

A History of Herbal Medicine for Herbalists (or How the Persians/Arabs Saved Greek Sciences)

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Over the past 15 years my studies have encompassed the history of ancient herbal medicine, focusing on Egyptian, Greek, Arab, Persian, East Indian and Western European roots. There one finds a rich, colorful and sometimes surprising array of characters, circumstances, wars, religions, and cultures that have engendered our modern herbal and medical traditions. I have been amazed at the tenacity of human endeavor, our insatiable curiosity, and ability to forget what has already been achieved. In the interest of remembering, I would like to begin the present journey in 476 AD with the collapse of the Western Roman Empire.

Byzantine Empire

By 395 AD The Eastern and Western portions of the Roman Empire had separated due to theological (and other) differences; but with the decline of Rome, the East succeeded Europe in the preservation and diffusion of traditional knowledge. The center of this world was the city on the Bosphorus known as Byzantium, later Constantinople and now Istanbul. The territory constituting greater Byzantium included Asia Minor, Anatolia (Turkey) northern Africa and Persia. Throughout its 1,000 years of existence the empire was continually beset by invaders and internal religious and political strife. Nevertheless, somewhat freer of the constraints of religion and superstition found in the “dark ages” of Europe, medicine was one science, along with mathematics and astronomy, in which the Byzantines improved on their predecessors. From their extensive library, physicians compiled and standardized medical knowledge using the writings of Theophrastus, Hippocrates, Galen, Dioscorides and many others. The herbals and medical texts were elaborately decorated, often portraying the particular ailment and the plant associated with its cure. *The Medical Compendium in Seven Books*, written by the leading

physician Paul of Aegina, (c. 600 AD?) is of particular importance. This compendium, as well as the beautiful *Juliana Herbal* were used as a standard source of medical and plant information for 800 years; the work of Paul of Aegina being especially the bridge between the ancient Greeks and the later Arabic/Persian Scholars. A text of this magnitude would not be written nor appear in Europe for almost 600 years.

Medieval Europe

In the 5th – 11th centuries in Europe, medical knowledge was largely drawn from surviving Greek and Roman sources, preserved in monasteries and private collections. Rather than empirical methods based on observation and reason, a metaphysical view in which factors such as destiny, sin, astral influences, demonic possession, curses, and the will of the gods was used to explain illness. Indeed, the preservation of the soul was thought more important than mere temporal health.

“Read with the Name of Allah” (Qur’an)

We continue our story through the Middle East at the ancient and beautiful city of Jundi Shapur, which was located in current day Iran. In 490 AD, its tolerant and cosmopolitan environment had sheltered excommunicated Nestorian Christian scholars from Europe, Neoplatonists banished in 529, and scholars from as far away as India and China.

The Nestorians, being scholars, began the huge bibliographic task of translating Greek books into Syriac, the language of the university. Hippocrates and Galen’s works were among the first to be translated. The adventures of the Nestorians explain why some Greek works have come down to us ultimately as Latin versions

from an Arabic text translated from the Syriac.

Most people have never heard of Jundi Shapur but it was a pivotal place in the preservation and promotion of knowledge. When the city fell to the Arabs in 636, and Persia became part of the Arab world, the university was not disturbed. In fact, the conquerors adopted it and made its medical school their principal training center.

The rulers of Jundi Shapur welcomed an international crowd of Greek (which includes the Nestorians), Persian, Jewish, Buddhist, Chinese and Hindu scholars. This convergence created the greatest center of medical teaching in the Islamic world for hundreds of years. People of all creeds worked together in peace, as nowhere else in the world.

While the Persian/Arab physicians first familiarized themselves with the works of Hippocrates, Galen and other Greek physicians (many books were found in the library of Byzantium where they were gathering dust), they also were exposed to the medical knowledge of India and China. Scholars, physicians, astronomers, and intellectuals of all branches of knowledge were encouraged to debate, study, and write about their work in this benevolent setting.

Toward the end of the 10th century, Baghdad, having become the capital of the caliphate, began to drain away the talents of Jundi Shapur. In consequence, the end came fast. Today nothing remains of that glorious city except for a few vague trenches in the ground.

