

What can an historical approach tell us about the medicinal use of ferns in 17th century Britain, and are they potentially relevant to British herbal practice today?

By
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“The future [of herbal medicine] is incredibly exciting...but our past and everything we’re built upon is just as important”

James Wiltshire, Chief Executive of NIMH at the 2024 Conference.

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Abstract

Sustainability in Western herbal medicine is becoming more of a worry as ecological concerns grow and supply chains of imported herbs become increasingly vulnerable. Alongside this, historically, Britain has seen a narrowing of its herbal pharmacopeia, leading to many traditionally-used herbs becoming ‘forgotten’. This research establishes if it is possible to move beyond a historical-based questioning a herbal remedy that includes ‘forgotten’ medicinal plants, to explore if the remedy could be relevant to a sustainable and safe herbal practice today.

The chosen remedy was for a “rupture or broken belly” (a hernia), from Elizabeth Birkett’s *Commonplace* book, dated to 1699, from Townend, Troutbeck, Cumbria, UK. It contains two ‘forgotten’ herbs, the ferns polypody (*Polypodium vulgare* L.) and royal fern (*Osmunda regalis* L.). A mixed-methods approach was taken that allowed different types of data to be analysed together: the original recipe and a database charting the historical use of ferns in published literature.

The recipe has two parts: 1) an internal powder of royal fern mixed with wine, 2) an external plaster of polypody and elecampane in bay oil. The historical survey revealed that a variety of ferns were used extensively in the 17th and 18th centuries before declining from the 19th century. It was necessary to look to ethnobotanical and recent scientific research to hypothesise that both ferns had wound healing/tissue repair properties needed for healing a hernia: for polypody it was through the external application of lipophilic flavonoids, and for royal fern it was internally through polysaccharides.

Overall, this method has offered an insight into how ferns and their preparations have been used in the past and could be relevant to herbal practice today. The study highlights the pharmaceutical bias of recent herbal pharmacopeia, and how a more integrated herbal pharmacopeia could honour ‘forgotten’ medicinal plants, the diversity of knowledge systems that Western herbal medicine currently encompasses and current issues in sustainability.

1 Introduction

Sustainability in Western herbal medicine is becoming more of a concern to a growing number of herbalists, especially as we draw increasingly on traditional Chinese medicinal (TCM) and Ayurvedic herbs (Brinckmann, 2021). Sustainability issues currently faced when buying domestic or imported herbs include: quality, economic and ecological impact, cost/supply/demand dictated by a global market, effects on traditional groups who originally grew/harvested the herbs, and the quality of the phytochemical profile (Sustainable Herbs Program, n.d.).

Whilst we rely on a global supply chain for our herbal products (Brinckmann, 2021), that also means we are at the mercy of global situations such as pandemics, tariffs, trade agreements, which can (and do) affect the supply of herbs.

Alongside this question over the supply of international herbs, is also the fact that in "...Great Britain there is a trend toward relying on an ever-dwindling materia medica" (Winston, 2005). This means the range of treatments herbalists can offer also shrinks (Winston, 2005). Bruton-Seal and Seal (2017) also discuss the historical narrowing of herbal pharmacopeia, and coined the term 'forgotten herbs' for those that have fallen by the wayside. Winston (2005) suggests that a way round this problem is to expand our pharmacopoeias with some of these currently "unused but effective species".

This research sets out to examine whether there is a role today for herbs that have fallen out of use in Britain. The main aim driving this project is: **Is it possible to move beyond a historical-based questioning of a 17th century herbal remedy, to explore if the remedy may be relevant to sustainable and safe herbal practice in Britain today?**

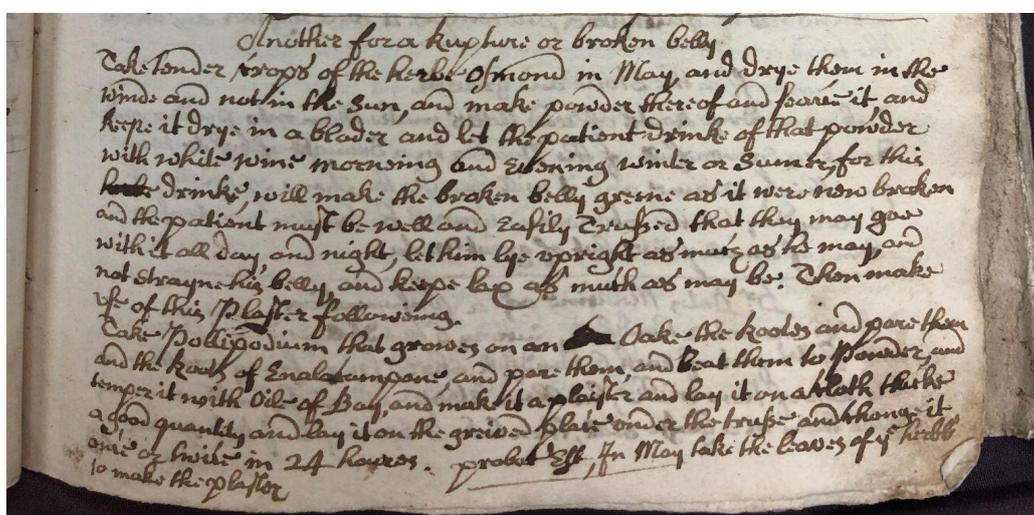


Figure 1.1 Image showing the recipe for 'Another for a Rupture or Broken Belly' in Elizabeth Birkett's Commonplace Book (1699).

1.1 Birkett's *Commonplace* book (1699)

To approach the question, a historical remedy was needed, and one that contained herbs that do not currently feature in British materia medica. It was also important to choose a recipe from a familiar location to be able to assess the botanical accuracy of the recipe. The manuscript chosen was Elizabeth Birkett's *Commonplace* book, dated to 1699. Birkett was local to Troutbeck, Cumbria, UK, both before and after her marriage (Feldman, 2023) and the manuscript was part of an extensive library at her marital home, Townend in Troutbeck, which is now owned by the National Trust (Feldman, 2023). The book contains c. 70 hand-written remedies, alongside other recipes for food, wine, household goods and dyes. Previous research has shown her recipes were mainly collected from local people (Feldman, 2023), that included some physicians, neighbours and the local wise man/wizard. A transcription of the book exists online (Wright, n.d.) and the original is located in Kendal Archives (ref WDTE/BOX 16/1-1a).

Other manuscripts were examined in the Kendal archives, with the help of the archivist. These were excluded because they: were from elsewhere in the country, had an unknown origin, contained a limited number of herbal remedies, focussed on apothecary ingredients, or were relatively recent in date.

Consistent with the research question, the herbal remedy needed to include herbs that were no longer in common use. A remedy was chosen: "Another for a Rupture or Broken Belly" (see Figure 1.1) that included two herbs: 'Osmond' and 'Pollipodium' (Birkett, 1699, p. 25). These are taken to be the ferns *Osmunda regalis* L./royal fern and *Polypodium vulgare* L./common polypody, respectively. Neither fern features in the most recent editions of the British Herbal Pharmacopeia (Bradley, 2010a, 2010b; BHMA, 1990).

1.2 Ferns

Polypodium vulgare L. is part of the Polypodiaceae family, and *Osmunda regalis* L. is part of the Osmundaceae family (RBGK, 2024) see Figure 1.2. Both ferns sit within the subclass of Polypodiaceae or leptosporangiate ferns (Nitta et al., 2022).

Equisetum arvense L. (horsetail) (RBGK, 2024) is another medicinal fern, but belongs to a different subclass (Equisetales) and does not feature into this study.

Ferns are vascular land plants, but are distinguished from angiosperms and gymnosperms by their lack of flowers and seeds, respectively. They are characterised by having spore-forming structures on the underside or ends of their fronds, which usually unfurl from a fiddlehead (TBPS, 2025). They have a two-phase life cycle, the 'fern' forms in the second phase (TBPS, 2025).

Both polypody and royal fern are considered to be of "least concern" on the *Vascular Plant Red List for England* (Stroh et al., 2014). Royal fern is not widely distributed

across Britain, but is focused on the western side, see Figure 1.3 (A); polypodium has a wider distribution across Britain, see Figure 1.3 (B) (Stroh et al., 2020).



Figure 1.2 Photos of A) Polypody growing on a tree and B) Royal fern (Photos taken by Rob Still and Chris Gibson as part of Stroh et al., 2020)

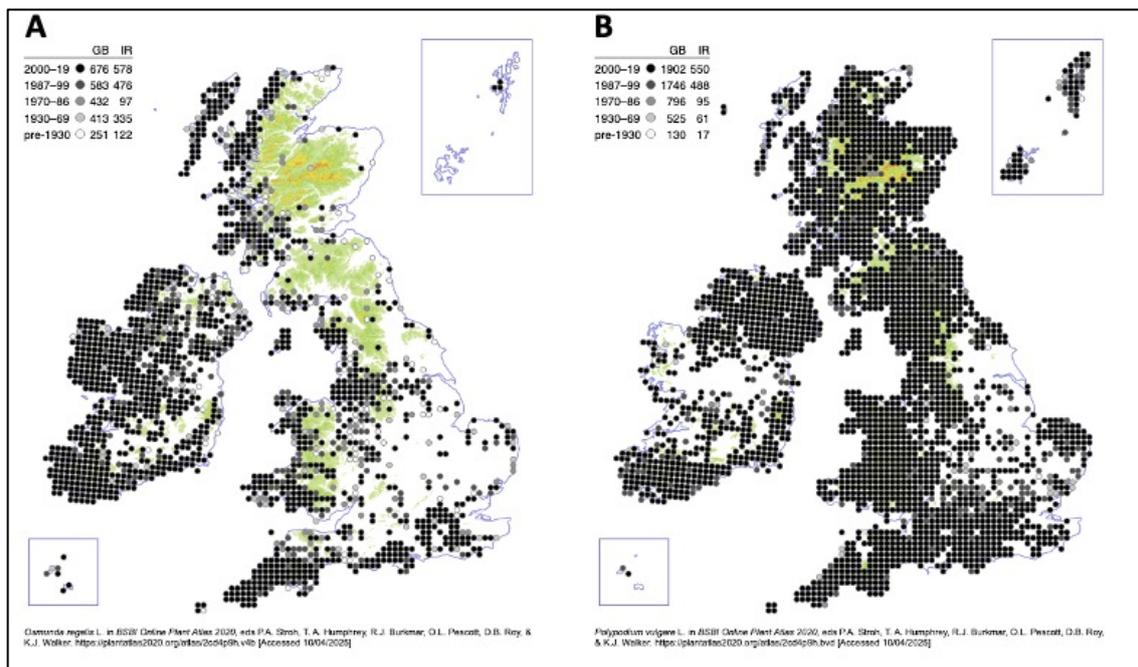


Figure 1.3 Distribution of A) royal fern B) polypody in the UK in 2020 (Stroh et al., 2020).

1.3 Ruptures

The recipe is titled 'Another for a rupture or broken belly' (Birkett, 1699, p. 25). The rupture or broken belly is a hernia (Anon., 2008), which occurs when an organ or part of an organ protrudes through the surrounding containing wall (Jensen, 2010). Looking more broadly at hernia treatment in the early modern period, Houston (1726) in his *The history of ruptures, and rupture-curers...* provides detail on historical and contemporary remedies and methods for treating 'ruptures'. He notes that herbal remedies were often for palliative care or for treating mild hernias that could be replaced (Houston, 1726). Before pushing the hernia back in, hardened faeces were softened using emollients (e.g. marshmallow root, pellitory of the wall, linseed) that were administered as an external poultice, or internal purgatives. Constipation was to be avoided. Trusses were often fitted over a hernia plaster to hold the organ in place and prevent it popping out again (Houston, 1726).

This background information is interesting, but leads to the first research question:

Q1. How were the two ferns in Birkett's 17th century recipe used as part of a remedy for a hernia?

1.4 Researching herbal history

Within herbal history, most studies fall between classical antiquity and the early modern period (1500-1780) (Francia & Stobart, 2014) with the 17th century being a focal point for research (Watkins & Nurse, 2024). The early modern period was one of both stasis and change in terms of healthcare (Stobart, 2016), with previous household traditions and beliefs being upheld, particularly drawing on the work of Paracelsus (1493-1541) (Nagy, 1988), simultaneously, by 1680 medical understanding and knowledge had also advanced (Wear, 2000).

