

## HEALING WITH PLANTS AND THERMAL SPRINGS

Herbal treatment of the urinary system diseases based on 16<sup>th</sup> and 17<sup>th</sup> century herbals in PolandJanusz Ostrowski<sup>1,3</sup>, Boleslaw Rutkowski<sup>2,3</sup>(1) 3<sup>rd</sup> Department of Internal Medicine and Nephrology, Specialist Provincial Hospital, Wloclawek, Poland

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## Abstract

The medicinal use of herbs is a principal achievement of human ingenuity. The most renowned doctors of antiquity: Hippocrates, Dioscorides, Theophrastus, Pliny the Elder and Galen mentioned herbs in their works. The first printed herbal was published in Mainz in 1485. Outstanding scientists e.g. Otto Brunfels, Hieronymus Bock, Leonard Fuchs and Andrea Mattioli published herbals in the 16<sup>th</sup> century. Polish doctors also contributed to the development of herbal treatment. The first work: "Of Herbs and their Potency" by Stefan Falimirz, published in 1534, triggered other publications in the 16<sup>th</sup> century, the "age of herbals". In 1542, Hieronymus Spiczynski published a herbal: "Of Local and Overseas Herbs and their Potency...". Then, in 1568, Marcin Siennik published his: "Herbal, which is the Description of Local and Overseas Herbs, their Potency and

Application...". In 1595, Marcin of Urzedow published: "The Polish Herbal, the Books of Herbs...". Completed in mid-16<sup>th</sup> century, it was only published 22 years after his death. The last work discussed is "Herbal Known in Latin as..." published in 1613 by Simon Syrenius - a graduate of Ingolstadt and Padua universities and lecturer at the Academy of Krakow. The work was Europe's most complete elaboration on herbal treatment. The herbs described in the herbals worked as diuretics, demulcents, analgesics, relaxants and preventives of kidney stones. Published in Polish, they are still to be found in Poland. All the works presented herein are held by the Library of the Seminary of Wloclawek, and the Ossolinski National Institute in Wroclaw.

**Key words:** 16th -17th century medicine, herbal treatment, Poland, urinary system diseases

## Introduction

Natural medicines, chiefly in the form of medicinal plants, remained the only therapeutics available to a practicing doctor for centuries. The use of plants and their preparations in medicine seems to be one of the oldest achievements of the human ingenuity. The ability to store medicinal plants dates back as far as four thousand years BC and is traced to the Sumerian culture thriving in the Tigris and Euphrates valley. Moving further on the axis of time, we learn about herbal treatment from Ancient Egyptian papyri with that of Ebers as the most prominent one, which is an interesting source of nearly 900 recipes composed mainly of herbs.

Egypt and Europe by no means were the only places where herbal treatment flourished as the Eastern Medicine of Ancient India and China was also largely founded on herbs and medicinal plants. Coming back to the Old World, however, one must not omit the greatest Greek doctor of antiquity - Hippocrates of Kos who, in his work *Corpus Hippocraticum*, gave a description of approximately 300 medicines based on plants. Following in his footsteps, another Greek physician of the Roman period - Dioscorides - described 600 herbal medicines in his *De Materia Medica*. Interestingly, this work served as a medical course book at medical universities up to the 16<sup>th</sup> century. It was early in the 2<sup>nd</sup> century AD when Galen of Pergamon created a new discipline in pharmacy known as *Galenic system*, which is the science of preparing medicines from fresh plants or

dry herbs. One century later, the famous Roman compiler, Pliny the Elder, wrote his natural encyclopedia *Historia Naturalis Libri* where he discussed no fewer than 1000 plants and methods of producing medicines from them. Other outstanding contemporaries were Scribonius Largus and Cornelius Celsus with his *De Medicina Libri Octo* [1] [2].

