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PLANTS IN FUNERAL CEREMONIES IN POLAND AND EUROPE NORTH OF THE ALPS (13th-18th CENTURIES)

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1. PLANTS IN FUNERAL CEREMONIES IN POLAND AND EUROPE NORTH OF THE ALPS – AN INTRODUCTION

1.1. History of the scientific exploration and description of plants

In the past plants have accompanied man in many areas of daily life. They have served as food, raw material for the manufacture of everyday objects, clothing or building material for the construction of shelters. They were used in rituals and were one of the basic raw ingredients for medicine purposes.

A key influence on the history of plants in Europe north of the Alps was the activity of the Benedictines who from the 6th century AD began to establish monasteries with vegetable gardens, orchards as well as hospitals with medicinal gardens. They contributed to the spread of plants of Mediterranean origin and the model of their cultivation outside their primary area of origin. In the 9th century, Charlemagne released recommendations for horticulture and cultivation which included approximately 70 species of plants (*Capitulare de Villis*, 812). The Crusades, as a result of which Europeans were introduced to certain exotic plants, were also breakthrough for the advancement of knowledge about botanical specimens (Waniakowa 2012: 52). The reconstruction of the set of plants that were known in the Middle Ages in various parts of Europe has been one of the main issues of ethnobotanical research from the late 19th century to the present day. John Harvey in *Medieval gardens* gave a list of 430 botanical species which Europeans encountered by the end of the Middle Ages (Harvey 1981: 163). Ülle Sillasoo compiled a list of plants appearing in medieval and early modern religious representations from parts of Central Europe, covering Austria, South Tyrol, Hungary, Slovakia, the Czech Republic and southern Germany (Sillasoo 2003). In order to identify plants brought to Northern Europe by monks, studies of the flora of abandoned monasteries and church ruins are also being conducted (Åsen 2009).

In the Middle Ages, one of the most famous treatises on medicine, hygiene and diet was *Regimen Sanitatis*, compiled at the medical school of Salerno. About plants wrote the famous scholars of the Middle Ages – Hildegard of Bingen (1098-1179), Albert the Great (1193-1280) or Vincent of Beauvais (?-1264) (Waniakowa 2012: 52--53). The herbal medicine of the Middle Ages was revolutionised by the Swiss physician Aureolus Theophrastus Bombastus von Hohenheim, known as Paracelsus (1493--1541), who believed that the healing factor within a plant was a chemical compound. He considered the chemical imbalance of the organism the cause of disease. Paracelsus' views initiated the rise of medicinal chemistry (Waniakowa 2012: 55). The oldest Polish treatise on therapeutics involving the use of plants is the *Antibolomeum* of Jan Stanko of Kraków from 1472 (Waniakowa 2012: 57).

In the early modern period, an important role as domestic medical manuals played so-called: herbaria. Polish herbaria, as in many other areas of Central and Western

Europe, appeared at the end of the Middle Ages and in the early modern period. Among the most popular were: Stefan Falimirz's *O ziołach i mocy ich* (*On herbs and their power*) from 1534, Hieronim Spiczyński's *O ziołach skutecznych i zamorskich* (*On effective and overseas herbs*) from 1542, Marcin Siennik's *Herbarz* (*Herbarium*) from 1568, Marcin of Urzędów's *Herbarz Polski* (*Polish Herbarium*) from 1595, and Szymon Syreniusz's *Herbarium* (*Herbarium*) from 1613.

Of the European herbaria, the following should be mentioned: John Gerard's *Catalogue of Plants* from 1596, William Turner's *New Herball* from 1597, Otto Brunfels' *Herbarum vivae eicones* from 1530-1536, Leonard Fuchs' *De historia stirpium commentari* from 1542 and *New Kreüterbuch* from 1543, Hieronim Bock's *Das Kreüter Buch* from 1539. A significant influence on the development of Polish herbaria were *Herbarius* and *Hortus Sanitatis* published in Mainz at the end of the 15th century (Waniakowa 2012: 54).

Stefan Falimirz's herbarium is modelled on last two works (Arabas 2006: 131). Marcin Siennik's herbarium represents a new edition of Falimirz's book, supplemented by engravings and inventories. The original literary works are the herbaria of Marcin of Urzędów and Szymon Syreniusz. Both authors had a medical background. In compiling their botanical compendia, they relied on their own experience and information gathered from people practising medicine. The information included in the herbaria, however, came mainly from the works of ancient writers (Arabas 2006: 131).

