Ibn-Sina: “The Prince of Physicians”

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Summary

Every age has its defining genius, every culture its own **Aristotle**, **Leonardo** or **Goethee**. For classical Islam that figure was unquestionably Ibn Sina. Master of many fields, his contributions to medicine are the topic of this brief biographical essay. In this survey is offered a glimpse of man who called the study of medicine “not difficult,” and amidst his other interests found time to write a million word classic of medicine, that served as a standard textbook, worldwide, for almost a thousand years. Future essays will focus on individual contributions of **Ibn Sina** in different fields of medicine.

Key Words: History of Medicine, Ibn Sina, Biography

Every culture and era has its defining genius -- an intellect so overpowering, accomplished and eclectic that it dominates, and becomes synonymous with it. For the Hellenistic World it was **Aristotle**, for the Renaissance, **Leonardo da Vinci**, for the early Americans, **Benjamin Franklin** and for the Germans, **Goethe**. The flower of medieval Arabic culture and learning was **Abu Ali al-Husayn bin Abdullah ibn Sina** (980-1037), known to the **West as Avicenna.** Called "The Prince of Physicians and Philosophers" by his contemporaries, he was the towering genius of Arabic civilization.

It is hard to describe **Ibn Sina** in anything but superlatives. His intellectual achievements encompassed not only medicine, but philosophy, law, science, music, poetry, mathematics, and statecraft. Even his life was the stuff of legend.

Born to a tax collector in Afshena, Persia, **Ibn Sina** was so precocious that he had completely memorized the ***Quran*** by the age of ten. Then he began the study of law, and in quick succession turned his attention to mathematics, physics, and philosophy. Blessed with a photographic memory and a keen wit, he soon absorbed all the books he could lay his hands on. Encountering a problem in Aristotle's *Metaphysics* **Ibn Sina** reread the Greek's book forty times before reaching a solution. At sixteen he turned to the study of medicine which, he wrote later, he found "not difficult." By his eighteenth year his fame as a physician was so great that he was summoned to treat the Prince ibn Mansur, who was promptly recovered.

Muslim society held physicians in high esteem and around his twentieth year **Ibn Sina** was appointed Vizier to Prince Shams ad-Dawlah of Hamadhan. But **Ibn Sina's** political career lacked the superior qualities of his other endeavors. The characteristic that would make him such an accomplished scientist and philosopher -- his almost supernatural persistence, his indomitable will and his wide ranging brilliance served him poorly as a diplomat and politician. Hard working and industrious, he had a streak of intellectual arrogance that worked against him in the game of court intrigue. Knowing himself to be intellectually superior to most, his contempt for mediocrity was scathing. He was devastating in argument with fellow courtiers and other scholars and they often verged on violence. His conceit, unorthodox beliefs and unconventional conduct embroiled him in one controversy after another. He paid the price for his imprudent genius. Malicious rumors spread that he was a sorcerer and conjurer of evil spirits. Within a few weeks of taking office the army revolted against him and he was forced into hiding until things calmed down. Still he was in great demand at court and the rest of his life was crowded with adventure

and hard work in the service of various princes and rulers. Somehow he found time in the intervals of his exacting diplomatic duties to write twenty book on theology, metaphysics, astronomy, philology and poetry and twenty more on medicine, where his greatest achievements lie.

Ibn Sina's supreme work is the monumental ***Al Kanun (The Canon)***. Over one million words in length, ***The Canon*** discusses the whole field of medicine in an attempt to codify all existing medical knowledge. Summarizing the Hippocratic and Galenic traditions, describing Syro-Arabic and Indo-Persian practice and including notes on his own observations, **Ibn Sina** strove to fit each bit of anatomy, physiology, diagnosis and treatment into its proper niche. It was a daunting task.

By the late tenth and early eleventh century, medicine in the Islamic World was a highly developed profession, comparable in many ways with medical practice today. Arab doctors had to comply with training and licensing regulations. City hospitals were divided into wards under the supervision of senior physicians and lay administrators. Traveling clinics brought medical attention to people in rural areas. And Arab laboratories evaporated, filtrated, crystallized, and distilled raw drugs, sometimes mixing them with syrups, gums, and fruit rinds to improve their taste.

At the core of this activity was the Muslim belief that health was normal and illness an aberration. In Europe sickness and disease was seen as signs of divine retribution. The Muslim physicians viewed themselves as practitioners of the dual art of healing and the preservation of health whereas their Western counterparts did nothing for their patients other than offer compassion, prayer and a bit of broth.

Arab physicians were making accurate diagnoses of diseases as different as plague, diphtheria, leprosy, rabies, diabetes, gout, cancer and epilepsy and fully understood their natural history. They mastered operations for hernia and cataract, developed surgical instruments like obstetrical forceps and specialized scalpels, filled teeth with gold leaf, prescribed spectacles for defective eyesight and established the role of sanitation, diet and hygiene in health. At the same time they unlocked the secret of sight, understood the causes of hay fever and other allergies, and are understood the idea, if not the details, of infectiousness.

The Canon stresses the importance of dietetics (Arab medicine recommended cure by natural products and methods) and the influence of climate and environment on health. **Ibn Sina's** discussions include the use of oral anesthetics, rabies, hydrocele, breast cancer, tumors, labor, poisons and their treatment. He further differentiates meningitis from the meningismus of other acute diseases; describes chronic nephritis, facial paralysis, ulcer of the stomach and the various types and causes of hepatitis. He also exposits the dilation and contraction of the pupils and iris and their diagnostic value, describes the six motor muscles of the eye, and discusses the functions of the tear ducts. He also notes the contagious nature of some diseases, and correctly attributes hookworm to an intestinal worm.

The Canon also includes a description of some 760 medicinal plants and the drugs that could be derived from them. At the same time **Ibn Sina** laid out the basic rules of clinical drug trials that are still followed today: The drug being tested must be pure. The drug must work on all cases of the disease. Its efficacy must correspond to the dose and the strength of the disease. Testing in humans, with careful notation of the drugs's effectiveness under differing conditions, was the necessary final step.

The Canon rapidly became the standard medical reference work of the Islamic World. The Muslim author, **Nizami-i-Arudi** of Samarkand, writing in the twelfth century, spoke for generations of physicians: "From him that hath managed the first volume thereof, nothing will be hidden concerning the general theory and principles of medicine." It was not until the discovery of the Germ Theory in the nineteenth century that ***The Canon*** was supplanted from its preeminence, making it THE medical textbook for a longer period than any other medical work.

At the urging of his friend, student and confidant **al-Juzjani**, **Ibn Sina** undertook another important work -- a commentary on the works of **Aristotle**. Designed to set out the philosophies of the ancient Greeks, ***Al Kitab ash-Shifa (The Book of Healing)*** is the longest treatise on philosophy ever written by a single man.

After the death of Prince Shams ad-Dawlah, **Ibn Sina** was offered a position at the court of Prince 'Ala' ad-Dawlah Abu Ja'far in Isfahan. While accompanying a military expedition in 1037, he was stricken with a severe case of colic that did not respond to treatment and died at the early age of 57.

Ibn Sina left the world an enduring legacy. His writings inspired philosophers, theologians and physicians in the Muslim World for centuries after his death. In the West, he was a primary link with the philosophical thought of Ancient Greece and a fundamental contributor to the European reawakening. In medicine, the *materia medica* of *Al Kanun* was Europe's pharmacopoeia for five centuries after his death. His rules for clinical drug trials are still the basis for modern pharmacological investigation. One modern historian described him as a "meteor, which flashed across the sky, illuminating the whole world with his brilliance, and in whose afterglow we still perceive the world around us."

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