The period following Galen saw a decline in the popularity of herbal treatments and it was not before the Middle Ages when orders, especially those of Saint Benedict and Cistercians revived this method. In the 10<sup>th</sup> century, the Salerno Medical School emerged with its most renowned booklet written in Latin: *Regimen Sanitatis Scholae Salernitanae* dedicated to the King of England Richard I, the Lionheart. The work, which provided advice on the application of medicinal plants and herbs, was translated into Polish by Hieronymus Olszowski in 1640. Later, in Renaissance, the legendary Paracelsus added no small input by developing his doctrine of signatures and the arcana. Two groundbreaking events at the dawn of renaissance, the invention of the printing press by Guttenberg and the discovery of America by Columbus, triggered a surge of authors of great herbals including Prospero Alpini, Otto Brunfels, Hieronymus Bock, Leonard Fuchs, Andrea Matthioli and Carl Clusius [3] [4] [5].

Closer to modern times, in the 19<sup>th</sup>, and especially in the 20<sup>th</sup> century, rapid development of chemistry brought along an explosion of chemotherapeutic medicines and the pharmaceutical industry as such.

Consequently, especially with the wake of antibiotic therapy, many thus-far-incurable diseases stopped claiming their toll.

Polish doctors and researchers also left their mark in the development of herbal treatment in the 16<sup>th</sup> and 17<sup>th</sup> centuries. The first work on medicinal plants to be published in Poland was *De Herbarium Virtutibus* by Emiliusz Macer, originally written in the 12<sup>th</sup> century but later edited by Simon of Łowicz and released in 1532 and 1537. The significance of the work rests in the fact that it was the first publication to contain the Polish names of plants. Remarkable as it may be, however, this work shall not be considered in detail in this article. By contrast, we wish to concentrate on herbals in the chronological order of appearance by: **Stefan Falimirz**, out in Krakow in 1534, **Hieronymus Spiczynski's** *On Local and Overseas Herbs and their Potency*, out in 1542 and serving as a supplement to Falimirz's work, **Marcin Siennik's** *Herbal, that is the Description of Local and Overseas Herbs*, out in 1568 in Szarfenberg's printing house in Krakow, **Marcin of Urzedow's** *Polish Herbal*, out in 1595 in *Officina Lazari* in Krakow and **Simon Syrenius'** *Herbal Known in Latin as ....*, published in 1613 also in Krakow [6] [7] [8] [9] [10].

### Stefan Falimirz

The work by Stefan Falimirz is the oldest Polish herbal translated from Latin. The author, who was a botanist, doctor, translator and editor lived and worked in the early 16<sup>th</sup> century. His skills and knowledge won him a respectable position at the

court of the Podolia Voivod Jan Tęczyński in Kraśnik. His work *Hortus Sanitatis on Herbs and their Potency* proved to be a bestseller and, following Florian Unglers advice, it was revised and released several times. The herbal includes numerous woodcut images depicting medicinal plants, three of which relate to urinary system diseases and have been selected for a closer consideration. These are: genista, valerian and pine. According to Falimirz, genista has diuretic, "stone-crushing" and anti-gout properties. Valerian works as a diuretic and pine can be used as a disinfectant [11] [12] [13] (Figure 1).

### Hieronymus Spiczynski

Hieronymus Spiczynski was born at some point before 1500 in Wielun, Poland. In 1517 he joined the Krakow Academy but never finished his education there which did not stop him from being a patrician and member of the city council in Krakow. Being a remarkably versatile man he was known to be knowledgeable in such areas as medicine, nature and astronomy. On top of that, he was also a poet and a translator. As such, he is renowned for being the first translator of the Bible from Latin into Polish and a possible translator of the works of the famous Erasmus of Rotterdam. Hieronymus Spiczynski died in Krakow in the summer of 1550. From the rich reservoir of herbs described in his work three have been selected: anise, chamomile and calamus. These herbs have diuretic (wild ginger), relaxing and disinfecting (chamomile) and diuretic and analgetic (calamus) properties [14] (Figure 2).