Among the ancient sources used by Renaissance herbaria authors was the legacy of Hippocrates of Kos (460-about 377 BC), whose works written down by his disciples, are known as the *Corpus Hippocraticum*. The most frequently copied ancient botanical work was Dioscorides' *De materia medica* (54-68 AD) and Pietro Andrea Matthiole's (1501--1578) commentary *Compendium de Plantis* from 1544. Other sources include *On the History of Plants* and *On the Origin of Plants* by Theophrastus of Eresos (372-287 BC), *De arte medica* by Aulus Cornelius Celsus (1st century AD), *The Art of Medicine* and *On the Cannons of Medicine* by Claudius Galenus (129-199 AD), and *Historia naturalis* by Pliny the Elder (books XII-XXVII refer to plants). Also worth mentioning are the numerous apocrypha and compilations of various treatises, Arabic and Greek translations of ancient works which discovered in later centuries were sometimes incorrectly attributed to ancient authors or saints (Sokolski (red.) 2014: 21-23).

The significant impact of Renaissance herbaria on the increase in plant knowledge and healing was connected with the print invention. On the pages of printed books previously dispersed information could be gathered, visualised and then reproduced without major distortions. The plant knowledge was made more easily accessible by publication in national languages. Clear plant illustrations enabled readers to identify the described species on their own.

In the first half of the 18th century, household handbooks and calendars, serving as home encyclopaedias, were brought into use on Polish lands (e.g., by Jakub Kazimierz Haur). They contained practical medical advice, linked to astrological information, weather forecasts, tables of sunrises and sunsets, various topics from the Scripture, and also concerning history, geography or agriculture. They were written by scientists or amateurs in different fields, not necessarily physicians.

The 19th century marked the beginning of the study of folk culture on Polish lands. At that time, Polish traditional culture was regarded as a living monument of the pre-Christian era. As research developed, it began to be doubted that some of the folk magic and plant-related customs were relics of the culture of the pre-Christian Slavs. The 1845 work *Medical Superstitions of Our People* by Michał Zieleniecki differs from the works of writers upholding a romantic vision of folk culture. The author noted that certain instructions for acquiring herbal raw materials for folk medical treatments came not from Slavic tradition, but from literature (Zieleniewski 1845: 69-72). They probably were transferred into the polish peasant population's awareness through the herbarium of Szymon Syreniusz.

One of the most important figures for Polish ethnobotany and archaeobotany was Józef Rostafiński. An essential part of his scientific activity were ethnobotanical studies, which he conducted both historically, i.e., analysed information contained in written sources, mainly early modern herbaria, and collected information on traditions cultivated by his contemporary residents of Polish villages. He developed a method of comparing the collected ethnographic

surveys with historical information. Józef Rostafiński is also the author of the first Polish archaeobotanical study[1].

Józef Rostafiński's considerable scientific contribution is the identification of the contemporary plant names with the old Polish ones and the creation of a list of species probably known and used in medieval Poland. Rostafiński concluded that Christianity had displaced or replaced all elements of Slavic culture. He noted that numerous elements of folk herbalism could be traced back to works of Dioscorides or Pliny's *Historia Naturalis*. Allegedly Slavic names quoted by authors of early modern herbaria were in fact loan translations from Greek or Latin.

Rostafiński also questioned the Slavic origins of the custom of ordaining herbs on the 15th of August the Feast of Assumption of Mary (Feast of Our Lady of the Herbs). He undertook a historical, botanical and etymological analysis of the texts of the church blessings, and concluded that the custom originated from the Jewish harvest festival taken over by the Christian Church in the East which then spread to the Roman Catholic Church. An analysis of the sacred bouquets revealed that they contained mainly cultivated rather than wild species. Later, herbs of Mediterranean origin promoted by the monasteries, began to be included. He also examined relics of the influence of medieval monasteries on the folk uses of plants (Zemanek 2000: 205).

As current historical research demonstrates, peasants were relatively quickly assimilating new cultural elements. The nobility, having better access to sources of botanical knowledge, played a significant role in the formation of folk herbal medicine. According to the *Encyclopaedia of Old Poland*, in almost every landed gentry residence there was a home larder-apothecary: "in every Polish manor and manor house there was a home apothecary, as well as in every monastery [...] A lord's larder with an apothecary remained under the management and care of the apothecary maiden who dispensed cooks, fried confiture, prepared tinctures and home remedies, baked gingerbread and with the girls collected medicinal herbs. She was usually a distant relative or a poor maiden or orphan who did not marry, but who found care and family warmth in a more affluent home" (Gloger 1902: 319).

