

Adriana Brišová

Department of Botany, Institute of Biology,
Pedagogical University of Krakow, Podchorążych 2, 30-084 Kraków, Poland, adriana.brisova@gmail.com

Inspirations by plant in the decorative motifs of St. Mary's Basilica in Kraków (Poland)

Introduction

Plants, especially flowers, have been used as an element of various types of decorations since the beginning of civilisation (Schwarz, Szober, 1974). Plant motifs from ancient times appeared in art, especially related to *Sacrum* (Latin) – the sphere of holiness. Religious symbols of various artists have abundant symbolism, which appeal to a specific audience in a specific and intended way. At present, many monographic studies relating to the religious symbolism of plants can be found in the literature. Examples include the “Atlas of Biblical Plants” by B. Szczepanowicz (2003) or “In the World of the Bible Flora” by J. Picka (1998). These studies contain a list of species mentioned in the Bible and they are particularly useful in explaining the meaning of plant religious symbols.

For believers, God was the first Being who cared for the earthly garden. Therefore, throughout the Bible, illustrating the history of the world, there are plants that have a specific symbolism describing the relationship between man and God. Human is also compared to the plant: (...) “*Planted in the house of the Lord, they will flourish in the courtyards of our God. They will bear fruit even in old age, full of juices and always alive* (Ps. 92.14)”. As many as eighty species of plants are listed in the Bible that have not survived to their full extent. Plants are part of the panorama of biblical events, from the Old Testament to the history of Christ. Biblical plant species are fascinating and attractive to many people, precisely because of the symbolism they carry. Hence, they were often an inspiration in various artists studies (Szczepanowicz, 2003; Włodarczyk, 2004; Lengiewicz, 2008).

The arch-presbytery church of the Assumption of the Blessed Virgin Mary in Kraków, also called the St. Mary's Church, the Basilica of the Assumption of the Blessed Virgin Mary or St. Mary's Basilica, is the subject of many studies and publications,

as it belongs to the “*treasury of Polish culture*”. It is one of the most important and one of the greatest architectural monuments of Kraków. For centuries it was under the care of wealthy middle-class families, thanks to which today it is included in Poland in the group of buildings of masterful sacred composition (Bujak, Rożek, 1987). The beginnings of the creation of this building, its reconstruction and other history were described in the first volume of the monograph “*Sacred Art of Krakow in the 19th Century*” by Bałus et al. (2004). The aim of this study is to identify plant motifs found in the interior decorations of the Archpriestal Church of the Assumption of the Virgin Mary in Kraków and to analyse their symbolism.

Characteristics of the object

Location and architecture

St. Mary’s Basilica is located in the north-east corner of the Main Square in Kraków, on the spacious St. Mary’s Square (50°03’42” N, 19°56’21” E). The sanctuary is located on the route of the Lesser Poland road of Saint James leading to Tyniec. The church is located obliquely in relation to the axis of the Main Square. This is due to its location before establishment of the city. St. Mary’s Square was established only in 1257, when the city was located under Magdeburg Law. The foundations of St. Mary’s Church date back to the years 1221–1222 (Adamczewski, 1986; Bałus et al., 2004; Komorowski, Sudacka, 2008).

External architecture (Appendix 1: Fig. 1)

The facade of the temple shows two towers differing in height and a church porch (Fig. 1a–c). The higher tower „*Ekxcubarium*” reaches 81 meters. It is crowned with a Gothic helmet from 1478, whose author is Maciej Heringk. In 1666 year a golden crown was erected on the spire, which was funded by the Italian merchant Piotr Antoni Pestaloci from Vicency. In the Middle Ages it had a defensive function, i.e. it was a guardroom. It was also called ‘*hejnalica*’. The lower tower (Fig. 1b) reaches a height of 69 meters and has been used as a belfry for centuries. The mannerist helmet of the tower was covered in the second half of the 16th century. It is covered by an elliptical dome placed on an octagonal drum. In its corners there are four smaller domes, located on four-sided bases. In the belfry tower, five bells are hung (Fig. 1b) – including four liturgical ones, which are the largest and oldest bells set in medieval Poland. The fifth bell is a clock dulcimer, because it does not work with the clock located on the higher tower. The belfry of the tower is occupied by a Renaissance chapel dedicated to St. Paweł, which was funded by the Kauffmann family. From the outside, right next to the chapel window, under the roof there is a bell ‘for those dying’ (Fig. 1g) – it was used to ring when a human died (Rożek, 1974, 1994, 2012).

The walls of the temple are decorated with ogival windows with numerous floral motifs, and the gables of the arches are figural sculptures with symbolic themes. The outer cornice of the temple surrounds 21 figures. Walls of the chapel St. Jan Nepomucen is decorated with a sundial made in 1954 by Tadeusz Przytkowski. On the eastern wall of the chapel there is a sculptural composition designed by Czesław Dźwigaj. It depicts the crucified Christ with the Mother of God and Saint John the Evangelist, as well as smaller statues of saints (Rożek, 2012). To the inside of the temple from the front side leads a baroque polygonal church porch (Fig. 1c). It was created in 1750–1752, according to a design by the Italian architect and sculptor Franciszek Placidi. From the north side of the church there is a small annex of the ecclesiastic treasury from the end of the 16th century. Next to it is a Gothic sacristy. The northern entrance to the church is opened by a huge gate with bas-reliefs depicting the history of Christ and Mary (Rożek, Gondkova, 2003; Rożek, 2012).

Internal architecture

The interior of the St. Mary's Church built on a cross plan (Fig. 2) from the floor to the vault is tightly covered with Matejko's paintings. Among them we find various ornamental motifs, angel figures, Marian prayers texts and other religious inscriptions. The vault throughout the church is covered with intensely blue pigment with golden stars. The whole gives the impression of a starry sky (Rożek, 1997; Bałus, 2007).

The main altarpiece was the largest cosmetic and artistic undertaking in St. Mary's Basilica. It was commissioned by city councillors to be implemented by master Wit Stwosz who arrived from Nuremberg. The altar was made in the years 1477–1489. It is considered a top-class work of sacred art from the Middle Ages. The Gothic pentaptic altar consists of a central wardrobe, two fixed wings and two movable wings and a crown. The scene of the Dormition of the Virgin Mary surrounded by the Apostles is the main idea and artistic accent of the altar. Above the central scene of falling asleep, Stwosz placed the Assumption, and at the peak – Mary's coronation. The author of the altar accurately recreated the smallest elements and details, revealed in the life of Mary and Christ scenes, placed in the quarters of the wings. The Wit Stwosz Altar is the greatest achievement of European sculpture of the Middle Ages (Dobrowolski, 1980).

The presbytery is also covered with paintings by Jan Matejko. On the walls are various floral and heraldic motifs: Loreto litanies placed on bands, Marian prayers and angels in dynamic poses. The wall paintings are in very intense and vivid colours. Most of them are red, gold, purple, and blue is on the vaults. Four carved keystones were made according to Matejko's design and they symbolise: the coat of arms of Odrowąż, the Piast eagle, the monogram of the Blessed Virgin Mary, and the coat of arms of the city of Kraków. The windows in the nave and in the presbytery are three-parted (Bałus, 2007).