Figure 1.  
Title page of Stefan Falimirz's work (left) and page presenting genista (right) (courtesy of the Old Prints Dept. at the Ossolinski National Institute in Wroclaw, Poland)



## Marcin Siennik

Born into a bourgeois family in the early 16th century, Marcin Siennik never studied medicine or any other science. This, however, did not stop him from mastering a number of languages such as German, Italian, Hebrew and Latin. Siennik died in Krakow in 1588. His work was in fact a remake of Spiczyński's herbal and comprised over 600 pages with the descriptions of more than 800 plants. In order to facilitate navigation through the herbal Siennik added an index of the diseases and medicines mentioned in the book. The list of herbs was prepared in Polish, German and Latin. The herbs which Siennik regarded helpful in the treatment of urinary system diseases included wild ginger, artemisia and parsley. All of them can work as diuretics, additionally parsley can help in cases of kidney stones and artemisia has relaxing properties [15] (Figure 3).

## Marcin of Urzedow

In the Pantheon of authors of Polish herbals there are also two graduates of the Universities in Krakow, Poland and Padua, Italy. The first one to be discussed here is Marcin of Urzedow. He was born around 1500 in Urzedow near Lublin, an important city renowned for its enlightened citizens. Marcin of Urzedow started his education at the Krakow Academy, later the Jagiellonian University, in 1517 and graduated with a masters' degree eight years later. He must

have been a distinguished student as, following his graduation, he stayed at the University to teach physics, mathematics, logics and philosophy specializing in Aristotle. In 1532, he was appointed Dean and took priestly orders. Soon he set for Italy to study medicine and natural sciences at the University in Padua where, in 1538, he obtained the title of a doctor of medicine. He then travelled widely in Europe visiting Venice, Switzerland and Hungary. Having returned to his native Poland, he settled down in the town of Sandomierz and took on the position of a canon and ran the hospital organized by the Holy Spirit church. Apart from that, he was employed as court doctor to a number of the most distinguished Polish gentry and aristocracy. His life came to an end in 1573 in Sandomierz where he was buried in the local cathedral. It is worth mentioning that for many years Marcin of Urzedow was nicknamed the Polish Hippocrates by authors and scientists. Marcin of Urzedow's herbal contains the description of more than 600 plants and their medicinal properties. In his bibliography he included the names of no fewer than 54 philosophers and doctors whose works inspired the creation of his *opus magnum*. These renowned figures fell into two categories: "the old" ones (ancient), and "the new" ones (his contemporaries). The list includes such luminaries as Pliny the Elder, Plato, Aristotle, Hippocrates, Herodotus, Theophrastus, Dioscorides, Avicenna and others. Out of the many plants recommended by Marcin of



Figure 2. Title page of Hieronymus Spiczyński's work (left) and page presenting chamomile (right) (courtesy of the Old Prints Dept. at the Ossolinski National Institute in Wroclaw, Poland)



Urzedow to treat urinary system diseases three have been chosen for closer consideration: clove, fennel and consolida. The author's recommendation was to apply clove in case of renal stones, fennel if a diuretic or relaxing means was sought and consolida as a combination of the previous two [16] [17] [18] (Figure 4).

### Simon Syrenius

The other one is Simon Syrenius, author of the most voluminous botanical and medical work in Poland. Simon Syrenius was born in Oswiecim in 1540 and studied philosophy at the Krakow Academy. He continued his education in Ingolstadt, Germany and in Padua, Italy where he graduated from medical studies. Afterwards, he worked as a doctor in Lviv and, in 1588, moved back to Krakow to join the staff of the Academy and teach medicine. In 1602, after the establishment of one of the world's first departments of botany, Syrenius was appointed its Head. His *opus magnum*, the herbal, comprises 1584 pages and features the description and woodcut of as many as 765 plants, chiefly of medicinal kind, with the description of the method of preparation and intake results. The Swedish princess Anna Vasa, the granddaughter of the King Sigismund I the Old and Bona Sforza, nicknamed the "queen of Polish botany" had no small contribution in the creation of the Herbal by pro-

viding the necessary funds. Anna Vasa was probably the first author of a Polish herbal.

Out of about 1000 issues of the work, approximately 100 have survived until now in the libraries of the universities of Gdansk, Krakow, Warsaw, Wloclawek and others. Among the hundreds of plants described in the Herbal a few dozens were used in treatment of urinary system diseases as diuretics, anti-inflammatory and relaxing means. Six plants are selected to highlight their possible positive role in the treatment of the urinary tract. The most prominent plants to treat such diseases included: glycyrrhiza, lavender, iris, viola, betonica and cumulus.