The apothecary maids were residents in manor houses, widows and unmarried women of noble origin, usually with only a basic education. The duties of the so-called apothecary maiden included, in addition to the function of pharmacist and physician, the production of remedies and providing aid to peasant families in the event of illness or accidents. Apothecary maidens usually relied on medical literature and information passed on verbally. They often held Polish Renaissance herbaria at their disposal. Medical and botanical knowledge from the manors transferred to the countryside and reverse. It is impossible to determine which methods and remedies were known in the manors thanks to the literature and which were adopted by oral transmission from village herbalists (Arabas 2006, 25, 26).

1.2. Plant symbolism

Plant symbolism can refer to many levels of meaning from a broad religious and secular tradition (Goody 1993: 175-176). Many authors emphasise that plant symbolism is variable. The interpretation of botanical specimens depicted in visual and literary artworks always depends on the context. The same species can allude with different symbolic meanings, even contradictory ones. Moreover, hidden messages are also not to be found in every depiction of plants in art and literature (Michniewska 2014: 55). The range of certain symbols remained only regional in the past. As Jacek Sokolski wrote, there is no common symbolic scheme, but familiarity with the common language of former symbolism makes it possible to recognise which components can be considered universal, and which should be interpreted individually (Sokolski 2000: 37).

A symbol in the Middle Ages was developed through analogy, i.e., similarity between words, concepts, objects or between a material thing and an idea. Material objects and living beings could conceal hints of the supernatural world. Medieval science and education relied on exegesis to expose the hidden significances of materiality (Pastoreau 2006: 21).

[1] Rostafiński identified plants found on Peruvian mummies donated to the Academy of Arts and Sciences in Kraków by Władysław Kluger in 1876. His conclusions, supported by ethnobotanical and historical information, were presented at a commission meeting in 1877 (*Posiedzenie Komisyi antropologicznej dnia 1 czerwca 1877…*).

In early modern Europe, dominant became a conception of the world, described by scholars as 'emblematic'. This term refers to the widespread belief that each of the elements of the real world is a sign and therefore has a double meaning – physical and metaphysical.

In modern Europe developed various literary and graphic forms aimed at revealing and facilitating the understanding of secret contents hidden in the reality. Their formation was inspired by the literature of Antiquity and the Middle Ages. Collections of word-picture compositions, so called emblems, that included also elements of plant symbolism, became popular sources of knowledge and art ideas. As the conventional origin of emblematics is considered the publication of *Emblematum liber*, by the Italian jurist and poet Andrea Alciati in Augsburg in 1531. Another work that had a significant impact on the development of modern iconography is Cesare Ripa's *Iconologia*, first published in 1593 (with illustrations as late as 1603). It contained a collection of female personifications illustrating a variety of concepts.

In emblematics word and image were combined. Emblems were composed of a motto, a graphic representation, and a fragment of prose or a poem providing an explanation (Pelc 2002: 9). The creators of emblematic books drew on all the sources available: the Holy Bible, natural history, historical works, bestiaries, herbaria, works of art, and emblematic works by other authors.

The symbol in the early modern period was considered a more general construction than the emblem, based on the similarity of things or concepts. The emblem, on the other hand, could refer to narrative stories. In fact, emblems and symbols were not always differentiated (Pelc 2002: 53). Iconological personifications also referred to emblems and employed symbols (Pelc 2002: 48). Plant attributes were depicted with them, and their meanings make an important contribution to early modern botanical symbolism. Emblematics and iconology influenced the rituals and ceremonies. Fashioned emblems and personifications were applied to funeral arrangements and tombstone designs.

Schools where prints were collected and handwritten compendia were created, played a leading role in the dissemination of an emblematic mode of reasoning. Emblematics knowledge crossed cultural and national boundaries. In Central Europe emblem handbooks were created and collected by the Jesuits, but Protestant collections originating in the Netherlands were also renowned (Pelc 2002: 45).

The early modern naturalists, and the authors of emblematic works, attempted to combine the creations of nature with culture. They thus interpreted environmental information on symbolic basis. At the core of these efforts was the conviction that nature was created for the benefit of man and that within it are hidden clues to the good living. A crisis of this concept started in the 17th century when a new model of performing science, based on experiment and experience, began to take form. However, the evolution of science proceeded slowly (Kowzan 2010: 136-138). The re-printing of medieval and Renaissance botanical texts and illustrations continued into the 17th century. In the Polish provinces, Renaissance herbaria still constituted the theoretical basis for medicinal practitioners in the 18th century.

