TIBB AND TIBBÎ INSTITUTIONS IN TURKEY

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Like many other branches of knowledge, the science of history owes a great debt to the Islamic nation. It was the Muslims who for the first time in human history evolved the philosophic concept of objective, non-partisan documentation of historical data. It is they who showed the world how a scientific historian sifts the material available to him, how he separates fact from fiction and truth from falsehood. Veracity was their main criterion. They insisted that never should a historian distort facts to suit his theory or some pre-conceived notion, and nothing which is not completely authentic and proven beyond all doubt should ever find place in a work of history.

History enables the student to correlate the past with the present. It analyses the rise and fall of nations, determines the causes thereof and helps mankind to avoid likely pitfalls and emulate the example of the pioneers of progress, in ages gone by, who through their initiative, sagacity and hardwork paved the way that has ultimately led mankind to the mastery of the physical universe. True history is a faithful account of the aspirations and ideals of nations, their beliefs and social mores and an in-depth study of their cultural, socio-economic, moral and spiritual institutions. It includes, in its purview, a true evaluation of a nation's mores of production, its art and literature, its penal system and its form of government. It must also provide adequate knowledge of the general standards of health among the people who form the subject of its study, the diseases found among them and the medical facilities available to them. No historical work can be considered definitive unless it gives a knowledgeable account of the health culture of the people whose story it sets out to tell. This last factor is highly important because the general standard of apeople's health will ultimately determine whether it will go up or down. The attitudes and ideals of nations are to a large extent dependent on the state of their physical and mental health.

Allâmah Shiblî has written in his classic *Sh*^{c}*ir al-*^{c}*Ajam* that Islam is like a shower to inundate the parched earth. It watered all the four corners of

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the earth, and every nation drew advantage from it according to its own capacity. The Turks particularly are an apposite example. Having come into close touch with Islam towards the twilight of the Ummayads, they became very zealous Muslims. Barybars, the saviour of West Asia from the onslaught of Hulagu in the 13th century, was a Turk. So were the Seljuqs, the celebrated patrons of arts and science, during whose reign flourished such outstanding figures as ʿUmar Khayyam, Imam Ghazâlî, Nizâm-al-Mülk, Tûsî, to name a few. Some of the greatest Iranian poets like Niz-âmî of Ganjah, Khâqânî, Anwarî, and others were also of Turkish stock probably. They were the greatest soldiers of the age and their valour is proverbial. Once they were invested with the faith of Islam, they became virtually invincible.

It is surprising indeed that historians generally assess the Turks primarily as fighters although, like other nations, the Turks also gathered within their fold the wealth of the Islamic faith. There is not one sector that does not bear the impress of the Turks. It is strange therefore that historians usually trace the history of Turks from the time of their migrations *(circa* 9th-11th century A.D.), their conquests of what constitutes Ottoman Turkey, and the conquests brought about by the Ottomans, and close the chronicle with Mustapha Kamal Pasha.

If we examine the history of *Tibb,* we find that the story of its origin is taken back to Babylon and Assyria, Egypt, and that of its evolution to Greece and Rome, Jundishapur, Syria, Baghdad in the East and Morocco and Spain in the West. We also trace its collateral branches in Sicily and other centres where Islamic medicine flourished. We also infer a link between Ayurveda in India and Islamic medicine, especially during the Caliphate of Harûn al-Raşhid. But nowhere do we find the Turks figuring prominently. The fact, however, remains that the Turks not only undertook original work on Tibb during the Seljuq and Ottoman periods, but have also left to posterity an invaluable corpus of scholarship.

While investigating the cultural background of the Turks, we have to bear in mind the constant and unremiting stream that ran back and forth between the Turks and the Iranians. The Seljuqs were a branch of the Turks who migrated from the steppes of Kirghizitan to Uzbekistan. Professor Phillip K. Hitti, while describing the cultural background of the Turks, has categorically stated that the Turks derived most of their knowledge in philosophy, religion, sociology, economics and politics from the

Arabs, although there were certain outstanding Turks who carved niches of their own, e.g., Zamaksharî, Fârâbî, al-Jawharîal-Fârâbî, the eleventh-century lexicographer, etc. In effect, the position of Turks *vis-à-vis* the Arabs corresponded to that of the Romans in relation to the Greeks. Just as the Turks implicitly —indeed, with a degree of zealotry— accepted the principles of the faith of Islâm, they also accepted the post-Islamic principles of *Tibb,* which were subsequently adopted and developed in Iran, taken over by Seljuqs, and transmitted by the latter to Turkey.

Muslim historians have always devoted much time and space in their works to the discussion of the overall health situation of their subjects of study and research. Turkish history is truly fascinating in many regards. It is absolutely objective and its authenticity is unquestionable, whether it relates to the Seljuq period, to the later Ottoman era or to the revolutionary times of Mustapha Kamal. I am not in a position to make any authoritative statement about what importance Turkish historians in fact attached to the subject of the general health standards of the Turkish nation and the medical facilities they could avail of in time of need. But I will, in this discourse, briefly discuss the history of Turkish medicine and health culture. What I have to say on the subject will I hope, notonly facilitate a true appraisal of classical Turkish works of history but may also be of some help to future Turkish historians.