The herbal historical focus is often situated within this historical perspective only, for example Stobart (2016) provides a fascinating and in-depth analysis of household recipes with themes such as: self-help, the role of women, beliefs in disease and health, and household and commercial medicine – within the 17th century. Leong (2018) takes a wider view of the whole early modern period and examines medicinal recipes, recipe books and the collating and curating of this information; again a treasure trove of information and insight. Both perspectives provide critical contributions to understanding herbal history in the 17th century, however, neither of them examines how this information is relevant to today.

Turning to the compilation of historical information about herbs, this is often in a monograph format (e.g. Bruton-Seal & Seal, 2017; Grieve, 1931; Toby et al., 2011), or a rich description of herbal uses and geographical locations associated with oral history (e.g. Allen & Hatfield, 2004; Vickery, 2019). Bruton-Seal and Seal (2014) provide a translation and interpretation of some of the herbs in John Parkinson's *Theatrum Botanicum* (1640). However, they do not include polypody or royal fern,

only herbs that “continue to be medicinally popular today” (Bruton-Seal & Seal, 2014, p. 22) are included; there is also little discussion of the mechanisms of action.

Tobyn et al. (2011) provide a detailed and interesting format where they examine: the detailed history of a herb, often based on Dioscorides work from the 1st century AD. They discuss key actions and chemical constituents, and also make recommendations on herbal usage (Tobyn et al., 2011). However, they have also concentrated on the herbs they use in their practices.

Overall, current herbal history focuses either on the detail relevant to a particular period, or provides an overview of herbs across time, but only for herbs that are currently used. Current materia medica often include a historical note on traditional use (Chevallier, 2016; e.g. Fisher, 2018) about a medical plant, but this is rarely fully-integrated or given the same weighting as the scientific research.

This leads to the next research question, focussing on the ‘forgotten’ medical plants:
Q2. How did the use of ferns change from the time of Birkett’s (1699) recipe to today?

1.5 Moving from the 17th century to today

As such, there is not an explicit methodology that could be followed for a ‘forgotten’ herb that allowed:

- a detailed reading and interpretation of a 17th century remedy
- an understanding of how a particular herb’s use has changed over time
- a discussion of the relevance of the remedy (and the herbs contained within it) to the practice of current Western herbal medicine in Britain.

Therefore, a mixed-method approach was taken in order to answer Q1 and Q2 – with the ultimate purpose of addressing the original aim (see Table 1.1).

Table 1.1 Research questions

Research Questions
Aim: Is it possible to move beyond a historical-based questioning of an 17 th century herbal remedy, to explore if the remedy may be relevant to sustainable and safe herbal practice in Britain today?
Q1. How were the two ferns in Birkett’s 17 th century recipe used as part of a remedy for a hernia?
Q2. How did the use of ferns change from the time of Birkett’s (1699) recipe to today?

(Author)

2 Methodology

A mixed-method approach has been taken that permits two different scales of analysis to occur, micro- and macro-, this allows both objective and subjective data to be analysed (Chen et al., 2025). The approach has been borrowed from the social sciences and anthropology and uses a ‘thick-big’ data approach after Chen (2025). The detail of the approach and how it translates to a historical herbal methodology is shown in Figure 2.1 and described below.

The ‘thick’ data is qualitative, from an individual, based on experience, and micro-level. In this study, the analysis of Elizabeth Birkett’s remedy is thick data (Chen et al., 2025; Siodmok, 2020).

The ‘big’ data collates information that was designed to be delivered to individuals, the data are quantitative and macro-level (Chen et al., 2025; Siodmok, 2020). In this instance, it is a database of information about polypody and royal fern gathered from published materia medica.

Where convergence and divergence occur between the two data sets, insights about the historical use of ferns and local use can be ascertained. Where the two types of data converge, this is considered to be societal level information, where they diverge, this is likely showing local/individual knowledge (Chen et al., 2025).

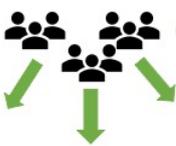
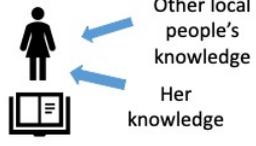
	Big data	Thick data	Comparing
“Big-Thick” approach	Macro level, can be compiled/quantified. Published.	Micro level one individual, experience-based, qualitative. Not published.	Convergence/divergence
“Big-Thick” Approach applied to this study	<p>Materia medica</p>  <p>Information going out to society</p>	<p>Elizabeth Birkett</p>  <p>Other local people’s knowledge Her knowledge</p> <p>Recipe coming from Birkett and her influences</p>	<p>Convergence informs about societal understanding, or the green arrows →</p> <p>Divergence informs about local influences, or the blue arrows →</p>
How this maps onto sections in results	<p>Historical review</p> <p>The largest section bringing together a lot of data contained in materia medica. Data transformed into quantitative data to show trends in C17th and patterns over time.</p>	<p>The recipe</p> <p>A close reading of the recipe, interpreted using both published sources (objective) and tacit and herbal knowledge from the individual (subjective).</p>	<p>Analysis</p> <p>Convergence (the green arrows) where the historical data from the materia medica agrees with Birkett.</p> <p>Divergence potential informs about local influences on Birkett.</p>
Qualitative/ Quantitative	Quantitative But with some interpretation	Qualitative But with some verifiable sources	Interpretation

Figure 2.1 Outlining how the ‘big-thick’ approach is used to analyse published historical materia medica alongside a handwritten 17th century recipe. Orange triangle - illustrates the amount of data. Pink triangle - illustrates the subjective nature of the text. Image: Author’s own, including categories from Chen (2025).

The advantage of this approach is that it allows a handwritten herbal recipe (thick data, subjective), to sit alongside a database of historical published materia medica (big data, objective) and for the two to be compared.

Therefore analysis is composed of **three strands** i) the historical review (big data); ii) Birkett's (1699) recipe (thick data), and iii) combining i) and ii) to understand the historical use of the two ferns and how Birkett's recipe sits within this.

Common names were used for the ferns in question: polypody is used for *Polypodium vulgare* L. (RBGK, 2024) and royal fern is used for *Osmunda regalis* L. (RBGK, 2024). The abbreviation 'C' is used in figures and tables for 'century', e.g. C17th means 17th century.

2.1 The recipe “Another for a Rupture or Broken Belly”

A transcript of the recipe already existed (Wright, n.d.), and was further interpreted using published sources and herbal and tacit knowledge. Two main published sources were used:

- Stobart's (2016) glossary in *Household medicine in 17th century England*
- The online source *Rudy's list of archaic medical terms* (Anon., 2008).

If neither of these yielded results, specific searches were made in google scholar and google, using specific search terms from the recipe in inverted commas, and additional terms such as “historical”, “17th century” or “meaning”.

Knowledge that is gained through experience is hard to both describe and reference (Collins, 2013). The knowledge bank drawn upon for this interpretation comes from:

- Herbal knowledge: from medical herbal training at Betonica
- Understanding of historical recipes: from previous career experience at the National Trust.

2.2 Historical review

2.2.1 Sources

A preliminary survey (detailed in Appendix A) refined the parameters of the main historical review (Arskey & O'Malley, 2003), revealing differences in the use of ferns according to geographic location and time period. To constrain the main review, only sources from the UK and from the time of the recipe (17th century) onwards were chosen for the final review. The historical sources consulted were primarily those listed in Tobyn et al. (2011), further detail on inclusion and exclusion criteria and exceptions are found in Table 2.1.

Table 2.1 Inclusion, exclusion criteria and exceptions for sources included in the historical review

	Inclusion	Exclusion	Exception
Timeframe	AD 1600 to present. Each century was represented.	Text published pre-1600	None.
Location	Based on herbal usage in the UK.	Texts based on herbs from continental Europe and USA.	1. Hoffman (2003): this is a key text for British herbal students, David Hoffman was a member of the British-based National Institute for Medical Herbalist (NIMH) at the time of writing 2. American Matthew Wood's Complete Guide to Old World Medicinal Plants (Wood, 2008): this examines plants commonly found in the UK and Wood trained at the Scottish School of Herbal medicine (Wood, 2011).
Type of text	Published	Other handwritten documents, oral histories.	The National Botanic Pharmacopoeia (1921) could not be obtained in timeframe of the project, however the 1st edition from (1905) was included.

(Author)

To identify polypody and royal fern in the historical sources, various challenges were encountered such as changes to plant names over time/multiple plant names, historical spellings and the same name being given to more than one plant. How these challenges were dealt with is detailed in Table 2.2, and Appendix B outlines the final search method adopted.

Table 2.2 Challenges that occurred in working with historical data and how they were dealt with

Challenge	Example	How it was dealt with
Name changes over time and multiple names can be assigned.	Royal fern was known as 'Felix florida' in C17th, a different name to both the present-day Latin and common names.	A series of steps was devised to take this into account when searching - see Appendix
Historical spellings in digitised texts sometimes meant entries were missed	's' was often written as 'j' or 'f' and digitised as 'f'. This posed a problem when <i>Osmunda</i> was a search term.	Manual checking of the index, contents, each page of the book if no entry was present in the search.
Same name was given to multiple ferns	Hatfield (1886) gave the name 'female fern' to <i>P. vulgare</i> .	Examining other names for the fern and its uses made it clear

(Author)

Data was entered into four tables in GoogleSheets, details of these can be found in Table 2.3.

Table 2.3 Information contained in data collation tables.

Sheet name	Purpose	Fields included	Location
Metadata	To make the following explicit: where the source can be found, why it was included, has it been analysed	Author, date, title, location (physical or online), URL, how the source is known about, if the source has been analysed, notes	Appendix C: Table 8.3
Summary	To provide an overview of which sources contained which ferns.	Author, date, if <i>Polypodium vulgare</i> or <i>Osmunda regalis</i> were included in the text, names of other ferns with their entry in the text, total number of ferns in the text, and notes	Appendix C: Table 8.4
Polypody	To contain the detail from each source concerning polypodium	Source, year, plant names used in the text, part used, preparation, uses, where the fern was to be found, page numbers and notes	Appendix C: Table 8.5
Royal fern	To contain the detail from each source concerning royal fern	Same fields as <i>Polypodium vulgare</i> above	Appendix C: Table 8.6

(Based information contained in Appendix C).

The main chart constructed was a summary sheet indicating if the texts included polypody, royal fern and any other ferns. Two other species-specific tables were constructed relating to how the polypody and royal fern were used and included: part used, preparation, body system, indications/actions and the location where the fern was found. These categories were chosen to allow comparison to be made between Birkett's recipe (1699) and information contained in the historical sources. They are also categories used currently in materia medica, therefore allowing for discussion of how they may be relevant to today.

Data was subsequently extracted into Excel for chart construction. Before this stage, an extra column was added next to each of the primary data fields in the species-specific sheets. This allowed a summarised interpretation to be made based on herbal and tacit knowledge. In order to create a chart from qualitative data, it needed to be turned into numerical data. For example, if polypody was present in a source, it was given a 1, if it was absent, it was given a 0, an example illustrating this process can be found in Appendix D. Charts were constructed to show:

- When ferns were in use

- What plant parts were used
- What preparations were used
- How the ferns were used (body system).

In addition, actions and indications mentioned in the historical texts for the primary body systems are presented as a table, as this information was too complicated for a chart.

Charts were copied to PowerPoint to allow further interpretation and formatting before being exported as .jpeg files.

Convergences and divergences between the recipe and the published sources were analysed. Where there was convergence this was taken to mean that the knowledge was likely established in wider society or shared; conversely, any divergence was considered to be more local in origin (Benzer et al., 2013). A summary table of all the results and analysis was created to illustrate the convergence and divergence.

2.3 Bias

Bias was a potential issue in choosing the historical sources and in the interpretation of them.

Choosing sources Using an established list, i.e. Toby et al. (2011) and official pharmacopoeia were attempts to mitigate for this, although these are in themselves biased towards the more pharmaceutical-led pharmacopoeia, as opposed to folk use. Other similar sources to those in Toby et al. (2011) were included based on the author's knowledge of the subject. To aid transparency, how a source was known about was recorded on the metadata sheet (Appendix C – Table 8.3). Bias remains an area for refinement in future projects of a similar nature.

Interpretation of the historical sources The researcher is forced to make decisions about the importance of data, and this will necessarily reflect the thinking and theoretical frameworks of the researcher (Arskey & O'Malley, 2003).