Plant symbolism in the modern period was affected by two approaches towards nature. On the one hand, it was believed that the beauty of nature was distracting and distanced from God. The modern period was heavily influenced by the idea of *vanitas*. Works of art conveyed didactic messages of a condemnation of luxury and attachment to earthly possessions, which were represented by plant symbols such as exotic fruit or the pricey tulips. On the other hand, plants and other natural creations were the signs contributing to the cognition of God (Goody 1993: 181-182). The formative purpose of early modern scientific works induced authors to ascribe moral qualities to natures creations (Kowzan 2010: 136-138).

Plants can be associated with the symbolism of vanity and an invitation for a turn towards eternal truths. Virtues were also an important theme in the modern period, personified in iconology and emblematics as figures bearing plant attributes. These motifs, along with the combination of extremes – earthly and heavenly, beauty and ugliness, death and life were part of the Baroque aesthetic and are evident in funeral ceremonies from this time. The application of plants at funerals is in accordance with the character, expression, essential concepts and fashions of the period.

The aesthetic appeal of the deceased body played a significant role due to the custom of presenting the corpses before burial. Plant grave decorations can be regarded as serving both decorative and symbolic functions. Usually, although there are remains of flowering plants in graves, at the same time they can belong to medicinal, magical and fragrant species, so the interpretation should not to be narrowed down to a decorative function. Plants in funerary ceremonies, especially in the form of wreaths and bouquets, emphasised the social status of the deceased. Botanical species with mediating and apotropaic qualities were appropriate for liminal circumstances. Plants were to aid the transition of the deceased into the afterlife and to accommodate the change in his or her status in the community.

The characteristics of plants: colours, scent, shape and number of organs, the time of flowering, the time of day at which the flower opens or closes, were thought to provide clues by which their significance and functions were determined. According to Paracelsus, the appearance of plants, the colour and the external features showing similarity to human organs, could reveal the therapeutic purpose of plants (Wajda-Adamczykowa 1989: 76).

As Katarzyna Pińska and Agata Sady wrote, plants placed in burials were likely to be colour-selected. In the modern graves from Central Europe analysed by these authors, purple and pink flowering plants were most common (Drążkowska (red.) 2015: 322). Purple, considered a shade of black in the Middle Ages, was the colour of liturgical vestments used by priests during Advent and Lent. Black was reserved for funeral masses and Good Friday (Pastoreau 2006: 139). In funeral ceremonies, black has been the colour of the vestments worn by mourners since the 16th century. However, interpretations can be challenged, as the perception of colour is a cultural and not an objective criterion. Furthermore, as today, in the past, among flowering plants ornamental flowers and plants with purely utilitarian values were distinguished.

An analysis of folk literary texts and songs indicates that, in the past, colour may have been more important than plant species in healing and magic, probably because of the difficulty of identifying medicinal plants in nature (Kapeluś 1989: 59). However, the attribution of colours to the species that represent them may have differed in the past from that of the today. This is suggested by traditional plant names, e.g.: common chicory in some regions of Poland was called *blajwas* (from the German 'Bleiweiß' – lead white) after the colour of the inside of the stem, rather than the colour of the flower (Waniakowa 2012: 152). Quick associations may also vary due to limited contact and the fact that many traditional uses and methods of processing plants have been abandoned today. Hence, the colour of individual plant organs may seem less important than that of the flower, while in the past, for example, leaves, juice, shoots, roots etc. may have been extracted and used more frequently than blooms.

1.3. The state of research on the subject of plants in medieval and modern burials

Plants were probably used more frequently in burial ceremonies in the past than it is indicated by the number of published archaeological discoveries. In recent years, the number of archaeological finds has expanded considerably due to the extensive interdisciplinary cooperation between archaeologists and specialists from various disciplines of natural science. Greater emphasis is being placed on microstratigraphy of burials and testing the potential for various types of analysis on recovered material, including botanical studies. However, the scientistic approach has not yet generated an in-depth analysis of the results of botanical identification from historical, social and cultural perspectives, nor the methodological tools that would serve it. So far, there has been no attempt to create a synthesis of the subject.

