

MEN AND MEDICINE

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RHAZES (841-926)

Medicine was born: Hippocrates created it.

It was dead: Galen revived it.

It was scattered: Rhazes reassembled it.

It was imperfect: Avicenna perfected it.

(Quoted by Elgood)¹

The name of Rhazes should stand as a symbol of medical leadership wherever the art of medicine is taught. His place in history is indicated by his contributions to the welfare of all mankind. His ideas and experiences in the cure of the physically and mentally sick were taught for centuries in medical schools throughout the civilized world. He was named "The Experienced" by his contemporaries and was considered the leader of medicine in the Middle Ages in Europe.² He was one of the brightest stars to appear in the sky of medicine.³ Rhazes was most revered by specialists in pediatrics because he was the first physician to write on the subject of diseases of childhood.^{1, 4, 5} Indeed, he may be called the father of pediatrics.

Rhazes was born Abu Bakr Mohammad ibn Zakarya ar-Razi in A.D. 841 in Ray, a city in the northeastern province of Iran. His name became Europeanized into Rhazes. The word Razi, generally, indicates a person from Ray. As a youth, he studied poetry, metaphysical subjects, and music. He wrote an encyclopedia on music. At the age of 30, he began to study medicine in Baghdad. It has been said that Rhazes' inclination toward the medical sciences was a result of an incidental journey to Baghdad, where he visited the Azodi Hospital. There "he saw a boy who had been born with two faces on a single head." He was also informed by a staff physician that a preparation had been discovered which kills pain and alleviates inflammation, the most effective remedy of its kind in those days. This was called "Hayo-l-Alam" (The Vivifier of the World). These two incidents stimulated Rhazes' curiosity not only to learn medicine but also to find ways by which the ills of mankind might be eliminated.

After he mastered Medicine, he returned to Ray and was appointed

chief physician in a hospital. This position did not satisfy him and later he went back to Baghdad where he became Director of the Azodi Hospital.

He did not remain in Baghdad long. He visited many cities and countries diagnosing and treating the illnesses of the nobility. He was also called as a consultant to the various Royal Courts when a question regarding philosophical or chemical sciences arose. In the last two years of his life he lost his sight because of cataract. His friends insisted upon an operation, but Rhazes refused this and said "I have seen so much of the world that I am wearied of it." He died in A.D. 926, blind and poor.

Characters and Intellectual Qualities. Ten centuries after his death Professor Neuburger wrote "Rhazes was a man of rare attainment, who linked the knowledge of his day to the achievements of the past, a tireless writer of immense productiveness, an inspired teacher and a powerful reader in the nature's book itself." As an able investigator he was called "The Experimenter," and "The Experienced." Earnest study seems to have been his main object. He was an intelligent and affectionate man and a kind and considerate physician. Not only did he never charge the poor for the medical services but he also furnished their medications free. Rhazes' characteristics may be summarized in "Not one, but all mankind's epitome," as Dr. Ranking said. There are many sayings describing Rhazes' character. One reads as follows: "careful and prolonged study of the writings of physicians and philosophers, and a probing of their secrets, is of service to every physician of eminence." This "will store his mind as though he had lived and practised his art for a thousand years."

There were many pupils from everywhere around him and he discussed scientific matters with different groups of them. He instructed his pupils to be cheerful to their patients. He believed that the body is acted upon by the mind and therefore, if the patient's peace of mind is

neglected, the treatment of the body alone may be a failure. He was not only a master of medicine, surgery, physiology, anatomy, materia medica, dietetics, hygiene and therapeutics but he was famous for his knowledge of philosophy, both general and speculative, psychology, mathematical science, logic, ethics, metaphysics, religion, grammar, music, and chess and checkers. Apparently, there were many medical quacks in his time. He wrote three books about imposters in medicine criticizing them severely and warning people to avoid them. He emphasized the fatalities among the people who had taken some charlatan's medications.

