

# Al-Razi

– Written by Emilia Calvo, Spain

Abu Bakr Muhammad ibn Zakariyya al-Razi, known to the Latins as Rhazes, was not only a pre-eminent physician but also a philosopher and alchemist. In fact, he represents the pinnacle of Arabic alchemy. Al-Razi is mainly known as a doctor and his reputation as a physician has drawn the admiration of those who have studied his medical works. He was born about 250/854 in Rayy, near Teheran, Iran and died in the same city about 313/925. He first studied philosophy, mathematics, astronomy, music and alchemy. It was only later that he became involved in medicine. He is considered to have had an encyclopaedic mind, gifted in both speculation and experimentation resembling the men of the Renaissance. But he is also seen as the most free-thinking

of the well-known philosophers of Islam. Some later authors criticised al-Razi for his Neo-Platonic philosophy and his refusal to accept the principle of authority. Others accused him of heresy in his theological ideas.

He wrote on many subjects including logic, philosophy and alchemy. His medical treatises, however, outnumber those on other topics. In his life he produced about 200 books. He claims in his apologia, the *al-Sira al-falsafiyya*, or *Philosophical Way of Life*, that his only excess in an otherwise moderate life was his devotion to learning. He was known to befriend princes, seen as a colleague rather than employee.

Al-Razi's biographers list some of his works on philosophy, logic, cosmology, theology, mathematics and alchemy.

Many of his contemporaries and medieval successors disliked al-Razi's tendency towards philosophical ideas and therefore very few of his works were copied or referenced. Fortunately, fragments survive in quotations by later authors.

Al-Razi profited from the Arabic translations of Greek texts. Despite this, his works show that he did not consider himself to be inferior to his Greek predecessors. On the contrary, he felt at liberty to modify their conclusions if he knew better, often adding details of his own research and observations.

His alchemic work was one of the most important in the Middle Ages. It is condensed in his *Sirr al-Asrar* (translated to Latin as *Secretum secretorum*). Here he takes a new, more experiential and practical

approach compared to that of the Greeks or his Arabic predecessors such as Jabir. Although al-Razi did not accept some of Jabir's theories, he believed that at the base of all substances there were four elements and that, therefore, the transmutation of metals was possible. There is much of interest in al-Razi's practical chemistry. His *Secretum secretorum* gives, for the first time, a clear division of chemical substances and he preferred presenting findings of laboratory work rather than theoretical imaginings without basis.

He served at the Samanid court in Central Asia and headed hospitals in Rayy and Baghdad. He employed an interesting method to decide the best location in Baghdad for the founding of a hospital during the reign of al-Mu'tadid (279-89/892-902): he hung pieces of meat in various quarters of the city and selected the place where the putrefaction of the meat was the slowest. He was later made director of this hospital, having formerly headed the hospital of Rayy. Besides this, he was constantly writing. His medical handbook, the *Book of Medicine Dedicated to Mansur* (*Kitab al-Tibb al-Mansuri*), was a short general textbook of medicine of considerable influence which he had dedicated in 290/903 to the Prince Abu Salih al-Mansur ibn Ishaq, the Samanid governor of Rayy. This was translated into Latin by Gerard of Cremona in the 12th century. His *Muluki* or *Regius* was dedicated to *Ali b. Wahsudhan of Tabaristan*.

Among his smaller medical works were treatises on colic, kidney and bladder stones, curing diseases in one hour (such as headache, toothache, haemorrhoids and dysentery in small children), diseases of children, diabetes, food for the sick, maladies of the joints, self-prescribed medicine in the absence of a physician, works on medical observations and on the fact that some mild diseases are more difficult to diagnose and treat than the serious ones. He also wrote a book on the connection between swelling of the head and excess mucus at the 'time of the roses', which is believed to be the first published work investigating the relationship between hay fever to the scent of flowers.

#### *Kitab al-Hawi fi 'l-Tibb*

His notebooks reveal that his medical research was methodical. At the insistence of Ibn al-'Amid, the vizier of Rukn al-Dawla, these were edited, in some 25 volumes, as *Kitab al-Hawi fi 'l-Tibb*, (*The Comprehensive Book on Medicine*). Translated as the *Continens* in 1279, it was printed at Brescia in 1486 and repeatedly thereafter. The text, edited in Hyderabad in 1955, contains al-Razi's extensive notes from a wide range of sources which are meticulously organised. Most sections close with al-Razi's own clinical observations which are often at variance with received opinions.

Of all his compositions, this was the most sought after. Rather than a formal treatise, this was an enormous commonplace book

into which he had placed extracts from earlier authors regarding diseases and therapy and also recorded clinical cases of his own experience. It is an extremely important source for knowledge of Greek, Indian and early Arabic writings which are now lost, as al-Razi was very careful about crediting his sources. The clinical cases presented in this book, while not unique, are the most numerous and varied in the Islamic medieval medical literature. All material within the *Hawi* is arranged under the headings of different diseases, with separate sections on pharmacological topics.

