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## Medications of medieval monastery medicine

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## **Abstract**

Herbal medicine has accompanied man since the dawn of time. For various ailments and health problems, help was sought in the surrounding nature. Ancient civilizations have greatly contributed to the development of phytotherapy, identifying and describing numerous species of medicinal plants. Plant raw materials have become the foundation of medieval medicine. The revival in herbal medicine has been observed since the sixth century with the emergence of monasteries, where the gardens in which the medicinal plants were grown were established. Monastic schools were also established, monks broadened their skills by studying and copying ancient books, preparing medicines of natural origin according to secret prescriptions used to heal the sick. Although the Middle Ages are often considered dark ages, many achievements of the then phytotherapy have been recorded on the pages of history and a man use them to this day.

**Key words:** monastic medicines, Middle Ages, monks, herbal medicine

## **Introduction**

From the very beginning, man has sought for a solution of his health problems in holy places or in the surrounding nature, and the causes of diseases were seen in the dislikes of gods and spirits, and the magicians acted as intermediaries. In antiquity many different plant materials have been known and widely used in medicine. Since the earliest times more and more curative properties have been learned about plants, moreover, herbal treatment is almost as old as humanity. Information on the use of plant materials for the treatment of various diseases by Jews can be found in the Bible, where eighty species of medicinal plants are mentioned, the best known are: aloe vera, hyssop, or ivy. The relationship between religion and medicine is also emphasized, when God says: "I am the Lord, your Healer" (Ex 15:26), or the prophet Ezekiel speaks of trees in the Promised Land: "Their fruit will be used for food and their leaves for medicine"(Ezek. 47:12)[1,2]. Many ancient intellectuals dealing with medicine and herbs could be mentioned, the last great figure of ancient times associated with herbal medicine was Galen. Unfortunately, the period of the early Middle Ages was a stagnation in the development of medical science. The feudal system contributed to the decline of agricultural production, craft and trade, as well as to hamper the development of science. It was not until the sixth century AD that gradual intellectual development was noticeable, which within the

contemporary era was inextricably linked with the clergy, because they formed the core of cultural and scientific life. It was they who, as a few, mastered the art of reading and writing. There were still items reaching roots of the ancient world in monastery libraries, containing numerous achievements in medicine, or ancient phytotherapy, which were copied and the precious knowledge was absorbed. A revival of herbal medicine was also observed with emerging monasteries, where gardens, in which medicinal herbs were grown, were simultaneously established, becoming the first therapeutic gardens. At the monasteries also shelters, hospitals and hospices were established. [1,3,4]. Benedictines from the monastery on Mount Monte Cassino, built in 529, which is a symbol of monastery medicine, as well as monks from other emerging monasteries, popularized the cultivation and collection of medicinal plants, so they were found in the gardens known to every European. The constituent chapter, a peculiar legal act, was developed on the basis of Roman and Greek writings probably in 812 by benedict Ansegis, abbot of the Sankt Wandrille monastery. The document contained recommendations for tenants of royal properties in regard to the cultivation of agricultural and horticultural crops, including medicinal species. To this day, the plans of the monastery in St. Gallen founded in the ninth century have been preserved as an autonomous community open to guests and pilgrims from the world, but also carefully protecting the privacy of monks, moreover containing objects intended for health care including the garden. One can see on them, among others, herbarium, hospital, doctor's office, blood-letting room, pharmacy, or a garden with a description of plants[5,6]. The first documented description of 23 species of medicinal plants with their impact on humans, under the title: "Hortulus" (garden) was made by Walafrid Strabo (809-849). In the eleventh century, monks even were recommended to study the works of Hippocrates, Dioscorides and Galen. They began to return to the rich experiences of previous generations, gathering knowledge about folk medicine. In the light of the above-mentioned facts, one can speak about the emergence of monastery medicine and pharmacy, and there were monastic pharmacies run by clergy, where natural medicines were prepared according to secret prescriptions. At the same time, people forgot to study the Bible and hygienic injunctions recorded in the books of the Holy Bible. The result of the hygiene deficiency was a spreading plague called "miasma" and according to the chronicles in the 14th and 15th century AD, up to a quarter of the population was victims to this plague. Johannes Gutenberg (1394-1468) also contributed to the significant popularization of knowledge through the invention of printing. Herbariums were printed as textbooks for doctors, the first of which was *Herbarium*, and in 1485 a German one entitled *Herbarius* was issued. Over time, engravings appeared in released herbariums, which further facilitated the identification of medicinal plants. The decline of the

Middle Ages manifested itself in a specific fashion for herbaria, many doctors in the fourteenth century wrote herbariums, for example Johannes from Milan, John Arderne from England, or the titular bishop of Sarepta from Wroclaw. However, the best herbarium is considered *Liber de simplicibus* arranged by Benedetto Rinio in Venice in 1410, containing 450 engravings of the Venetian artist Andreas Amodio[3,7]. It should be noted that the period of cloister medicine should be considered finished at the Synod in Clermont in 1095, when a medical activity of clergy was forbidden, but monks were still able to cure with herbs, which they willingly did[4].