The cyborium is authored by Jan Maria Padovan. Its execution was completed in 1536. The print consists of three floors. The central part of the cyborium is divided by four pilasters with Corinthian capitals into three niches, based on the theme of the triumphal arch. The cyborium contains the tempietta and tabernacle in which the Blessed Sacrament is. The top is finished with a dome. The golden door on the tabernacle was decorated with a stylised rose and olive tree. It was reconstructed in 1745. Vases, finials and cartouches from the Baroque era were placed here (Wolańska, Bałus, 2010).

There are 11 chapels funded by rich Kraków families such as: Bonerowie, Montelupi and Salomonowie. On the north side of the nave there are the following chapels: Transfiguration, Loreto, St. Lawrence's, St. Anthony's, St. John the Baptist's and St. Michael Archangel's. On the south side of the nave there are chapels: Guardian Angels, St. Valentine's, St. Lazaurus's, St. John Nepomucene's and Our Lady of Częstochowa (Wolańska, Bałus, 2010).

The analysed material

The material used to analyse plant inspirations in the interior decorative motifs of St. Mary's Basilica in Kraków, in the form of 100 photographs in the years 2017/2018 was collected and developed. In this study some photographs were included as documentation. In the Basilica, 18 sectors (positions) were designated and numbered to simplify the description of the location of plant motifs (Fig. 2). The study omitted the wardrobe and wings of the main altar, made by Wit Stwos, because they had already been the subject of botanical research (Szafer, 1934, 1958), and the focus was on other parts of the church. The documentation of the study refers to decorative motifs in the following forms: wall painting, sculpture (including scagiola and decorating the dress in paintings) with polychrome, stained glass. The study identifies plant taxa whose mappings were found in the above-mentioned ornamental forms. To identify species and genera the following studies, among others, were used: Szafer et al. (1986), Macků and Krejča (1989), Červenka et al. (1990), Krzyściak-Kosińska and Kosiński (2007), Halarewicz (2014).

In the case of ambiguous identification of the genus or species of the plant, an analysis was made of the entire context of the decoration in which the motif was considered. The context was helpful when the symbolic meaning of the plants used in decorating was taken into account (Wolańska, Bałus, 2010). In the interpretation of Christian symbolism were used, among others, studies of Szczepanowicz (2003), Włodarczyk (2004, 2011) and others.

All plants identified in ornamental motifs were catalogued alphabetically according to systematics with belonging to families. Nomenclature of genera and species, as well as belonging to families was adopted according to the study by Mirek et al. (2002)

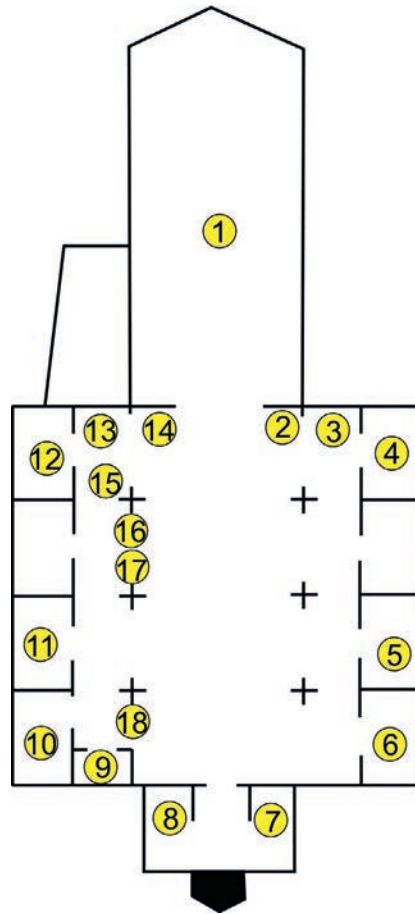


Fig. 2. Diagram of the distribution of the analysed sectors (stands) on the St. Mary's Church (Photo. Adriana Brišová);

1 – Presbytery, 2 – Cyborium, 3 – Altar with the crucifix of Wit Stwosz, 4 – Chapel of St. John Nepomucene, 5 – Chapel of St. Valentine, 6 – Chapel of St. Lazaurus, 7 – Chapel of Our Lady of Częstochowa, 8 – Chapel of St. Anthony, 9 – Chapel of Our Lady of Loreto, 10 – Chapel of St. John the Baptist, 11 – Chapel of St. Lawrence, 12 – Chapel of the Transfiguration, 13 – Altar of St. Stanislaw bishop, 14 – Altar with the painting of the Annunciation 15 – Epitaph of Prelate James Januszowicz, 16 – Altar of St. Sebastian, 17 – Fogelweder Stalls, 18 – Altar of St. Simon and St. Jude Thaddeus

and Polish flora (www.atlas-roslin.pl). At each identified taxa, the following information is summarised: name of the genus or species (if possible), location of the motif in St. Mary's Church according to the numbering of positions in the diagram (Fig. 2), artistic form in which the motif with the given plant appeared (Sg – stained glass, WP – wall painting, Sc – sculpture, P – polychrome), plant parts (f – leaf, c – flower, p – fruit, b – branch) and presentation (st. – stylised, r. – realistic, sy. – symbolic). For example, the abbreviated entry: 1 – WP st. f means that at stand no. 1 (Presbytery) in wall painting a stylised leaf motif of a given plant appears.

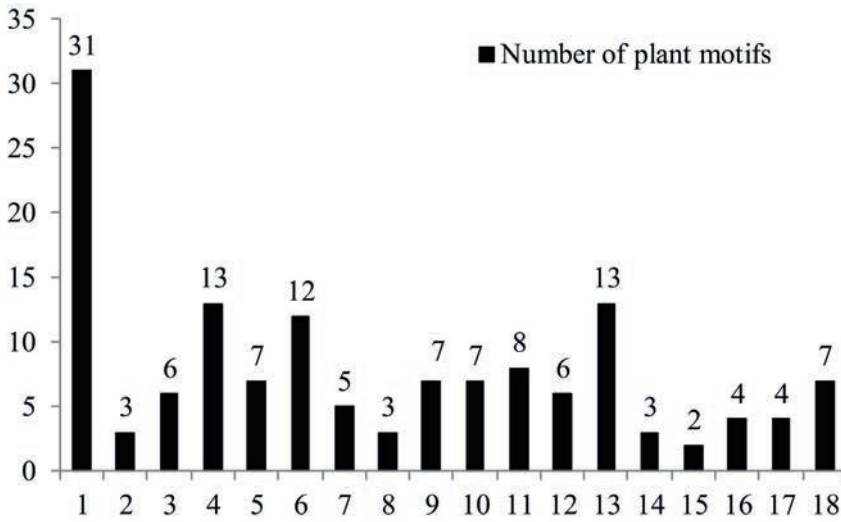


Fig. 3. Comparison of the number of plant motifs in individual research sectors of St. Mary's Basilica; 1 – Presbytery, 2 – Cyborium, 3 – Altar with the crucifix of Wit Stwosz, 4 – Chapel of St. John Nepomucene, 5 – Chapel of St. Valentine, 6 – Chapel of St. Lazaurus, 7 – Chapel of Our Lady of Częstochowa, 8 – Chapel of St. Anthony, 9 – Chapel of Our Lady of Loreto, 10 – Chapel of St. John the Baptist, 11 – Chapel of St. Lawrence, 12 – Chapel of the Transfiguration, 13 – Altar of St. Stanislaw bishop, 14 – Altar with the painting of the Annunciation 15 – Epitaph of Prelate James Januszowicz, 16 – Altar of St. Sebastian, 17 – Fogelweder Stalls, 18 – Altar of St. Simon and St. Jude Thaddaeus

