



THE PLACE OF ABŪ BAKR AL-RĀZĪ IN THE SCIENCE OF MEDICINE

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Abstract. *The article examines the contribution of Abū Bakr Muḥammad b. Zakariyyā' al-Rāzī (865–925) to the science of medicine against the background of the rise of learning in Islamic civilization. It sets out the conditions that gave rise to the first hospitals and medical institutions in the Caliphate, describes al-Rāzī's path into medicine, his direction of the hospitals of Baghdad and of his native Rayy, and the method by which he chose the site of a hospital. The article further examines his insistence that the physician verify theoretical knowledge in practice and keep a record of the case history of the patient, his researches into infectious diseases and his demonstration of the acquisition of immunity after smallpox and measles, his work as a surgeon, his classification of substances in the history of chemistry, and the fate of his medical works, which were translated into Latin and served for centuries as textbooks in the medical faculties of the universities of Western Europe.*

Keywords: *Abū Bakr al-Rāzī, history of medicine, Islamic civilization, hospital, immunity, smallpox, Kitāb al-Ḥāwī fī al-ṭibb, Baghdad, Rayy, medieval science.*

INTRODUCTION

The influence of the religion of Islam may be seen in the inclination of the Muslims towards the acquisition of learning. As the Prophet Muḥammad, peace be upon him, said, the best form of worship is striving after knowledge. History bears witness that the rise of Islamic civilization came about through the aspiration of people to learning, and in particular through their thorough mastery of the sciences of the Qur'ān and of ḥadīth. In the view of scholars, moreover, when a person applies such faculties as observation and reflection in the course of studying the Qur'ān and the Sunna of the Prophet, his learning increases in every respect (Sarton, 1927).

Through education Islamic culture laid the foundations of medicine, technology, geometry, mathematics, chemistry, physics, urban planning, art and poetry and of many other sciences, and developed them; and it thereby exerted a great influence upon Western and upon world civilization. Alongside the religious sciences, Muslim scholars also attained great achievements in the exact sciences (Sarton, 1927).

We know that many cultures and civilizations have existed in history. Among them, however, it was Islamic civilization that in truth shook the world in every respect and retained the leadership for a thousand years. The principal causes of this were the following: in the first place, Islam required mutual respect in the acquisition of learning, censured all that was destructive of it, and showed discipline, tolerance and respect towards the adherents of other religions. The teaching of Islam inspired many Muslims to achievements in the field of learning and to other great attainments that have become at the present day a source of world civilization.

The aim of the present article is to set out, against this background, the place occupied in the science of medicine by Abū Bakr al-Rāzī, and to show by what methods and in what works he enriched that science.

MAIN PART

The highest attainments of Muslim scholars may be recorded in the field of medicine as well. It was precisely in the Arab Caliphate that hospitals were first built and that the first medical institutions appeared. For centuries Muslim physicians stood at the head of research into diseases of the eye. The first hospital in the Caliphate was established in the year 707 in the time of the Umayyad caliph al-Walīd b. ‘Abd al-Malik. The expenses of maintaining this hospital and of supplying the sick with food were borne by the state, and penalties were instituted in order that patients suffering from contagious diseases should not escape from it (Ibn Abī Uṣaybi‘a, 1965).

One of those who left a vast heritage in the field of medicine is Abū Bakr Muḥammad al-Rāzī (865–925). Al-Rāzī began the study of medicine when he was already a mature man of more than thirty years of age. Many scholars point out, as one of the reasons for his taking up this field, his intention of treating his own eyes, which had been damaged as a result of chemical experiments. Al-Rāzī set out for Baghdad, and there he thoroughly mastered the foundations of medicine (Goodman, 1995:474).

Within a few years al-Rāzī attained success in this field and came to direct the hospital of Baghdad, and afterwards the hospital of his native city of Rayy. In determining the most suitable place for building a hospital he applied a method of his own: in various parts of the city he hung up pieces of meat, and he then observed in which places they remained longest without decomposing. That place the scholar held to be the best (Ibn Abī Uṣaybi‘a, 1965).

At the hospital of Baghdad there was a school of physicians, which was likewise directed by al-Rāzī. In his view the physician must constantly verify his theoretical

knowledge in a practical manner, since the descriptions of diseases given in medical books may not always correspond to the case in hand. For this reason al-Rāzī proposed to his colleagues that they should keep the case history of the patient and compare it with the information reflected in the scholarly literature. The saying of al-Rāzī that «a single physician cannot cure all diseases» has become widely known (Goodman, 1995:475).

Al-Rāzī conducted researches upon a number of infectious diseases, and as a result he demonstrated the formation of immunity in the human being. In his view, for example, immunity against measles and smallpox arises in a person who has recovered from those diseases; and through his researches the lives of many people were preserved in times of epidemic. His treatise on smallpox and measles, which distinguishes the two diseases from one another, is reckoned among the first works of its kind in the history of medicine (al-Rāzī, 1955–1971; Goodman, 1995:475).

Al-Rāzī was known in addition as a skilled surgeon. He removed foreign bodies from the throat by surgical means and was among the first in this field (Ibn Abī Uṣaybi‘a, 1965).

In the history of chemistry he proposed for the first time a classification of substances, according to which they are divided into the mineral, the vegetable and the animal. Al-Rāzī was convinced that all things consist of atoms; and he wrote also upon the terrestrial globe and the heavenly bodies (Goodman, 1995:476).

Taken as a whole, al-Rāzī wrote nearly two hundred scholarly works in various sciences: in philosophy, medicine, chemistry, physics and astronomy. Thirty-six of his works devoted to medicine have reached us. He enriched with new ideas and discoveries such sciences as therapy, surgery, diagnostics, sanitation and hygiene, pharmacognosy, pharmacology, anatomy and psychology, and he attained considerable success also in the fields of botany, mineralogy and chemistry, which are connected with medicine. One of the most important of his works is the collection entitled «Kitāb al-Ḥāwī fī al-ṭibb» (A Compendium of Medical Knowledge) (Ibn al-Nadīm, 1997; al-Rāzī, 1955–1971).

The medical works of al-Rāzī, which reached as far as al-Andalus, that is to say present-day Spain, were afterwards translated into Latin and served for a long period as textbooks in the medical faculties of the universities of Western Europe (Sarton, 1927; Goodman, 1995:476).

CONCLUSION

Abū Bakr al-Rāzī occupies a place of the first rank in the history of the science of medicine. He combined in his person the physician, the director of hospitals, the teacher of physicians and the natural philosopher, and he introduced into medical practice principles that have retained their value to the present day: the verification of theoretical knowledge by practice, the keeping of the case history of the patient, the comparison of the individual case with the scholarly literature, and the choice of the site of a hospital upon an experimental basis. His demonstration of the acquisition of immunity and his distinction between smallpox and measles are among the earliest attainments of their kind, and the translation of his works into Latin made him for centuries one of the teachers of the medical faculties of Europe. The study of his heritage accordingly remains an important task both for the history of medicine and for the history of Islamic civilization.

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