Contributions to Medicine. Rhazes was the author of 250 works, the great majority of which were original. Unfortunately, many of his writings have been lost. There are 232 of his works listed by Ranking, most of them in Arabic, then the language of science. In his writings, he used the ideas and theories of Hippocrates, Galen, Orbasius, and Aetius. He was a superb clinician but inferior to Galen in his knowledge of anatomy and physiology. The most important books written by Rhazes which dominated the medical world and were used in Europe as well as the East for several centuries, are:

(1) *Havi* (or *Liber Continens*), which was an Encyclopedia of Medicine and Surgery, covering all the branches of the art and science of Medicine and consisting of 25 volumes. This book was more voluminous than *Canon* of Avicenna. The ninth volume of *Havi* dealt with pharmacology and was used in European Medical Schools for many years after the Renaissance.² In spite of great efforts on the part of the anti-oriental and pro-Greek-minded physicians of the Renaissance, it was impossible to bury Rhazes and his works. *Havi* was translated into Latin in Brescia in 1486, and in Venice in 1500, 1506, 1509 and 1542.

(2) *Al Kitab-el-Mansouri* (or *Liber Almansorem*), which was a descriptive treatise composed of ten volumes: (I) Anatomy and Physiology. (II) Temperament. (III) Single Remedies. (IV) The Means of Preserving Health. (V) Skin Diseases and Cosmetics. (VI) The diet

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for the Travelers. (VII) Surgery. (VIII) Poison. (IX) The Consideration of the Various Organs of the Body from top to toe. This book was very influential in the world of Medicine and its Latin translation was specifically called *Nonus Almansoris*. (X) On the Fever. The Latin translation of these books was published in Milan (1481), in Venice (1497), in Lyons (1510) and in Basle (1544).

(3) *Liber de Variolis et Morbillis*, in which Rhazes has described the smallpox and measles and their differentiation from the other exanthemata. Although smallpox had been known previous to Rhazes' time, he was the first to describe it fully and scientifically.^{1, 2, 5, 8} This book was translated into Greek in Paris (1548); into Latin in Venice (1498 and 1555), in Basle (1529 and 1544) and in London (1747); into French in Paris (1726); and into English in London (1848).

(4) *Affections of the Joints*. Rhazes was the first to describe Spina Ventosa. He indicated "the disease originally begins within the bone, in the medullary substance of it, and divides the outer lamellae, so as to produce a tumor, which by pressing upon the periosteum, creates pain."⁶

(5) *Taghsim-ol-Elal* (or *Division of Diseases*) which was also translated into Latin. The details of this book are not available.

Other contributions made by Rhazes in various special fields are briefly as follow: In surgery, tracheotomy, tonsillectomy, the reduction of fractures and dislocation by means of machines, treatment of harelip, longitudinal opening of the vein in venesection, and on the suture of animal gut for abdominal wounds.¹ In ophthalmology, operative procedure in entropion and ectropion, the extraction of cataract, and operation for fistula lacrymalis.⁸ In gynecology and obstetrics, description of retroversion of the uterus, hydrometa, mole pregnancy, and embryotomy for the relief of labor. In infectious diseases, in addition to smallpox and measles, which have already been referred to, he was the first to describe hydrophobia.⁵ In anatomy, description of the recurrent laryngeal^{1, 8} and the trigeminus nerves.⁸ In materia medica, Rhazes was the first to introduce chemical preparations into medicine, such as external use of arsenic, mercurial ointment and sulfate of copper.^{1, 5, 8} The discovery of sulfuric acid and distillation of alcohol from starch and sugary substances are ascribed to him.¹ In therapeutics, he was conservative and was against the polypharmacy in treatment of the

patients. In this regard he said, "One should use the drugs whose properties are well known, and avoid the employment of rare and less proven drugs, confining oneself mainly to those of which one has personal experience."

He probably knew about cancer, since he advised against methods which ulcerate the process, and he suggested total removal of the disease, if possible. The cautery was one of his recommendation in such cases.⁵ The importance of the diet in therapeutics was known to him. He wrote several articles on "The Dietetics and Alimentation, both in Health and Disease." Rhazes was recognized as a pioneer in medical research including animal experimentation. Before administration of mercury to human beings he gave it to the ape, and noted abdominal discomfort in the animal.¹

Conclusion

World medicine was greatly advanced by the contributions of Rhazes many centuries ago. His talents in the cure of the sick were matched by his teaching and leadership in the field of clinical investigation. He will be remembered for his devotion to duty, his humanitarian efforts, and his compassion for his fellowman. The world was indeed made richer by the life of Doctor Rhazes of Iran.

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