Results

Alphabetical list includes 43 plants found in the ornamental motifs of the St. Mary's Basilica in Kraków, including 29 taxa of genus and 14 taxa of species (Tab. 1 – Appendix 2). Most plant motifs concerned taxa from the following families: Rosaceae (9), Asteraceae (5), Liliaceae (3), Papaveraceae (2), Malvaceae (2). The most common motif appearing is the acanthus (*Acanthum* sp.), which was found in 15 positions. The next most frequent depictions are lilies (*Lilium* sp.) which occur in 11 positions, then roses (*Rosa* sp.) appearing at 9 points of the examined object (Fig. 3).

The unique motifs are hibiscus (*Hibiscus* sp.), gloriosis (*Gloriosa* sp.) and lingonberry (*Vaccinium vitis-idaea* L.) (Tab. 1 – Appendix 2). As for the manner of presentation, in all of the analysed artistic forms (WP, Sc, Sg) stylised performances dominate (Fig. 4). Selected, more interesting decorative motifs are presented in figures 5–8 – Appendix 1. Many floral motifs refer to the symbolism of Mary, due to the fact that the Basilica is for Mary's call (Tab. 2 – Appendix 2).

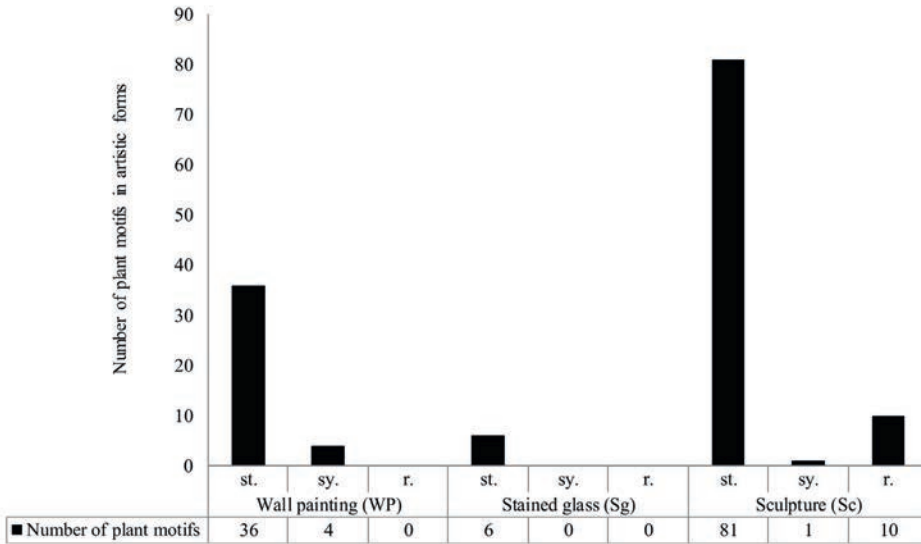


Fig. 4. Comparison of the number of performances (st. – stylised, sy. – symbolic, r. – realistic) of floral motifs in the analysed artistic forms

Discussion

Plants presented in decorative motifs were very often the result of a kind of fashion. Sometimes, the artists created using patterns directly from the nature, but this required some botanical knowledge. That is why they more often used templates or herbaria, i.e. medical books showing plant pictures. They even sometimes copied from other creators and this phenomenon was very common. In various artistic forms created around 1500, such unusual and unreal plants appear, and at the same time so similar to each other that they were certainly copied. However, it can be said that, more or less since the 1660s, the artists tried to faithfully and realistically render the appearance of plants (Włodarczyk, 2011).

The floral motifs in art have always been accompanied by various types of stylisations, which in some cases led to partially or completely unrealistic representation a given ornamental motif. In St. Mary's Basilica, many decorative motifs were found, both in stained glass, wall painting and sculpture, which are difficult to attribute to any plant, although the inspirations of the world of plants are clearly noticeable here. These types of motifs include: branch, thorns (Fig. 5 a–b), pods (Fig. 5c), triple leaves (Fig. 8a), whether rosettes formed from them (Fig. 5d) or stylised flowers (Fig. 5e) – Appendix 1. Often, these motifs have a clear symbolic meaning, and it was probably the main artistic intention (Tab. 2 – Appendix 2). For example, thorns are associated with the crown of thorns and the passion of Christ. According to F. N. Hepper,

J. Maillat and S. Maillat (botanists dealing with biblical plants), there are several species from which branches a crown of thorns could be made, e.g. the thorn of Christ (*Ziziphus spina-christi* (L.) Willd.), Jerusalem thorn (*Paliurus spina-christi* Mill.), or prickly (*Sarcopoterium spinosum* (L.) Spach). However, there is no agreement about this (Włodarczyk, 2011). In religion, the significance of thorns is associated with unhappiness, pain and suffering. Thorns also symbolise the curse that resulted from Adam's disobedience to God. A crown of thorns placed on the head of Christ (Fig. 5a – Appendix 1), means not only torture, but also redemption from the sin of Adam's entire family (Szczepanowicz, 2003; Lengiewicz, 2008).

In the analysed sacred object, the most common appearing method of presentation is a stylised motif. Only in a few cases, the performances are symbolic or realistic – this applies to all three examined artistic forms (Tab. 1 – Appendix 2; Fig. 4). These styles are very different – from small, almost real representations, to significantly changed motifs. Their identification was possible only through the analysis of the whole decorative context. A good example of this are daisies placed in wall painting around the figure of the Mother of God in the Chapel of St. Jan Nepomucen (Fig. 6c – Appendix 1). Their stylisation is far advanced and they also look different from real plants. However, the context of Mary, accompanied by lilies, a symbol of purity, roses and dahlias as an attribute of virginity, peonies symbolising innocent embarrassment. White and pink daisies are a symbol of eternal youth and fit into Marian context (Szczepanowicz, 2003; Lengiewicz, 2008). Similarly, the figures of angels in the Presbytery placed in different poses with instruments and with the text of the Lorean litanies, set on lily flowers, which can be identified only from the context of the presence of angels as the personification of purity, expressed by the presence of these extremely stylised, fancy and colourful lilies. Right next to it, as if for comparison, the artist posted white lilies that are easy to identify because the stylisation is insignificant here.