If we look at the outlines of the history of Turkish medicine, we see that the first hospital to be made from stone was built in 1401 A. D. at the command of Bayazıd at Bursa. It had a clinic attached to it. *Tıbb* was taught at the *Madrasahs* of *Sûleymâniye* and the *Fâtih.*

Discussing the contribution of the Turks to medicine, Dr. Julius Germanus, the celebrated Hungarian orientalist, has referred in particular to the Turkish contribution to brain therapy and genetic diseases, especially the aetiology and the diagnostic aspects of such diseases. Two famous Turks, Haji Pasha and Ishaq bin Murad have written treatises of high order in Turkish. Altunizade, Ahmed Ali, Ahmed Çelebi, Wesim Abbas, etc., gained fame as physicians. As surgeons and ophthalmologists, the fame of the Turks ranged up to Central Europe.

Dr. Hossein Nasr, mentioning the achievements of the Turks in the field of medicine, has said that the Turks, following the footsteps of the Seljuqs and Abbasids, continued building hospitals. The first hospital, christened *Dar al-Shifa,* was built at Bursa. This was followed in the

ninth century A. H. by a faculty at the command of Sultan Bayazıd the Second. It comprised not only a hospital but also medical institutions. Two from amongst these are still extant. A big hospital *(bimaristan)* was established at Istanbul, and was later converted into a modern hospital.

Insofar as the history of the Turkish medicine is concerned, it is an incontestable fact that the Turks did not inherit any system of medicine that was alien to the Greco-Arab, and they developed the system which is known as the Greco-Arab or Islamic *Tibb.*

Early Turkish medicine is not lacking in the traits which characterize the primitive practice of medicine. For example, the procedure adopted two and half millenia ago for the treatment of fever by man was also found to exist during the Seljuq and Ottoman period. It is for this reason that a considerable number of manuscripts in Arabic, Persian and Turkish are to be found in individual and public libraries in Istanbul. Some of the books are priceless and comprise manuscripts to which early physicians like Râzî and Ibn Sînâ refer. The number of hospitals and medical institutions set up by the Seljuqs number more than a thousand. Some of them are still extant, as already mentioned. The *hammam* (hot-water bathing places) has its origin in the Seljuq period. As Turkey began to occupy an extremely important place in the practice and promotion of *Tibb* in the Middle Ages, it began to import important Arabic and Persian manuscripts on *Tibb.* Two such manuscripts were those of Dioscorides' *Greek Herbal,* bearing the dates of 621 and 622 A. D., respectively. These can be seen in the Topkapı and Ayasofya libraries. *Nizâmî-i ʿArûdzî* refer in his *Chahar Maqalah* to manuscripts which the Seljuqs had studied.

The Seljuqs attached considerable importance to consensus as regards diagnosis of diseases. If necessary, physicians from other countries were invited for giving their opinion on specific points concerning the diagnosis and aetiology of a disease. The Seljuqs are to be credited with the development of the concept of the mobile hospital. Trains of camels used to carry the medical equipment and medicines. Among the celebrated physicians of the age were Shemsüddin Ibn Hibl from Mosul, Cerrah Fasil, Muvaffaküddin Abdüllatif from Baghdad, Ebü'l-Ferruh el-Mulatî, Ekmelüddin (chief physician in Konya),Tabib Ghazanfer, Sadrüddin Ebubekir bin Zeki, Kemalüddin and so on.

The Seljuq system was continued by the Ottomans till the fifteenth century A.D. when it began to be influenced by the Western system.

However, till as late as the nineteenth century A.D., the Islamic system of medicine managed to retain its identity. Sultan Bayazıd, Murad, Mehmet, Bayazıd the Second, Salim, etc. (14th-15th century A.D.) had seventeen hospitals built on the Islamic system.

Iranian physicians who migrated to Turkey, especially during the Safawid period, were patronized, and up to the fourteenth century A. D. the teaching of *Tibb* was in Arabic and Persian, but later, because of the large number of translations into Turkish, Turkish became the medium of instruction.

The sixteenth century A. D. is a landmark in the history of Turkish medicine in as much as a University was established at about this time, and a faculty of medicine was set up seperately. The custom of translation continued down to the eighteenth century, although after the 16th century A. D. allopathy had begun to infiltrate into the body of indigenous medicine. The 19th-20th century physicians, however, have particularly addressed themselves to the heritage of Islamic medicine.

We are perhaps justified in pinning our hopes upon the renaissance of *Tibb* in Turkey and to explore new avenues in the light of knowledge which reposes in one of the most unique manuscripts collections in the world.

We say this because Turkish physicians have blazed the trail of *Tibb.* The experiments and observations of Şerefeddin Sabunjuoğlu are of considerable importance to us. His operations have been illustrated. He had brought about innovations in the surgical instrument and had experimented upon the effect of a theriac upon a fowl before administering it to a patient.

The Turks embarked upon the application of music for effecting cure from the sixteenth century A. D. onwards. Saib Efendi is the first physician after Bernard to diagnose by means of percussion.

We are therefore justified in claiming that the relationship between the Turks and medicine dates back to time immemorial and their achievements in this field are enviable.

Professor Süheyl Ünver has collected references concerning the history of *Tibb,* i.e., Islamic medicine after adven of Islam, history and organiza-

tion of *Tibb* in Turkey. About the origin of *Tibb* in the Turkish lands he observes:

> When the Turks embraced Islam in the first century A.H., many scholars and physicians became Muslims. But since their faith was Islam, only the Arabs manifested their nationality and these Turkish Muslims did not find it necessary to display their ethnic origin, and, as a result, the ethnic origin of many Turks who have made outstanding contributions to medicine has not come to light.