The scarcity of sources for the study, in proportion to the number of excavated burial sites, is the result of the combination of several factors. Above all the reason is delicate nature of organic materials which need certain conditions to survive. Thanks to development of archaeology as a discipline the perception of the significance of archaeological finds from early modern period and the valuation of individual burial elements have changed over time. From the perspective of the study area, the value of explorations conducted in the past is inferior in the light of the contemporary expanding range of expertise and the avail-

able tools and methods of scientific analyses. During past excavations of burial sites, botanical samples were rarely collected. Botanical remains from medieval and modern burials before the end of the 1990s were investigated in Europe in a few cases and only when discovered in the macroscopic form.

Burial sites, especially graves of rulers and tombs located in significant historic buildings, had already been explored from the 18th century. In the 19th century, due to Europe-wide trend of restoration of historic buildings, many of the crypts and tombs were opened up, often irreversibly demolishing the context or completely destroying their contents. While it is still possible to re-examine artefacts from burials that are kept in museum or private collections to this day, reconstructing the stratigraphic context and the botanical composition of the soil or the casket is today utterly unachievable. During past restorations, plant remains were often removed from portable artefacts, such as garments, without being identified by the botanist.

Considering the modern period as the time of the most intensive use of plants in funerary ceremonies, a factor significantly contributing to the insufficient state of study on plants in funerary context, is the negative attitude towards finds from this period, for a long time not considered as being worthy of archaeological research attention. The archaeology of early modern times is one of the youngest fields in the discipline of archaeology, having been developed in Western Europe methodically for only about 40 years. Analogous approach can be witnessed today with regard to graveyard finds dating back to the 19th-20th century.

A problem faced in the post-war years was the devastation of many cemeteries and resting places established before 1945. This was especially the case in Central and Eastern Europe which underwent social transformations in accordance with socialist ideology, when many private estates of the elite, along with their crypts and family mausoleums, became common property. Another issue was the removal of cemeteries of ethnic and religious groups that had been exterminated or displaced during and after the Second World War. In post-war Poland, memorials, gravestones and cemeteries associated with the German ethnicity were being destroyed and removed. In Wrocław (in German 'Breslau') in the 1960s and 1970s most of the then existing Protestant cemeteries established before 1945 were demolished and the few that survived were handed over to the Catholic parishes. Archaeologists' interest in Protestant burial customs on Polish territory has developed more dynamically only since the beginning of the second millennium.

In the case of medieval and modern burial sites, the results of archaeological research are published in the form of articles, or article series, rather than monographs. Usually, only selected and most interesting finds are published. Publications of the research results include the conclusions of the anthropological report and comments on the grave furnishings, extended by an in-depth analysis of selected artefacts. The range of analyses carried out and the choice of artefacts to be examined depends not only on the character of the site, but also to a large extent on the personal interests of the researcher and team members. During the exploration process, botanical samples are gathered, which are then analysed by specialists in archaeobotany, who provides the plant species identification. Cultural interpretation of botanical finds is usually the task of the archaeobotanist, less often of the archaeologist. In addition to information on the plant distribution and biology, the study usually includes briefly reviewed cultural references, mostly extracted from the ethnobotanical studies. Different ways of publishing botanical results are applied, ranging from presenting full quantitative details of the report, through merely listing the identified species sometimes complemented with information on what sort of plant organs were recognized in the material, to employing the most general terms (herbs, moss, hay, twigs, etc.). Often botanical analyses are not carried out, but the researchers' observations of the plants in the burials are noted during the exploration. It is still rare to collect samples for palynological studies from burials placed in crypts. The study of grave cushions is usually limited to the identification of macroremains. Species identification of the organic parts of grave wreaths is carried out sporadically.

One of the earliest archaeobotanical studies of samples collected from burial context was carried out by the discovery of the burial place of the Polish Dukes from Piast dynasty, Janusz III and Stanisław. Exploration of the acci-

dentally disturbed crypt under the presbytery of St John's Archcathedral in Warsaw began in 1953. The research report and the results of specialist analyses were published in 1997 in a paper by Włodzimierz Pela (Pela 1997). The appendix contains report from study of botanical samples from the coffin fillings made by Ewa Perkowska in 1972 (Appendix II – *Provisional set of plants found in the coffins of the Dukes of Mazovia*). The publication contains also an opinion on finds from 1996 by Maria Henslowa, an ethnographer specialising in folk medicine.