Among the 18 analysed sectors of St. Mary's Basilica (Fig. 2), the most identified plant motifs were found in the presbytery: 21 in wall painting, 8 in sculpture and 2 in stained glass, and in the Chapel of St. John Nepomucene: 9 in wall painting, 2 in sculpture, 2 in stained glass (Tab. 1 – Appendix 2; Fig. 3). The most common floral motifs appearing in the Basilica decorations are: acanthus (*Acanthum* sp.) – 15 positions, lilies (*Lilium* sp.) – 11 positions, roses (*Rosa* sp.) – 9 positions, cinquefoils (*Potentilla* sp.) and chrysanthemums (*Dendranthema* sp.) – 8 positions each. Unique motifs are hibiscus (*Hibiscus* sp. Fig. 6f–g – Appendix 1) and gloriosis (*Gloriosa* sp.), placed in the wall painting of the Presbytery and lingonberry (*Vaccinium vitis-idaea* L.), which is part of the decorating the vault of the Chapel of St. John the Baptist.

The decorative element, in the form of a stylised acanthus leaf, was already used in architecture in ancient Greece and Rome. This motif was also popular in the Renaissance, Baroque and Classicism periods. Its symbolic meaning is not so important, but

above all it was a favourite decorative element in various artistic forms. In St. Mary's Basilica, it was found in as many as 16 examined sectors of the church (Tab. 1–2 – Appendix 2; Fig. 7a–d – Appendix 1). It is considered a symbol of the tree of life, the impermanence and fragility of life, the passing of the world and human life. On the other hand, as a symbol of suffering and pain, while the leaves themselves as a symbol of moral virtues (Szczepanowicz, 2003; Lengiewicz, 2008; Będkowska, Zemanek, 2016).

In the studied Basilica a very common plant decoration are lily and rose. It is probably associated with the Virgin Mary, who is the patron of this church (Tab. 2 – Appendix 2). Its attributes are, among others, flowers. The lilies appear here in real, stylised and symbolic form. Most often the lily is presented in a stylised form, but also in the form of the so-called Bourbon lily as a symbol of power and majesty. From the 11th century, this flower was part of the Bourbon dynasty coat of arms. It is a kind of stylised lily, heraldic figure, being the symbol of Mary in the Catholic Church (Szczepanowicz, 2003). For example, in the St. Jan Nepomucen's Chapel Mary and the Child, depicted in wall painting, are surrounded by small, golden Bourbon lilies, decorating a navy blue background. This motif also appears in their crowns (Fig. 6c – Appendix 1). Lilies also occur in the St. Anthony's Chapel for whom lily is also an attribute.

In turn, the rose indicates the love of the Mother of God, both for people and for God (Tab. 2 – Appendix 2). It is also a symbol of her beauty: physical and spiritual. In the past, theologians wrote that roses in paradise had no thorns. Our Lady is to be this rose without thorns, which refers to her immaculate conception. The rose kept in the hands of the saints, in turn, can be a symbol of martyrdom. In the Scriptures, roses appear several times, but they do not actually refer to the genus *Rosa* L., but to completely different plants, which do not even belong to the *rosa* family (Rosaceae). Many local biblical plants named 'Jericho rose' or 'Sharon rose' are the work of medieval monks who loved Bible stories and created gardens with plants they gave biblical names to. They did not have basic botanical knowledge about biblical plants. They themselves identified the flowers and gave them names that they thought were adequate or similar to some biblical species. To this day, many of these names have become part of botanical knowledge (Garrett, 2008). Hence, species that have nothing to do with the rose, e.g. hibiscus (*Hibiscus* sp., Fig. 6f – Appendix 1) or peony (*Paeonia* sp.), may have similar Christian symbolism as a rose. This is analogous to the lily described above, which has been confused with the tulip (*Tulipa* sp.) and, such as: diced chessboard (*Fritillaria meleagris* L.).

Jesse's tree is an interesting plant motif occurring in the Presbytery of St. Mary's Basilica. It was a frequent motif used in art from the 11th to the 17th century. It is an artistic presentation of the family tree of Christ, which in the analysed object resembles a vine (*Vitis vinifera* L.). Jesse was the father of David, king of Israel. In prophecy from the Isaiah book are mentions about the arrival of the Messiah, a descendant of Jesse

or Jesus Christ. In the presentations of this tree, Jesse rests on the ground, from which a trunk with numerous branches springs; on them are images of the Jewish kings and other ancestors of Christ (Šliwa, 2017). The vine motif can also be seen here in several other decorations (Fig. 8g–h – Appendix 1).

There were many reasons for placing specific plant motifs in decorations. Certainly religious symbolism played an important role in this respect, which was to be legible to everyone. It was supposed to raise the majesty and dignity of the temple, which was mentioned earlier. The placement of intricate floral motifs also played an important aesthetic role, which is also very important for religious sites. Thus, decorative motifs with lilies, roses, dahlias and other beautiful flowers, in addition to the symbolic and religious meaning, also fulfilled the decorative functions of this Basilica.

Conclusion

In the analysed object it is not possible to identify all representations of decorative motifs inspired by the world of plants. It is also difficult to determine the exact functions of all depictions. One can only consider suppositions on this topic and formulate hypotheses. Sometimes, however, it is worth considering the mapped species or type of plant, because it may carry some symbolic content. It happens above all on artistic forms depicting the Mother of God, as well as on those on which Maria, Christ or the saints hold flowers or fruits in their hands. The inspiration for many of these appearances was certainly the well-known symbolism of certain species. Some of these species are recognised only because of their symbolic significance in religious context, because they are not a natural component of our region's flora. An example would be the well-known olive, acanthus or pomegranate. Therefore, such representations also have a certain cognitive aspect.

Conflict of interest

The author declares no conflict of interest related to this article.

References

- Adamczewski, J. (1986). *Kraków Od A Do Z*. Kraków: Wydawnictwo Krajowa Agencja Wydawnictwa, ss. 210. [In Polish]
- Bałus, W., Mikołajska, E., Urban, J., Wolańska, J. (2004). *Sztuka sakralna Krakowa w wieku XIX: część pierwsza*. Kraków: Wydawnictwo Universitas, ss. 205. [In Polish]
- Bałus, W. (2007). *Sztuka Sakralna Krakowa w wieku XIX: Część druga. Matejko i Wyspiański*. Kraków: Wydawnictwo Universitas, ss. 260. [In Polish]
- Będkowska, P., Zemanek, A. (2016). Ornamenty roślinne w architekturze sakralnej Krakowa (XIX–XX w., wybrane obiekty). *Orbuscula Musealia*, 24, 93–106. [In Polish]
- Bujak, A., Rożek, M. (1987). *Kościół Mariacki w Krakowie*. Warszawa: Wydawnictwo Sport i Turystyka, ss. 301. [In Polish]

