

CHAPTER 2

The Golden Age of Medieval Islamic Toxicology

Mozhgan M. Ardestani¹, Roja Rahimi¹, Mohammad M. Esfahani¹,
Omar Habbal² and Mohammad Abdollahi³

¹School of Traditional Medicine, Tehran University of Medical Sciences, Tehran, Iran ²Sultan Qaboos University, Muscat, Sultanate of Oman ³Faculty of Pharmacy and Pharmaceutical Sciences Research Center, Tehran University of Medical Sciences, Tehran, Iran

2.1 INTRODUCTION

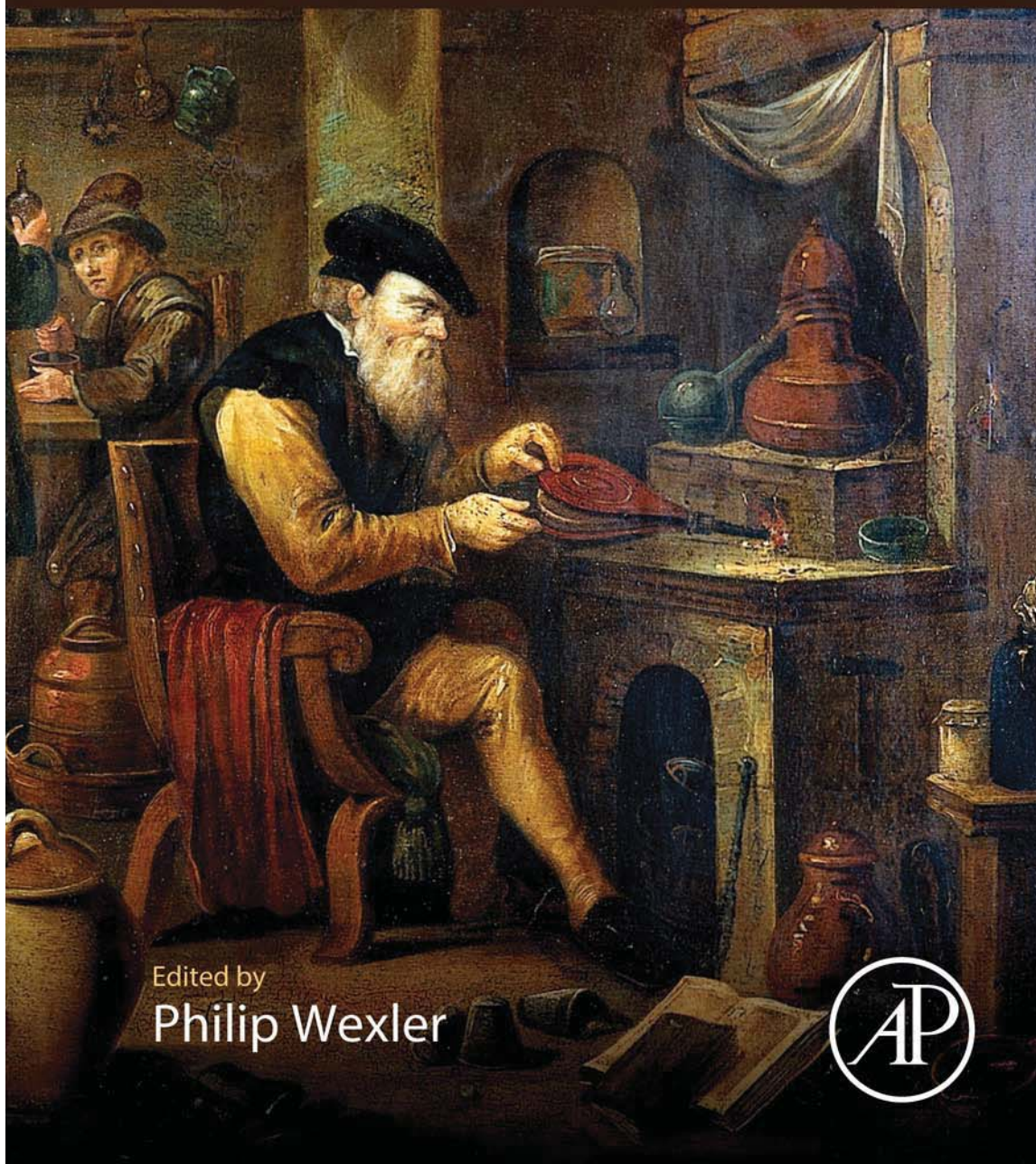
Islamic countries in the Middle Ages made early and important contributions to toxicology. This was mainly due to the need of kings and conquerors to prepare poisons and antidotes for fighting enemies and competitors (Mohagheghzadeh et al., 2006). Sudden death was not an uncommon occurrence in royal courts and was often attributed to poisoning (Tschanz, 2013). Many of the Shiite Imams were killed by poisons. One example is Imam Hassan Ibn Ali Ibn Abi Talib (624–70 CE), who died from repeated and chronic poisoning with arsenic and consequent cirrhosis and gastrointestinal bleeding (Nafisi, 1974). The fear of poisoning convinced Umayyad caliphs (661–750 AD) of the need to study poisons, their identity and methods of detection, as well as the prevention and treatment of poisoning. Animal bites, including the bites of dogs, snakes, scorpions and spiders as well as the poisonous properties of various minerals and plants, such as aconite (*Aconitum napellus*), mandrake (*Mandragora officinarum*), and black hellebore (*Helleborus niger*) were of great interest (Tschanz, 2013).