### **God created herbs. Monks', alchemists', quacks' activity**

In the Middle Ages, it was believed that God created herbs to serve human beings, which is why herbalism was an inseparable element of monastic life. At this point, it should be emphasized that monks and nuns used the knowledge of earlier cultures during the preparation of recipes. Already on Sumerian tablets it was discovered that mixtures, tinctures and powders were made more than 5,000 years ago. The Assyrians and the Babylonians, as a result of their observations, developed a calendar, principles of cultivation and harvesting of plants as well as storage of a raw plant material. Descriptions of many active substances were found in the Egyptian papyri, and when building pyramids, workers ate onions and garlic to minimize the risk of outbreaks. A wealth of knowledge was also drawn from India, to whom we owe many spices (cumin, pepper, cardamom, cloves, ginger), as well as a medical and philosophical system - Ayurveda. A very important foundation for medieval monks was the output of ancient Greeks and Romans. Worth mentioning is Hippocrates from Kos (460-377 BC), who described the healing properties of several hundred plants, developed many recipes, and created the foundations of medical ethics, and the young doctors make the Hippocratic oath to this day. The specific canon of plant pharmacy is the work of Dioscorides (40-90): *De materia medica libri quinque*, and on the basis of this work that European monastic herbal medicine was developed. The author collected plants himself, learned and described their healing and toxic properties. Another well-known person associated with herbal medicine was Claudius Galenus from Pergamum (130-210), who described more than 450 plants and discovered, for instance the narcotic effect of poppy and antidiarrhoeal properties of buckeye. The formulas elaborated by Galen had been used by medicine for fifteen consecutive centuries, and the definition of galenic preparation continues to this day. Arabs have made a remarkable contribution to the development of herbal medicine, introducing new forms of medicine: syrups, aromatic waters and medicinal spirits, and began to grow exotic plants in the Mediterranean, conducted first animal drug experiments, created the first pharmacy in Baghdad and separated pharmacy from

medicine. The father of contemporary medicine is Avicenna (980-1036), who described 760 medicines of plant origin and 800 various species of medicinal plants, and his *Canon of medicine* was a compulsory textbook for doctors in Poland until the eighteenth century. In the Middle Ages, alchemy was believed, therefore the focus was put on finding one magic potion that would cure all diseases and prolong life, moreover alchemists tried to convert common metals into gold using a mythical stone of philosophy. Alchemists were also involved in the isolation and purification of various substances (by distillation, extraction, dissolution, precipitation, filtration and crystallization), what led to discoveries of numerous salts that have been used in medicine. Not everyone, however, had access to exclusive monastic infirmary. Simple people were suspicious of a priesthood, and often they could not afford to buy medicines in monastic pharmacies. Therefore, parallel to monastery medicine, folk medicine developed, saturated with magic, described as a secret and dark art mastered by age-old people experienced in using herbs called healers, magicians or sorcerers[1,2,8,9].

### **The monastery gardens and pharmacies, the gracious Benedictines, and the famous herbalist**

At the Benedictine monastery in Monte Cassino, a symbol of medieval monastery medicine, the monks cultivated numerous medicinal plants and collected them in natural locations. Founder of the Benedictine order, Saint. Benedict of Nursia (480-547), attached great importance to care for the sick, which he also emphasized in the rule of the Order, devoting one chapter to the spiritual aspect of the service of the sick, citing Christ's words: "Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me" (Mt 25:40). Christianity changed the approach to the sick and weak people, because in the Greek-Roman culture it was believed that the suffering people deserved such a fate. The mission of the founder of the Order was continued by Aurelius Cassiodorus (485-580), who attached great importance to studying and saving ancient works. For this purpose he founded the Vivarium monastery in 538, where the Benedictines managed to find, preserve and rewrite old manuscripts in order to convey the cultural heritage of the ancients for posterity. He also wrote his own work - *De medicina*, where he described the duties of the infirmary brothers, and encouraged the monks to conduct their own research on a raw plant material, which influenced the development of recipes. According to Saint. Benedict, every convent was to be self-sufficient. Traditional monastic gardens have always had a usable character and provided the community of monks with supply of fruit, vegetables, flowers, healing herbs and spice plants. However, their layout was changing, so that a usable garden (hortus) and herb garden

(herbarium) intended for cultivation of medicinal plants could be distinguished. The herbs were grown on rectangular beds, in accordance with the principle that one patch would contain one species of plant for the preservation of the species and minimizing the risk of mistakes. Herbariums elaborated in the convent scriptwriters played a particularly important role in the development of healing. They were not only a record of the recipes of the medicines being prepared, but also a model for the way the monastery gardens were developed. A great translator of natural works was Constantine the African, a Benedictine from monastery, in which a medical school was also established. In the eleventh century, the Benedictines also founded the Salernitan School, in which the abovementioned Constantine the African was a teacher. The work of this school is: *Regimen Sanitatis Salernitanorum*. It has become the basis for the indications of folk medicine and information about medicinal plants.