Further on he says the following about the history of Turkish *Tibb:*

> It is not our intention to segregate the history of the Turkish medicine from Islamic *Tibb.* The latter is often designated as Arabian medicine because the Arabs promoted this system and developed it.
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> Each nation has its mores and its own history. And the history of a people is not very different from the histories of its neighbouring countries. ...The arts of Turkish nation and a considerable part of its *Tibb* is held as Islamic, and until the fourteenth century A.D., it had no seperate identity. The history of Turkish *Tibb* which is an offshoot of Islamic medicine, had, like the Turkish *belle lettres,* its origin in Anatolia during the Seljuq times. ...

Professor Ünver has a brief survey of the history of *Tibb* commencing from the Seljuq period to the Ottoman period (16th-19th century A.D.). The spirit of the survey made by him deserve appreciation and I personally have the impression that it is quite possible to present a detailed survey on the basis consisting of this survey and the profound research work, prepared by Abdülhak Adnan Adıvar, named *Osmanlı Türklerinde İlim.*

Science is based upon induction. And for induction it is essential that facts be collated in order to arrive at certain conclusions. The History of Science is important not only in enabling us to be acquainted with our past but in order also to see how this chain of knowledge has been forged. Once this link has been established, there is no reason why progress should be for us a nebula, a phantasy, beyond reach.

It is most likely that the Turkish physicians had followed Nature and had depended mainly on medicinal herbs in the treatment of diseases.

But this, at least, is just an intelligent hypothesis. The matter needs long and careful investigation. In the medieval times the Turks and Arabs enjoyed very close association in many matters. It is, therefore, natural to assume that they must have established a close and active collaboration in medical research.

The Turkish nation became the dominant power in the world of Islam in the eleventh century and soon after became a major world power. The golden period of Turkish history lasted for almost seven centuries. Although their major achievements lay in the politico-military domain, yet they did not lag behind other peoples in the fiel of intellect and scientific enquiry. They used the pen as skilfully as the sword. Along with the Arabs and the Persians, they made solid contributions to the fund of human knowledge and the creative arts which is equalled by few nations in the long history of mankind. In the Middle Ages which saw the flowering of the Turkish creative and scientific talent, Arabic was the academic and the link language in the world of Islam as Latin was in the Occident. Consequently much of the works done by Turkish masters — scientists and medical men — was in Arabic, the language of the learned and got categorised in the genre of Muslim or Arab work. Because of this fact they could not retain their separate Turkish identity. Turks, as true Muslims, were always above narrow parochial considerations. They felt pride in adopting the language of the Holy Qur'ân, as their medium of communication. They thought and wrote in Arabic. This major handicap notwithstanding one can identify many works of historic importance which Turkish masters contributed in the field of medical research.

Turkish physicians who were engaged in medical research received generous patronage from Turkish sovereigns. Military leaders and members of the ruling hierarchy made large financial allocations for the provision of medical facilities to the people at large. The name of General Feth Ibn Khaḳan will always shine in the Turkish Role of Honour for establishing the fifth biggest hospital in the Muslim world at Baghdad during the reign of the Abbâsid Caliph Al-Mutawakkil (232-247 A.H.), so will the name of Ahmed bin Tulun, the Turkish Governor of Egypt, who founded the sixth biggest hospital of the Muslim world at Fustât. This was the first hospital in the Muslim world to be given a vast land endowment to cover its expenses. Thus started the noble tradition of establishing hospitals for providing free medical treatment to suffering humanity. It was enriched by successive regimes, almost all of which were Turkish.

This tradition of providing patronage to hospitals and medical research was inherited by the great Ottoman Turks who came into power in the 15th century.

Dr. Süheyl Ünver, Director of the Institute of the History of Medicine, Istanbul University, who is a distinguished research scholar in his own right is quite correct when he says that Ottoman medicine is a continuation of the medicine of the Seljuq period both in concept and in practice.

Mohammed Tahir Bursalı in his scholarly book *Osmanlı Müellifleri* has described the contribution made by 86 Turkish medical authors to the medical science. There are many more authors who have done excellent work in medical research but have become famous for their contribution to other disciplines. Tahir Bursalı has given the names of 53 important medical treatises written by such writers from the period of Mehmet the Conqueror—middle of 15th century—to the establishment of the Academy of Medicine in 1927 A.D.

The founder of the Ottoman Empire, at the very outset made it clear that the Science of Medicine was very close to his heart. He created the post of Rai'su'l-Aṭibba (the Physician Chief) the incumbent of which high office—equivalent to a present day cabinet minister—was responsible for all matters relating to public health and hygiene. Tahir Bursalı states that 63 eminent physicians held this office from the time of Mehmet the Conqueror to the reign of Mahmud II (1803-1839 A.D.).

It is gratifying to note that in present day Turkey every effort is being made by the State as also by leading men of medicine to preserve this invaluable national heritage. All available books and manuscripts of Turkish masters, written in the Arabic, Persian and Turkish languages, which were lying in different libraries have been collected in the Institute of the History of Medicine at Istanbul University. These rare books have been carefully catalogued and preserved for posterity.

I will now give a brief evaluation of this unique storehouse of medical knowledge in the light of the profound research work done by Dr. Abdulhak Adnan Adıvar, Dr. Süheyl Ünver and other distinguished scholars.