Initial observations of plant remain stuck on pieces of clothing and coffin equipment were made by the conservators. Plant remains were investigated during conservation works performed on various sarcophagi and coffins from early modern crypts in the 1970s to the first half of the 1990s (Zöllner 1974; Rawa-Szubert *et al.* 1981; Diefenbach and Sörries 1994). For the study of the tomb of Polish King Kazimierz IV Jagiellon in the Wawel Royal Castle Cathedral in Kraków, information on the presence of plant remains in the archaeological material was only brought to light by the re-examination and conservation of the relics of the sepulchral garment, stored in the Kraków Royal Cathedral, since their excavation in the 1970s. Conservation was carried out in 2001-2003 by the Department of Conservation and Restoration of Historic Textiles at the Faculty of Conservation and Restoration of Works of Art of the Academy of Fine Arts in Warsaw. The results of the examinations of the objects before conservation, including the analysis of the few botanical remains present on the robes, were described in 2010 by the Head of the Department, Helena Hryszko (Hryszko 2010).

Hryszko also participated in the conservation of textile relics excavated from burials under the floor of famous church of Jasna Góra Monastery in Częstochowa, southern Poland, in 2009-2012 (Hryszko 2013). The plant remains discovered at this shrine were compiled by Halina Galera, Emilia Jurkiewicz and Barbara Sudnik-Wójcikowska from the Department of Plant Ecology and Environmental Conservation at the University of Warsaw. This study, included in one of the chapters of the site's monograph, is one of the first in Poland to deal entirely with the function and significance of plants in the modern funerary ceremony. The described archaeobotanical materials retrieved from the graves are cross-referenced with ethnographic information and historical accounts of the individual herb species identified. A separate subsection includes an analysis of the reasons for which the selected plants were placed in the coffins. The authors distinguished five possible causes: preservative properties, medicinal and magical properties, aesthetic functions, aroma, and use as a lining (Galera *et al.* 2009).

Currently in Poland, the leading centre for research and conservation of finds from early modern burials is the Institute of Archaeology at Nicolaus Copernicus University in Toruń, northern Poland. Survey and conservation of artefacts from early modern burials from across the country is carried out by Małgorzata Grupa. Interdisciplinary teams are formed each season for the archaeological research of crypts, consisting of academics representing both the humanities and sciences. Particularly relevant to the subject of sepulchral plants are the findings from explorations of burial sites in the cemetery and St Nicholas Church in Gniew (Grupa *et al.* 2015a), the Church of the Name of the Blessed Virgin Mary in Szczuczyn (Dudziński *et al.* 2015, 2017; Grupa *et al.* 2013, 2014), and more recently the examination of sarcophagi from the Hochberg crypt in Świebodzice (Kulpa *et al.* 2019).

The history and conservation of historic textiles is also the main subject of studies by Anna Drążkowska, also working at Toruń University. Problems of the use of plants in funerary ceremonies have been mentioned in her articles on burial furnishings published since the early 2000s (Drążkowska 2005, 2006, 2007a, 2007b). Notable are the articles on grave wreaths (Drążkowska 2006, 2007a) and coffin cushions (Drążkowska 2007b) in which emphasis was placed on the problem of the function and significance of the plants used. In 2014, a monographic study of the results of research on human remains, coffins and furnishings from burials of bishops in crypts located under the Przemyśl Archcathedral (southeastern Poland) was published (Drążkowska 2014). A separate chapter of the publication is focused on the plants discovered in the coffins. The identification of plants used for embalming of the deceased bishops buried in Przemyśl was possible. Such a summary of herbs used for embalming was published in Poland for the first time. In 2015, Anna Drążkowska

completed the research project: *Funerary culture of the elites of the First Polish Republic in the 16th-18th centuries on the territory of the Kingdom of Poland and the Grand Duchy of Lithuania*. The project culminated in a publication of texts by a number of authors concerning examination of various elements of early modern burials. The work includes a chapter on plants discovered in coffins, presenting the results of investigations in the Przemyśl crypt, burials from the Archcathedral of St John in Warsaw, the Church of the Finding of the Holy Cross and St Andrew the Apostle in Końskowola, and the Church of the Visitation of the Blessed Virgin Mary in Trakai, Lithuania. A commentary on the results of botanical analyses in relation to ethnographic and historical data was presented by Agata Sady and Katarzyna Pińska. A monograph on the discoveries in the crypts of the Church of St Francis of Assisi in Kraków has also recently been published which contains a chapter on botanical findings (Drążkowska (red.) 2020)).

Research on medieval and modern burials in the monastery and basilica of the Holy Trinity in Strzelno and the cemetery at the Church of St James in Toruń which resulted in the discovery of grave wreaths and plant remains, was conducted under the direction of Krystyna Sulkowska-Tuszyńska, also affiliated with the Nicolaus Copernicus University in Toruń (Sulkowska-Tuszyńska 2006, 2007, 2010, 2022).