2.4 Ethics

Ethical considerations were an important part of the working process, especially for handling historical documents, respect of manuscripts and rules and regulations of archives was paramount (M. R. Hill, 1993). Appropriately acknowledging the work of the previous transcription of the recipe was also important (M. R. Hill, 1993).

3 Results

Each strand (Birkett's recipe, historical review, and the combining of the two) has the following sections:

- **When?** Situating the section chronologically.
- **What?** Which ferns were used and which plant parts were used,
- **How?** This includes the body system, actions and indications, the preparations used
- **Where?** Analyses where the ferns were procured from.

A summary of all results and analysis is found in Table 3.3.

3.1 “Another for a Rupture or Broken Belly”

The original recipe is shown in Figure 1.1. A transcript and glossary are found in Figure 3.1.

When? The year 1699 is written on the cover (Kendal Archives ref WDTE/BOX 16/1-1a), however, additions and different hand-writing at the end of the book, perhaps by Elizabeth Birkett's son (Feldman, 2023), suggest it was written over time.

What? Two ferns were used:

- **“Herbe Osmund”** *Osmunda regalis* L. or royal fern (RBGK, 2024). Osmund was one name given to royal fern in the 17th century (Gerarde, 1597/1636), see Appendix B.
- **“Pollipodium”** *Polypodium vulgare* L. or common polypody (RBGK, 2024). Many spellings of polypodium existed in the 17th century - the ‘y’ was often replaced with an ‘i’ (Gerarde, 1597/1636; Parkinson, 1640), see Appendix B.

The plant part used for royal fern was the young shoot, which was dried, powdered and sieved. For polypodium, the root was used, which was peeled and powdered. A later addition, also states that young and fresh leaves could be used in May.

How? The remedy was for a “rupture” and “broken belly”, both are historical terms for hernias (Anon., 2008; Hudson, 2007). Most hernias occur where the bowel protrudes through the anterior abdominal wall (Jensen, 2010) and given the reference to the “belly” in the title, the main body system treated is likely to be the gastrointestinal system.

The method of preparation involved two stages:

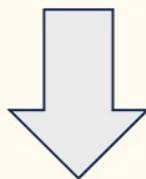
1. Internal: powdered royal fern was mixed with white wine, to make the “broken belly greene as it were new broken”. The exact meaning of is unclear, however, it implies the area of the hernia was taken back to a newly-injured state.
2. External: A plaster was made to apply to the hernia using the powders of dried polypodium and elecampane, mixed with bay oil.

Interpretation of “Another for a rupture or broken belly”

Another for a rupture or broken belly

Take *tender crops* of the *herbe Osmond* in May, and drye them in the winde and not in the sun, and make powder thereof and *searce* it, and keepe it drye in a *blader* and let the patient drinke of that powder with white wine *morning and evening winter or summer*, for this drinke, will *make the broken belly greene as it were new broken* and the patient must be well and *Easily Trussed* that they may goe with it all day, and night, let him lye upright as much as he may, and not strayne his belly, and keepe lax as much as may be. Then make use of this Plaster following. Take *Pollipodium* that growes on an Oake the Roots and pare them and the Roots of *Enalacampane*, and pare them, and beat them to Powder, and temper it with *Oile of Bay*, and *make it a plaister* and lay it on a cloth thicke a good quantity and lay it on the greived place under the trusse and change it once or twice in 24 houres. *probat Est*, In May take the leaves of ye herbb to make the plaster.

(Wright, n.d., p. 19)



Interpretation based on published sources

Original	Interpretation
A rupture	A hernia, especially of the groin or intestines ¹
broken belly	A hernia ³
a blader	An animal's bladder. Used for keep foods airtight in the 17th and 18th centuries ⁴
Easily Trussed	A truss is compression device. They are still used today for hernias ²
Oile of Bay	Aromatic leaves of the bay tree expressed as an oil ⁵
make it a plaister	A plaster was a stiff type of ointment made with gums or resins and spread on cloth or leather ⁵
probat Est	It is proved. Implies the recipe has been used and found to work, however, there is evidence that sometimes this phrase was just copied ⁵

Interpretation based on herbal and tacit knowledge

Original	Interpretation
tender crops	Young shoots
herbe Osmond	Royal fern (<i>Osmunda regalis</i>)
drye them in the winde and not in the sun	Dry in a dark and airy place
searce it	Strain it
winter or summer	All year
make the broken belly greene as it were new broken	A greene wound is a fresh wound.
Pollipodium	Common polypody (<i>Polypodium vulgare</i>)
Enalacampane	Elecampane (<i>Inula helenium</i>)
In May take the leaves of ye herbb to make the plaster	This was added at the end, suggesting interaction with the recipe, either from personal knowledge or from information from another source.

Data taken from ¹Anon, 2008; ²East Sussex Healthcare NHS Trust, n.d.; ³Hudson, 2007; ⁴Preece & Suson, 2021; ⁵Stobart, 2016.

Figure 3.1 Transcript of original recipe (after Wright, n.d.) (above), and interpretation of individual words/phrases based on published sources (below: left) and tacit/herbal knowledge (below: right). Image: Author's own.

Between the two stages the person was to wear a truss and stay lying down.

Where? Information about growth stage, time of year, and location of growth suggests the ferns were gathered locally e.g. “Take tender crops of the herbe Osmund in May” and “Take Pollipodium that growes on an Oake”.

3.2 Historical review

Thirty-four sources were consulted (Figure 3.2). A list of sources and metadata are found in Appendix C – Table 8.3.

When? Sources dated from 1636-2021 (see Figure 3.2 and Appendix C). Grieve (1931) and Barker (2001) state they are recording historical information, not necessarily contemporary use.

What? In the 17th and 18th centuries polypody and royal fern were included in 100% and 75% of the historical sources, respectively. Many other ferns were also used (see Figure 3.2 and Appendix C). Fern use declined in the 19th, 20th and 21st centuries. Only Wood (2008) provided 21st century evidence of having prepared a fern (royal fern) for herbal use.

In terms of plant part (see section 1 of Figure 3.3), all sources state the root was the main part used for both ferns. Hill (1798) suggested fresh polypody roots were preferable. New growth of polypody in May was preferred by Parkinson (1640). Gerarde (1597/1636) suggested using fresh young shoots of royal fern for wounds.

How?

In terms of body system (section 3 of Figure 3.3), both ferns were most commonly used to treat the gastrointestinal system, followed by the respiratory system for polypodium and integumentary system for royal fern. In the 17th and 18th centuries both also treated the urinary system. Specific actions and indications for both herbs for their main body systems are included in Tables 3.1 and 3.2. Hernia is only given as a specific indication for royal fern, and only in the 17th and 18th centuries (Table 3.2). Other indications for polypodium included: nausea, constipation, hepatic conditions, and worms; with laxative and anthelmintic being key actions (Table 3.1). Other indications for royal fern included wounds, bruises, skin conditions, hepatic conditions – with vulnerary being a consistent action (Table 3.2).

The most common preparations for both ferns in the 17th and 18th centuries were decoctions taken internally (section 2 of Figure 3.3). Royal fern was also used externally. The range of preparations for polypody increased from the 19th century.

Where? Polypody was consistently known to grow on walls and in woods, and on old trees - particularly oak, which was preferable in the 17th and 18th centuries. All sources confirmed royal fern grew in boggy, damp and wet places (section 4 of Figure 3.3). Gerarde (1597/1636) and Miller (1722) also gave specific locations.

Table 3.1 Actions and indications for the gastrointestinal system for polypody over time.

Century	Gastrointestinal actions	Gastrointestinal indications
17 th	Laxative	Nausea, constipation
18 th	Laxative, anthelmintic	Obstructions of the liver, jaundice, worms
19 th	Anthelmintic	Hepatic conditions, worms
20 th	Stomachic tonic, cholagogue, laxative, anthelmintic	Dyspepsia, loss of appetite, hepatic conditions, stitches, colic, hardness in the spleen, mild constipation, worms
21 st	Cholagogue, laxative, anthelmintic	Dyspepsia, hepatitis, jaundice, indigestion.

(Author: Based on data in Table 8.5 in Appendix C).

Table 3.2 Actions and indications for the gastrointestinal and integumentary system for royal fern over time.

Century	Actions	Gastrointestinal indications	Integumentary indications
17 th	Alterative, vulnerary,	colic, splenic disorders, ruptures (hernias),	Wounds, bruises, punctures
18 th	Alterative, choleric, vulnerary	Obstructions of the liver and spleen, jaundice, rickets, ruptures (hernias)	Wounds, bruises
19 th	Mucilaginous, tonic, stomachic	Dysentery, stomach and bowel pain	
20 th	Alterative, choleric, vulnerary	Jaundice, obstructions in the gut, rickets	Wounds, bruises
21 st	Astringent, purgative, vulnerary	Rickets, mucosal issues.	Bruises, bleeding, sores, for skin conditions

(Author: Based on data in Table 8.6 in Appendix).

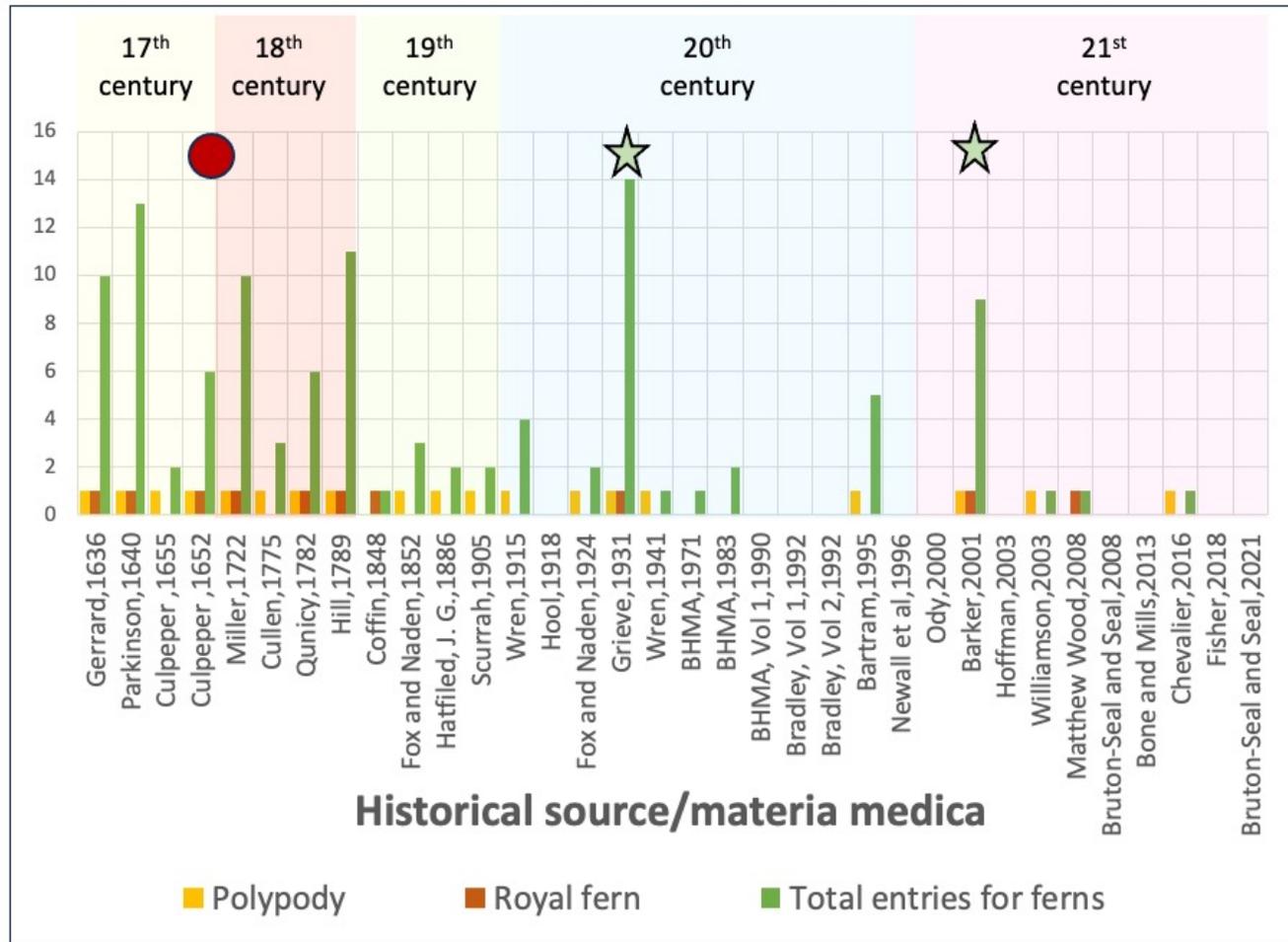


Figure 3.2 Timeline representing the presence of polypodium, royal fern and any ferns in the main published sources from the 17th century to 2021. Entries marked with a green star are sources that are primarily recording historical (not contemporary) usage. The red dot marks the date of Birkett’s (1699) recipe. Image: Author’s own based on data in Appendix C.