The Turks wrote their medical works in Arabic and Persian till the 15th century when Turkish language started replacing these two languages. After the disintegration of the Seljuq kingdom in Konya, many

small princedoms sprang up in Turkey and lasted till the Ottoman State was founded at Sögüt towards the end of the 13th century. These principalities gave official patronage to the Turkish language for the first time. The first books in the Turkish language were compiled in two small princedoms called Aydın Oğulları and Menteshe Oğulları, located in south-western Turkey. These princedoms were incorporated in the Ottoman State in the 15th century. Medical work done here during the period can truly be said to be the starting point of medical research in the Ottoman Empire:

Active and sustained research in medicine was initiated in the Ottoman State during the 14th century under Murad I (1359-1389 A.D.) and Bayazıd Yıldırım (1389-1400 A.D.). The pioneer in this field was a scholar named Murad bin Ishaq bin Murad who wrote a book entitled *Khavâsu'l-Edviye* in 1387 A.D./792 A.H. This is the first work on medicine in the Turkish language and contains succinct and precise descriptions of the properties of single remedies. According to Dr. Abdulhak Adnan, the author used Ismâil Jurjanî's *Zakhîra-e-Khwârzamshahî* and Ibn Sînâ's *Kânûn*, the two great medical classics, as his source material. Almost contemporaneously with this treatise *Kamilu's-Sinâa* the great classic of ʿAli ʿAbbâs, a renowned physician of the Buveyhi period was translated into Turkish by an unkown anatomist of Bergama. It was the second most important contribution to medical literature in the Turkish language after *Mufredât* of Ibn Baytâr.

We now pass on to Haji Pasha of Konya, the great Turkish master of medicine (died 1417 A.D./820 Hijra). Completing his education in Cairo, he started working as the Chief Physician in the world famous hospital set up in this city by Mansur Kalavun. After serving in this capacity for sometime he returned to Turkey at the invitation of Fakhruddîn Îsâ, the ruler of Aydın was incorporated in the Ottoman Empire during the reign of Sultan Murad and Sultan Bayazıd Yıldırım. Consequently Haji Pasha spent the last years of his life in the Ottoman State. He was a prolific writer and wrote many books on medicine and allied subjects in Turkish and Arabic. He dedicated his masterpiece Shifâu'l-Eskâm Fid Devâul-Âlâm to Fakhruddin Îsâ, which he had written in 1381 A.D./783 Hijra. The original manuscript in Haji Pasha's own handwriting is preserved in the library of the Topkapı Museum, Istanbul. Other manuscripts of this book are found in many libraries in India, Egypt and Istanbul, which is a proof of the universal recognition this great work received in the medi-

cal world. The most distinctive feature of this work is that the author has avoided unnecessary details and confined himself to dealing with the core of the matter.

It comprises four sections as detailed below:

1) Theoretical and practical information.

2) Drinks and eatables. According to Dr. Abdulhak Adnan Adıvar, this section is based entirely on Ibn Baytar's *Al-jâmi'*.

3) Diseases affecting the entire human system, i.e, organic diseases.

While in its basic approach the book depends largely on the theories of Ibn Sînâ and the ancient Greek system of medicine, the author has also recorded his own views and observations. Later on Haji Pasha produced a Turkish version of this book, most likely in 1408, under the title *Teshilu'sh-Shifâ,* to enable his own countrymen to benefit from it. Other important works of Haji Pasha are *Kitabus-Sa'ade, Kitâbut-Ta'lîm, Muntakhabush-Shifa,* and *Ikhtilâj-Nâma. Muntakhabu'sh-Shifa* is in Turkish. He also wrote a scholarly treatise on Piles. Due to the volume and the profundity of his contribution to the science of medicine he enjoys the same high position in Turkey as Ibn Sînâ does in the world of Islam. He may well be called the Ibn Sînâ of Turkey.

Some of the other important books produced in Turkey or translated into the Turkish language contemporaneously with Haji Pasha are:

1. Abridged version of Ibn Sînâ's Ḳânûn produced in Turkish by Sh.Jamâl-ud-Din Aqserai, under the title *Mujezu'l Ḳânûn.* It became very popular in Turkey.

2. *Tervîhu'l Arân* by Turkey's major poet Ahmedî, who was a fellow student of Hâji Pâsha in Cairo. According to Dr. Abdulhak Adnan Adıvar after a succinct expose on human anatomy, the author has discussed diseases and their treatment. He dedicated the work to the Ottoman Prince Amîr Suleiman (1403-1410 A.D.).

3. Abdu'l Wahâb's *Muntekhab,* which is dedicated to Sultan Mohammed Chelepi (1410-1421 A.D.).

Although it may appear to be somewhat outside the purview of this article, yet I feel that a mention has to be made here of the first hospital that was set up under the Ottomans. Bayazıd Yıldırım founded it at Bursa

in 1400 A.D./802 Hijra. It comprised 4 large and 22 small wards. Its staff consisted of 3 doctors and 2 compounders. This hospital was open to all patients who needed medical care, irrespective of race, colour and creed. Although the testament of the hospital does not contain any mention of any medical school, yet Turkish research scholars maintain that a medical school was in fact attached to the hospital and was called Dar-ul-Tibb (Faculty of Medicine). It may be well to note that, at this period of time, no European country had any similar institution at all. This hospital-cum-medical school at Bursa was followed by a second medical school which was founded during the reign of Sultan Mehmet, the Conqueror, founder of the Ottoman Empire. The third medical school was established in 1555 during the time of Suleiman, the Great. The buildings of the third medical school are being used even today, although not for medical purposes.

The Ottoman Turks, besides providing full patronage to hospitals and compilation of medical literature, took all necessary steps to promote medical education in well-equipped teaching institutions.

