

IBN SINA'S TREATISE ON DRUGS FOR THE TREATMENT OF CARDIAC DISEASES

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THE "Prince of Physicians", Ibn Sina (Avicenna d. 1037 A.D.) wrote as many as fifty-four books and treatises on the science of medicine including his *Magnum Opus*, the *al-Qanun f'it-Tibb*. They deal with particular diseases or drugs but the one dealing with drugs for the treatment of Cardiac diseases is important.

Both Ibn al-Qifti (d. 646/1248) and Ibn Abi Usaybi'a (d. 668/1270) record the title as *Kitab al-Adwiyat-Qalbiyah* and their statement is corroborated by the title found in the majority of its MSS. In some of them the word *Risalas* takes the place of *Kitab*. This is also the title recorded in the 3rd Book of *al-Qanun* of Ibn Sina. However, C. Brokelmann has recorded its title as *Fi Ahkam al-Adwiyat al-Qalbiyah*⁴ It was written at the request of his patron Abu'l-Husayn 'Ali bin al-Husayn al-Husayni for his Library. It has been stated that there is another treatise *Risalat al-Qakbutag*⁵ written by Ibn Sina.

The authorship of this treatise was never disputed and without doubt it is a genuine work of Ibn Sina. As stated above both Ibn al-Qifti and Ibn Abi Usaybi'a include it among his works. But the most reliable and unimpeachable evidence is that it has been mentioned by Ibn Sina himself in the third Book of the *Qanun*, which means that it was written at Hamadan before the latter was completed.

That it was a popular and widely circulated treatise is proved by its numerous MSS found in libraries and private collections all over the world. C. Brockelman has recorded a List of these MSS, but it is by no means complete. He had information of 17 MSS,⁶ but he had no knowledge of MSS of this work in the libraries whose catalogues of Arabic MSS have not yet been published. He has not mentioned the Leningrad and Jami'a Millia, New Delhi MSS. Moreover, there are several MSS in the private collections such as the one at Patna belonging to Hakim Mazaher Hasan. While translating the book into Urdu, Hakim Abdul Latif depended on the last two MSS and the two at the British Museum.

There seems to be three printed texts of this treatise of which one is

incomplete. Its first part, excluding the discussion on drugs, was printed in the monthly *al-'Irfan* of Sa'ida (Syria) in the Rabi-'al-Awwal issue of 1345 A.H. The full edition of this text was published with a Turkish translation at Istanbul in 1937.⁷ The Leningrad MSS of the *al-Adwiya* was published in facsimile at Tashkent in 1966 by the Uzbek Academy of Sciences along with an Uzbek translation by Hikamatullayev. The Istanbul text is on the whole satisfactory.

Owing to its wide acceptance and importance, this treatise was translated into Latin in the early 14th century by Arnaldo de Villanova (d. 1310 or 1313 A.D.) under the title *De Medicinis Cordialibus* and it was translated for the second time into Latin by Alpagus in 1520 A.D. The Turkish and Uzbek translations have been mentioned above and Hakim Abdul Latif of the Ajmal Khan Tibbiya College of Aligarh Muslim University published its Urdu translation with an introduction under the auspices of the Iran Society of Calcutta in 1956.¹⁰

Generally, Ibn Sina does not specifically mention his sources in the *Qunan*, but in this treatise he had indicated some of them. He refers to Aristotle twice and his two works on the *Sofistica* and the *Rhetorica*. The first is the *Sophistici Elenchi* which is the last of the logical works of Aristotle. There were at least three Arabic translations of this work available to Ibn Sina. The *Rhetorica* of Aristotle was translated by Ishaq bin Hunayn and Ibrahim bin 'Abdullah and al-Farabi wrote a commentary on it. Hippocrates of Cos¹¹ (Ca. 460-Ca. 370 B.S.) is mentioned once only and Galen¹² (Ca. Pergamon A.D. 129/130 and 199/200) twice but no title of their works is referred to. Ibn Sina has not acknowledged it but there is no doubt that he has consulted some books dealing with simple and compound drugs used in Greco-Arab system of medicine compiled before him.

The first part of the treatise is a discourse which is medico-philosophical in character but almost original and important, in which the relationship between the pneuma,¹³ the heart and medicine is explained. Ibn Sina was first and foremost a philosopher, hence, even while discussing the treatment of Cardiac diseases, the philosopher in him predominates over the physician. The anatomy and physiology of the heart are not described but Ibn Sina writes about the left cavity (ventricle) of the heart, which is most active, as a chamber for the pneuma, the source of its formation and the provider of animal powers to permeate the body's organs.¹⁴ "The heart is not merely a physiological organ, according to him, as anatomists teach us; Ibn Sina gives to it a psychological and suprabiological function. The heart is the seat of emotions and regulator of animal heat. In paragraph three of his treatise on cardiac drugs Ibn Sina says that the source of the beginning of those energy-processes can be located in the heart".¹⁵ On the authority of

Aristotle he states that among the pneumata the first originates in the heart and reaches the other parts of the body. Ibn Sina then discusses the potentiality and capacity of the "cardiac pneuma or spirit", and adds that the heart is the physical seat of all emotions, such as anger, anxiety, joy and grief which are now considered to be psychical. This whole discussion is based on what may now be called medical psychology. A pertinent remark is made that all weak-hearted persons are not necessarily sad in disposition, or vice versa. Similarly, all persons with strong hearts should not necessarily be jovial in disposition or vice versa.