It seems that within 50 years after al-Razi's death, copies of *al-Hawi* were very hard to obtain because, according to later sources such as al-Majusi, it was excessively long, and hence, too expensive to have copied (the modern printed version is incomplete at 23 volumes). Besides this, al-Majusi criticised al-Razi for quoting what he saw to be too many second-rate authors, for lack of proper organisation and for not devoting enough attention to anatomy and surgery.

#### *Kitab fi 'l-Jadari wa-'l-Hasaba*

Among the most famous of al-Razi's medical writings is the treatise *Kitab fi 'l-Jadari wa-'l-Hasaba* (*On Smallpox and Measles*), translated into Latin as *Variolis et Morbillis*. Although well-known, it is not the earliest monograph on the subject. Thabit ibn Qurra (d. 288/901) wrote a treatise on this topic that has not yet been studied.

Smallpox was first documented in a Syriac medical text by Ahrun of Alexandria in 622 AD, but al-Razi wrote the first comprehensive text that differentiated between smallpox and measles. In one of the chapters, al-Razi observed that survivors of smallpox never suffer it again. In his introduction, he noted that Galen only mentioned smallpox briefly.

This treatise bears witness to his concern for therapy, in contrast to the silence regarding the topic in the Hellenistic and Byzantine literature preserved. One of the interesting aspects of this text is his concern for protecting the cornea of the eye from pustules. Indeed until very recent times, smallpox has been a major cause

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of blindness in the Middle East as well as elsewhere as one of the complications are corneal scars and the destruction of the cornea caused by the pustules. This treatise was translated over a dozen times into Latin and other European languages. Its lack of rigidity and its Hippocratic reliance on clinical observation typify al-Razi's medical methods.

**He warned that even the best doctors could not have answers and solutions for everything**

*Shukuk 'ala Galenus*

Al-Razi's independent mind is clearly seen in his *Shukuk 'ala Galenus* or *Doubts about Galen*. Here he rejects some of Galen's claims, including assertion that the Greek language is superior to all others as well as many of his medical views. Al-Razi places medicine within philosophy, suggesting that sound practice demands independent thinking. He uses his own clinical records as an example, as they do not confirm Galen's descriptions of the course of a fever. In some cases he also finds that his clinical experience exceeded Galen's.

He does agree on some of Galen's points, however. Both had an interest in medicine as an art and profession. Al-Razi wrote essays on the subjects such as *The reasons for people's preference of inferior physicians*, *A mistaken view of the function of the physician*, *Why some people leave a physician if he is intelligent*, *That an intelligent physician cannot heal all diseases, since that is not possible*, and *Why ignorant physicians, common folk, and women in the cities are more successful than scientists in treating certain diseases, and the physician's excuse for this*. He also shared Galen's interest in philosophy as described in his treatise *That the outstanding physician must also be a philosopher*.

**Other works**

Among other writings of al-Razi for which we have mentions are a commentary on Plato's *Timaeus*, (perhaps based on the epitome of Galen), a critique of *Mu'tazilism*, another on the infallible Isma'ili Imam, a work on how to measure intelligence, an introduction to and vindication of algebra, a defence of the incorporeity of the soul, a debate with a Manichaeon and an explanation of the difficulty people have in accepting that the earth is round.

Moral philosophy was linked to medicine as it was believed that the achievement of happiness was conducive to good health. Al-Razi's *al-Tibb al-Ruhani* (*On Spiritual Medicine*) embodies his Epicurean ethical system. It was written for al-Mansur as a companion to the al-Mansuri and develops a moderately disciplined ideal of life from the premise that all pleasures presuppose a prior pain. This means that peace of mind or lack of anxiety is an ideal state for contentment. He postulates that attempting to achieve happiness by serving the appetites and passions is a self-defeating strategy. His ethical treatise follows al-Kindi's precedent in treating ethics as a kind of psychic medicine or clinical psychology.

Following this line of thought, medieval biographers recount that when al-Razi became blind from cataracts, he declined to have them couched because, in his own words, "This operation is not without pain, and ... it is repugnant to someone like myself at the end of his days to choose pain and discomfort over repose".

Al-Razi stressed the importance of diet and of heeding the wishes of patients about their dietary needs, especially when recuperating from illness. He repeatedly expressed sympathy for the doctors of princes, nobles and wealthy women,

**He gave priority to the doctor-patient relationship**

as theirs were patients who "did not follow doctor's orders, especially for diet and medication".