A number of learned treatises on medical problems were compiled during the reign of Sultan Murad II. Some of these were dedicated to the royal patron. Perhaps the most important work of this period is *Ẕekhîre-i Muradîye,* compiled by Mumin Bin Mukbil, who is more widely known in Turkey as *Mukbilzade Mumin* in 1437 A.D./841 Hijra. This book discusses, in detail, diseases of the brain, the head, the eyes, the ears and the stomach in five chapters. A distinct feature of this work, according to Dr. Adnan Adıvar is that Arabic medical terms are followed by their Turkish equivalents. Of all the five chapters the one on the eyes contains the most detailed and exhaustive material. Optic maladies are described at length and drawings of instruments used in eye-surgery are also given. The book does not, however, contain much original contribution and is mainly a compilation of material already available in Arabic and Persian. Its major source is the *Ẕakhira-iKhwârzam Shâhî.*

Miftah-un-Nur is the title of another important book compiled by Mukbilzade Mumin in which a brief discourse on health care and anatomy is followed by an in-depth discussion of optic diseases. The author also recounts the qualities that according to him a good physician ought to possess.

Dr. Süheyl Ünver, has mentioned two other noteworthy medical works produced during the same period— *Tuhfe-i Murâdi* written by Hakim Mahmûd Shervâni and *Kemâl-Name,* a work in three volumes, written by some anonymous physician. *Tuhfe-i Murâdî* is devoted entirely to precious stones and their medicinal properties.

We now come to the time of Sultan Mehmet, the Conqueror and his son, Sultan Bayazıd II. These two great empire-builders were also generous patrons of art and learning. A number of important books on medicine were written during their reign. Şerefettin Sabunjuoglu, a resident of Amasya was the most outstanding physician and surgeon of this period. He worked as director of the local hospital for 14 years. Later, he translated in Turkish, the world famous classic *Al-Tasrif* written by the immortal Andalusian physician Abul Kasim Zehrâvî. He named it *Cerrah-Nâme-e-Ilhani* and presented it to Sultan Mehmet, the Conqueror. Between 1465 to 1468 A.D. (870-873 Hijra) he prepared three different Turkish versions of the classic. The manuscript of the first rendering is preserved in the Library of the Institute of Medical History, University of İstanbul, that of second version is lying in the National Library of Paris. The manuscript of the third rendition in Turkish is a prized exhibit in the library of Eli Emiri. The second and third versions are in the author's own handwriting and are well illustrated with drawings and sketches. It is the first significant work on surgery in the Turkish language.

This work is not mere translation, as the compiler has given his own observations at numerous places besides adding drawings of surgical instruments some of which he had himself designed and manufactured.

Şerefettin Sabunjuoglu's second book is entitled *Mujerreb-Nâma* inwhich he has recounted medical experiments conducted personally by him. He was a pioneer in the development of anti-snake-bite serums. He first conducted large-scale experiments on birds before trying these serums on human victims of snake-bite.

Şerefettin's renowned contemporary physician Ashraf bin Mehmed wrote a book entitled *Khazâinu's-Sa'âdat* and presented it to Mehmet, the Conqueror.

Yadgâ-i Ibn-i Sherîf is another important medical work of this period. According to Dr. Abdulhak Adnan, it was written shortly after the conquest of Istanbul by Sultan Mehmet, the Conqueror in 1453. This book

became very popular, as is evident from the fact that a large number of its manuscripts are extant to this day. It contains in-depth discussion of subjects like air, water, residential environment, drinks, eatables, and clothers. In his discourse on wine, the author has enumerated its medicinal uses.

Akhi Chelebi is another important medical personality of Sultan Mehmet's time (d. 1523 A.D./930 A.H.). He achieved prominence during the reign of Bāyazıd II who had complete faith in his skill as a physician. He worked as director of the hospital at Edirne for some time. He is remembered for his valuable treatise on the stones in the kidney and the bladder. Although he has drawn largely on Ibn *Sînâ's Kânûn* for their treatment, he has also made some noteworthy observations of his own. The Turkish translation of *Mu*ᶜ*cezfî't-Tibb* an important book written by the famous Egyptian physician Ibn Nafıs is also ascribed to Akhi Chelebi. But Dr. Adnan maintains that this translation was done by Chelebi's father Ahmed Kemal, who was himself a distinguished physician of his time.

Under Chelebi's guidance, Musa Jâlinus Isra'ilî wrote a medical treatise in which a mention is made for the first time in the Eastern medical literature, of some European men of medicine and good use is made of their researches.

During the reign of Bayazıd, Ibrahim Bin Abdullah Cerrah translated an ancient Greek work on surgery, that was found during the expedition against Morea, under the name *Cerrah Nâme.* In this book is mentioned for the first time a disease called the 'European Disease' which appeared in this region during the expedition of Charles VIII, King of France, against Naples. At about the same time Ahmad bin Bali Fakih translated in Turkish Nejmeddin Mehmud Shiraz's (d 1330 A.D.) book *Hâvi--Saghir* under the title *Mecmau'l-Mucerrebât* and also made valuable original contribution to it.

Valuable contribution to medical literature in Turkish was made during the time of Suleman Kanûnî (1520-1566). It included *Munâfeu'n-Nâs* of Mehmud Kaysumîzade, a leading medical authority of his time and *Kâmûsu'l-Hikme Wa Tibb,* which is based on the work of Ibn Baytar and in which subjects are arranged in alphabetical order. Its other distinctive feature is that every term is given along with its Turkish equivalent. *Mu'cez*

of Ibn Nafıs was once again translated in Turkish, during this period, by poet Sruri, at the behest of Prince Mustafa's personal physician.

Dr. Abdulhak Adnan has observed that this book can be a big help to those Turks who want to learn the Arabic language.