The multi-disciplinary team model also works successfully in funeral research in Germany. In 2009, *Arbeitsgemeinschaft Sepulkralkultur der Neuzeit (ar.se.n.)* research platform was formed in Brandenburg. Researchers centred around *ar.se.en*. carry out archaeological, anthropological and historical research on finds from cemeteries and crypts. Among the most important from the viewpoint of this study, are the examinations of the burials from crypts of the parish church in the Berlin-Mitte district, the cemeteries by other Berlin churches (Krebs 2002; Wittkopp 2002, 2015; Lippok 2007, 2015; Malliaris 2010, 2015; Escher *et al.* 2011) and the private crypt of the Schlabrendorff family in the cathedral in Brandenburg an der Havel („Historischer Verein Brandenburg (Havel)", J. 14, 2005).

Important discoveries were also made in the crypt beneath the Lüne Monastery in Lüneburg in Germany. During the restoration of the crypts, analyses of the preserved burial vestments, furnishings and human remains were carried out. Samples from the linings of the burials deposited in the crypt under the Chapel of St Barbara were examined in 2005. The author of the identification and interpretation of the results is the French archaeobotanist Julian Wiethold. With the findings in Lüneburg, the issue of the emergence of hop-based (*Humulus lupulus,* Fig. 90) grave linings in Europe north of the Alps has been brought back into scientific discussion (Wiethold 2005; Ströbl, Vick 2007, 2009, 2011; Ströbl *et al.* 2014).

In Germany, the centre for exhibitions, conferences and publications on medieval and modern funerals, including aspects such as the presence of plants in burials, is the Museum of Sepulchral Culture in Kassel. The subject of one of the first exhibitions at the museum, organised in 1993, were the coffins. The exhibition catalogue provided brief information on the interior fillings of the coffins of the von Stockhausen family presented (Diefenbach and Sörries 1994). The results of the botanical identifications were not published until 2007 (Rosinski 2007). In 2007--2008, the Kassel Museum organised an exhibition on wreaths and grave crowns. The publication *Totenhochzeit mit Kranz und Krone. Zur Symbolik im Brauchtum des Ledigenbegräbnisses* (Neumann (Hrsg.) 2007) is a collection of texts by specialists from various disciplines, presenting their research approaches to the study of maiden wreaths and grave crowns from the perspectives of history, art history, archaeology and ethnography.

In Germany, grave wreaths became the object of interest of ethnographers before they emerged as a research problem in archaeology. The term appeared in German encyclopaedia and dictionaries in the 18th century. The characteristics of burial wreaths was included in the *Frauenzimmerlexikon* by Gottlieb Siegmund Corvinus, published in Leipzig in 1715 (Corvinus 1715: 386). A definition of the term *Corona funebris* was provided in 1776 in the *Oekonomische Encyklopädie* (Krünitz 1776: 630-632). Otto Lauffer's pioneering article on wreaths and sepulchral crowns dealing with findings from an analysis of written and iconographic sources and examples of artifacts preserved in German churches was published in 1916 (Lauffer 1916). In 1976, a publication by Ernst Helmut Segschneider (Segschneider 1976) summarising the results of ethnographic inter-

views on wreaths and grave crowns collected in the German-speaking area between 1930 and 1935 was released. Only in the 1980s and 1990s grave crown finds started to be mentioned in German archaeological publications (Härke 1981) which is more or less corresponding with the situation in other European regions at this time (Bungeneers 1987; Beranová 1989). Single discoveries of grave wreaths were reported occasionally in previous archaeological publications (Streinz 1966/70). The information on grave crowns discovered in the Frauenkirche in Dresden were published in 1995. It is the first of the texts to identify conservation issues and to report on methods of documenting and reconstruction of this type of artefacts (Frenzel *et al.* 1995).

One of the few cohesive publications on the subject of grave crowns and wreaths from Germany is the study by Julianne Lippok (Lippok 2009). The author attempts to define the origins and to identify new research directions, above all the technology issues of the manufacture of the individual components of garlands and grave crowns, along with the characteristics helpful in classifying and dating this kind of finds.