The antiquity of toxicology in Persian and Arabic countries is apparent in searching for the roots of two words: “toxin” and “bezoar.” “Toxin” was derived from the Persian word “taxsa” meaning “poisoned arrow” used in ancient Persia (Davari, 2013). The first known use of the word “toxin” was in 1886. The standard etymology suggests it is derived in 1660 from the French “*toxique*” and from Late Latin *toxicus* meaning “poisoned” and from Latin *toxicum* “poison,” from ancient Greek *toxikon* (pharmakon) “poison for use on arrows” and from *toxikon*,

HISTORY OF TOXICOLOGY AND ENVIRONMENTAL HEALTH SERIES

SERIES EDITOR: PHILIP WEXLER

Toxicology in the Middle Ages and Renaissance



Edited by
Philip Wexler





Figure 2.9 Commemorative medal issued by the UNESCO in 1980 to mark the 1000th birth anniversary of Ibn Sina. Adapted from: <http://www.1001inventions.com/node/1611>.



Figure 2.10 Images from Latin translation of Canon. Adapted from: <http://www.1001inventions.com/node/1611>.

on medical substances, arranged alphabetically, following an essay on their general properties. The third book concerns the diagnosis and treatment of diseases specific to particular parts of the body, while the fourth covers more general conditions not specific to particular regions of the body, such as poisonous bites and obesity. The final, fifth book, is a formulary of compound remedies (Nasser et al., 2009). This fifth volume of the *Canon of Medicine* has a chapter with detailed descriptions of poisoning (Heydari et al., 2013). Avicenna discusses poisons



Figure 2.4 The statue of Razi in United Nations Office in Vienna is part of the “Scholars Pavilion” donated by Iran. Adapted from: https://en.wikipedia.org/wiki/Muhammad_ibn_Zakariya_al-Razi.

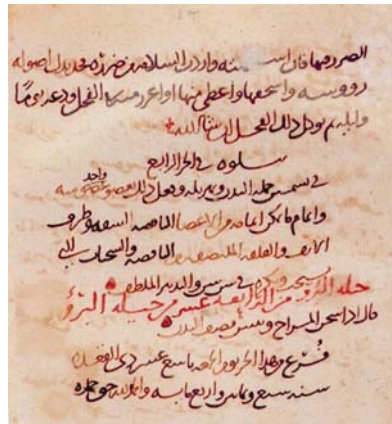


Figure 2.5 The final page of the copy of the *Al-Hawi* by Rāzī, with the colophon in which the unnamed scribe gives the date he completed the copy as Friday, the 19th of Dhu al-Qa'dah in the year 487 (=November 30, 1094). The National Library of Medicine, Bethesda, Maryland, MS A17, p. 463. This manuscript is the third oldest Arabic medical manuscript known to be preserved today. Adapted from: https://www.nlm.nih.gov/exhibition/islamic_medical/islamic_06.html.