- Červenka, M., Feráková, V., Háber, M., Kresánek, J., Pačlová, L., Peciar, V., Šomšák, L. (1990). *Świat roślin skał i mineralów*. Wyd. 4. Warszawa: Państwowe Wydawnictwo Rolnicze i Leśne, ss. 401. [In Polish]
- Dobrowolski, T. (1980). *Wit Stwosz Ołtarz Mariacki*. Kraków: Wydawnictwo Literackie, ss. 183. [In Polish]
- Garrett, G. (2008). *Biblijne sekrety piękna. Praktyczne zastosowanie starożytnych receptur*. Kraków: Wydawnictwo M, ss. 118. [In Polish]
- Halarewicz, A. (2014). *Atlas roślin*. Warszawa: Wydawnictwo SBM, ss. 185. [In Polish]
- Komorowski, W., Sudacka, A. (2008). *Rynek Główny w Krakowie*. Wrocław: Wydawnictwo Ossolineum, s. 251–255. [In Polish]
- Krzyściak-Kosińska, R., Kosiński, M. (2007). *Atlas roślin*. Bielsko Biala: Wydawnictwo Pascal, ss. 271. [In Polish]
- Lengiewicz, I.W. (2008). *Rośliny biblijne*. Warszawa: Przedsiębiorstwo Wydawnicze „Rzeczpospolita” S.A., ss. 207. [In Polish]
- Macků, J., Krejča, J. (1989). *Atlas Roślin Leczniczych*. Wrocław: Zakład Narodowy im. Ossolińskich, ss. 430. [In Polish]
- Mazan, L. (2003). *Z Mariackiej wieży hejnał płynie*. Wydawnictwo Anabasis, s. 9–148. [In Polish]
- Mirek, Z., Piękoś-Mirkowa, H., Zając, A., Zając, M. (2002). *Flowering Plants and Pteridophytes of Poland – a checklist. Biodiversity of Poland*. Kraków: W. Szafer Institute of Botany, Polish Academy of Science, pp. 442.
- Pick, J. (1998). *W świecie Biblii. Flora*. Pelplin: Wydawnictwo Bernardinum, ss. 183. [In Polish]
- Polish flora* <https://www.atlas-roslin.pl> [In Polish]
- Rożek, M. (1974). *Kościół Mariacki w Krakowie*. Warszawa: Wydawnictwo Voyager, s. 6–17. [In Polish]
- Rożek, M. (1994). *Kościół Mariacki w Krakowie*. Piechowice: Wydawnictwo Lanmann, ss. 107. [In Polish]
- Rożek, M. (1997). *Kraków*. Wrocław: Wydawnictwo Dolnośląskie, ss. 290. [In Polish]
- Rożek, M. (2012). *Magia Kultury. Kraków*: Wydawnictwo Petrus, ss. 248. [In Polish]
- Rożek, M., Gondkova, B. (2003). *Leksykon kościołów Krakowa*. I, II. Kraków: Wydawnictwo Vesco, s. 193–199.
- Szafer, W., Kulczyński, S., Pawłowski, B. (1986). *Rośliny polskie*. Wyd. 3. Warszawa: Państwowe Wydawnictwo Naukowe, ss. 1019. [In Polish]
- Schwarz, Ż., Szober, J. (1974). *Rośliny towarzyszące człowiekowi*. Warszawa: Wydawnictwo Szkolne i Pedagogiczne, ss. 115. [In Polish]
- Szafer, W. (1934). Polichromia roślinna w ołtarzu Wita Stwosza. *Acta Societatis Botanicorum Poloniae. Supplementum*, 11, 33–43. [In Polish]
- Szafer, W. (1958). Kwiaty w ołtarzu Wita Stwosza. In: W., Szafer, J., Szaferowa, (eds.), *Kwiaty w naturze i sztuce*. Warszawa: PWN, s. 102–117. [In Polish]
- Szczepanowicz, B. (2003). *Atlas roślin biblijnych. Pochodzenie, miejsce w Biblii i symbolika*. Kraków: Wydawnictwo WAM, ss. 272. [In Polish]
- Śliwa, L. (2017). Rodowód Chrystusa. *Tygodnik Gość Niedzielny*, 50, 1. <https://www.gosc.pl/doc/4374250>. Rodowód-Chrystusa [In Polish]
- Włodarczyk, Z. (2004). Biblical Gardens in dissemination of ideas of the Holy Scripture. *Folia Horticultura*, 16(2), 141–147.
- Włodarczyk, Z. (2011). *Rośliny biblijne*. Leksykon. Kraków: Instytut Botaniki im. W. Szafera PAN, ss. 245. [In Polish]
- Wolańska, J., Bałus, W. (2010). *Sztuka sakralna Krakowa w wieku XIX: Część trzecia*. Kraków: Wydawnictwo Universitas, ss. 368. [In Polish]



Fig. 1. Selected elements of the external architecture of St. Mary's Basilica; a – main facade, b – lower tower (belfry), c – porch, d – board dedicated to Saint John Paul II, e – epitaph of Stanislaw Chudzicz, f – Renaissance porch, g – bell 'for dying', h – southern entrance for visitors (Photo. A. Brišová, 2017)



Fig. 5. Plant motifs in the decorations of St. Mary's Basilica; artistic forms: Sc – sculpture, P – polychrome, WP – wall painting, Sg – stained glass; way of presenting the plant motif: r – realistic, sy. – symbolic, st. – stylised; 1 – 18 sector numbers as per figure 2
 thorns: a – 6 Sc (sy.), b – 12 WP (sy.); pods: c – 2 Sc (st.); rosettes with trifoliate elements: d – 1 WP (sy.)
 flowers: e – 1 WP (st.) (Photo. A. Brišová, 2018)



Fig. 6. Plant motifs in the decorations of St. Mary's Basilica (cont.); artistic forms: Sc – sculpture, P – polychrome, WP – wall painting, Sg – stained glass window; way of presenting the plant motif: r. – realistic, sy. – symbolic, st. – stylised; 1–18 sector numbers as per figure 2
oak (*Quercus* sp.): a – 1 WP (st.); carnation (*Dianthus* sp.): b – 6 Sc (r.); peony (*Paeonia* sp.): c – 4 WP (st.), other: roses, dahlias, lilies and bourbon lilies, daisies; mallow (*Alcea* sp.): d, e – 17 Sc / P (st.), other: bells, apple tree, peony; hibiscus (*Hibiscus* sp.): f – 1 WP (st.), other: acanthus leaves; g – real plant (Photo. A. Brišová, 2018)