All the above mentioned herbs display a number of medicinal properties. Glycyrrhiza is a disinfectant and relaxant and, additionally, preventing urolithiasis. Lavender, on the other hand, is a diuretic and renal stone "crusher", while viola has diuretic and disinfecting properties. Betonica disinfects and prevents the formation of kidney stones. Finally, humulus can be used as a disinfectant and diuretic [19] [20] [21]. (Figure 5)

Table 1 lists some of the herbs included in the Polish herbals from the 16<sup>th</sup> and 17<sup>th</sup> centuries discussed in the article and their particular indications for treatment of various symptoms accompanying the urinary system diseases.

The 18th century brought a number of distinguished figures in the field of herbal treatment. These in-



Figure 3. Title page of Marcin Siennik's work (left) and page presenting Artemisia (right) (courtesy of the Old Prints Dept. at the Ossolinski National Institute in Wroclaw, Poland)





**Figure 4.**  
Title page of Marcin of Urzedow's work (left) and page presenting consolida (right) (courtesy of the Old Prints Dept. at the Ossolinski National Institute in Wroclaw, Poland)



**Figure 5.**  
Title page of Syrenius' work (left) and page presenting glycyrrhiza (right) (courtesy of Seminary in Włocławek, Poland)

**Table 1.** Index of plants used for threatening pathologies of the urinary tract

Lp	Scientific name	English name	Reference	Therapeutical purposes					
				stones	analgetic	disinfectant	relaxing	anti-inflammatory	gout diuretic
1	Genista tinctoria	Genista	Stefan Falimirz	+	+				+
2	Valeriana off.	Valerian		+					
3	Pinus sylvestris	Pine					+		
4	Pimpinella vulgaris	Anise	Hieronim Spiczyński	+				+	
5	Chamomilla recutita	Chamomile					+	+	
6	Acorus calamus	Calamus		+					
7	Asarum europaeum	Wild ginger	Marian Siennik	+		+			
8	Artemisia abrotanum	Sagebrush		+	+				
9	Petroselinum crispum	Parsley		+	+				
10	Herba tunici	Clove	Marcin of Urzędów		+				
11	Foeniculum vulgare	Fennel		+				+	
12	Delphinium consolida	Consolida		+	+				
13	Glycyrrhiza glabra	Glycyrrhiza	Simon Syrenius		+			+	
14	Lavendula anustifolia	Lavender		+					
15	Iris germanica	Iris		+	+				
16	Viola tricolor	Viola		+					+
17	Betonica off.	Betonica			+		+		+
18	Humulus lupulus	Humulus		+			+		

cluded Jan Kluk, Stanisław Jundzill and, the professor of the Jagiellonian University, Napoleon Czerwiakowski. The discussion of their work and input will be, however, a subject of a separate article.

## Conclusion

Medicinal plants have been used to treat various diseases since prehistoric times. The catalogue of diseases subjected to herbal treatment also includes those of the urinary system. The development of herbal treatment was rather abruptly thwarted by emergence of medical chemistry, pharmacology and the pharmaceutical industry as such. Nevertheless, recent years have seen signs of revival in the interest in this area among doctors worldwide. Of interest, approximately half of the medicines produced nowadays contain plant-derived active substances. Moreover, the ever-growing cost of treatment seems to add to the popularity of herbs and medicinal plants. This trend is documented by the number of

talks and lectures on medicinal plants presented during congresses of the history of medicine including the history of nephrology. This subject is frequently brought up by researchers from many countries such as the USA, Italy, Greece, Turkey and Poland. Needless to say, though, this kind of treatment must be administered only as auxiliary and supplementary means and must always be supervised by a qualified medical doctor. This approach finds its confirmation in the directive of the European Economic Community Council no. 64/65, which treats herbal preparations as medicinal products. The notion of herbal medicine has been approved by the international community and remains in line with the WHO directives [22].

The authors of this article are firmly convinced that the works presented herein, especially those by Marcin of Urzędów and Simon Syrenius, should be subject to a more thorough analysis for the application of the plants depicted in them to treat the urinary system ailments.

