

**CLASSIFICATION OF SCIENCES IN THE SCIENTIFIC HERITAGE OF
ABU ALI IBN SINA**

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Abstract:

This article discusses the life and work of the famous Bukhara scholar Abu Ali Ibn Sina, his contribution to various sciences, and the study of his work "The Laws of Medicine" as a subject in all European universities.

Keywords:

Kitab al-Shifa, classification of sciences, medicine, Abulkhair Hammor, "Kitab lisan ul-Arab", traditional sciences, musicology, Urjuza, "Donishnama", Medical canons, "Shaykh-ur-Rais", "Avicenna"

Introduction

One of the great thinkers who brought the culture of the peoples of Central Asia to the forefront of world culture in the Middle Ages was Abu Ali ibn Sina, known in Europe as Avicenna. Ibn Sina (real name Husayn, father's name Abdullah) was born in the village of Afshana in Bukhara, in the month of Safar in the year 370 AH (980), into an official family. In 986, Ibn Sina's family moved to Bukhara, and from that time on, young Husayn began to receive an elementary education and study science. His youth and youth coincided with the last years of the Samanid rule, in particular, the reign of Nuh II ibn Mansur Samani (976-997).

Avicenna was gifted, had a strong memory, and was quick to learn the sciences known in his time. At the age of 10, he had memorized the Holy Quran from cover to cover. At the age of 13, he began to study elementary mathematics, logic, jurisprudence, and philosophy. Despite his young age, Avicenna studied philosophy in all its aspects under the guidance of Abu Abdullah Natili and medicine under Hasan ibn Nuh Qumri, and gradually became involved in medicine.

When Bukhara was conquered by the Karakhanids in 999, the Samanid power collapsed. In 1000, Ibn Sina left Bukhara and went to Khorezm, one of the cultural centers, where he was accepted into the academy of his time, which united scholars at the court of the Khorezm governor, Ali ibn Ma'mun.

Ibn Sina became closely acquainted with such prominent scholars as Beruni, Ibn Miskawayh, Abu Sahl Masihi, Abu al-Khair Hammar, and Abu Nasr ibn Iraq. However, fleeing the persecution of Mahmud Ghaznavi, who was gaining strength during this period, he was forced to leave Khorezm and wander around various cities of Khorasan and Iran. Ibn Sina, who arrived in Jurjan through the cities of Abivard, Tus, and Nishapur, lived as a famous physician in the palace of the governor Qabus ibn Washmgir, and met his future student Juzjani. In 1019-1021, while serving as a minister in Hamadan, he was imprisoned for 4 months for failing to reach an agreement with the governor. In 1023, he fled to Isfahan and devoted his entire life to writing scientific works.

The total number of works by Ibn Sina exceeds 450, but only about 160 have survived to our time. Many of his treatises were lost due to migrations from city to city, feudal wars, palace riots, and various disasters. In many sources, Ibn Sina is interpreted primarily as a physician, although medicine is one of the most important of his scientific fields. The main part of Ibn Sina's works is in Arabic, the scientific language of the Near and Middle East at that time, and some are written in Persian. His largest work known to us, "Kitab ush-shifo" ("The Book of Healing"), consists of 22

volumes and has 4 large sections on logic, physics, mathematics, and metaphysics. Some of its parts have been translated into Latin, other European languages, oriental languages, as well as Russian and Uzbek. The 20-volume "Kitab ul-insaf" ("Book of Justice") has not reached us, as it was lost in a fire in Isfahan. "Kitab un-najat" ("Book of Salvation") consists of 4 large parts - logic, physics, mathematics, metaphysics, "Kitab lisan ul-arab" ("Book of the Arabic Language") consists of 10 volumes. "Donishnama" is written in Persian and includes 4 parts - logic, physics, mathematics, metaphysics.

The scientific heritage of Ibn Sina can be conditionally divided into 4 parts: philosophical, natural, literary and medical, in each of which the scientist left a deep mark. However, if we look at the quantitative ratio of Ibn Sina's works, we see that the scientist's interest and attention were more focused on philosophy and medicine. Although it was his medical heritage, in particular the "Canons of Medicine", that made him famous in the West as "Avicenna", the name "Shaykh-ur-Rais" is, first of all, an indication of his great philosophy.