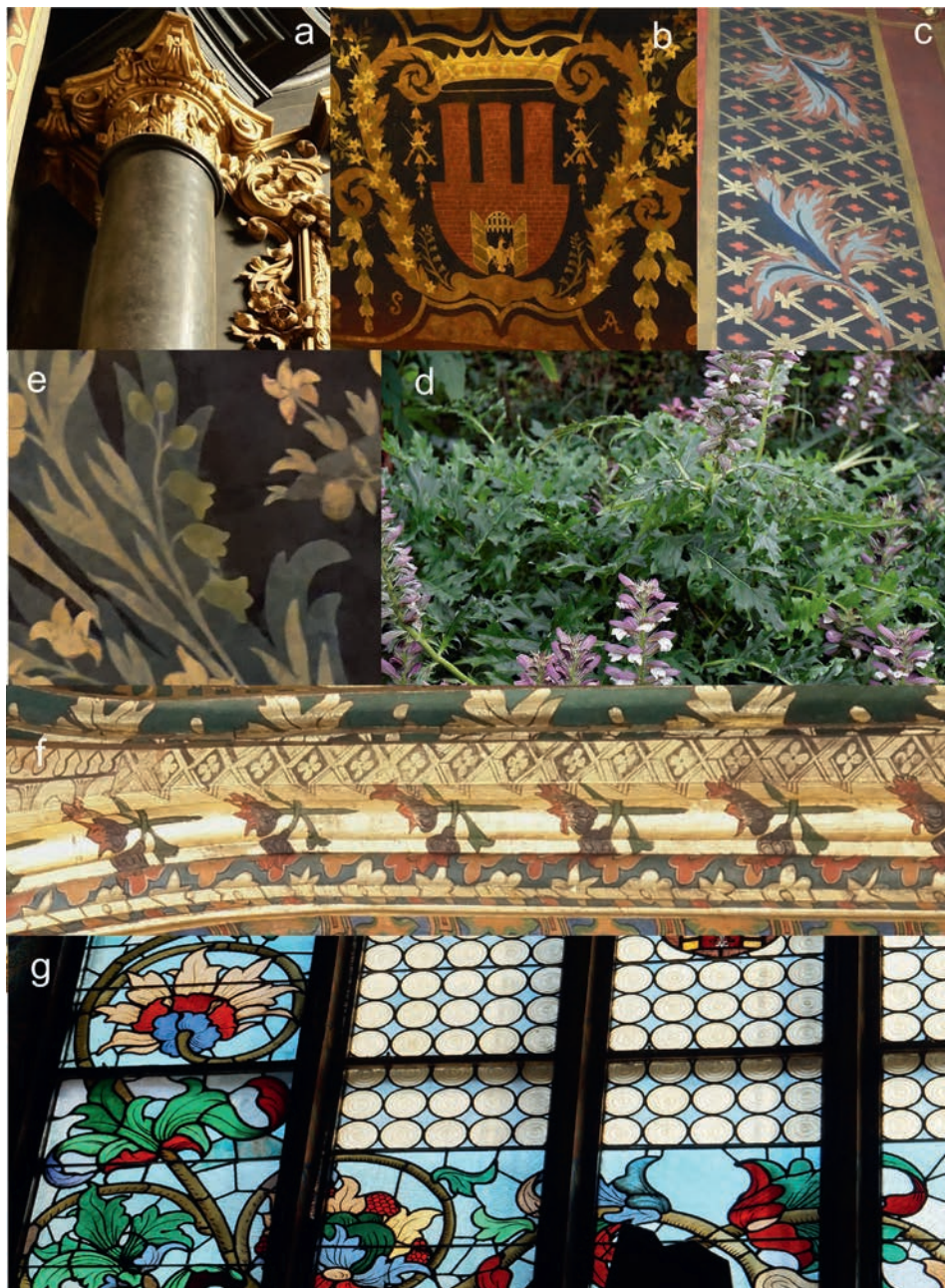


Fig. 7. Plant motifs in the decorations of St. Mary's Basilica (cont.); artistic forms: Sc – sculpture, P – polychrome, WP – wall painting, Sg – stained glass; way of presenting the plant motif: r. – realistic, sy. – symbolic, st. – stylised; 1–18 numbers sectors as per figure 2
 acanthus (*Acanthus* sp.): a – 5 Sc (st.), b – 18 Sc (st.), c – 12 WP (st.), d – real plant; bell (*Campanula* sp.): e – 13 Sc (st.), f – 1 WP (st.); chrysanthemum (*Dendranthema* sp.): g – 1 Sg (st.) (Photo. A. Brišová, 2018)



Fig. 8. Plant motifs in the decorations of St. Mary's Basilica (cont.); Sc – sculpture, P – polychrome, WP – wall painting, Sg – stained glass; way of presenting the plant motif: r. – realistic, sy. – symbolic, st. – stylised; 1–18 sector numbers as per figure 2
 clover (*Trifolium* sp.): a – 1 WP (st.); linum (*Linum* sp.): b – realistic plant, c – 16 Sc (st.); geranium (*Pelargonium* sp.): d – 1 WP (st.); proper grenade (*Punica granatum*): e – 1 WP (st.); f – real plant; proper vine (*Vitis vinifera*): g – 9 Sc (st.), h – 9 WP (st.) (Photo. A. Brišová, 2018)

Appendix 2

Tab. 1. List of all plant taxa recorded in the decorations of the sectors of St. Mary's Basilica;

1–18 – sectors / positions numbers according to figure 2; artistic forms: Sc – sculpture, P – polychrome, WP – wall painting, Sg – stained glass; way of presenting the floral motif: r. – realistic, sy. – symbolic, st. – stylised; plant parts: f – leaf, c – flower, p – fruit, b – branches

Plant motifs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	Presbitery	Cyborium	Altar with a crucifix	Chapel of St. John Nepomucene	Chapel of St. Valentine	Chapel of St. Lazarus	Chapel of Our Lady of Czeszochowa	Chapel of St. Anthony	Chapel of Our Lady of Loreto	Chapel of St. John the Baptist	Chapel of St. Lawrence	Chapel of the Transfiguration	Altar of St. Stanislaw	Altar with a painting of the Annunciation	Epitaph of bishop James Janszowicz	Altar of St. Sebastian	Fogelweder Stalls	Altars of St. Simon and St. Jude Thaddaeus	
1. <i>Thuja</i> sp.	Sc st. b	-	-	-	-	-	-	-	-	-	WP st. b	-	-	-	-	-	-	-	
Cupressaceae																			
2. <i>Chelidonium majus</i> L.	Sg st. f	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3. <i>Papaver</i> sp.	WP st. c	-	Sc st. c	WP st. c	Sc r. c	-	-	-	-	-	WP st. c	Sc st. c	-	-	-	Sc st. c	-	-	
Papaveraceae																			
Lauraceae																			
4. <i>Laurus nobilis</i> L.	-	-	-	-	Sc st. f	-	-	-	Sc st. f	WP sy. f	Sc st. f	-	-	-	-	-	-	-	
Fagaceae																			
5. <i>Quercus</i> sp.	WP st. b, f; Sg st. f	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Caryophyllaceae										
6.	<i>Dianthus</i> sp.	-	-	-	-	Sc r. c	-	-	-	Sc r. c
Paeoniaceae										
7.	<i>Paeonia</i> sp.	-	-	-	WP st. c	-	-	-	-	Sc/P st. c
Malvaceae										
8.	<i>Alcea</i> sp.	-	-	-	-	-	-	-	-	Sc/P st. c
9.	<i>Hibiscus</i> sp.	WP st. c	-	-	-	-	-	-	-	-
Buxaceae										
10.	<i>Buxus</i> sp.	-	-	-	WP st. b	-	-	-	-	-
Ericaceae										
11.	<i>Vaccinium vitis- idaea</i> L.	-	-	-	-	-	-	WP st. p	-	-
Rosaceae										
12.	<i>Armeriaca vulgaris</i> L.	-	-	-	-	-	-	-	Sc st. p	-
13.	<i>Cerasus</i> sp.	-	-	-	-	Sc st. p	-	-	-	Sc st. p
14.	<i>Crataegus</i> sp.	WP st. f	-	-	-	-	-	-	-	-
15.	<i>Malus</i> sp.	WP st. p	-	-	-	Sc st. p	-	-	-	Sc/P st. p
16.	<i>Persica vulgaris</i> Mill.	-	-	-	-	Sc st. p	-	-	-	Sc st. p
17.	<i>Potentilla</i> sp.	WP st. f.	-	Sc st. c	WP st. c	-	Sc st. c	WP st. c	Sc st. c	-