The diseases of the heart mentioned in this treatise are the following:

- a) Difficulty in breathing or *Tawahhush Qalb*
- b) Palpitation of the heart or *Kafaqn*
- c) Unconsciousness or *Ghashi*

First of all, he explains the causes of the weakness of the heart. This weakness and the resultant cowardice are caused by the thin, fine, and cold blood of the heart, and breathing difficulty is due to the thick, coarse, and hot blood. He also explains the other causes of the weakness. The inflammation of the heart (*awram Qalb*) is mentioned in the *Qanun* but not in the *Risala*. According to him, the liver supplies blood and nourishment to the body, while the heart provides them for the pneuma (animal spirit). He adds that the animal pneuma, which has its seat in the heart, is stimulated by fragrant smell (i.e. brain), while the natural pneuma, which is located in the liver, is animated by sweet food.¹⁶ Then he enters into a long philosophical discussion on the property and nature of the four basis elements, which are considered to be different, but in his view, are almost identical.¹⁷

In the second part of this *Risala*, Ibn Sina prescribes simple and compound drugs for the treatment of heart diseases, but before doing so, he divides the drugs into several categories, such as stimulants, laxatives, diuretics, cooling, imparting warmth and vomit inducing giving an illustration in each case. In this connection, he also explains the subtle difference between the property and nature of a particular drug as being hot, cold, moist or dry. Altogether 65 simple and 17 compound drugs in the form of theriacs, electuaries, crushed medicaments, pills, oxymel, tonic and syrups derived from the vegetable, mineral and animal kingdoms are discussed explaining how they act on the heart and the pneuma (soul). In this treatment, the Galenic concept of the four humours (blood, phlegm, yellow bile and black bile) predominates. Hot, cold or moderate drugs are prescribed according to the temperatal state of the patient namely hot, cold wet and dry. The temperament of the drug is moderated by the "aroma or by warming and cooling".¹²⁸

Some of the simple drugs mentioned by Ibn Sina are silk cocoon,

Azarbowya, Badranjaboya, Saffron, Ruby, Pearls, Egyptian clover, wild ginger, storax, silver and gold, coral leopard's bane (of the genus *Doronicum*), rose, camphor, musk, ambergris, embelic myrobalan, myrtle, marigold, lemon balm, zedoary (aetwall), Cinnaman, Yew (or mountain spignel). He also recommends egg-yolks and meat soup for heart patients.¹⁹ As for the egg-yolks he states that it has three qualities; first it changes quickly into blood and increases blood supply to strengthen the heart; secondly, it has low quantity of unassimilable matter, thirdly, the blood formed of its substance is light and pure, easy to circulate and helpful to the nourishment needed by the heart. If the weakness of the heart is due to the thickness of the pneuma, he prescribes the meat of sheep or goat, one or two years old and if it is due to the coarse and thick pneuma, its soup is recommended which is more easily digestible than meat itself. Then he also explains how the soup has to be prepared. Apple and apple juice drink are recommended as a stimulant for the heart, which strengthens it. He adds that this is due to its sweetness and fragrance and also because it is not only food but medicine as well. Some of these drugs are stated to act also as an antidote to poison. It is not possible to give an account of the simple and compound drugs prescribed in this treatise but it has to be stated here that they are more or less the same which are prescribed for the treatment of cardiac diseases discussed in Book III, Chapter XI of the *Qanun*.²⁰ Without doubt, the discussion here is more detailed and comprehensive.

An in-depth, comparative study of what Ibn Sina has written on the subject in the *Qanun* and in this *Risala* is not necessary. Suffice it to state that he describes the anatomy and the physiology of the heart, whose flesh is firm, with its veins and arteries comparing it with the anatomy of the monkey's heart. Since dissection of the human body was prohibited in Islamic tradition²¹, monkeys were generally dissected and it is likely that Ibn Sina had seen a monkey's heart. Moreover, the discussion of the different diseases of the heart is much more detailed here. He makes an important statement that the warm inflammation of the heart is an instant killer²² and discusses the different kinds of inflammation. The symptoms of heart diseases and the general principles to be followed in their treatment have also been discussed in great detail in the *Qanun*. He states clearly that soundness of body is conditional on soundness of heart.

Ibn Sina was writing quite late in the eleventh century, when the age of translation of the Greek medical works and their commentaries into Arabic had come to an end. Moreover, several general medical works containing chapters on heart diseases were available to him. Clearly, he was in an advantageous position since he could consult the works of Galen, Hippocrates, Hunayn bin Ishaq, 'Ali bin Rabban at-Tabari and Abu Bakr Muhammad bin Zakariyya ar-Razi. It is almost certain that the *Firdaws al-*

Hikmah of at-Tabari, the voluminous *al-Hawi fi't-Tib* of ar-Razi and the *Kitab al-Maliki* of al-Majusi²³ were read and used by Ibn Sina. The sum total of the discussion and prescriptions contained in the *Qanun* and the *Risala* on the subject seem to be derived from these sources but the medico-philosophical discussion in the first part of the *Risala* with speculative reasoning is Ibn Sina's original contribution.

