

## ONE OF THE SAMPLES OF THE INFLUENCES OF AVICENNA ON THE OTTOMAN MEDICINE, SHAMS AL-DIN ITAQI

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Anatomy is a discipline which needs to know human body very well. However, even the earlier times human being certain coincidence to learn it by the means of some accidents and fights in order to obtain their nutrition. We learn it through the wall pictures which were drawn by the human of that period of time. After then, certain people were interested in human anatomy in order to treat people. It means that anatomy became a fundamental branch of medicine, although, they did not make human dissection which was the method of anatomy. In *Corpus Hippocraticum* there is limited anatomical knowledge.

When we talk about classical anatomical knowledge, generally we mean Hippocratic and Galenic anatomy<sup>1</sup>. Galen wrote a book named *De Usu Partium* and some other works. In those works he explained the human anatomy and the function of the systems, depending on mainly animal anatomy. He made dissection on certain animals as pigs, apes etc. and accepted that human body resembled their structures. For instance, his explanation on muscles shows that he took the anatomical structures of muscles of human being from apes, as is seen the explanations of the muscles of the extremities.

As is known that in Islam in earlier period of time, nearly all of the classical medical works were translated from Greek and Latin into Arabic and the scientists who lived in the World of Islam had opportunity to learn earlier anatomical knowledge through them. Among them can be mentioned Rhazes (IX.cent.), Ali b. Abbas (Haly Abbas) (X. cent.) and Avicenna. In ge-

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<sup>1</sup> Aristotle was also interested in anatomy, but in general he focused on animal anatomy and made precious observations on them. Even nowadays, his knowledge on them are accepted as correct; for instance he gave information about certain sea animals and their life which are accepted as correct. He also explained basic structure of human body with the theory of 4 elements and 4 humours.

neral when they prepared their works they depended on those classical works, especially Hippocrate's and Galen's.

Avicenna (980-1037) was the famous physician who lived in Islamic World in the eleventh century. He was interested in physics, chemistry, astronomy, mathematics, music and philosophy, but he became famous because of his studies on medicine. He wrote many books on this subject, Among them can be mentioned *Kitab al Adviya al Kalbiyye*<sup>2</sup>, *Risala fi al-Hindiba*<sup>3</sup>, *al-Kanun al-Sagir*<sup>4</sup> etc. However they were merely brief risalas on certain branches of medicine. But his famous work, *Qanun* was different from the rest of his work. It was a kind of medical encyclopaedia which consisted of 5 books.

Avicenna had great influence on the following medical studies and especially by the means of the last famous work. It was translated to Latin in the thirteenth century by Gerard of Cremona and its Latin version was published in 1527 and 1544. Its Arabic text was also published several times until the end of the seventeenth century in the West. For that reason, it created enormous extensive influence on the early Western medical studies<sup>5</sup>.

It had not only influence on the Western medical men but also on the physicians in the Ottoman Empire. His work, *Qanun* was accepted as a handbook of medical sciences and it was on the curriculum in the medical madrasas until nearly the end of the first half of the nineteenth century in East. For, after the new medical school was founded in 1827, the medical madrasas continued their activities in the following years and it was on the curriculum.

Avicenna's famous work, *Qanun* contained information about all of the medical subjects. In the first book there are information about the theory of humours, anatomy, pathology (very briefly) and public health. Avicenna explained whole structures of human body classifying them in systems as skeleton, muscles, etc. as is seen in modern books of anatomy, nowadays. There

<sup>2</sup> Some version of this risala are found in Süleymaniye, Bagdatlı Vehbi, 2255, Fatih 3627/1 and 5316/4, Shehid Ali Pasha, 2031/1 and 2092/15, Laleli 1647/2.

<sup>3</sup> There is a version of this manuscript in Suleymaniye, Ayasofya, 6363.

<sup>4</sup> There are two versions in Suleymaniye, Fatih, 3593 and Reisulkütüb 103/4.

<sup>5</sup> See, İbn Sina, *el-Qanun fi't-Tibb*, I. Book (trans. Esin Kahya), Ankara 1995, pp. XXXVIII-XLIII.

is an explanation about the functions of organs which can be named as physiology, nowadays.

The second book is on the simple drugs. He gave information about the usage of the simple drugs and the preparation of the drugs for what kinds of diseases they could be used.

The third volume is about pathology. He explained the diseases of whole human body, beginning from the head to the feet. He gave symptoms and prognosis of the diseases.

Surgery and contagious diseases are explained in the fourth book. Avicenna also gave explanation about the contagious diseases in this book. Complex drugs treated in the 'Akkrabadin', fifth book<sup>6</sup>.

Avicenna had great influence on the Western and Eastern medical studies; especially al-Qanun was very effective on their studies. One of them was Itaqi who lived in the Ottoman Empire in the seventeenth century. His book was named *Tashrih al-Abdan ve Tarceman al Kibale-i Faylasufan*<sup>7</sup>.

*Tashrih al- Ebdan* is the only illustrated monograph on anatomy written in the Ottoman Empire. Some historians of medicine claimed that this work was simply translation of Ahmed b. Mansur's *Teshrih al Abdan* which was written in the fourteenth century. Mansur's work is also an illustrated monograph on human anatomy, but it is shorter. Itaqi's work explains the subjects in detail. It is about 276 pages; Ibn Mansur' work is merely 25 pages. Itaqi used this work and its anatomical illustrations, but he also put some other illustrations which were taken from Vesalius' *Fabrica* (1543). *Tashrih al-Abdan* also contains some other illustrations which could be drawn by Itaqi, himself.

