Abū Bakr Muhammad ibn Zakariyyāʾ al-Rāzī — known most commonly as “Razi” or, in Latin, “Rhazes” — was born circa 865 CE in the ancient Persian city of Ray; “Razi” means “from Ray” in Persian. Ray, also known as Rey, Rayy, Rhages, and Arsacia, was situated on the vital Great Silk Road and is now part of the greater Tehran, Iran, metropolitan era. Razi was a noted physician, philosopher, and alchemist — an important pioneer in pediatrics and ophthalmology. He is probably most noted as the first physician to clearly distinguish smallpox from measles, and to describe chickenpox.

Relatively little is known of Razi’s youth, except that he played lute and wrote an encyclopedia of music. Since he could not make a living as a musician, he became a goldsmith and also developed a strong interest in alchemy. During his work as an alchemist, he developed improved distillation techniques for alcohol and discovered sulfuric acid, ammonium chloride, and several metal alloys. He attempted to systematically classify chemical substances, as well as clearly describing chemical reactions and the apparatuses used in his experiments.

At around age 30, Razi suffered a chemical-induced eye injury, so he stopped his alchemy experiments and began to learn medicine, initially at a hospital in Baghdad. He was invited back to Ray by the local governor and soon became the chief physician of Ray’s hospital. After his popularity and notoriety grew, the Abassid Caliphate (a major dynasty that ruled over the Islamic Empire), invited him back to Baghdad to establish a great hospital there. Tradition has it that Razi determined the location of his Baghdad hospital experimentally: He hung slabs of meat in various places around the city and built the hospital where the meat took the longest to rot, reasoning that this was the healthiest part of the city. Because of Razi’s reputation as a brilliant bedside teacher, students soon came to him from all over the Islamic territories.

Razi was a prolific author and wrote hundreds of books and essays on a wide variety of subjects, including alchemy, medicine, pharmacology, music, philosophy, cosmology, and theology, only a few dozen of which survive. His most influential medical work was the 23-volume Kitāb al-Ḥawī fī al-ṭibb (translated into Latin in 1297 AD as “Continens Liber,” and known in English as “The Virtuous Life”). Razi wrote the first home health manual, Man la Yahduruhu Al-Tabib (“For One Who Has No Physician to Attend Him”), as well as an early critique of Galen and Hippocrates.

Razi believed that mental health is essential to the patient welfare and rejected Socratic and Aristolean beliefs about the dichotomy of the body and mind. He emphasized improvement of the spiritual dimension of his patients as a key to recovery, and advocated music therapy for patients with psychological disease.

Razi was the first to describe the reaction of the ocular pupil to light. He also described developing a surgery for cataract: “I have split the lower part of the pupil and have led the cataract outward.”

Razi noted the survivors of smallpox never contract the disease again — an early recognition of acquired immunity. In May 1970, the World Health Organization (WHO) recognized Razi’s 10th century essay on smallpox and measles as original and
Razi also described the allergic rhinitis of a prince caused by smelling roses in spring, presentations of infantile epilepsy, the importance of fever as a natural defense against infection, differences between rheumatism and gout, and various manifestations of gonorrhea.

Razi’s contributions to the early practice of pharmacy included introduction of mercury-based medications. He was among the first to experiment by administering new drugs to animals before patients. For example, he reported giving mercury orally to a monkey, and observed that the animal appeared uncomfortable, gritting its teeth and squeezing its abdomen with its hands, and later developing loose stools. He used low doses of pure mercury therapeutically as a purgative thereafter.

Perhaps of more lasting consequence was Razi’s method of scientific thinking, which emphasized critical reasoning and empirical methodology, and was disseminated by many of his students. He argued against blind obedience to teachers and famous medical authors, and believed that textbook descriptions were of less value than the experience of a wise senior physician.

In his final years, Razi became disillusioned and reportedly even refused needed eye surgery, since he did not want to see how the world was changing as he was sure it would be disappointing. He died at the age of about 60 years, in \(\sim 925\) CE. He has been commemorated several times philately. Iran issued 2 stamps in December 1964 (Scott #1312-1313) to commemorate the 1100th anniversary of his birth; and on August 26, 1978, Iran commemorated Pharmacists’ Day with a stamp (Scott #1989) that shows Razi and pharmaceutical tools (see figure). Additionally, Razi also was memorialized philately by the Syrian Arabic Republic (Scott #C413-415) in 1968.