

## Iranian Scholar Hāly Abbās Contributes to Europe's First Modern Medical School

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Medical education has not always taken place in medical schools. Until the tenth century, medicine was taught to apprentices, or passed down from father to son. Founded in the ninth century in Salerno, Italy, the *Schola Medica Salernitana* was the first modern medical school and the most important source of medical knowledge in Western Europe at the time.<sup>1</sup> The city of Salerno was an ideal place to found a medical school: all trade routes passed through the city. Being like a melting pot of numerous cultures and ethnicities, with Normans from the west, Sicilians from the south, Greeks, Benedictine monks, Jewish physicians, and Arabs, the city was really an ideal spot to share and exchange ideas and establish a teaching center. Furthermore, the school was located near a monastery, Monte Cassino, where the sick people went to be cured with the help of magic herbs and the miracles of the saints.

In 1010, the School of Salerno flourished as the first institution in Europe to grant medical diplomas and hosted many students coming from around the Mediterranean. Although Roger of Salerno, affiliated to the school, was the first one to publish a book on surgery in the West, the school had not entered its golden era until 1071 when *Constantinus Africanus* (c. 1020–1087) came to study at Monte Cassino.<sup>2</sup> Constantine was a Muslim African slave who spoke Greek and Babylonian. He collected many books and manuscripts on medicine during his travels to Syria, India, Egypt, and Ethiopia. After converting to Christianity, he translated these texts—mostly from Arabic, Greek, and Indian—into Latin for use in the medical school. This movement opened a new door to a rich source of knowledge and made the school the most prestigious medical school for over 200 years. This success led to the establishment of medical schools in other European cities, including Paris and Montpellier in France and Padua in Italy.

One of the most influential books that Constantine translated was the *Liber Pantegni*. The book consisted of 20 chapters—10 on theoretical medicine and 10 on practical medicine. It is believed that the *Liber Pantegni* is a translation of the *Liber Regalis* (The Royal Book or *Kitab al-Maliki*) authored

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around 980 by *Ali Ibn Abbas Al Majoussi* (Hāly Abbās).<sup>3</sup> Constantine did not attribute the work to its true author, Hāly Abbās. By today's standards, what Constantine did was a blatant act of misconduct, plagiarism.<sup>3</sup> But given that the *Liber Regalis* was one of the core textbooks of the *Schola Medica Salernita*, had he not plagiarized, the school and today's modern universities around the globe would probably not have been established, at least at that time.

Hāly Abbās was therefore, one of the influential figures who indirectly involved in establishing the *Schola Medica Salernita*. Around 980, Hāly Abbās, a Persian physician born in *Ahwaz*, completed the *Liber Regalis*, a collection of medical knowledge intended to be used as a reference for physicians.<sup>4</sup> The first 10 chapters of the book deal with the theories behind medical treatment, anatomy and physiology. The second half of the book—also in 10 chapters—deals with medical treatments including drugs and surgery. *Liber Regalis* was written in Arabic, the *lingua franca* of science at the time, and was in fact the first Arabic work to give detailed instructions on surgery. Much of the material in the book is based on the writings of Galen (130–200). The author attempted to correct errors in Galen's work that had been discovered in the centuries since they were written. He also wanted to organize the information that Galen had accumulated into a form that would be easy for physicians to use.

Although Hāly Abbās has made great efforts, he is not as well-known, even to Iranians, as his predecessor, Rhazes (c. 865–c. 923), and his successor, Avicenna (c. 980–1037).<sup>4</sup> I, for one, believe that the work of Rhazes and Avicenna was so brilliant that it almost completely eclipsed Hāly Abbās, who lived between these two great scholars. He was deeply impressed by the Rhazes' book, *Liber Continens*. Although he clearly appreciated the book, he criticized it for not being well organized and for being too long. The length of the *Liber Continens* (more than 23 volumes) made it so expensive that almost no physician could afford to own a copy. Hāly Abbās' *Liber Regalis* solved these problems by organizing and clarifying ancient Greek and more recent medical knowledge into a single, more affordable book.<sup>4</sup> However, his book was not entirely based on the work of others; Hāly Abbās included his own observations too. For instance, he noted that both arteries and veins carry blood. Most physicians of the time believed that only veins carry blood and that arteries carry air. It is believed that *Liber Regalis*

also had a profound influence on his successor, Avicenna, in writing his book, *Canon of Medicine*, considered by many to be the most important medical book of the Middle Ages.<sup>5</sup> However, many people believe that the *Liber Regalis* is a more systematic and concise encyclopedia than Rhazes' *Liber Continens*, and more practical and handy than Avicenna's *Canon of Medicine*.

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