18. <i>Prunus</i> sp.	-	-	-	-	-	-	-	-	-	Sc st.p	-	-	-
19. <i>Pyrus</i> sp.	-	-	-	-	-	-	-	-	-	Sc st.p	-	-	-
20. <i>Rosa</i> sp.	Sg st.c; Sc st.c	-	Sc st.c	WP st.c	Sc r.c	Sc st.c	-	WP st.c	Sc st.c	-	-	Sc st.c	Sc st.c
21. <i>Rubus idaeus</i> L.	-	-	-	-	-	-	-	WP st.p	-	-	-	-	-
Fabaceae													
22. <i>Trifolium</i> sp.	WP st.f	-	-	-	-	-	-	-	-	-	-	-	-
Linaceae													
23. <i>Linum</i> sp.	-	-	Sc st.c	-	-	Sc st.c	-	-	-	-	-	Sc st.c	-
Geraniaceae													
24. <i>Pelargonium</i> sp.	WP st.f,c; Sc st.f	-	-	-	-	-	-	-	-	-	-	-	-
Lythraceae													
25. <i>Punica granatum</i> L.	WP st.p	-	-	-	-	Sc st.p	-	-	-	-	-	Sc st.p	-
Vitaceae													
26. <i>Vitis vinifera</i> L.	WP,Sc st.f,p	-	Sc st.f,p	-	-	-	-	-	Sc st.f,p	-	-	-	-
Oleaceae													
27. <i>Olea europaea</i> L.	-	Sc r.f,p	-	-	-	Sc st.f,p	-	-	-	-	-	-	-

Gentianaceae															
28.	<i>Gentiana</i> sp.	Sc st. c	-	-	-	-	-	-	-	-	-	-	-	-	-
Caprifoliaceae															
29.	<i>Viburnum</i> sp.	WP st. p	-	-	-	-	-	-	-	-	-	-	-	-	-
Boraginaceae															
30.	<i>Myosotis</i> sp.	WP st. c	-	-	WP st. c	-	-	-	WP st. c	WP st. c	-	-	-	-	-
Acanthaceae															
31.	<i>Acanthus</i> sp.	WP, Rz st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f	Sc st. f
Campanulaceae															
32.	<i>Campanula</i> sp.	WP st. c	-	-	-	Sc st. c	-	-	-	-	-	Sc st. c	-	-	Sc/P st. c
Asteraceae															
33.	<i>Bellis perennis</i> L.	-	-	-	WP st. c	-	-	-	-	-	-	-	-	-	-
34.	<i>Dahlia</i> sp.	-	-	-	WP st. c	-	-	-	-	-	-	Sc st. c	-	-	-
35.	<i>Dendranthema</i> sp.	WP st. f, c	-	-	Sc st. f, c; st. f	-	-	-	-	-	-	Sc st. c	-	-	-
36.	<i>Helichrysum bracteatum</i> (Vent.) Andrews	-	-	-	-	-	Sc st. c	-	-	-	-	-	-	-	-
37.	<i>Leucanthemum vulgare</i> Lam. s. str.	-	-	-	-	Sc r. c	-	-	-	-	-	Sc st. c	-	-	-
Colchicaceae															
38.	<i>Glorioza</i> sp.	WP st. c	-	-	-	-	-	-	-	-	-	-	-	-	-

		Liliaceae																	
39.	<i>Fritillaria meleagris</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40.	<i>Lilium</i> sp.	WP sy, st. c; Sc st. c	-	-	Sg st. C; WP sy, st. c	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	
41.	<i>Tulipa</i> sp.	WP st. c)	-	-	-	-	-	-	-	Sc st. c	-	-	-	-	Sc r. c	-	-	Sc st. c	
		Poaceae																	
42.	<i>Triticum</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sc r. o	
		Arecaceae																	
43.	<i>Phoenix dactylifera</i> L.	Sc st. b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Motifs of different parts of plants																	
	Nr sektorów/ stanowisk	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.	thorns	-	-	Sc sy.	-	-	Sc sy.	-	-	-	-	WP sy.	WP sy.	-	-	-	-	-	-
2.	tree	Sc st.	-	-	-	-	-	-	-	-	WP st.	-	-	-	-	-	-	-	-
3.	flower	WP st.	-	-	WP st.	Sc st.	Sc st.	-	-	-	-	-	-	-	-	-	-	-	-
4.	Pods	-	Sc r.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	triple leaf	WP sy.	-	-	WP sy.	-	-	-	-	-	-	-	-	-	Sc sy.	-	-	-	-

Tab. 2. Christian symbolism of plants noticed in the ornamental motifs of St. Mary's Basilica in Kraków

Successive number	Plants	Christian symbolism
1.	<i>Thuja</i> sp.	Branches are considered a symbol of happiness and longevity.
2.	<i>Chelidonium majus</i> L.	It is not known.
3.	<i>Papaver</i> sp.	Symbol of sleep, death, shed blood.
4.	<i>Laurus nobilis</i> L.	The laurel wreath is a victory and a dignity of power; the wreath with the monogram of Christ means triumph over death.
5.	<i>Quercus</i> sp.	The habit of the tree and the durability of wood is a symbol of strength; it also means a place sanctified by God's presence and God's great power – it is a tree of life and immortality.
6.	<i>Dianthus</i> sp.	Carnations mean purity and motherly love as well as the spiritual relationship between Christ and Mary; the red flower is a symbol of Christ's passion and pure and true love.
7.	<i>Paeonia</i> sp.	The flower is a symbol of Mary or St. Jan; considered a symbol of embarrassment and innocence.
8.	<i>Alcea</i> sp.	It means pain, mercy, a request for forgiveness.
9.	<i>Hibiscus</i> sp.	In Christian symbolism, it has a similar meaning as a rose.
10.	<i>Buxus</i> sp.	In Christianity, it symbolises the hope of salvation and immortality.
11.	<i>Vaccinium vitis-idaea</i> L.	Fruits are a reflection of offspring, the virtues of interior life.
12.	<i>Persica vulgaris</i> Mill.	The fruit symbolises the virtues of the interior life, Christ, the artistic work of man, the offspring of mankind.
13.	<i>Cerasus</i> sp.	Like the fruit of blueberry, raspberry, hawthorn, peach and apricot.
14.	<i>Crataegus</i> sp.	Like the fruit of blueberry, raspberry, cherry, peach and apricot.
15.	<i>Pyrus</i> sp.	Like the fruit of blueberry, raspberry, cherry, peach and apricot.
16.	<i>Malus</i> sp.	An apple fruit symbolises Christ, overcoming sin, eternity, marriage, and in the mouth of the snake or the hands of the devil means sin and even death.
17.	<i>Rubus idaeus</i> L.	Like the fruit of blueberry, cherry, peach and apricot, hawthorn.
18.	<i>Armeniaca vulgaris</i> Lam.	Like the fruit of blueberry, cherry, peach and apricot, hawthorn.
19.	<i>Potentilla</i> sp.	A flower with 5 petals of the crown is five wounds of Christ; occurs in the descriptions of the crucifixion of Christ.
20.	<i>Rosa</i> sp.	Flower means fiery love; a white rose hung from the ceiling meant silence; is the attribute of the Virgin Mary; is an image of the shed blood of Christ; 5 rose petals symbolise (like a cinquefoil) the 5 wounds of Christ.
21.	<i>Prunus</i> sp.	The branches of plum are made of thorns crowns, which are a symbol of the passion of Christ, as well as suffering and hope.
22.	<i>Trifolium</i> sp.	The leaf is a symbol of the Holy Trinity; it also means happiness and life.
23.	<i>Linum</i> sp.	Flower is patience, purity, innocence, steadfastness of customs, simplicity and even holiness.