Many eminent doctors of medicine flourished in the Ottoman Empire outside Turkey proper. The most outstanding of them all was Dâûd bin Omer Antakî who lived in the 16th century and belonged to Syria-Egypt. He was a man of many splendoured genius and wrote on many subjects including philosophy and mathematics. But his most significant work is his medical book *Tezkıretu'l-Elbâb,* which is also famous under the title *Tezkıretu'l-Antakî.* It received universal recognition. Seven editions of it were printed in Egypt between 1254 A.H. to 1324 A.H. It was probably written by the author in 972 A.H.

Dâûd Antakî knew the Greek language well. His *Tezkiretu'l-Elbâb* contains, besides a discourse on medical subject enriched by much valuable information, notes on leading personalities of Greek and Arab medical disciplines. In his account of single remedies, he has benefited largely from Ibn Baytar's *al-Jami* but has also made invaluable additions to the subject on the basis of research and experiments personally conducted by him. Dr. Abdulhak Adnan states that Dâûd Antakî has described one thousand seven hundred and twelve single remedies and medical ingredients as against eight hundred remedies discussed by Ibn Sînâ in his *Kânûn.* His *Tezkre* also includes a brief discourse on anatomy in which he recommends the study of his other book *NuzhetFi't-Teshrih.* In the second part of this work he lists diseases in alphabetical order. The second most important work of Antakî is *E-Nuzhetu'l-Mubhije fi Teshkhız-ul-Ezhân* which deals with pathology. Its style and approach is rather philosophical. He also wrote a commentary, with annotation, on Ibn Sînâ's *Kânûn* and named it *Nazm-e-Kânûnchek.*

Enmûzecu't-Tibb, written by Emir Chelebi, the Chief Physician in the royal court of Murad IV, is the most significant contribution to the science of medicine in Turkish during the 17th century. Like Haji Pasha he too has received his medical education in Egypt and worked in Kalavun Mansurya Hospital at Cairo. Dr. Adnan says Emir Chelebi emerges, in this book, as a master physician. Following the established tradition, the author begins with a discourse on animals and ecology and then gives a detailed description of all known diseases along with their proper diag-

nosis and treatment. He strongly pleads the cause of continuous research in medicine. He decries blind acceptance of the knowledge left by earlier masters as the last word and maintains that it is essential for every practitioner of medicine to carry on research and to continue making experiments. He lays great emphasis on the study of anatomy and the need of further development in this branch of medical science. He maintains that it is imperative to increase man's knowledge and understanding of the human organism and for this purpose he recommends that experiments be carried out on the corpses of war casualties. In case this is not found feasible experiments may be carried out on the dead bodies of monkeys and pigs.

Dr. Süheyl says that another book on anatomy was written during this period by Shamsuddin Haki, which according to him is a very useful work. It is quite likely that this is the book to which Dr. Abdulhak Adnan has referred in his learned research work *Osmanlı Turklerinde Ilim as Teshrîhu'l Abdan* by Shamseddin Shirvânı. It was written between 1629-1631 during the time of Sultan Murad IV and contains some beautiful drawings. One section of this book comprises translation of Ibn Sînâ's *Kânûn* and *Sharh-i Teshrihi'l Kânûn* by Ibn Nafis. The compiler in his introduction to the main work gives a discourse on the four elements and different human temperaments besides compound medicines; it is followed by a detailed account of human anatomy, including the anatomy of the womb. A drawing of the female body is given by Shamseddin showing the location of the womb to illustrate his point about the surgery of the womb. The book contains an illuminating chapter on Embryology. According to Dr. Abdulhak Adnan, the author has used as source material *Teshrihu'l-Beden,* an authentic work in Persian by Mehmed Mansur Haji Ahmed written in the 9th century. Mehmed Mansur's work had received universal acclaim. It was printed in Lucknow in 1265 A.H. under the title *Teshrih-i Mansûrî.*

Some of the medical literature produced in Turkey during the 17th century drew, for the first time, on European sources specially Latin, French and German, although in a very small way. This was a natural outcome of the contacts Turkish medical scientists developed with physicians and surgeons attached to European diplomatic missions in Istanbul. The new world discovered towards the end of the 15th century became a source of supply of a large number of exotic items to Europe including many with pronounced medicinal properties such as Quninine and Ipec-

ac.From Europe they came to Turkey. *Gâyetu'l-Beyân fit Tadbîr Bedenil Insân* written by Sâleh bin Nesrullah Hâlebî (d.1670) is one of the first works which show pronounced European influence. The author presented this book to Sultan Mehmed IV and received a reward for it. Some new diseases which were spreading in Turkey at the time are discussed in it with the help of European medical expertise available in Turkey, and drugs and methods of treatment hitherto unknown to Eastern medicine, are recommended to fight them. Other important books of the same author are *Gayetu'l-Itkân* and *Gayet fi't Tibb,* the latter has a very wide canvas and deals with internal and external maladies, skin diseases and cosmetics. *Gayetu'l-Itkân* was translated in Turkish by Mustafa Faizullah during the time of Sultan Ahmad.

Saleh Nesrullah also translated into Turkish a book entitled *Basilica Chymica* written by Oswald Croll (d. 1609) a well known European medical scientist. The original manuscript of the translation is preserved in the Berlin Museum. He is also said to have translated in Turkish the works of a German medical authority named Paracelsus (1493-1541), who incidenally was the first man of medicine to challenge the medical theories of Galenos and Ibn Sînâ.