## References

- [1] Touwaide A Epidemiology and treatment of kidney conditions in antiquity. *Journal of Nephrology* 2013 Dec 23;26(Suppl. 22):175-179
- [2] Touwaide A, Pollio A, Aliotta G et al. Medicinal plants for the treatment of urogenital tract pathologies according to Dioscorides' *De Materia Medica*. *American Journal of Nephrology* 1997;17(3-4):241-7
- [3] Iorio L, Nacca RG, Simonelli R et al. Cistercian medicinal herbs for renal therapy in the 15th century. *American Journal of Nephrology* 1997;17(3-4):286-8
- [4] Aliotta G, De Santo NG, Ongaro G et al. Some useful plants for renal therapy listed in *De Plantis Aegypti Liber* by Prospero Alpini in the 16th century: modern considerations. *Journal of Nephrology* 2013 Dec 23;26(Suppl. 22):180-186
- [5] Balat A From past to present: traditional herbs used in the treatment of nephrologic diseases in southeast Turkey. *Journal of Nephrology* 2013 Dec 23;26(Suppl. 22):187-191

- [6] Brzeziński T. Historia medycyny. Wydawnictwo Lekarskie PZWL. Warszawa 1995.
- [7] Szumowski W. Historia medycyny. Sanmedia. Warszawa 1994.
- [8] Ożarowski A., Jaroniewski W. Rośliny lecznicze i ich praktyczne zastosowanie. Instytut Wydawniczy Związków Zawodowych. Warszawa 1987.
- [9] Volák J., Stodola J. Rośliny lecznicze. Państwowe Wydawnictwo Rolnicze i Leśne. Warszawa 1987.
- [10] Zemanek A. Renaissance botany in the light of contemporary science. *Wiadomości Botaniczne* 1997; 41(1): 7-19
- [11] Falimirz S. Hortus sanitatis, O ziołach i o mocy ich. Drukarnia Florian Ungler. Kraków 1534
- [12] Matuszewski A. Kwartalnik Historii Nauki i Techniki. 1993; 38(4): 119-129
- [13] Zemanek A., Zemanek B., Harmata K. et. al. Selected foreign plants in old Polish botanical literature, customs and art (acoruc calamus, aesculus hippocastanum, Cannabia sativa, Fagopyrum, Helianthus annuus, Iris) In: Morel J., Mercuri A. (ed) Plants and Culture, seeds of the cultural heritage of Europe. Edipuglia 2009
- [14] Spiczyński H. O ziołach tuteicznych i zamorskich i o mocy ich... Drukarnia Florian Ungler. Kraków 1542
- [15] Siennik M. Herbarz, to jest ziół tuteicznych, postronnych i zamorskich opisane... Drukarnia M. Szarfenberg. Kraków 1568
- [16] Marcin of Urzędów. Herbarz polski, to jest o przyrodzeniu ziół i drzew rozmaitych. Drukarnia Łazarzowa. Kraków 1595
- [17] Dłużewski S. Dzieło Marcina z Urzędowa. *Panacea* 2004; 1 (6): 30-31
- [18] Rostański J. Medycyna na Uniwersytecie Jagiellońskim w XV wieku. Kraków 1900
- [19] Sirenius S. Zielnik Herbarzem z języka łacińskiego zowią. To jest opisanie własne imion, kształtu, przyrodzenia, skutków, i mocy ziół wszelakich... B. Skalski. Kraków 1613
- [20] Rostański K. Simon Syrenius and his work. *Wiadomości Botaniczne* 1997; 41(2): 7-12.
- [21] Zemanek A., Rostański K. "Habent sua fata Libelli" czyli uwagi o egzemplarzach Zielnika (1613) Syreniusza zachowanych w Polsce. *Kwartalnik Historii Nauki i Techniki* 1996; 41/3-4: 159-188
- [22] Drozd J. Phytotherapy – yesterday and today. *Przegl Med Uniwersytetu Rzeszowskiego i Narodowego Instytutu Leków w Warszawie. Rzeszów* 2012; 2: 245-251