He gave priority to the doctor-patient relationship and was responsible for introducing new concepts and practical and psychological ideas. He postulated that the physician should encourage and support the patient. He fought the charlatans, warned that even the best doctors could not have answers and solutions for everything and stressed the importance of constant education through books and practice.

A notable witness of the widespread diffusion of his works was Geoffrey Chaucer (14th century), who in his Prologue to the *Canterbury Tales*, gives the names of some of the great physicians of the past that his audience could be expected to recognise. Among them, he includes al-Razi.

It is not exaggeration to say that the Muslim world owed to al-Razi its first formulation of the faith in continuous scientific advancement, with emphasis on the provisional nature of all research whose conclusions can be revised at all times. He is perhaps the most outstanding example of the analytical and questioning attitude found in many medieval Muslim scholars.

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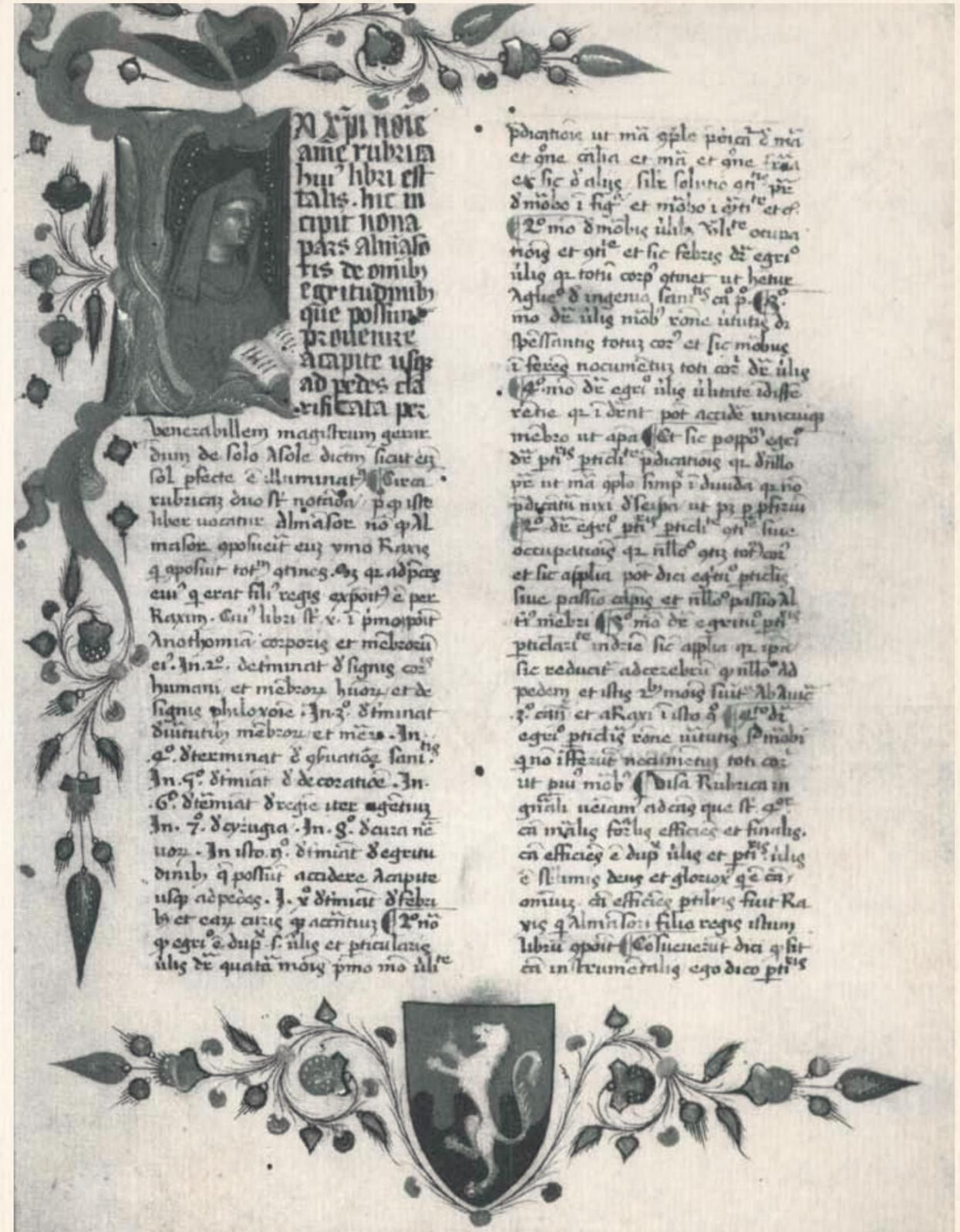


Image: A copy made in 1443 of the ninth book, on therapeutics, of the Latin translation of The Book for al-Mansur by al-Razi. A portrait of al-Razi forms the initial decoration along with other decorative elements unrelated to the text.