanical investigations can be found in Appendix 1 and a summary of the archaeobotanical investigations used in Appendix 2. In Appendix 3 there is a translation into Swedish of the guidebook to the present herb garden at Skálholt.
- 6 Jónsson, ‘Um klaustrin á Íslandi’, 174–265.
- 7 Guðmundsson, *Kristni á Íslandi*, vol. 2.
- 8 Wolf, *The Icelandic Legend of Saint Dorothy*.
- 9 Kristjánsdóttir, *Sagan af klaustrinu á Skriðu*, 62–4; Kristjánsdóttir, ‘The Tip of the Iceberg’.
- 10 *Ibid.*, 97–9.
- 11 Persson, Ansebo, and Solberg, ‘Cultural Relict Plants in the Nordic Region’.
- 12 Løjtman, ‘Aldersrekorder for reliktpanter’, 4–14.
- 13 Åsen, *Norske klosterplanter*.
- 14 Complete inventory lists are published in Larsson, et al., *Medeltida klostergrunder på Island*, Appendix 1.
- 15 Bjarnadóttir, ‘Skriðuklaustur í Fljótsdal. Frjókornagreining – Niðurstöður í september 2004’; Bjarnadóttir, ‘Skriðuklaustur í Fljótsdal. Frjókornagreining – Niðurstöður í október 2005’; Kristjánsdóttir, ‘Skriðuklaustur Monastery – Medical Centre’; Shaw, *Analysis of Soil Samples from Skriðuklaustur*.

- 16 Bjarnadóttir, 'Viðey Island'.  
 17 Åsen, *Norske klosterplanter*.  
 18 Kristjansdóttir, 'Skriðuklaustur Monastery – Medical Centre'.  
 19 Wasowicz, Przedpelska-Wasowicz, and Kristinsson, 'Alien Vascular Plants in Iceland', 648–73.  
 20 Lucas, 'The Tensions of Modernity'.  
 21 Wasowicz, Przedpelska-Wasowicz, and Kristinsson, 'Alien Vascular Plants in Iceland'.  
 22 Ibid.  
 23 Ámundason, 'Krythóll'.  
 24 Lawson, et al., 'Environmental Impacts of the Norse Settlement'.  
 25 Wasowicz, Przedpelska-Wasowicz, and Kristinsson, 'Alien Vascular Plants in Iceland'.  
 26 Ibid.  
 27 Larsson, 'Beyond Byzantium', 184–209.  
 28 Heizmann, *Wörterbuch der Pflanzennamen im Altwestnordischen*.  
 29 Larsson, 'Skriftliga källor', 49–51.  
 30 Larsson, 'Beyond Byzantium', 184–209; Larsson, 'Skriftliga källor', 49 f.; Kristensen, *Harpestræng*; Larsen, *An Old Icelandic Medical Miscellany*.  
 31 Steindórsson, *Nomina Plantarum Islandicum*; Høeg, *Planter og tradisjon*, passim.  
 32 Larsson, *Millefolium, rölika, näsegräs*.  
 33 Hallsdóttir, 'Frjórannsókn á mósniðum úr Viðey'; Bjarnadóttir, 'Viðey Island'; Bjarnadóttir, 'Skriðuklaustur í Fljótsdal. Frjórnagreiðing – Niðurstöður í september 2004'; Bjarnadóttir, 'Skriðuklaustur í Fljótsdal. Frjórnagreiðing – niðurstöður í október 2005'; Kristjansdóttir, 'Skriðuklaustur Monastery – Medical Centre'; Jenson, *Garðrækt í Skriðuklaustri*; Shaw, *Analysis of Soil Samples from Skriðuklaustur*, I.  
 34 See Åsen, 'Villeple, *Malus sylvestris*, i Norge', 12–13 for conditions in Norway.  
 35 Bjarnadóttir, 'Viðey Island', 41; Þórarinnsson, *Tefrokronologiska studier*, 127–8; Einarsson, 'Vitnisburður frjógreiningar um gróður, veðurfar og landnám á Íslandi', 442–69.  
 36 Larsson, *Millefolium, rölika, näsegräs*, 209.  
 37 Griffin, 'Plant Remains from Medieval Oslo', 151–63; Griffin, 'Plant Remains from Oslogate 7', 124–33; Høeg, 'O. Pollenanalyse', 140–8; Krzywinski and Soltvedt, 'A Medieval Brewery (1200–1450) at Bryggen, Bergen', 1–68; Lindh and Tjeldvoll, *Innberetning over de arkeologiske utgravningene i Storgaten 24/26*, 56; Sandvik, *Frå Nidarosen til Nidarneset*, 6, 226; Sandvik, *Analysar av plantemakrofossilar i jordprøver frå Nedre Langgate 40*.  
 38 Høeg, 'Pollenanalytiske undersøkelser av karpedam på Hovedøya', 6–159.  
 39 Larsson, 'Skriftliga källor och äldre isländska växtnamn', 49–51, 71–2.  
 40 Jenson, 'Garðrækt í Skriðuklaustri'; Shaw, *Analysis of Soil Samples from Skriðuklaustur*.  
 41 Källman, *Vilda växter som mat och medicin*, 110 f.  
 42 Larsson, 'Beyond Byzantium', 184–209.  
 43 Except for Keldnaklaustur as we were not aware of its existence in 2009–2010 when the main investigations were undertaken.  
 44 Hallsdóttir, *Pollen Analytical Studies*.  
 45 Stopford, 'Some Approaches to the Archaeology of Christian Pilgrimage', 57–72.  
 46 Arnórsson, 'Suðurgöngur Íslendinga í fornöld'.  
 47 *Diplomatarium Islandicum*, vol. 9, 290.

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