Saleh Nesrullah and Hayâtî-Zâde were undoubtedly well-acquainted with European medical works and system of treatment. This means that Turkish men of medicine had established contacts with Western medicine. Then how does one explain the fact, wonders Dr. Adnan, that Turkish doctors of the period, were, almost all of them, ignorant of the new discoveries and findings of European medical research.

During this period Mehmed Bin Ahmed translated in Turkish Ibn Baytâr's *Kitabu'l -Mughni fi'l- Ediviyetil-Mufrede.* He also wrote a commentary on this medical classic under the title *Mualejat-i Sheykh Ibn--u'l-Baytar.* This was done at the behest of Husain Mustafa Pasha, the Governor of Hungary.

Dr. Adnan has written about a Greek physician Alexander Mavrocordato, who wrote a 150-page dissertation in Latin, in 1664 A.D. on blood circulation and the function of lungs. In this learned treatise he starts with an analysis of the theories of blood circulation enunciatiated by Hippocrates, Galen and Vesalius and then gives a lucid exposition of the theory advanced by Harvey, in his masterly work *De Moto Cordis,* regarding blood circulation and compares it with earlier theories. This pro-

found medical thinker was personal physician of the French Ambassador, and at the same time he was, perhaps, the most influential in the affairs of the state after Fazıl Ahmed Köprülü Pasha, President of the Court of Ministers; stayed in Istanbul for quite sometime. Dr. Adnan wonders why a master-physican and medical theorist of the eminence of Alexander Mavrocordato, despite his position of importance in the State, remained so little known in Turkey and how was it that he could create no impact whatsoever on the local physicians and medical scientists. As a result of this inexplicable situation the Turks remained ignorant of the new research on blood circulation for a long time and it found no mention in medical books published in Turkey.

Two important medical lexicons were compiled in Turkey in the 17th century. The first which is entitled *Lisanu'l-Etibba* was compiled by Husain Hazarfan. The first section of this work contains Arabic terms along with their Turkish equivalents while the second half comprises Turkish words and their Arabic translations. The author has also given the Greek names of drugs and medicine and has discussed in some detail diseases and temperaments. In the concluding chapters of this reference book Husain Hazârfen has given some authentic case histories of well-known treatments by leading Arab, Iranian and Greek physicians.

The second medical dictionary was compiled by Hakim Ahmed Bin Ibrahim, who had very close links with the Indo-Pakistan subcontinent. After completing his education at the Edirne and Istanbul medical universities, he came to India and was appointed special physician to Emperor Shah Jehan. On return to Turkey he compiled in 1970 A.D. a voluminous medical lexicon, entitled *Kâmûsu'l-Etibbâ*. In the foreword to this work he states that he has also translated the works of Râzi and Ibn Baytâr.

Another distinguished physician of this very productive century, was Ali Efendi who had close links with the court of Sultan Ibrâhîm (1640-1648). He wrote the following three books:

1. *Devâu'l-Emrâz*

2. *Nizâmu'l-Edviye*

3. *Mufredât.*

Quite a few books on the science of medicine were written in Turkey during the 18th century. Shaban Shifaî wrote two valuable books on child-birth, mother and the baby and the upbringing of the child. In one of the two books which is entitled *Tedbîru'l-Mevlûd* written in 1112 A.H. Shifâî has presented in lucid and precise Turkish the views and observations of Zakariyâ Râzî, Ibn Sînâ and Haji Pasha.

Ferâidu'l-Mufredât, another important book appeared in 1166 A.H. The name of the author remains unknown. Its main subject is plants and animals, rather than remedies. Names of plants and living organisms are given in Arabic, Persian and Greek, and their medicinal properties are described in some detail. Dr. Adnan says that it forms a part of Turkish medical and botanical literature written in the traditional style.

Ibn Sînâ's Ḳânûn has always been the main book of reference for Turkish physicians. For many centuries they consulted the original Arabic text. Later on a number of abridged Turkish versions became available. The unabridged Turkish translation of this bible of medicine was done by Haji Mustafa towards the end of the 18th century, at the command of Sultan Mustafa III. He made use of Qutbuddîn Shîrazî's *Sharh-i Ḳânûn* in his interpretation of the difficult portions of the *Ḳânûn.* In his Turkish version of the classic, he retained the original Arabic names and terms. Contemporaneously with it Hayatî-Zâde's son-in-law Hakim Suleimân produced a Turkish translation of *Aḳrabadin.*

Western influence on Turkish medicine became noticeable in the 18th century and Turkish men of medicine started drawing more and more on Western medical source material. According to Dr. Süheyl Ünver the European method of medical treatment found a dynamic and forceful champion in Gevrekzâde Hasan Efendi. He wrote a number of books on diseases of the eye, gout, pediatrics, and on the use of music in the treatment of psychic disorders.

Aphorizma, a medical work of the highest importance by the renowned Dutch physician Hermann Boerhaave was translated in Turkish by Abdulaziz Efendi in 1771 A.D./1195 A.H. Through the translation of this masterly exposition of the Western system of medicine, Turkish men of medicine became fully cognizant of Harvey's theory of blood circulation for the first time and it meant a major advance in Turkish medical science.

Vesim Abbas, the most illustrious Turkish physician of the 19th century, is the author of a work of the highest importance. His *Düstûrûl-Vesîm Fi't Tibbi'l-Jedid ve'l Kadîm,* is in two volumes and contains a thorough and detailed discussion of all diseases of the limbs and organic maladies. He covers the entire human body and discusses many specialized branches of medicine, such as gynecology, pediatrics and skin diseases including boils, sores and ulcers, and suggests specific treatment of all diseases described by him in his work. He had very friendly contacts with a large number of European physicians who were frequent visitors to his residence. Dr. Adnan Adıvar has collected bio-data of 13 foreign doctors out of the list given by Vesim Abbas. The learned doctor maintains that despite these contacts with practitioners of Western medicine and his natural inclination towards critical evaluation of available data and scientific research he remained unaware of the advances made by the West in the field of medicine. He did not know even the findings of Harvey about blood circulation. Harvey's book on the subject was translated into Turkish almost a decade after the death of Vesim Abbas.