Saint Hildegard (1098-1180) was a Benedictine abbot in Bingen, called "the first woman doctor and first woman scientist", the author of the six rules of life contained in the *Liber subtilitatum*, as well as books on the practical use of herbs, among others *Causae et Curae and Phisica*, where she described over 250 species of plants taking into account their healing and nutritional values, as well as the composer. She was a representative of the holistic medicine, perceiving man as a functioning essence in four dimensions: divine, cosmic, carnal and spiritual. Hildegard's works were little known during her lifetime, and her worship developed only after her death, and her therapeutic and nutritional recommendations find followers to the present day[2,10,11].

### **Plants the foundation of medieval medicine**

Phytotherapy was the basis of medieval medicine. The plants grown in the monastery gardens were collected by monks and kept in special rooms, which gradually became monastic pharmacies. The raw materials were cut, crushed in a mortar and mixed together. Herbal mixtures were made up of about hundreds of ingredients, some are known to this day, for example, Benedictine tincture. Other forms of medicines were also prepared, such as: ointments, extracts, decoctions. The monks treated the local population and were real specialists in the field of herbal medicine. Wine was used as a disinfectant, moreover, it was also an effective medicine for many ailments with the addition of fresh or dried herbs. Each discovered herb was given a name adequate to its sacred properties, and for example St John's wort was called "the bells of the Virgin Mary" and the valerian "herb of Saint Claire". Plants were to be not only the basic source of food, but also a source of knowledge of God Himself, their cultivation was supposed to bring man closer to God. Growing plants in gardens, on specially

prepared locations, had a significant impact on the healing therapy, because the problem of seasonal availability of herbs collected from natural sites was over. In consequence, adequate stocks were made and it was possible to standardize the raw material, for example due to established cultivation conditions[2,10].

The basic "medical kit" consisting of 28 herbs of St. Hildegard was made of among others: galgant alpinia, basil, mugwort, horseradish, cinnamon, summer savory, garlic, nutmeg, mustard, gentian, cloves, hyssop, ginger, dill, bay leaf, lovage, garden orache, peppermint, pepper, parsley, nettle, watercress, sage, chives and tansy. Hildegard of Bingen in everyday living also used: chickpeas, greater celandine, artichoke, fennel, carrot, oregano, origanum, parsley, purslane, watercress, cress pepper, celery, lentils, gourd, spurge and wax myrtle[12].

Herbs grown in the Middle Ages were divided into utility groups. The species used in everyday life included, among others: southernwood, sapling, hops, mullein, stemless carline thistle, juniper, common soapwort, wormwood, cotton thistle and common broom. Some healing species are: St John's wort, red scarlet, valerian, licorice, mallow, marshmallow, tansy and common comfrey. There were relatively few aromatic plants: iris, blue cupid, true lavender, melissa, verbena, filipendula and tansy. For culinary purposes: small-leaved basil, winter savory, valerian and chives were used. The herbs used by medieval artists included: boxwood, common bugloss, greater celandine, dyer's weed, madder, common agrimony, gallium verum, woad and moonflower. Plants that were supposed to provide love and marriage are: agnus castus, columbine meadow-rue and wild strawberry. The most important group were magical plants: common lady's mantle, ragged robin, common ivy, cornus mas and herb Robert[10].

## **Summary**

Medieval times are considered dark ages, also in the field of medicine. However, thanks to the monks ancient works were not only copied and protected from destruction, but above all, studied thoroughly, what contributed to development of knowledge about herbal medicine and led to optimizing, as well as creating new recipes for herbal medicines. A great deal of the medieval knowledge is used today, especially in the world of many synthetic drugs with numerous adverse effects. In the modern world, people often go back to the roots, so there is a growing interest in the use of herbs in pharmacy and medicine. Under medical control, phytotherapy can be a valuable complementary therapy or can be used instead of standard pharmacotherapy based on synthetic drugs. On the basis of the above historical facts, one can definitely say that in the Middle Ages monastic medicine and pharmacy was created, with many elements present to this day.

## Conflict of interest

None

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