It must be noted that many of these scholars were plant men as well and were involved in adventurous exchanges of plants from different countries and locales which helped expand the existing material medica. The Islamic Empire eventually stretched from the Spain, Italy, Central Asia, and North Africa to the whole Middle East allowing for the plant exchanges to be vital and exciting.

Baghdad

Recognizing the importance of translating Greek works into Arabic from the Syriac to make them more widely available, the Abbasid caliphs Harun al-Rashid (786-809) and his son, al-Ma'mun (813-833) established a translation bureau in Baghdad called the House of Wisdom. Al-Rashid and his immediate successors dispatched emissaries far and wide in search of more and ever more manuscripts. For more than a century, the translation work was vigorously carried on, from Greek to Syriac and then into Arabic. This ushered in an even greater era in Arabic medicine, whose effects we feel

today. This was the Golden Age of the Arab world.

An important name to remember is that of Hunyan, a Nestorian Christian whose chief contribution among many was the translation of Galen's Anatomy. Outstanding work was done as well as by the Sabeans, or star worshipers, particularly and naturally along the line of astronomy.

A current from India also contributed to the stream with the introduction of the digits known as Arabic numerals, as well as the decimal system and the use of zero. The century of translation was but the prelude to the original contributions made through the Arabic language and under the stimulus of Arab encouragement.

Some of the translators themselves did significant original work. It was the Nestorian Christian physician Yuhanna who used apes as subjects for dissection. He also wrote extensive works on the disorders of the eye, and his pupil Hunayan produced a ten-volume treatise on the eye.

The most important of the translators was Hunayn ibn Ishaq al-'Ibadi (809-73). He and his team of translators rendered the entire body of Greek medical texts, including all the works of Galen, Oribasius, Paul of Aegin, Hippocrates, and the *Materia Medica* of Dioscorides into Arabic by the end of the ninth century.

Arab medical practice largely accepted Galen's premise of humors, which held that the human body was made up of the same four elements that comprise the world — earth, air, fire and water/yellow bile/black bile/phlegm and blood. These elements could be mixed in various proportions, and the differing mixtures gave rise to the different temperaments and "humours." Sickness was due not to supernatural forces but to humoral imbalance, and such imbalance could be corrected by the doctor's healing arts.

Arab physicians therefore came to look upon medicine as the science by which the temperaments of the human body could be discerned and to see its goal as the preservation of health and, if health should be lost, there was assistance in recovering it. They viewed themselves as practitioners of the dual art of healing and the maintenance of health.

Even before the period of translation closed, advances were made in other health-related fields. Harun al-Rashid established the first hospital, in the modern sense of the term, at Baghdad about 805. Within a decade or two, 34 more hospitals had sprung up throughout the Arab world, and the number grew each year. These hospitals bore little resemblance to their European counterparts as mentioned earlier. The sick saw the hospital as a place where they

her studies in that area over the years, specializing in ancient medicine, religions and the movements of plants and people. She spent the summers of 2003 and 04 in Kyrgyzstan, Central Asia in the Tien Shen Mountains identifying the medicinal plants and teaching the medicine ways to the indigenous people in three villages. The full unabridged article on the History of Medicine for Herbalists can be viewed on her site www.evergreenherbgarden.org. She can also be reached at evrgreen@innercite.com

These pharmacists introduced a large number of new drugs (herbs) to clinical practice from around the known world. Some of these were senna, camphor, sandalwood, musk, myrrh, cassia, tamarind, nutmeg, cloves, aconite, ambergris and mercury.

could be treated and perhaps cured by physicians, and the physicians saw the hospital as an institution devoted to the promotion of health, the cure of disease, and the expansion and dissemination of medical knowledge. Medical schools and libraries were attached to the larger hospitals, and senior physicians taught students, who were in turn expected to apply what they had learned in the lecture hall to the people in the wards. The hospital treated all people – rich and poor alike – and those of different religious beliefs. There were gardens, music, reading of the Qur’an, and the destitute were given money when they left the hospital so that they could live a little more comfortably while they continued to heal (rather than facing a huge bill for the services rendered.)