Shems al-Din Itaqi lived in Shirvan until 1604. In those days there was a war between the Ottoman Empire and Iran. As a result of this Itaqi lost his family and some of nearest friends, and he had to live his motherland. He

<sup>6</sup> Its first book was translated from Arabic to 'Turkish by myself and it was published by AKM in 1995. Although its first Turkish translation was in Ottoman and its translator, Mustafa of Tokat preferred the terms and technical terms in Arabic or he used certain Persian words instead of Arabic terms. It means that the second translation was really the first Turkish translation of al-Qanun of Avicenna.

<sup>7</sup> It was published in English in Islamabad among the 100 Islamic Works (no 85a) in 1986 and in Turkish in Ankara 1996 (trans. with some notes by Esin Kahya).

came to Istanbul. In there Grand vizier, Recep Pasha helped him. Itaqi wrote the book, mentioned above, in order to thank the Sultan Murad Han IVth and Recep Pasha. He said that when he prepared his book he used Avicenna's famous work, *al-Qanun* and Rhazes *al-Havi (Continens)* and Bagdadi's works.

The plan of Itaqi's work is nearly same as the first book of *al-Qanun*. However, it is typical plan of any book of anatomy, for even nowadays. Itaqi, also began his book with explaining the 4 elements and 4 humours, and then he gave the characteristics of each organs. However, he separated the organs into two main groups; simple organs and complex organs. This classification is found in Avicenna. He also classified the organs into two main groups and also said that simple organs were the organs which consisted of the same structure, as blood, bone and muscle etc. but complex organs were different, like the system of respiration and digestive system. From this explanation we think that Avicenna and Itaqi described each simple organ as a kind of tissue.

In general, although Avicenna excepted Galenic anatomy and explained the organs depending on it, time to time, his explanations are different from his; for instance, his explanation of the bones of the extremities are quite different from Galenic anatomical knowledge<sup>8</sup>. His explanation about the division of the vessels of upper extremities are also different from the Galenic explanation<sup>9</sup>. We can increase the examples on this matter. However, depending on such information, some physicians claimed that Avicenna should have been made dissection, although he had never mentioned it.

When we look at the Itaqi's book, we can define certain resemblance between Avicenna's and Itaqi's explanations. However, Itaqi also gave certain information which are quite different from Avicenna's information in some points. However, the resemblance between Itaqi's work and Avicenna's *al-Qanun* is natural. For, Itaqi have known the earlier anatomical knowledge very well as a physician. But he made certain contribution and in some point he did not accept neither Galenic anatomy nor Avicenna's. One of them can be defined in the explanations of the nerves. For instance, Galen said that

<sup>8</sup> Ibn Sina (Avicenna), *al-Qanun*, Bagdad, v.1, p.36.

<sup>9</sup> Galen, *De Usu Partium*, New York 1968 (Eng. Trans. M. Tallmadge), v.2, pp. 691-692.

there were 7 cranial nerves, and the first cranial nerves were optic nerves. Although Avicenna accepted his classification, he mentioned olfactory nerves but he did not add it into the classification of the cranial nerves. Itaqi added this pair of nerves into his cranial nerves classification as the first pair of cranial nerves. In addition to them, Itaqi also gave different knowledge about the function of the third, fourth and fifth cranial nerves from Avicenna's.

Itaqi's explanation about the embryo is also different from Avicenna's. Here Itaqi preferred to give information comparing different physicians' opinion and one of them was Avicenna's.

As is known that Ibn Nafis (13.cent.) discovered the lesser circulation and we know that Itaqi knew well his famous book, *Sharh-i Tashrih l'Ibn Sina*. This book is a commentary written on the anatomical part of al-Qanun. Ibn Nafis explained the lesser circulation in the five different places of this book. Although Itaqi mentioned Ibn Nafis among the physicians whom he used their books when prepared his work, he did not realise the difference between the other physicians' and Ibn Nafis' explanations. For that reason, he still gave classical information about the lesser circulation.

Itaqi was the first physician in the Ottoman Empire who showed Western influence very clearly. Although he used classical books of anatomy, and Avicenna's *al-Qanun* was the most important of them, he used Vesalius famous book, *Fabrica* (1543) which was accepted the first book of modern anatomy in which Andreas Vesalius showed that dissection should have been used as a research method of anatomy. Itaqi did not only copy some of the illustrations of this book, but also used its explanation as well. One of the clues which shows us that he used *Fabrica*, is the explanation of the functions of the muscles of the neck.

As a conclusion we can say that Itaqi used Eastern and Western sources very well, but for him, Avicenna had quite different place among them.

Itaqi also used Ahmed b. Mansur's book's illustrations in addition to *Fabrica*, Vesalius' book. We can have chance to compare the two different kinds of illustrations. Ahmed b. Mansur's work had no perspective, contrary to *Fabrica*.

But I should said that Itaqi also gave some illustrations or in better word, some schemata which were probably drawn by himself; these schemata are suitable the explanations in his text. Some of the samples are seen in the explanation of the cranial nerves.