At-Tabari first explains the symptoms of the temperament of the heart which may be hot, dry cold and wet²⁴ and recommends a bath,²⁵ which Ibn Sina does not.

The value and importance of this treatise may now be discussed. There are two diametrically opposed views regarding this work. E.G. Browne states "of his prose works after the great *Qanun*, the treatise on Cardiac Drugs, *al-Adwiyat al-Qalbiyah*, . . . is probably the most important".²⁶ He is supported by Hakim Abdul Latif, its Urdu translator, who writes: "Avicenna's researches on "Heart Drugs" are most original and, I believe, are still capable of revolutionizing our ideas on "Heart Therapy". On the other hand, L. Leclerc expresses an adverse opinion that this treatise on heart drugs is of mediocre value but the most damaging statement is made by Sami K. Hamarnah who writes: "From a medical point of view, this treatise brought almost nothing new to expand knowledge on the subject. On the contrary, it failed to present practical and adequate treatment for heart ailments, propagated erroneous medical and anatomical teachings and gathered contradictory statements. It however focusses attention on an important topic in human pathology and recommends certain simples for possible therapeutic uses and suggests their modes of action on heart and soul."²⁸

Both views seem to be exaggerated — one in favour of Ibn Sina and the other against him. A thorough and critical study of this treatise will lead to the conclusion that it has both merits and demerits. It is not correct to state that it provides no new information, no new drugs and no new line of treatment. There is no doubt that its discussion, of the relation between the pneuma, heart and medicine, is original and in a way anticipates psychosomatic concept in the modern sense. Had this treatise been so worthless and unreliable, as stated by Hamarnah, it could not have acquired such reputation in the Middle Ages. In it, an attempt has been made to prove that moral qualities are based on the functioning of the heart in combination with the pneuma. It contains a few personal clinical notes of Ibn Sina and in so far as compound drugs are concerned, most of the prescriptions (one of them contains 38 different drugs)²⁹ seem to be based on his personal experience, which certainly enhances the value and importance of this treatise. Further, Ibn Sina explains, *inter alia*, the methods of pharmaceutical properties, forms, dosages, strength of each drug

and technique of application, preservation and therapeutics. The clarity of thought and expression is characteristic of the writings of Ibn Sina and the whole discussion is in a high key.

It would, however, be incorrect to suggest that this treatise does not suffer from any demerit. In the *Qanun* as well as in this *Bisala* he puts forward the traditional statement about the anatomy and physiology of the heart and the circulation of blood based mainly on the writings of Galen. Ibn an-Nafis (d. 687/1288), a follower of Ibn Sina, while writing a commentary on the *Qanun* opposed both of them and was the first to discover the pulmonary circulation of blood three centuries before Michael Sirvatus (1556) and Rinaldo Colombo (1559).³¹ Anyone who reads this treatise cannot fail to be struck by the fact that most of the drugs prescribed can be used only by the rich, the nobles and kings and are usually beyond the reach of ordinary and poor people. Even the biography of Ibn Sina shows that, in general he was inclined to treat the rulers and used them to fulfil his political ambitions.³² It is not on record that he attended any hospital regularly for the treatment of the poor and the ordinary, as was done by ar-Razi. A serious defect of this treatise is that all kinds of heart diseases are not clearly and specifically mentioned and several prescriptions recorded in it are not especially for the treatment of cardiac diseases but for ailments of other parts of the body and one may say that they have nothing to do with them.³³ Even considering the fact that there was no hard and fast distinction between philosophy and medicine at the time of Ibn Sina, his statement that the left cavity of the heart is the seat of the pneuma does not belong to the domain of medical science.

This is a metaphysical notion grafted on a medical treatise. The concept of the pneuma (*ar-Ruh*) itself is imprecise since it indicates different things in different context.³⁴

This treatise has merits as well as demerits, but it cannot be judged from the point of view of the very advanced and scientific knowledge of heart diseases and their treatment available in modern times. Since they are the highest killer of human beings for people above forty, even more fatal than cancer, much attention has been paid to them by physicians all over the world. It is true that he had no idea of obstruction of arteries, arteriosclerosis, elevated cholesterol levels and high blood pressure. It should be remembered that this treatise of Ibn Sina was written in the early eleventh century and it should be reviewed in the light of the state of knowledge concerning heart diseases and their treatment available at that time. That he wrote a treatise on specific drugs for heart diseases is enough to show that he considered them the most fatal ones. If a history of heart diseases from the Greeks to the beginning of modern times is written, it

would not be possible to ignore this treatise of Ibn Sina. Moreover, modern clinicians may study his heart therapy and may use it with good results.