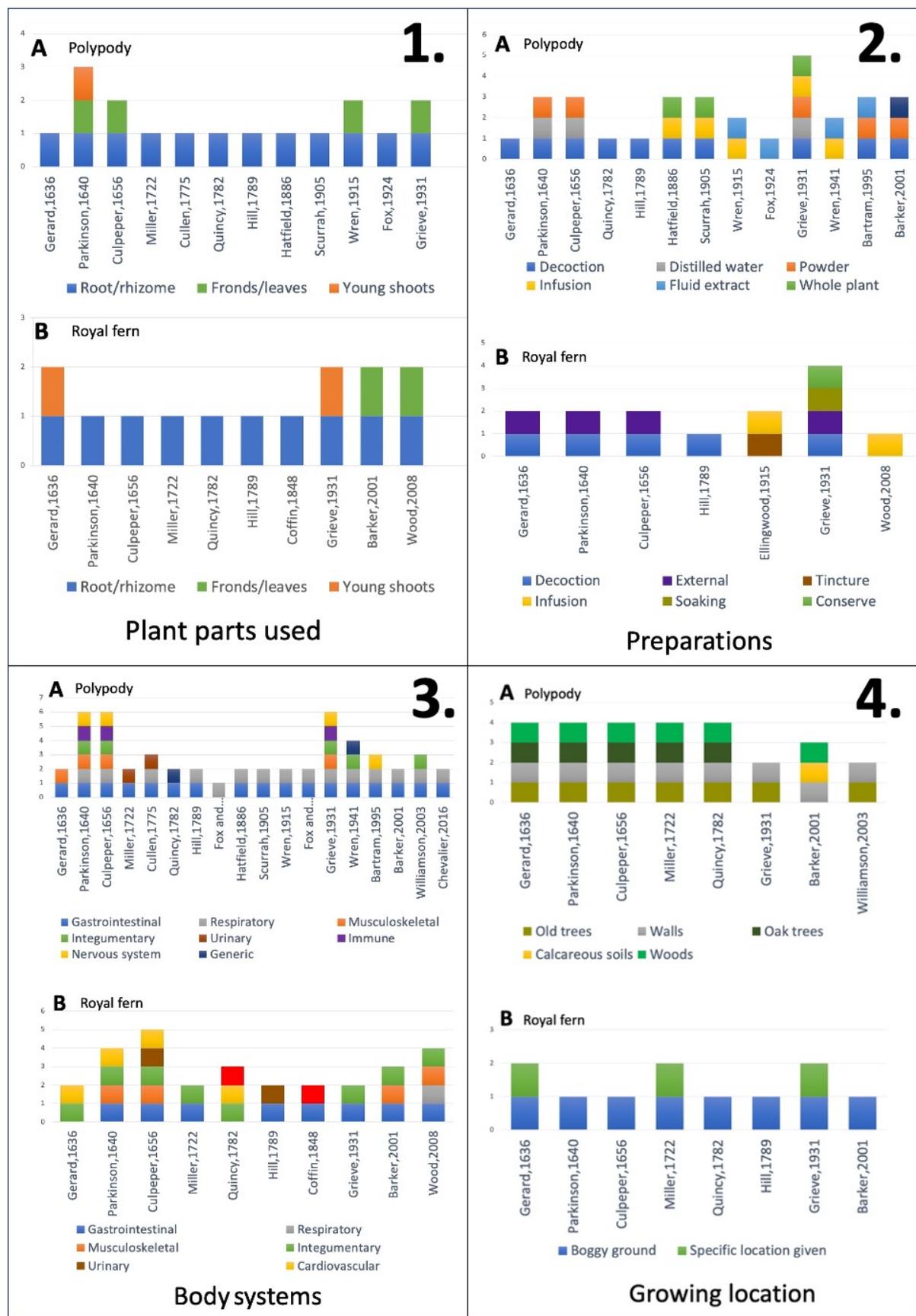


Figure 3.3 Charts depicting how **A** polypody and **B** royal fern are described in the historical sources. **1.** Parts used, **2.** Preparations used, **3.** Body systems associated with the fern, **4.** Growing locations. Image: Author, based on data in Appendix C.

3.3 Analysis

Table 3.3 provides a summary of the results and analysis.

When? Birkett's (1699) use of ferns was generally consistent with practices at the time (17th-18th centuries) and was written at the height of their medicinal use in 1699. From the 19th century, the use of ferns declined until their almost non-existent use today.

What? Both polypody and royal fern, used by Birkett (1699), were written about extensively in the 17th and 18th centuries, along with many other types of ferns. The plant parts used by Birkett (1699) were largely consistent with the 17th century sources. The main difference was that Birkett was drying the young shoots of the royal fern; whereas others, e.g. Gerarde (1597/1636) used them fresh.

How? Birkett's (1699) recipe for a "rupture" was interpreted as a hernia (Anon., 2008) occurring in the abdomen; however, the severity of the hernia was not stated. In the 17th and 18th centuries royal fern was known for treating "ruptures", as mentioned by Parkinson (1640), Culpeper (1652) and Miller (1722). It was also considered, demulcent, purgative, alterative and vulnerary to wounds. These actions may have cleaned or cleared the area internally, taking it back to the "green" state mentioned by Birkett (1699) before helping it to heal.

Birkett's (1699) recipe deviates from the materia medica in terms of the preparations used. The historical sources do not record polypodium being used externally as a plaster as suggested by Birkett (1699), although the practice of making a powder from polypody was recorded by Culpeper (1656) and Parkinson (1640). Equally, for royal fern, there is no mention of a powder dissolved in a liquid in the historical sources, although various other liquid preparations (decoction from the whole plant, tincture, infusion) did occur.

Where? The historical sources and Birkett (1699) both give environments where royal fern and polypody grew in the 17th and 18th centuries. This implies that at that point in time ferns were gathered rather than bought in.

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	The recipe	Historical materia medica			Analysis
When?	1699 onwards	1636 - 2021.			1636 - 2021.
What was used? Herb	Royal fern and polypodium. Elecampane and bay are also mentioned, but not included in the analysis.		Number of different fern species included in each source:	Percentage of sources containing polypody (P) and royal fern (R)	Ferns were commonly included in the 17 th and 18 th centuries, with inclusions declining from 19 th century onwards. Many more ferns were used (up to 15 different species) in the 17 th century. Convergence Birkett's recipe in 1699 was written in the the height of medicinal fern use.
		C17 th C18 th C19 th C20 th C21 st	3-15 4-13 1-3 0-6* 0-2**	P: 100%; R: 75% P: 100%; R: 75% P: 50%; R: 50% P: 31%*; R: 8%* P: 22%**; R: 11%**	
Part	Polypodium: root, and young leaves in May Royal fern: young shoots		Polypody	Royal fern	Roots have been the main plant part used from C17 th -C21 st centuries. Leaves and young shoots have been used. Convergence Parkinson also specifically mentions using the young leaves in May, in line with Birkett. Divergence However, there is no reference for Birkett's use young fresh royal shoots.
		C17 th C18 th C19 th C20 th C21 st	Roots, shoots, leaves Roots Roots Roots, leaves -	Roots, shoots Roots Roots Roots, shoots Roots, leaves	
How was it used? Body system	Gastrointestinal		Polypody	Royal fern	Birkett's recipe is for hernia, which generally falls under the gastrointestinal system. Convergence Almost all the sources have the gastrointestinal system as one of the main systems treated. However, it should be noted that both ferns were also used to treat conditions in many other body systems.
		C17 th & 18 th C19 th C20 th * C21 st	GIT, Resp, MSK, NS, Skin, Urinary, Tonic, Immune GIT, Resp GIT, Resp, Skin, Tonic GIT, Resp, Skin	GIT, Skin, MSK, Cardio, Repro (F), Urinary GIT, Repro (F), - GIT, Skin, Resp, MSK	
Specific Indication: hernia	Hernias – no further info on type or severity		Polypody	Royal fern	Birkett's recipe has been interpreted as being for a hernia. Convergence In the C17 th and C 18 th hernia was included in many texts as a specific indication for royal fern. Divergence Polypody had a purgative effect but was not specific to hernias. Many other indications are included for both ferns, see Tables 4.1 & 4.2 for examples.
		C17 th & C18 th C19 th , C20 th & C21 st	- -	Hernia -	
Method of preparation	1 st : Royal fern (dried, powdered) and mixed with white wine. Internal. 2 nd : Polypodium (dried, powdered) and mixed with bay oil. External.	C17 th & C18 th C19 th , C20 th & C21 st	Decoction, distilled water, powder Decoction, Powder, infusion, fluid extract, whole plant. syrup	Decoction and external applications. Decoction, infusion, tincture, conserve	Decoction of both herbs is the dominant preparation through time. Divergence Birkett's recipe has an internal part (power of royal fern in wine), and external part (polypody made into an external plaster). Neither of these preparations occur in the historic literature.

Table 3.3 Summary of results and analysis. Abbreviations: * - excludes Grieve (1931); ** - excludes Barker (2001); GIT - gastrointestinal; Repts - Respiratory; MSK - musculoskeletal; NS - nervous system; Repro (F) - Reproductive (Female). (Author)

4 Discussion

Birkett's *Commonplace* book (1699) reflects the changing healthcare scene of the 17th century (Stobart, 2016) with recipes collated from physicians to the local wiseman, using a variety of ingredients and methods from gathered herbs to apothecary chemicals and charms (Birkett, 1699). The recipe studied, "Another for a Rupture or Broken Belly" (1699), has been shown to be used for treating abdominal hernias. It used two medicinal ferns as part of the treatment: polypody and royal fern, as a plaster and internal remedy, respectively. In a wider context, many different types of ferns formed part of the 17th/18th century British materia medica, including polypody and royal fern, and they had wide-ranging uses.

4.1 Traditional medicinal remedies for "ruptures"

Many questions remain about Birkett's (1699) recipe:

- What was the severity of the hernia?
- Was the remedy for alleviating symptoms or cure?
- What were the mechanisms of action at play?
- Was the recipe a typical hernia treatment for the time?

An element of tacit knowledge is implied in the recipe. If tacit knowledge is taken to be the knowledge circulating in wider society, then the information written down (the explicit knowledge) has been judged by Birkett to be the information needed for transmission (Collins, 2013). This is evidence of her herbalist skills; in that she was aware that these details were pertinent. Equally, a lot of the 'unsaid' is taken to be wider/tacit knowledge.

Looking to other historical texts can help to shed light on some of the questions raised above and the societal/tacit knowledge that Birkett was drawing on at the time and was not written in the recipe. In Houston's (1726) discussion of ruptures/hernia treatments in the 18th century, comfrey was a key herb, with both vulnerary and agglutinative (being able to unite) actions that were used internally and externally. Internal remedies were often vulnerary, e.g. a comfrey root powder decoction. External preparations were agglutinative and astringent; e.g. comfrey root and Solomon's seal (Houston, 1726). This is further supported by Fletcher Hyde suggesting an external compress of comfrey root for a hernia (Bartram, 2015).

Today, whilst comfrey is still considered to be effective externally for broken bones, sprains, strains and ulcers (Herbal Reality, 2024), the presence of pyrrolizidine alkaloids means that internal use is restricted by the National Institute of Herbal Medicine and banned by the College of Practitioners of Phytotherapy (BSHM, 2023).

Royal fern is mentioned by Houston (1726) for the treatment of hernias (see Table 4.1), and was often taken with wine, which was considered astringent, and is

consistent with Birkett's (1699) recipe. Royal fern was taken in conjunction with comfrey root or Solomon's seal, or instead of them (Houston, 1726), suggesting that it played a similar vulnerary/astringing/agglutinative role, possibly helping to repair the tissue where the bowel had popped through. This would imply Birkett's (1699) recipe is for treating a hernia before it needed surgery. It also suggests the herbs were used (alongside a truss) for supporting tissue repair.