Archaeological discoveries of funerary wreaths in Poland have been reported in print increasingly often since the early 2000s. One of the first texts dealing with this subject and an attempt of cultural and symbolic interpretation is the article by Anna Petrycka published in the "Quarterly of Material Culture History" in which the author mentions funerary wreaths from St Catherine's Church in Służewo, Warsaw, the Church of the Holy Cross in Szestno and St Anne's Chapel in Frombork (Petrycka 2003). The findings from churches in northern Polish urban areas have been published in several articles, in particular sets of wreaths and sepulchral crowns from the church of the Assumption of the Blessed Virgin Mary in Toruń (Drążkowska 2006), St John and the Holy Trinity in Gdańsk (Drążkowska 2007a), the cemetery at the church of St James in Toruń (Cicha 2011; Grzyb 2011; Sulkowska-Tuszyńska 2011, 2022) and the chancel and side chapels of the church of St Nicholas in Gniew (Grupa *et al.* 2015a; Nowak 2013-2014). Grave wreaths have been discovered in significant numbers in recently excavated cemeteries in Wrocław – at the church of St Peter and Paul in Ostrów Tumski (Pankiewicz and Marcinkiewicz 2012), St Mary Magdalene (Wojcieszak 2007, 2010a), at the Salvator cemetery (Guszpit *et al.* 2010; Sawicki 2015), at the church of St. Elizabeth and at the former All Saints' Hospital. Finds of grave wreaths have also recently been recorded from the Czech Republic − from the cemetery at the Church of St John the Baptist in Praha (Omelka, Řemounová 2008), from the Church of St Bartholomew in Rakovník (Čiháčková *et al.* 2011), and from the new cemetery in Opava (Kováčik *et al.* 2017). Remains of wreaths/grave crowns are also found in Opole in Silesia (Przysiężna-Pizarska, Cieślik 2012). Wreaths and burial crowns on Polish territory have been discovered, e.g., in the crypts of the church in Jasna Góra Monastery in Częstochowa (Galera *et al.* 2013), in Lublin, Szczuczyn, Byszewo, Kędzierzyn, the former Augustinian church in Stargard (Drążkowska 2016), and in the ruins of the church of the Blessed Virgin Mary in Kostrzyn nad Odrą (Drążkowska 2017).

In France, archaeobotanical studies on burials are carried out by botanical specialists who deal with different site types, dating from all chronological periods. Marie-Pierre Ruas is active in archaeological research organised by a unit created for this purpose within the Institute for Humanities and Social Sciences, Centre National de la Recherche Scientifique. In 1992, she published a study of pollen from inside Anne d'Alègre's coffin in Laval. A novel aspect of the study and method is the incorporation of palynological samples from inside the body of the deceased into the analysis. The most important issue investigated by French archaeologists is the question of the use of plants in the embalming of the bodies of the dead and the creation of linings. Comparisons of archaeological plant finds with data from written historical sources have recently been published by Rémi Corbineau (Corbineau *et al.* 2018).

In Northern as in Central Europe, intensified studies of modern burials have been carried out since the beginning of the second millennium. The distinctive nature of the finds from Northern Europe lies in the significant difference in terms of natural flora, climatic conditions and the specific traditions of the indigenous population. In Finland, botanical remains have been discovered in large numbers in modern church cemeteries and in churches dating from the 17th-19th centuries. One of the most botanically

rich sites from Northern Europe is St Olaf Cathedral in Helsingør, Denmark (Karg 2001, 2012/2013).

The botanical studies carried out by the exploration of the crypt in the Church of the Blessed Virgin Mary in Breda in the Netherlands in 1996 were also a breakthrough (Maat *et al.* 1997; van Haaster and Vermeeren 1999; Maat 2013). It included the identification and palaeopathological analysis of the remains of the first members of the von Nassau family and also examination of plant macroremains from their sarcophagi. In addition, the samples of pollen collected from the burials of Engelbrecht II Nassau and Cimburga van Baden were analysed. Numerous species of exotic plants were identified which were used as linings and for the embalming of the bodies.

In 1999, a research project was initiated in the United Kingdom to gather information on medieval burial practices in Britain through detailed analysis of available samples obtained from cemeteries, mainly monastic. It included sites used from around 1050-1600. The result is a publicly accessible database containing information on over 8,000 excavated medieval burials from 70 separate excavations carried out in churches and cemeteries in England, Wales and Scotland. These data have been compiled and summarised in a monographic publication by Roberta Gilchrist of the University of Reading and Barney Sloane (Gilchrist and Sloane 2005a, 2005b). In many cases the information includes botanical finds, also from older research and conservation of buildings, crypts and tombs.