Like the hospital, the institution of the herbal pharmacy was developed at this time. One of the first pharmacological treatises was composed by Jabir ibn Hayyan (ca. 776) who is considered the father of the herbal pharmacy. The Arab/Persian pharmacopoeia of the time was extensive, and gave descriptions of the geographical origin, physical properties, and methods of application of everything found useful in the cure of disease: plants, minerals, animals, insects and so forth. These pharmacists introduced a large number of new drugs (herbs) to clinical practice from around the known world. Some of these were senna, camphor, sandalwood, musk, myrrh, cassia, tamarind, nutmeg, cloves, aconite, ambergris and mercury.

The pharmacists also developed syrups and juleps, a word that comes from both Arabic and Persian languages: a sweet water made from such things as rose water and orange-blossom water as means of administering drugs. They were familiar with the anesthetic effects of some of the Indian herbs as well that were added to liquids or inhaled.

At this time pharmacy was a profession practiced by highly skilled specialists. They were required to pass examinations, be licensed, and were then monitored by the state. Pharmaceutical preparations were manufactured and distributed commercially, then dispensed by physicians and pharmacists in a variety of forms — ointments, pills, elixirs, confections, tinctures, suppositories, and inhalants. Herbal medicines were reaching a new level of use and appreciation at this juncture in history.

By 800 AD, this explosion of information was infused with original thought in Arab/Persian medicine. The first major work showing this fusion appeared when Al-Razi (Rhazes) around 841-926 turned his attention to medicine. His most esteemed work was a medical

encyclopedia in 25 books, *The Comprehensive Work*, later translated into Latin. Al-Razi spent a lifetime collecting data for the book, which he intended as a summary of all the medical knowledge of his time, augmented by his own experience and observations. Al-Razi emphasized the need for physicians to pay careful attention to what the patient’s histories told them, rather than merely consulting the authorities of the past. Al-Razi’s clinical skill was matched by his understanding of human nature, particularly as demonstrated in the attitudes of patients. In a series of short monographs on the doctor-patient relationship, he taught that doctors and patients needed to establish a mutual bond of trust. He felt that positive comments from doctors encourage patients, made them feel better, and sped their recovery. Further, he warned, changing from one doctor to another wastes patients’ health, wealth, and time.

Avicenna of Central Asia

Not long after Al-Razi’s death, a Persian named, Abu ‘Ali al-Husayn ibn ‘Abd Allah ibn Sina (980-1037) was born in Bukhara, in what today is Uzbekistan in Central Asia. Translators later Latinized his name to Avicenna. He was to the Arab world what Aristotle was to Greece and Leonardo da Vinci to the Renaissance. His interests embraced not only medicine, but also the fields of philosophy, astronomy, science, mathematics, psychology, music, poetry, and statecraft. His contemporaries called him “the prince of physicians.”

Avicenna created an extensive body of works over his lifetime; he wrote 450 treatises on a wide range of subjects, of which around 240 have survived. In particular, 40 of them concentrate on medicine and herbs. His most profound contribution to medicine was his medical encyclopedia called *The Canon of Medicine*, originating around 1025 in Persia. This healing system is commonly known as Unani Tibb medicine and was primarily influenced by Greek medicine which, in turn, was greatly influenced by the great Egyptian physicians. (Unani is the Arab word for Ionian which is what the Greeks were called in Ancient times.)

The Canon of Medicine was a standard medical text in European and the Islamic worlds up until the 18th century. The book is known for its introduction of systematic experimentation and the study of physiology, the discovery of contagious diseases and sexually transmitted diseases, the introduction of quarantine to limit the spread of

infectious diseases, the introduction of experimental medicine, clinical trials, and the idea of a syndrome in the diagnosis of specific diseases. Avicenna hypothesized the existence of microorganisms and classified and described diseases, and outlined their assumed causes. Hygiene, simple and complex medicines, and functions of parts of the body were also covered. He asserted that tuberculosis was contagious, which was later disputed by Europeans, but turned out to be true. He also describes the symptoms and complications of diabetes as well.