Polypody is not mentioned in Houston's (1726) collection of hernia remedies, nor did it feature in the historical review as being specific for a hernia. This begs the question: why was it used as a plaster by Birkett? The historical sources suggested it was used as a laxative, which if it was administered internally would be consistent with keeping the bowels open/clear/soft as suggested in Houston (1726). However, Birkett's (1699) recipe is for an external plaster. To suggest a hypothesis for Birkett's (1699) use as a plaster, it is necessary to turn to more recent research and to look further afield.

Table 4.1 The role of royal fern in hernia treatments from the early modern period.

Year	Author	Summary of method that employs royal fern
1507	Chalmetaus (Scholar at Montpellier, France)	Body emptied by purging using a herb that also astringed afterwards (e.g. rhubarb). To strengthen the area equal parts of royal fern and comfrey root in wine and water, mixed with syrup of quinces.
1640	Parkinson	All ferns, especially royal fern , cured ruptures.
1580	Wechelum (printer in Frankfurt)	Roots of royal fern and Solomon's seal , infused in red wine and sweetened
1676	Richard Wiseman (17th century English surgeon)	Royal fern simple: specific affinity for ruptures. Given as a powder in a decoction of comfrey roots , as a tea, juiced, or with red wine.

(Based on data from Houston, 1726)

4.2 Medicinal use of ferns around the world today

Whilst the historical review has clearly shown that ferns have fallen out of medicinal use in Britain since the 19th century, the same cannot be said of mainland Europe and more widely, for example in India, Japan and China (Dvorakova et al., 2024). Ferns also have a long history of culinary use around the world (summarised in Łuczaj, 2022).

4.2.1 Polypody - herbal therapeutics and efficacy.

Polypody has been used traditionally for respiratory conditions and as a laxative, and was approved in 2008 by the European Medicines Agency (Fossum et al., 2008).

Importantly, it has also been used externally for dislocated fingers in Greece (rhizome), and the leaves have been used externally for swellings in India and skin diseases in Europe (Dvorakova et al., 2024), suggesting a transdermal mechanism of action.

The use of plasters (as seen in Birkett's polypody plaster) as an external transdermal method of application of herbs has largely fallen away in British medical herbalism today. Plasters are made from a very thick poultice of herbs spread onto a piece of cloth and applied to the skin over a long period, one of their actions is to promote healing (Easley & Horne, 2016; Hawkins, 2024): ideal for the healing of a hernia. They were also a popular 17th century home remedy; Stobart (2016, p. 116) found that they were the most common external preparation recorded in the 17th century manuscripts she studied. However, Stobart (2016) also found there was move away from external preparations, more in favour of internal preparations as the 17th century progressed.

To repair the rupture of the tissue, tissue repair/wound healing would be a key action. Therefore, it is hypothesized that the mechanism of action for Birkett's (1699) polypodium plaster recipe is getting tissue-healing flavonoids to the site of the hernia transdermally, in a sustained manner.

This theory is supported by two lines of evidence. Firstly, by *in vitro* and *in vivo* studies, where polypody has been shown to have wound healing and tissue repair properties (Batur et al., 2020; Dvorakova et al., 2024; Farràs et al., 2021). For example, an extract of *polypodium vulgare* was statistically more effective ($p < 0.05$) than a control for generating new blood vessels and for epidermal granulation tissue organisation (Batur et al., 2020), both of which are key elements in the wound healing process (Alhajj & Goyal, 2025; Schultz et al., 2011).

Secondly, these wound healing attributes are likely to be due to polypody's antioxidant properties (Batur et al., 2020) from shikimic acid, caffeoylquinic acid derivatives and flavonoids (epicatechin, catechin) (Farràs et al., 2021). In addition, flavonoids are lipophilic, with limited water-solubility suggesting poor oral bioavailability; therefore a transdermal application is likely to be more effective for flavonoids, especially in a carrier oil (Costa et al., 2021).

Whilst no clinical trials have been undertaken on polypody (Dvorakova et al., 2024) Birkett's (1699) plaster recipe was for polypody mixed with bay oil suggesting this transdermal route was understood and applied in the past through a different system of knowledge.

4.2.2 Royal fern - herbal therapeutics and efficacy.

Whilst royal fern has been known historically for the treatment of hernias (Anon., 1842; Culpeper, 1652; Houston, 1726; Parkinson, 1640), its mechanism of action remains unclear. Ethnobotanical research on royal fern in Spain (where its use is still known) shows that it is used internally, predominantly for musculoskeletal conditions or tissue repair (Molina et al., 2009). Very few studies exist examining the phytochemicals of royal fern, and there is no evidence from clinical trials (Dvorakova et al., 2024). However, tannins, glycosides, steroids and saponins have been identified in preliminary *in vitro* studies (Schmidt et al., 2017). Polysaccharides are also the main component in the fern's cell walls (Qu et al., 2019), which makes the whole plant powder that Birkett (1699) employed, highly relevant. Other research on royal ferns, thus-far, has focused on its antimicrobial and anticancer properties (Schmidt et al., 2017).

Whilst royal fern (*Osmunda regalis*) and Asian royal fern (*Osmunda japonica*) are geographically separate species, they share a common ancestor (Tsutsumi et al., 2021) and royal fern has shown evolutionary stasis on a molecular level since long before it became geographically separated from the Asian royal fern (Qu et al., 2019). This suggests a strong degree of similarity will still exist between the two species.

Using research on Asian royal fern it is possible to hypothesise how royal fern may have been working in Birkett's (1699) recipe. *In vitro* studies on Asian royal fern are more numerous and suggest it has antioxidant properties (Woo et al., 2017) with the root having a higher concentrations than the leaves (Dion et al., 2015). *In vitro* studies (on mice) also suggest the polysaccharide element regulates function and activity in the immune system to increase microcirculation and activate nuclear factor-kappa B (NF-κB) signalling (Liu et al., 2025). Polysaccharides have strong antioxidant properties through the Nrf2/ARE pathway (Mu et al., 2021) and are a key element of tissue repair because they can induce stem cell differentiation, reduce pain, quicken healing times, and increase blood circulation (Jin et al., 2024) – all actions that would be beneficial in healing an internal wound from a hernia.

However, the biologically active polysaccharides of Asian royal fern vary with drying and preparation methods; hot air drying produces the strongest antioxidant effect from the polysaccharides compared to natural drying and freeze drying (Liu et al., 2020). The modern study (Liu et al., 2020) is using replicable and controlled methods, whereas Birkett (1699) makes observations on the preparation based on real-world conditions for royal fern: “dry them in the wind not the sun” implying that she (or the originator of the recipe) understood the importance of appropriate drying methods. The preparation of the remedy is also important. Polysaccharides, especially mucilage, can lose their structural integrity in very hot preparations (Ganora, 2021). Birkett's recipe appears to respect this principle by mixing powders

with wine, which was served at room temperature and was often considered in the 17th century to be part of the medicine (Curth, 2003). In this time period, wine was also often served with sugar, herbs or fruit, as it was sold by the merchants unmatured and unclarified (Willes, 2020). In addition, “drinks” were the most common form of internal preparation found in the hand-written manuscripts examined by Stobbart (2016)

Based on recent research it is hypothesised that both ferns were acting to heal the tissue involved in the “rupture” of the abdominal cavity, albeit in different ways. The polysaccharides from royal fern were used internally before the antioxidant flavonoids from the polypodium were used externally. In both cases the preparation of the remedies played an important role in the effectiveness of the remedy, with polypodium needing the oil component to get the lipophilic flavonoid through the skin to be absorbed by the cells. Equally, the preparation of royal fern appears to have has a bearing on the effectiveness of the polysaccharides, as noted by both Birkett (1699) and modern science (Liu et al., 2020).

This is just one simple hypothesis - based on phytochemistry - for how the ferns may be working medicinally in the remedy. However, Birkett’s (1699) remedy is using the *whole* plant part, in this instance the root, and in *combination* with other ingredients (e.g. oil, herbs, wine), rather than an extract or isolated compound from a plant. Most of the scientific research discussed above is undertaken on the later (Rasoanaivo et al., 2011); however, herbal medicine works on many different levels (Upton, 2021) = with the different constituents working in harmony (Popham, 2024). The synergy operating in Birkett’s (1699) remedy was also almost certainly playing a role in its effectiveness, but in a way that science is unlikely to ever untangle.

4.3 Why did ferns fall out of medicinal use in Britain?

The use of ferns declined over time until the present day, where ferns are currently seen as a historical note, rather than as part of a working herbal dispensary.

However, the question still remains as to why their demise occurred.

Bruton-Seal and Seal’s (2017) original definition of a ‘forgotten’ plant – one that was in the herbal pharmacopeia, but which fell from use with the rise of pharmaceuticals – has also been borne out in the historical survey.

Polypody and royal fern were both in Quincy’s 18th century *Pharmacopoeia Officinalis* (1782), however, by the 19th and early 20th centuries Hatfield’s (1886) and Scurrah’s (1905) pharmacopoeias only contained polypody. As the 20th century progressed, and pharmaceutical medication became the *status quo*, all ferns were dropped from British Herbal Pharmacopeia (Bradley, 2010a, 2010b; BHMA 1971, 1983,1990). Upton (2021) suggests that as the pharmacopoeias became increasingly pharmacological in nature, more traditional herbal medicine systems

that had a distinctly different way of understanding their materia medica fell by the wayside.

Literature suggests that there has been an erosion of traditional/folk knowledge since the 19th century due to urbanisation, industrialisation and globalisation (Allen & Hatfield, 2004; Wahlberg, 2010). This caused the migration of people out of rural areas and/or the evolution of remedies to include newer, or more fashionable, ingredients and methods (Allen & Hatfield, 2004; Wahlberg, 2010), this also possibly accounts for the decline in traditional preparations, such as plasters.

When practicing herbalists were informally asked why ferns did not currently feature in British herbal practice, responses included:

- Indications were perceived as narrow.
- Angiosperms provided a broader range of uses and had wider availability.
- The pharmaceutical industry squashed their use in the early 20th century, because they were so effective.
- Potential toxicity.
- Identification issues.

Toxicity is a concern around ferns, and this appears to come from two directions. The first, is its association with male fern (*Dryopteris filix-mas* (L.) Schott), which is included in Part 1 of the Schedule 20 of *The Human Medicines Regulations* (2012) as it is a toxic herb (Dvorakova et al., 2024) that can legally only be prescribed by a registered medical practitioner (not a herbalist). Secondly, its association with bracken (*Pteridium aquilinum* L.); the spores of which can damage DNA and therefore have a link to cancer (Simán et al., 2000). Both of these associations appear to occur due to a lack of confidence in field identification, or the lumping of all ferns under the same toxic umbrella as male fern and bracken.

Despite these concerns over toxicity, both polypody and royal fern have been shown to be safe (Fossum et al., 2008; Molina et al., 2009). In the case of polypody, it is extremely unlikely it would have been approved by the European Medicines Agency (Fossum et al., 2008) if there was any doubt over toxicity. One case report does exist that describes contact urticaria caused by an ornamental polypody fern (Rodríguez et al., 2001), however, this was from the leaves, not the roots (Fossum et al., 2008). Williamson (2003) and Chevallier (2016) also mention rashes can occur after ingestion and or topical application of polypody.

Fewer studies exist for royal ferns. In the limited research that does exist, *in vitro* studies have shown that spores did no more damage to DNA than the control group; given the link between DNA damage and cancer, this suggests that royal fern spores are not carcinogenic (Simán et al., 2000).

Whilst research is limited, and more is needed for both ferns in terms of safety, there is a long history of use for both ferns around the world and current research is looking to both for novel therapeutic uses (e.g. Gleńsk et al., 2019; Schmidt et al., 2017) – none of this would be occurring if toxicity was a major concern. However, having the appropriate botanical field skills to confidently identify safe and toxic ferns is a real safety concern.

Both ferns are considered safe based on the current evidence, however, their sustainability is questionable. Whilst royal fern is not currently a threatened species in the UK it has been subject to overharvesting in Victorian times, which combined with habitat loss has led to its decline (Stroh et al., 2020). Also, where royal fern is still used today in Spain, there have been issues with over-harvesting of royal fern for urban use (Molina et al., 2009). Polypody has not been subject to the same over-harvesting as royal fern in the past, potentially making it more suitable for wild harvesting.