The scientist's largest and most important work on philosophy is the "Book of Healing". It consists of 4 parts: 1) logic - divided into 9 sections: al-madhal - introduction to logic; al-maqulul - categories; al-ibarat - interpretation; al-qiyas - syllogism; al-burhan - proof, argument; al-jadal - argument, dialectic; as-safsata - sophistry; al-khitaba - rhetoric; ash-she'r - poetics (the art of poetry); 2) nature (here minerals, plants, the animal world and humans are discussed in separate sections; 3) mathematics - divided into 4 sciences: arithmetic, geometry, astronomy and music; 4) metaphysics or theology. Parts of this work have been published in Latin, Syriac, Hebrew, German, English, French, Russian, Persian, and Uzbek. Another philosophical work of Ibn Sina, Kitab an-najat, is an abbreviated form of Kitab ash-shifa, which has also been partially translated into several languages

of the world. The scholar's philosophical views are also reflected in Al-isharat wa-ttanbihat ("Hints and Warnings"), Hikmat al-mashriqiyn ("Philosophy of the Orientals"), Kitab al-isharat fi-lmantiq wa lhikmat ("Hints of Logic and Philosophy"), Donishnama ("Book of Knowledge") written in Persian, and other philosophical treatises of various volumes, as well as in philosophically meaningful literary stories such as "The Story of Tayr", "Solomon and Ibsol", "Hayy ibn Yaqzan", and "The Story of Joseph".

Ibn Sina was interested in astronomy from his youth and maintained this interest until the end of his life. He devoted separate chapters to astronomy in 8 independent treatises and in the mathematical parts of the "Book of Healing" and "Book of Wisdom". He revised Ptolemy's "Almagest" and created a manual on practical astronomy on its basis. Ibn Sina determined the geographical longitude of the city of Jurjan using a completely new method for his time - observing the highest point of the Moon. In his work "Geodesy", Al-Biruni spoke about the correctness of this method and associated it only with the name of Ibn Sina. This method was rediscovered in Europe 500 years later (in 1514) by the astronomer Werner. In the field of mathematics, Ibn Sina revised Euclid's book "Fundamentals", introduced comments and additions to it, applied arithmetic terminology to geometric dimensions, and expanded the scope of the concept of "number" far beyond the "natural number".

Ibn Sina is a major theorist who continued the scientific direction of Al-Farabi in the field of music. His work on music "Jawome' ilm ul-musiqi" ("Collection on the Science of Music") is part of the "Book of Healing", each of which consists of 6 sections with several chapters. There are small sections on music in "An-najot", "Donishnama", and in "Tib Qanonari", "Risolai Ishq" and others he discussed some issues of music. He described all the problems of the music of his time: nag'ma, bo'd (interval), lad systems, iyqo, melody creation, musical instruments, etc. He was the first to establish a musical structure that was later called "sof tizma (tone system)" in Europe.

Ibn Sina's contributions to the development of surgery are also enormous. In his medical works, he describes some of the methods used in modern surgery. These include cauterizing or cutting purulent tumors with a knife, suturing hemorrhoids, stopping bleeding with a tampon, sharp object or suture, cutting the throat and inserting a tube (tracheotomy). The method of treating the protrusion of the shoulder bone with simple pressure is still called the "Avicenna method". Ibn Sina corrected the curvature of the spine using a wooden device he invented. This method was rediscovered by the French physician Calo in the 15th century. The method of plastering bones was also widely used by Ibn Sina, but it was also later forgotten and was returned to practice by European physicians in 1852 as a new invention.

Almost all the methods currently used in eye surgery were known to Ibn Sina. Low-grade cancerous tumors, removal of bladder stones, istisqa, hemorrhoid operations, skull surgery, etc. are among the treatment methods used by Ibn Sina. Ibn Sina also paid great attention to the issue of anesthesia (insensitivity to pain) in surgery. For this, he used opium, ginseng, cannabis, etc. drugs with narcotic effects. Ibn Sina emphasized the great importance of personal hygiene, sleep, and physical exercise in the treatment of diseases. His method of treating one disease by inducing another is noteworthy.

Ibn Sina conducted in-depth research in the field of medicine. He completed the formation of a new pharmacy that emerged in the Muslim East based on the pharmacy of ancient scientists. The use of drugs such as sana, camphor (camphor), robach, tamr-hindi (Indian date) in medicine, and the preparation of many drugs based on sugar instead of honey are also due to Ibn Sina. His methods of collecting, storing, and processing medicinal plants are very close to the methods of modern medicine. Along with natural drugs, Ibn Sina was one of the first to use drugs prepared chemically. Depending on the type of disease, he treated first with simple, then with drugs of complex composition.

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