The Canon includes a description of some 760 medicinal plants and the medicine that could be derived from them. At the same time Avicenna laid out the basic rules of clinical drug trials, principles that are still followed today. Avicenna was, in fact, a great herbalist.

Not surprisingly, *The Canon* rapidly became the standard medical reference work of the Arab world. It was used as a reference, a teaching guide, and a medical textbook until well into the 19th century, longer than any other medical work. Unani Tibb, the “Medicine of the Greeks,” is still in practice today in India, Central Asia, and the Middle East.

The civilized and intellectually advanced Arab scholars of the 12th and 13th centuries continued to develop and elaborate the study of medicine far beyond the point where their Greek mentors had left it. They traveled widely, they drew on their own observations, and they organized expeditions specifically to find and identify plants. In their herbals we see teasel, chamomile, artemisia, umbellifers, elder, horsetail, euphorbia, lesser celandine, elecampane, coral, and so much more; plants growing natively in Central Asia, Asia Minor, India, China, and other locations. It would be yet a couple of centuries before this type of botanical expedition would happen in western Europe.

Europe Reawakens

During the 12th century Europe began to reap the intellectual riches of the Arabs and, in so doing, sought out its own classical heritage. The works of the Greeks had been preserved and expanded upon by the Arab scholars and physicians and were now making a complete loop back to Europe. The medical works of Galen and Hippocrates returned to the West by way of the Middle East and North Africa, and the Arab medical classics were translated into Latin, the common language of the educated class

in Europe. Through the intellectual ferment of the Arab scholars and intellectuals, Europe recovered some of its past in its upgraded form. One of the translators of the text from Arabic to Latin was Constantine the African who spoke and studied three languages fluently (1020-1087). He worked at Salerno and in the cloister of Monte Cassino. The other translator was Gerard of Cremona (1140-1187) who worked in Toledo. It was no accident that both these translators lived in the Arab-Christian transition zones where the two cultures influenced each other. And it was no coincidence that Salerno, Europe’s first great medical faculty of the Middle Ages, was close to Arab Sicily.

Avicenna’s *Canon* made its first appearance in Europe by the end of the 12th century, and its impact was dramatic. Copied and recopied, it quickly became the standard European medical reference work. From the 12th to the 17th century, Avicenna’s *materia medica* was the pharmacopoeia of Europe, and as late as 1537 *The Canon* was still a required textbook at the University of Vienna. These are the true roots of Western European herbalism.

Thus, the Arab world not only provided a successful line of transmission for the medical knowledge of ancient Greece and the Hellenic world, it also corrected and enormously expanded that knowledge before passing it on to Europe. Physicians of different languages and religions had cooperated in building a sturdy structure whose outlines are still visible in the herbal and medical practices of our own time.

As can be seen from this short essay on the history of medicine, we as herbalists are indebted to many people from different cultures, times, religions, and regions of the world. In my estimation we have been practicing a form of “Planetary Herbology” for centuries, as was coined by Michael Tierra over 20 years ago. How many of our “Western Herbs” were really introduced centuries ago from far away lands? Our roots as herbalists did not die out because of the Dark Ages in Western Europe. Our roots grew deeper and richer with the critical (scientific) thinking, curiosity, and intelligence of these Byzantine (Greek), Arab, and Persian scholars and their translations of Indian and Chinese texts. From these sources, European herbalism as we know it was born.

Where are the homelands of cinnamon, ginger, clove, nutmeg, fennel, oregano, rosemary, thyme, ginger, nigella, myrrh, and elecampane? What would we do as Western herbalists if we did not have these medicinal plants from

all over the world? Our new vision of ourselves as part of this multi-cultural heritage can help to expand and clarify our place in history and allow us to be more open to new (and old ideas) of what it means to be an herbalist. As we learn about our remarkable story, we no longer have to resort to a made-up history based on hearsay, rumors, and disjointed statements. We can deepen our appreciation of the past plant people and the centuries of inquiry, studies, documentation, travels, gardening, medicine making, and wildcrafting they did. With that knowledge we can rest easy in our hearts that we are part of this heritage.

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