In terms of the legality of wild harvesting in the UK, neither polypody nor royal fern feature in the list of protected species of Schedule 8, *Wildlife and Countryside Act* (1981). However, it is illegal to dig up wild plants without permission (Natural England, 2022), meaning landowner permission should always be sought first. Alongside permission, good field identification skills would be needed to be able to differentiate polypody and royal fern from other more toxic ferns, such as male fern and bracken.

Both ferns could potentially be cultivated to avoid issues of legality and sustainability, although it has been noted that royal fern rhizomes take about 10 years to regenerate after harvesting providing the whole plant has not been uprooted (Molina et al., 2009).

Ultimately, polypody could become part of a working herbal dispensary, providing it is only part of an individual's dispensary and gathered in areas where it is locally abundant with permission. Royal fern, is best left alone, to ensure its survival.

Currently, these types of insights into 'forgotten' medicinal plant, that integrate traditional use, sustainability and scientific research are not included in most materia medica or herbal pharmacopeia. However, as Upton (2021) states: "If modern pharmacopoeias and regulatory systems can evolve to integrate traditional healing knowledge and practices, herbal medicine can thrive and reach its full potential in serving humanity". Based on the discussion above, it would also seem necessary to include sustainability in this modern type of pharmacopeia.

5 Conclusion

A single remedy was chosen from Birkett's *Commonplace* book for analysis. Much more remains to be discovered from the book, especially from a medical, social or local history perspective, as well as from a herbal perspective. The aim of the study was to focus on exploring how a herbal remedy may be relevant to sustainable and safe herbal practice in Britain today; establishing whether it is possible to move beyond a purely historical-based questioning of a 17th century document.

Combining the recipe with historical information and recent research into polypody and royal fern it has been possible to suggest how the ferns were working in Birkett's recipe. Both ferns appear to have the capacity to help with wound healing through tissue regeneration from the external application of flavonoids contained in polypody and the internal administration of polysaccharides from royal fern.

The historical review demonstrated the extensive use of ferns in the 17th and 18th centuries and their decline from the 19th century onwards. Despite this decline in Britain, both royal fern and polypody have continued to be used abroad, medically and culinarily.

Using a mixed-method methodology has allowed the combining of different types of data to understand a 17th century recipe and how has allowed a hypothesis to be made in terms of how it was working. Whilst the analysis of the recipe led to an understanding of the *text*, many medicinal herbal questions around *how* the ferns might have been working remained unanswered, without a phytochemical perspective.

Alongside the inclusion of modern phytochemical research, future studies looking to understand how historical recipes might have working on the body should look to include broader historical material such as: oral history/folklore records (e.g. Allen & Hatfield, 2004; Vickery, 2019), medical texts, and materia medica from prior to the original remedy. This would give more contextual information and provide some indication of the societal-level tacit knowledge that may have also been drawn upon by the author of the recipe.

It is not suggested that ferns are brought back for the specific treatment of hernias. However, where polypody grows abundantly, there is a possibility that it could be used to support tissue repair in a situation where a herbalist has the identification skills and permission to gather the fern. Royal fern has a more chequered history in terms of sustainability, and should not be exploited further.

More broadly, this close-reading of the remedy and tracing of the trajectory of the historical medicinal uses of polypody and royal fern has offered an insight into how

the ferns and the methods of administration have been used traditionally, and how they could be used today. A similar method could be employed for other 'forgotten' medicinal plants, especially, given that the study has highlighted the current pharmaceutical bias in herbal pharmacopeia.

Overall, a broader approach to herbal pharmacopeia is advocated. This would entail the inclusion of some of the 'forgotten' herbs; an integrated discussion of the history of the medical plants as well as the current scientific research; and a realistic discussion on sustainable herbal use. This last point would also include an understanding of supply and provenance, and the potential for - and issues with - wild harvesting and/or cultivation.

A more integrated approach could honour the traditional knowledge about 'forgotten' medicinal plants, and the diversity of knowledge systems that medical herbalism currently draws on.

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7 Figures

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8 Appendices

8.1 Appendix A - Preliminary search

Search criteria

Due to time and budget restraints (Arskey & O'Malley, 2003) the following criteria were used:

- A start date of AD 1600 was chosen, to include the full century of the original recipe (1699).
- Only English language sources were examined.
- Only sources that were easily accessible (physically or online) were chosen.

The table below outlines the results from this initial survey.

Table 8.1 Initial search of contemporary books and collections of monographs for inclusion of ferns

Name of volume	Ferns included	Reference
European Scientific Cooperative on Phytotherapy (ESCOP)	None.	(ESCOP, 2024)
Expanded commission E monographs	None	(Blumenthal et al., 1998)
Commission E monographs: approved	None	(Blumenthal et al., 1998)
Commission E monographs: unapproved	Male Fern: internal use is obsolete	(Blumenthal et al., 1998)
European Medicines Agency	Polypodium (rhizome only)	(Fossum et al., 2008)
Encyclopaedia of herbal medicine	Polypody	(Chevallier, 2016)
Wayside Medicine: Forgotten Plants	None	(Bruton-Seal & Seal, 2017)
The Medicinal Flora of Britain and Northwestern Europe	Adder's tongue : fallen out of use; Royal fern Maidenhair fern : still used in France	(Barker, 2001)

Name of volume	Ferns included	Reference
	Bracken Black spleenwort: used in the past Rusty-back fern: French use Hart’s tongue fern: in British Herbal Pharmacopoeia 1983. Male fern: European references Common polypody: European references	

8.2 Appendix B – Search terms

Table 8.2 Outlining the search terms and the order in which they were applied.

	Polypody	Royal Fern	All ferns
Search for the common term used today and historically, either online or in the index/contents.	Polypody	Royal Fern or Osmunda	Fern
Search for the Latin names	Polypodium vulgare	Osmunda regalis	Pteridophytes, Filicales, Polypodiaceae, Osmundaceae
Search for other common and Latin names used historically, revealed in the initial search	Polypodie, Polypodium indicum, Indian polypodie, Polypi, Polypodium, Filicula, parva felix, little Ferne, Polypodie of the wall, Polypodie of the Oke, wall-fern, female fern	Osmund regalis, Osmunda, Osmund the water man, regalis, Osmund or water ferne, Felix florida, buck throne brake	Search specific names e.g.: Male fern, female ferns, royal fern, common polypody, dryopteris, onopteris mas, harts tongue fern, asplenium, filiula petrea(?), maiden-haire fern

8.3 Appendix C - Data tables for historical information

Table 8.3 Metadata table for historical sources used for the historical review

Century	Author	Year	Title	Online location/or physical location	Web address	Citation	Source	Source analysed
17 th	John Gerarde	1636	The Herball or General History of Plants	wellcome library	https://wellcomecollection.org/works/q7hbxt7z/items	(Gerarde, 1597/1636)	Tobyn et al	Yes
17 th	John Parkinson	1640	Theatrum Botanicum or The Theatre of Plants	wellcome library	https://archive.org/details/gri_33125008297760	(Parkinson, 1640)	Tobyn et al	Yes
17 th	Nicholas Culpepper	1652	The English Physitian	the biodiversity heritage library	https://www.biodiversitylibrary.org/item/257982#page/11/mode/1up	(Culpeper, 1652)	Tobyn et al, SR.	Yes
17 th	Nicholas Culpepper	1655	Pharmacopoeia Londinensis	Early English Books, 1641-1700	https://archive.org/details/bim_early-english-books-1641-1700_pharmacopia-londinensis_culpeper-nicholas_1655/page/n29/mode/2up	(Culpeper, 1655)	Tobyn et al	Yes
18 th	Joseph Miller	1722	Botanicum officinale or A Compendious Herbal	wellcome library	https://wellcomecollection.org/works/ht72m2ch/items	(Miller, 1722)	Tobyn et al	Yes
18 th	John Quincy	1782	Pharmacopoeia Officinalis & Extremopanea	wellcome library	https://wellcomecollection.org/works/aew33kc4/items	(Quincy, 1782)	Tobyn et al	Yes
18 th	John Hill	1789	The Useful Family Herbal	wellcome library	https://wellcomecollection.org/works/rr6hwyje/items	(J. Hill, 1798)	Tobyn et al	Yes
18 th	William Cullen	1775	Lectures on Materia Medica	US National Library of Medicine	https://archive.org/details/2548007R.nlm.nih.gov	(Cullen, 1775)	Tobyn et al	Yes
19 th	Albert Isiah Coffin	1848	Botanic Guide to Health	internet archive/Wellcome library	https://archive.org/details/b29321049/page/n5/mode/2up	(Coffin, 1848)	Tobyn et al	Yes

Y4 Independent Research Project – Betonica School of Herbal Medicine

Century	Author	Year	Title	Online location/or physical location	Web address	Citation	Source	Source analysed
19 th	William Fox and Joseph Nadin	1852	The working man's family botanic guide	University of Toronto internet archive	https://archive.org/details/workingmansfamil00foxwuoft	(Fox & Nadin, 1852)	Tobyn et al	Yes
19 th	John Hatfield	1886	Botanic Pharmacopoeia	UCL and internet archive	https://archive.org/details/b21687377/page/n1/mode/2up	(Hatfield, 1886)	SR	Yes
20 th	James William Scurrah	1905	The National Botanic Pharmacopoeia (1st ed.)	Public library of India	https://ia902208.us.archive.org/25/items/in.ernet.dli.2015.84168/2015.84168.The-National-Botanic-Pharmacopoeia.pdf	(Scurrah, 1905)	Tobyn et al	Yes
20 th	Richard Cranfield Wren	1915	Potter's Cyclopaedia of botanical drugs and preparations	wellcome library	https://wellcomecollection.org/works/qbcz2esp/items	(Wren, 1915)	Tobyn et al	Yes
20 th	Richard Hool	1918	Health from British wild herbs	Bergner and Henriette	https://www.henriettes-herb.com/eclectic/hool/index.html	(Hool, 1918)	Tobyn et al	Yes
20 th	Maud Grieve	1931	A modern herbal	Book and website	https://botanical.com/	(Grieve, 1931)	Tobyn et al	Yes
20 th	James William Scurrah	1920	The National Botanic Pharmacopoeia (2nd ed.)	wellcome collection	Can't find online.	N/A	Tobyn et al	No - cannot get access in time scale.
20 th	William Fox	1924	Family botanic guide	open source	https://archive.org/details/family-botanic-guide/page/n1/mode/2up	(Fox, 1924)	Tobyn et al	Yes
20 th	Richard Cranfield Wren	1941	Potter's Cyclopaedia of botanical drugs and preparations	digital library India	https://archive.org/details/in.ernet.dli.2015.109429	(Wren, 1941)	Tobyn et al	Yes
20 th	Priest A and Priest L	1982	Herbal Medication	NIMH Library - requested		N/A	Tobyn et al	No - did not arrive in time.
20 th	BHMA	1971	British Herbal Pharmacopoeia	NIMH Library - have photos of it		(BHMA, 1971)	SR	Yes

Y4 Independent Research Project – Betonica School of Herbal Medicine

Century	Author	Year	Title	Online location/or physical location	Web address	Citation	Source	Source analysed
20 th	BHMA	1983	British Herbal Pharmacopoeia	NIMH Library - have photos of it		(BHMA, 1983)	Tobyn et al	Yes
20 th	BHMA	1990	British Herbal Pharmacopoeia	NIMH Library - have photos of it		(BHMA, 1990)	SR	Yes
20 th	Thomas Bartram	1995	Encyclopaedia of Herbal Medicine	Own book.		(Bartram, 2015)	Tobyn et al	Yes
20 th	Peter Bradley	1992	British Herbal Compendium vol 1	NIMH Library		(Bradley, 2010a)	Tobyn et al	Yes
20 th	Newall, Anderson and Phillipson	1996	Herbal Medicines: a guide for health-care professionals	Own book.		(Newall et al., 1996)	SR	Yes
21 st	-	2006	British Herbal Compendium vol 2	NIMH Library		(Bradley, 2010b)	Tobyn et al	Yes
21 st	Penelope Ody	2000	Complete guide to medicinal herbs	Own book.		(Ody, 2000)	SR	Yes
21 st	Julian Barker	2001	The medicinal flora of Britain and northwestern Europe	Own book.		(Barker, 2001)	SR	Yes
21 st	Elizabeth Williamson	2003	Potter's Cyclopaedia of botanical drugs and preparations	Betonica Library – photos of it		(Williamson, 2003)	Tobyn et al	Yes
21 st	David Hoffman	2003	Medical Herbalism	Own book.		(Hoffman, 2003)	Tobyn et al	Yes
21 st	Matthew Wood	2008	The Earthwise Herbal: a complete guide to Old World Medicinal Plants	Own book.		(Wood, 2008)	Tobyn et al	Yes
21 st	Bruton-Seal and Seal	2008	Hedgerow Medicine: harvest and make	Own book.		(Bruton-Seal & Seal, 2008)	SR	Yes