- | | | |
|-----|---|---|
| 24. | <i>Pelargonium</i> sp. | It is not known. |
| 25. | <i>Punica granatum</i> L. | The pomegranate is synonymous with resurrection, purity and compassionate love; red means – flaming love, a sign of blood and death, cracked fruit – emblem of “ <i>bonus frater</i> ” monks, clay fruit on the tombs – this is the hope of future life, the fruit crowning the column – it is rebirth, power and life. |
| 26. | <i>Vitis vinifera</i> L. | Vine shoots are a symbol of heavenly bliss, leaves are life, Eucharist grapes, paradise; grape juice is the blood of Christ, and the grape on the bush means Christ on the cross. |
| 27. | <i>Olea europaea</i> L. | Mother of God attribute and in the scenes of the Annunciation; means blessing and harvesting a time of peace, a just man, a holy tree, eternal wisdom, the chosen people, reconciliation, peace and forgiveness; the olive branch is a symbol of Christ's merciful love, reconciliation and peace. |
| 28. | <i>Gentiana</i> sp. | It is a symbol of bitterness and regret. |
| 29. | <i>Viburnum</i> sp. | The viburnum shrub is a symbol of rebirth, fruit like blueberry hawthorn and others. |
| 30. | <i>Myosotis</i> sp. | Sincere love, faithful memory and naive simplicity. |
| 31. | <i>Acanthus</i> sp. | Acanthus thorns is a symbol of suffering and pain, and the leaves themselves for moral virtues, impermanence and fragility of life, the passing of the world and human life. |
| 32. | <i>Campanula</i> sp. | Bell flowers are called the hats or thimbles of the Mother of God; combined with the Mother of God, and mean persistence. |
| 33. | <i>Dendranthema</i> sp. | Flower for the ‘dead’; symbol of faith and hope in the resurrection. |
| 34. | <i>Dahlia</i> sp. | The red flower is the equivalent of a rose, hence it has a similar symbolism as a rose. |
| 35. | <i>Helichrysum bracteatum</i> (Vent.) Andrews | It means immortality and perseverance. |
| 36. | <i>Bellis perennis</i> L. | Eternal youth. |
| 37. | <i>Leucanthemum vulgare</i> Lam. | A symbol of great joy, but also the suffering and death of Christ and martyrs. |
| 38. | <i>Gloriosa</i> sp. | It means wonderful, full of glory, hence the symbolism similar to that of lilies. |
| 39. | <i>Lilium</i> sp. | Mary's most important attribute; emphasizes virtues and innocence, means the Body of Christ, purity, soul striving for God, faithful soul, virginity, royal dignity, Church of the Blessed Virgin Mary, transience, the word of God, light. |
| 40. | <i>Fritillaria meleagris</i> L. | Similar like a lily. |
| 41. | <i>Tulipa</i> sp. | Similar like a lily; also means good name. |
| 42. | <i>Triticum</i> sp. | The ear of grain is God's Kingdom, the mysteries of Jesus and the resurrection; Christ is likened to an ear; threshing and sieving grain symbolises the Last Judgment; the seed means Christ and the resurrection, and the ear of the Blessed Virgin Mary. |
| 43. | <i>Phoenix dactylifera</i> L. | The palm branch symbolizes the tree of life, eternal award, triumph, sign of adoration, victory, Christ's victory over hell, a life that does not die, and the branch on the tombstone means martyrdom. |

Abstract

The aim behind this analysis was to identify the plants which are the floristic motifs of ornaments inside of Church of Our Lady Assumed into Heaven in Kraków. The art techniques used in ornaments submitted to the analysis were: paintings, sculptures and stained glass-works. The analysis was based on the photographs of various parts of the St. Mary's Basilica taken between 2017 and 2018. Identified species of plants were presented in the table. In the analysis performed here, the author was focused on the symbolism of chosen floral art motifs, since the artist's botanical knowledge was not the only inspiration for utilising such decorations. Due to its symbolism, the motif of flowers was commonly used in the religious art, highlighting the dignity and majesty of this beautiful place of worship. Even though the meaning of plants as a symbol often depends on the cultural basis in which the work is done, there are some examples of plants that are widely known as religious symbols by everyone.

Key words: floral motifs, wall painting, stained glass, sculpture, plant symbols

Received: [2019.05.20]

Accepted: [2019.11.10]

**Inspiracje roślinne w motywach zdobniczych
Bazyliki Mariackiej w Krakowie (Polska)****Streszczenie**

Celem niniejszej analizy była identyfikacja motywów roślinnych występujących w wewnętrznych zdobieniach Kościoła Archiprezbiterialnego Wniebowzięcia Najświętszej Marii Panny w Krakowie. Ujęto tu następujące formy artystyczne: malowidła, rzeźby, witraże. Przegląd przeprowadzono w oparciu o fotografie wykonane w różnych częściach Bazyliki Mariackiej w latach 2017/2018. Zidentyfikowane gatunki roślin zostały zestawione tabelarycznie. W przeprowadzonej tu analizie skupiono się również na znaczeniu symbolicznym wybranych motywów roślinnych, ponieważ nie tylko wiedza botaniczna artystów była inspiracją w umieszczaniu tego rodzaju zdobień. Częstym bodźcem była powszechnie stosowana w religii symbolika roślin, co jeszcze bardziej podkreślało powagę i majestat tego pięknego miejsca kultu religijnego. Mimo, iż symbolika roślin zależy ogólnie od podstaw kulturowych, w których dzieło powstało, to niektóre rośliny są powszechnie znanymi i czytelnymi dla wszystkich symbolami religijnymi.

Słowa kluczowe: motywy roślinne, malarstwo ścienne, witraże, rzeźba, symbole roślin

Information on the author**Adriana Brišová**

She was a student at the Department of Botany of the Pedagogical University. He is interested in floral motifs in different decorations. He is an avid biology teacher.