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Century	Author	Year	Title	Online location/or physical location	Web address	Citation	Source	Source analysed
			your own herbal remedies					
21 st	Kerry Bone and Simon Mills	2013	Principles and practice of phytotherapy	Own book.		(Bone & Mills, 2018)	Tobyn et al	Yes
21 st	Andrew Chevalier	2016	Encyclopaedia of Medicinal Plants	Own book.		(Chevallier, 2016)	Tobyn et al	Yes
21 st	Carole Fisher	2018		Own book.		(Fisher, 2018)	SR	Yes
21 st	Bruton-Seal and Seal	2021	Wayside Medicine: forgotten plants and how to use them	Own book.		(Bruton-Seal & Seal, 2017)	SR	Yes

(Data from Author compilation)

Table 8.4 Summary table for inclusion of ferns in historical sources

Source	Date	Polypody	Royal fern	List of ferns with their own entry	Total number of ferns	Notes
Gerard	1636	Yes	Yes	Male fern, female ferns, royal fern, common polypody, dryopteris, onopteris mas, harts tongue fern, asplenium, filiula petrea(?), maiden-haire fern	10	Gerrard has multiple varieties in each entry.
Parkinson	1640	Yes	Yes	Common male fern, female fern, Osmund, common pollipodie of the Oake, Dryopteris, rough spleenwort, small or stone fern, smooth splene-worte, ordinary harts-tongue, Mules ferne, maidenhaire, english maidenhaire, golden maidnehaire, golden maidenhaire	13	
Culpepper	1655	Unclear	No	Male fern and female fern	2	
Culpepper	1652	Yes	Yes	Fern (includes male and female), Osmund Royal, Hart's tongue, maidenhair, polypody of the oak, Adder's tongue	6	
Miller	1722	Yes	Yes	Osmunda regalis, Female fern, male fern, Polypody of the Oake, spleenwort, Hart's Tongue, maidenhair, black maidenhair, white maidenhair, adder's tongue	10	
Cullen	1775	Yes	No	Polypody, Filices, Maidenhair fern,	3	Formerly, more were used.
Quincy	1782	Yes	Yes	Osmund, Asplenium/spleen-wort, fern (male and female), maidenhair, Adder's tongue, harts tongue	6	Hart's tongue and spleenwort "They are neither of them much in use" p 115
Hill	1789	Yes	Yes	Polypody, Male fern, female fern, Flowering fern, hart's tongue fern, The true maidenhair, English maidenhair, white maidenhair, black maidenhair, spleenwort, Adder's tongue	11	Flowering fern is Osmunda regalis
Coffin	1848	No	Yes	Flowering fern	1	
Fox and Naden	1852	Yes	No	Male fern, Polypody, Maidenhair,	3	
Hatfield, J. G.	1886	Yes	No	Male fern, polypody, filiula petrea(?), maiden-haire fern	2	

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Source	Date	Polypody	Royal fern	List of ferns with their own entry	Total number of ferns	Notes
Scurrah	1905	Yes		Male fern, polypody,	2	
Wren	1915	Yes	No	Adder's tongue (American), Adder's tongue (English), Hart's tongue fern, Male fern, Male shield fern, Maidenhair fern, Polypody	4	
Hool	1918	No	No	No.	0	
Fox	1924	Yes	No	Male fern and polypody	2	Same as 1852, but expanded and more detail on preparation
Grieve	1931	Yes	Yes	Male fern, shield fern, lady fern, common spleenwort, black spleenwort, wall rue, common maidenhair, true maidenhair, hart's tongue, bracken, common polypody, royal fern, adder's tongue, moonwort	14	
Wren	1941	Yes	No	Adder's tongue (American), Adder's tongue (English), Hartstongue, Male fern, Male shield fern, Maidenhair		Ferns identical to 1915 ed.
BHMA	1971	No	No	Hart's tongue fern	1	
BHMA	1983	No	No	Hart's tongue fern, Maidenhair fern	2	Same entry as 1971 ed, with more detail added to the description
BHMA, Vol 1	1990	No	No	No	0	
BHMA, Vol 2						
Bradley, Vol 1	1992	No	No			
Bradley, Vol 2	1992	No	No			
Bartram	1995	Yes	No	Adder's tongue, Hart's tongue fern, Maidenhair fern, Male fern, Polypody	5	Male fern noted as: "Seldom used, of historical interest"
Newall et al	1996	No	No	No	0	

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Source	Date	Polypody	Royal fern	List of ferns with their own entry	Total number of ferns	Notes
Ody	2000	No	No	No	0	
Barker	2001	Yes	Yes	Adder's tongue, Royal fern, Maidenhair fern, Bracken, Black spleenwort, Rusty-back fern, Hart's-tongue fern, Male-fern, Common Polypody,	9	Drawing largely from Leclerc (French), Grieve (historic), BHP (only 2): not current use "little used now"
Hoffman	2003	No	No	No	0	
Williamson	2003	Yes	No	Polypody, Maidenhair fern	1	
Matthew Wood	2008	No	Yes	Royal Fern	1	Notes Royal Fern is "almost unused in modern herbalism"
Bruton-Seal and Seal	2008	No	No	No	0	
Chevalier	2016	Yes		Polypody, Maidenhair fern		Male fern in index, but not included in text.
Fisher	2018	No	No	No	0	
Bruton-Seal and Seal	2021	No	No	No	0	

(Data from Author compilation)

Table 8.5 Information on polypody from historical sources

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	NOTES	SAFETY
Gerarde	1636	Polypodie, Polypodium indicum, Indian polypodie, Polypi, Polypodium, Filicula, parva felix, little Ferne, Polypodie of the wall, Polypodie of the Oke	Root	Root	Boiled in the broth of an old cock with beets and mallows	Decoction	To make the "belly soluble"/move the stool	Gastrointestinal	Old rotten trees, on old walls, and tops of houses, rubbish near borders of fields, under trees and thorns, or in woods. The type that grows on old oaks is preferred "Qircinum or Polypodie of the Oke"	Old trees, walls, woods, oak trees	1133-34		
					decoction		arthritis or aches in the joints, to counter	Musculoskeletal					
			root				"for members out of joint" and "chaps between the fingers"						
			root		boiled with honey, water and pepper, an ounce of giuen		"empty the belly of cholericke and pituitous humors"						
Parkinson	1640	Polypodium vulgare, Common pollipodie of the oak, pollipody	Fronds (year-round), and new growth (spring).	Fronds, roots, young shoots			To purge the body: opens and mollifyies	Gastrointestinal					
			Always green, so leaves can be used all year.		Decoction	Decoction	tumours in the hands, feet, knees, and joints	Musculoskeletal	Old rotten trunks or stumps of trees: oak, beech, hazel or willow, and others. Also, in woods and on mud walls, in mossy and stony places. The best grows on oaks, but the quantity of these is not sufficient for use.	Old trees, walls, woods, oak trees			

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	NOTES	SAFETY
					Taken in whey or meade, barley water, chicken broth, or with beets and mallows,		Melancholy or Quartine Agues, and hardeness of the spleen, "prickings or stitches in the side", collick						
					Decoction with fennel seeds, anise or ginger or powder of the dried root in honey water.		nausea and strengthen the stomach						
			Roots and leaves		Distilled water	Distilled water	Quartaine ague (96-hour fever), fearful or troublesome sleep or dreams, Melancholy,	Nervous system, immune					
			Roots and leaves		distilled water with dissolved sugar candy,		All ill effects of the lungs, shortness of breath, wheezing, which often turn to consumption or tische (cough).	Respiratory					
			Roots		Decoction with wine		Against plague or pestilence, purging of phlegm						
			Fresh roots or dry powder		mixed with honey	Powder	joints, or applied to the nose against polypus (tumour of the mucous membrane), or clefts/chappes that occur between toes or fingers.	integumentary					
Culpeper, The English Physitian	1656	Polypodium vulgare, Common pollipodie of the oak, pollipody	Always green, so leaves can be used all year.	Leaves, roots			For digesting thick phlegm, joints,	Musculoskeletal	Old rotten trunks or stumpes of trees: oak, beech, hazel or willow, and others. Also, in woods and on mud walls, in mossy and stony places. The best grows on oaks, but the quantity of	Old trees, walls, woods, oak trees	197	All entries identical to Parkinson except the final paragraph.	

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	NOTES	SAFETY
									these is not sufficient for use .				
					Taken in whey or honey water, barley water, chicken broth, or with beets and mallows,	Decoction	Melancholy or Quartine Agues, and hardeness of the spleen, "prickings or stitches in the side", collick						
					Decoction with fennel seeds, anise or ginger or powder of the dried root in honey water.	Powder	nausea and strengthen the stomach	Gastrointestinal					
			Roots and leaves		Distilled water	Distilled water	Quartaine ague (96-hour fever), fearful or troublesome sleep or dreams, Melancholy,	Nervous system, immune					
			Roots and leaves		distilled water with dissolved sugar candy,		All ill affects of the lungs, shortness of breath, wheezing, which often turn to consumption or tische (cough).	Respiratory					
			Roots		Decoction with wine		Against plague or pestilence, purging of phlegm						
			Fresh roots or dry powder		mixed with honey		joints, or applied to the nose against polypus (tumour of the mucous membrane), or clefts/chappes that occur between toes or fingers.	integumentary					
Miller	1722	Polypodium Quericnum, Polypody of the Oak, Polypodium, Wall-fern, Polypody, Polypodium vulgare	Roots only	Roots	None given.		"opening and purging", "purges biliose melancholic humours". Not given as a simple. Opens obstructions of the liver, jaundice and dropsy. Provokes urine, Scurvy. Ingredient in	Gastrointestinal, urinary	Old walls, at the roots of trees, decayed trees. "That which grows on the oak is most esteemed"	Old trees, walls, woods, oak trees	355-356		

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	NOTES	SAFETY
							antiscobutic diet-drinks.						
Cullen	1775	Polypody	Roots	Roots	Large quantities needed		Purgatives, ALL FERNS - destroying worms; astringent: rickets, scurvy, spasmodic complaints, liver complaints, catarrhs, nephritic diuretics, ;	Gastrointestinal, urinary, respiratory		Not Stated	203, 483		
Quincy	1782	Polypodii, Polypody, Polypodium vulgare					Cathartic		Growing out of old walls and ruins, trees. Growing out of oak is regarded as the best.	Old trees, walls, woods, oak trees	128		
			Roots of polypody from oak	Roots	Decoction with fennel, liquorice, aniseed hart's tongue, maidenhair, dodder, betony, celandine, tamarisk, blue currants and barley water.	Decoction	For rickets	Gastrointestinal			521		
			Roots of polypody from oak		Decoction with monk's rhubarb, succory, sena, sweet fennel seeds, liquorice, raisins,		For many virtues and a spring purge	Generic, environmental			534		
Hill	1789	Polypody, Polypodium	Root, best fresh.	Roots	Decoction	Decoction	Jaundice, dropsy, in diet-drinks, scurvy, "safe and good purge on all common conditions"	Gastrointestinal, generic	Not stated	Not Stated	305-306		
Fox and Nadin	1852	Polypody.	Not stated		Not stated.		Incipient consumption, asthma, catarrh of the lungs, expectorant: cough and oppression of the chest.	Respiratory	Not stated	Not Stated	82		

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	NOTES	SAFETY
Hatfield	1886	Polypodium, Polypody, Polypody-of-the-oak, Female fern, Polypodium vulgare	Root	Roots	Infusion, decoction, or substance	Infusion, decoction, or substance	Pectoral, purgative, and anthelmintic, coughs, catarrhal affections, difficulties of expectoration, dry coughs with hard mucus, hepatic conditions, worms,	Respiratory, gastrointestinal	Not stated.	Not Stated	110		
Scurrah	1905	Polypody, Polypodium vulgare	Root	Root	Infusion, decoction, or substance	Infusion, decoction, or substance	Purgative, pectoral, anthelmintic. Hepatic conditions, coughs, catarrhal affections, difficulty expectorating, tonic for the lungs. Worms	Respiratory, gastrointestinal	Not stated	Not Stated	71		
Wren	1915	Polypodium vulgare, Rock polypody, Brake root, Rockbrake	Root, leaves	Root, leaves	Fluid extract, infusion	Fluid extract, infusion	Alterative, tonic, pectoral, expectorant. Coughs, consumption, chest disease. Tonic in dyspepsia, loss of appetite. Alterative in skin disease	Respiratory, gastrointestinal	Not stated.	Not Stated	224		
Fox and Nadin	1924	Polypody root, Polypodium vulgare	Root	Root	Fluid extract,	Fluid extract,	Pectoral, demulcent, anthelmintic. Consumption, asthma, catarrh of the lungs, expulsion of taenia and other worms.	Respiratory, gastrointestinal	Not stated.	Not Stated	68		
Grieve	1931	common polypody, Polypodium vulgare,	roots (fresh and dried), leaves occasionally	Roots, leaves			Alterative, tonic, pectoral, expectorant. Mild laxative. Tonic in dyspepsia. Alterative for skin diseases. Hepatic. Coughs, catarrhal affections,	Respiratory, gastrointestinal, integumentary, nervous system, immune	Shady hedge banks, roots and stumps of trees, moist rocks, old walls	Old trees, walls,		Is summarising many of the old sources, some of these are acknowledged, others not.	
					Sweetened Infusion	Infusion	early stages of consumption						
					Powder	Powder	some kinds of worms						
					Decoction of fronds	Decoction	Whooping cough in children						
					Fresh root in decoction or powder		Melancholia, rheumatic swelling of the joints. Jaundice, dropsy, scurvy.	musculoskeletal					
					Combined with mallows		Removes hardness of the spleen, stitches in the side and colic						

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	NOTES	SAFETY
					distilled water of the leaves and roots	distilled water	ague,						
					Fresh or dried roots mixed with honey	Substance	Cure for polypus of the nose.						
Wren	1941	Polypodium vulgare, Rock polypody, Brake root, Rockbrake, Polypodi of the Oak	Root, leaves		Fluid extract, infusion	Fluid extract, infusion	Alterative, tonic, pectoral, expectorant. Coughs, consumption, chest disease. Tonic in dyspepsia, loss of appetite. Alterative in skin disease	Generic, respiratory, gastrointestinal, integumentary	Not Stated	Not Stated	278	Same as 1915 entry, except additional name.	
Bartram	1995	Polypody root, Polypodium vulgare	Root		Decoction, powder, liquid extract	Decoction, powder, fluid extract	Actions: expectorant, alterative, laxative, anti-stress, cholagogue, stomachic tonic	Gastrointestinal, respiratory, nervous system	Not Stated	Not Stated	347		
Barker	2001	Common polypody, Polypodium vulgare,	Dried rhizome		Powder, light decoction, or syrup	Decoction, powder, syrup	Actions: Mild expectorant. Laxative. Aperitif and Cholagogue. Anthelmintic. Uses: Bronchial catarrh, mild constipation.	Gastrointestinal, respiratory	Woodland floors, rocks, walls in damp places, especially on calcareous soil	walls, woods, calcareous soils	518		Safe for children.
Williamson	2003	Polypody root, Polypodium vulgare	Rhizome				Expectorant, pectoral, alterative. Coughs and chest disorders, dyspepsia, skin diseases (e.g. psoriasis)	Gastrointestinal, respiratory, integumentary	Grows on old walls and trunks of trees throughout Europe	Old trees, walls	352		Occasionally produces a rash after ingestion - reason unknown and appears to be harmless
Chevalier	2016	Polypody, Polygonum vulgare	Rhizome				Stimulate bile secretion: hepatitis, jaundice, indigestion. Gentle laxative (safe for children). Expectorant: congestion, bronchitis, pleurisy, dry irritable coughs.	Gastrointestinal, respiratory	Not Stated	Not Stated			Safe for children. May cause skin rash if applied externally.

(Data from Author compilation and interpretation)

Table 8.6 Information on royal fern from historical sources

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	Safety
Gerard	1636	Water-ferns, Osmund the water-man, water-ferne, St Christopher's herb, Osmund Royall, Osmunda, Filix palustris, Filix aquatilis, Filicestrum, Lunaria major or Filix latrifolia (Apothecary's names),	Heart or middle part of the root (year-round)	Root	Boiled or 'stamped' and taken with liquor; or decoction	Decoction	Wounded, "dry-beaten", bruised, those fallen from a height, dissolves "cluttered blood" inside the body and can drive it out by the wound.	Cardiovascular, Integumentary	Bog on Hampstead Heath. Bogs on heath near to Bruntwood (Brentwood?), Essex	Boggy ground, specific geographic location	1131-1132	
			Tender sprigs (spring)	Young shoots	Balmes, oils, consolidations, healing plasters	External	as above and unguents into wounds and punctures	Cardiovascular, Integumentary				
Parkinson	1640	Osmund regalis, Osmunda regalis, Osmund or water ferne, Felix florida,	Root	Root			Suggested it came under male fern in the past	Cardiovascular, Integumentary, musculoskeletal, gastrointestinal	Bogs, wet moores, and watery places.	Boggy ground		
					Decoction to be drunk or boiled into an ointment or oil as balme or balsame	Decoction, external	Wounds, bruises, broken bones, bones out of joint, collick, splenic diseases, ruptures (hernia) and burstings					
Cupper	1656	Osmund royal, water fern,			Decoction to be drunk or boiled into an ointment or oil as balme or balsame	Decoction, external	Wounds, bruises, broken bones, bones out of joint, collick, splenic diseases, ruptures (hernia) and burstings	Cardiovascular, Integumentary, musculoskeletal, gastrointestinal, urinary	Bogs, wet moores, and watery places.	Boggy ground	50	Initial description identical to Parkinson
			Root	Root	Decoction in white wine		Diuretic, cleanses the bladder and "passages of urine"					
Miller	1722	Filix florida, Osmunda reglais, Water fern, Osmund Royal,	Root only	Root	None given		Obstructions of the liver and spleen; rickets in children, ruptures (hernias), wounds, and bruises,	Gastrointestinal, integumentary	Marshes, boggy places, "particularly in a Bog at the backside of Woolwich, near the Warren."	Boggy ground, specific locations		

Source	Year	Names	Part Used	Interpreted summary of part used	Preparation	Interpreted summary of preparation	Uses	Interpreted body system	Location found	Interpreted location	pg	Safety
Quincy	1782	Osmunde Regalis, Osmund Royal, Filix florida	Root only	Root	None given		Leukorrhoea in women, strengthening the womb, dispersing bruised blood and taking away blackness from bruises	Reproductive system (women), cardiovascular, integumentary	In the marshes	Boggy ground	87	
Hill	1789	Flowering-fern, Osmunda regalis,	Fresh roots	Root	Decoction	Decoction	Promotes urine, opens obstructions of the liver and spleen, jaundice	Urinary, gastrointestinal	Boggy places and is not common in the wild in England	Boggy ground	172-173	
Coffin	1848	Osmunda regalis, flowering fern, buckhorn brake,	Root	Root			Mucilaginous and tonic properties, dysentery, soreness in the stomach and bowel,	Gastrointestinal, reproductive system (women)	Not stated		143-144	
					Steeped in hot water with sugar	Infusion	Female weakness and debility					
Grieve	1931	Royal fern, Osmunda regalis, Osmund the Waterman, Heart of Osmund, Water Fern, Bog onion.	Root or rhizome	Root	Decoction of the root	Decoction	Jaundice (in early stages) and removing obstructions of the viscera. Lumbago.	Gastrointestinal, integumentary	Western counties of England and Scotland, Wales and west of Ireland. Needs bog earth.	Boggy ground, specific locations		
					Ointment (root)	External	wounds, bruises, dislocations					
					Conserve		Rickets					
			Young fronds	Young shoots	balms, oils and healing plasters							
Barker	2001	Royal Fern, Osmunda regalis	Rhizome, fronds	Root, fronds	Not stated		Action: Astringent, diuretic, purgative. Uses: bruising, bleeding and sores (internally and externally), rheumatic pain, children with rickets.	Gastrointestinal, integumentary, musculoskeletal	Damp meadows, fens, scrub	Boggy ground	511	
Wood	2008	Osmunda regalis, Royal Fern, Buck Horn Brake, Backache brake	Heart or middle part of root, gathered in the latter summer. Leaves.	Root, leaves	Fresh infusion, can be preserved in brandy. Or, soak the leaves in sunlight for 3 hours; to extract the minerals, mucilage dominates the extract after this time.	Infusion, soaking	Defective bone growth in infancy and spinal deterioration in old age, rickets, lumbago. For skin and mucosa, liver and spleen. Acute and chronic bronchial irritation. Large-boned people.	Gastrointestinal, integumentary, musculoskeletal, respiratory				No contraindications known. Found in sparse populations, gather judiciously.

(Data from Author compilation and interpretation)

8.4 Appendix D - Example of summary data table driving the charts

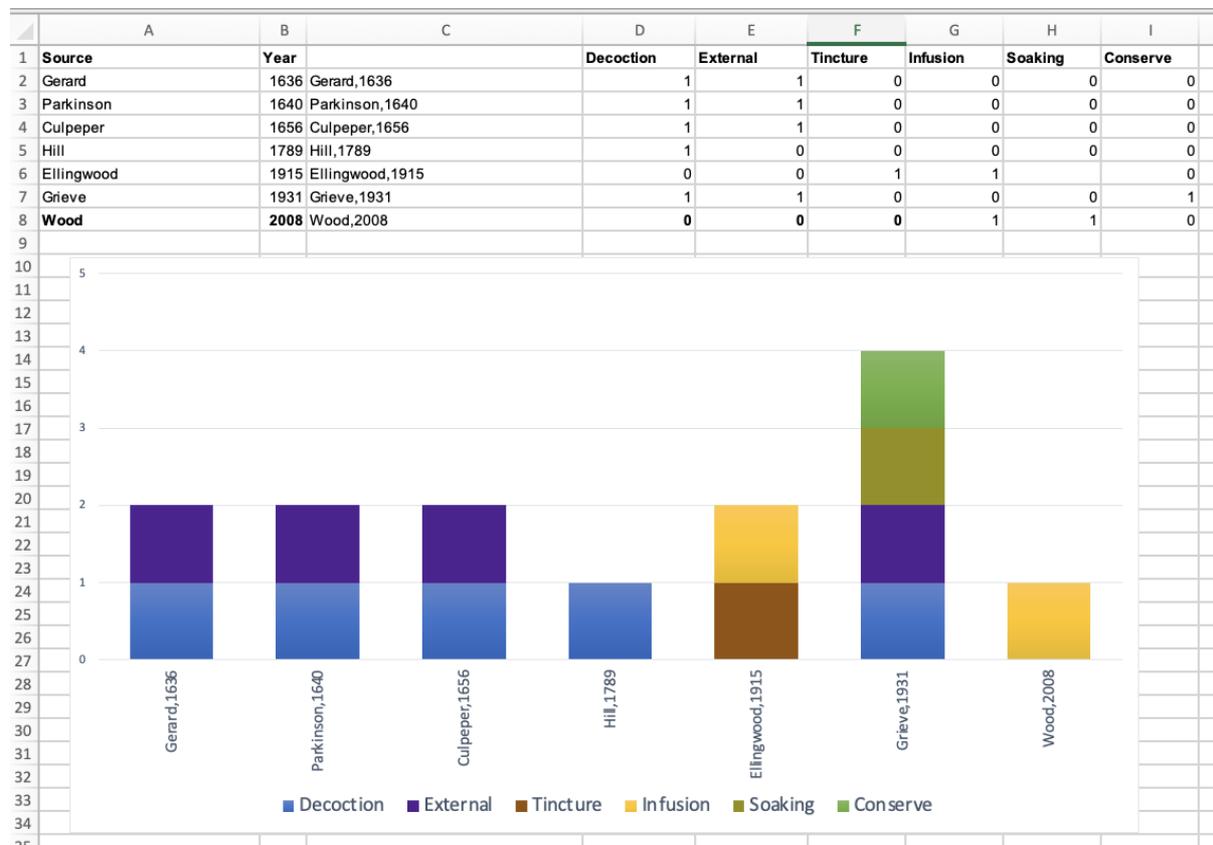


Figure 8.1 Example of summary data table driving the charts. Image: Author's own.