The reign of Sultan Selim (1789-1807) is historically very important because many technical institutions were set up during the period. It witnessed the advent of modern disciplines in Turkey. A medical school, on the European model, was established in 1826 and a year later i.e. in 1827 a high-powered institution was founded under the name Tibbiya Osmania. Its major assignment was large scale translation of medical literature, initially from French into Turkish with a view to laying a solid foundation for modern medicine in Turkey. Two names stand out from amongst the large number of people who translated medical books from European languages—Hakim Shafî-zâde Atâullâh (d. 1826) and Hakim Behzat Mustafa (d. 1833).

This brief survey of the medical theory and practice during the Ottoman period will, confirm Dr. Abdulhak Adnan's evaluation of Turkish medical activity in his excellent book *Osmanlı Türklerinde İlim* (Science and the Ottoman Turks). This book brings out the fact that Ottoman doctors continued to follow the theories and concepts of Galenos and Ibn Sînâ right up to the 18th century and despite their proximity to Europe remained unaware of the medical discoveries that achieved a breakthrough in the science of medicine in the post-Renaissance period. Dr. Adnan is absolutely correct when he says that this failure to keep pace with the times was due to the fact that the Ottoman Turks appeared on the cultu-

ral and scientific scene after the destruction of the Abbasid caliphate by the Mongols and the forced exodus of the Muslims from Andalusia. Intellectual decadence and inertia followed political decline in the world of Islam. The learned men and thinkers confined their intellectual activity to writing footnotes and to *annotating* works of ancient masters. The general consensus amongst these men of limited vision was that the works of the old masters were definitive and there was no possibility whatsoever of making new discoveries and breaking fresh ground. The circumstances that ushered in the age of enlightenment in Europe did not exist in the Orient. As a result, the West went ahead at a very fast pace and the East continued to wallow in its lethargy and complaisance.

This, however, does not mean that the Ottomans did not do anything at all in the domain of scientific research and intellectual inquiry.They were fully aware of the scientific and cultural heritage available in Arabic and Persian. All important medical literature in these languages was translated in the Turkish language. Towards the end of their politico--military dominance they turned to the Western medicine but owing to the quickening pace ogf their decline and increasing instablity in the Empire they were in no position to make any significant headway in this sphere. A keen study of Turkish medicine from the beginning of the Seljuq period to the 18th century shows that the Turkish nation produced many scientists of rare brilliance who possessed minds of razor-edge sharpness and unbounded dynamism. They did not feel shy of formulating new hypotheses or of conducting experiments on their basis. Some of them made worthy contributions to the fund of medical knowledge. They designed and perfected many surgical instruments, specially those required in eye-surgery. According to Abdulkerim Germanus, a Hungarian convert to Islam and a distinguished medical research-scholar, Turkish doctors were, beyond all doubt, pioneers in the field of psycho-therapy besides being masters in the field of diagnosis and treatment of hereditary diseases. Turkish doctors according to Germanus, were famous throughout Europe for their matchless skill in surgery. Turkish medicine has another first to its credit. Dr. Süheyl Ünver maintains, on the basis of much authentic evidence, that Turks were the first nation in human history to set up exclusive hospitals for lepers. Leper hospitals were located at Kayseri, Edirne and Istanbul and special residential wards for lepers were built outside city limits in Cyprus and Kastamonu. Furthermore, anti-smallpox vaccine was introduced in Turkey towards the end of the 17th century. It

was such an astoundingly novel thing that the wife of Montago, the British Ambassador, made a special mention of it in one of her letters to people back home in 1717 A.D.

The Turkish men of medicine had made such remarkable advances in the treatment of mental diseases that they made therapeutic use of music for some specific psychic ailments. This is an extremely important point, when most European peoples burnt their mental patients alive in the mistaken belief that they were haunted by evil spirits.

To sum up this short resume of the history of Turkish medicine we should say, that on the whole, the contribution made by the Turkish medical scientists, up to the 10th century, is unmatched, both in quality and in volume, in the entire Muslim world and the Orient with the exception of Muslim India.

The hospitals of medieval Islam—unlike the Greek Aesculapia where magic and mystery played a more important part than medicine—were professional medical institutions, well organised, well equipped and manned by fully qualified physicians and surgeons. They were all charitable institutions which offered free medi-care and constituted strongholds of scientific medicine. As Professor Aydın Sayılı rightly points out the Turks played a pivotal role in the development of hospitals as philanathropically endowed specialized scientific institutions. Early Turkish hospitals were in the true sense of the word, fore-runners of the modern hospitals. Fath İbn Khakan, the Turkish general and minister of the Abbasid Caliph Mutawakkil, established the fifth hospital in the Muslim world. The sixth hospital which was set up by Ahmed bin Tulun was the first Islamic hospital to be supported by a *waqf* endowment. Out of the five earliest hospitals that were financed by *waqf,* at least three, may be four, were founded by the Turks.

Hospital building activity began with the Seljuqs. Although they paid more attention to the establishment of educational institutions including medical schools, their successors in Anatolia, Syria and Egypt extended the sphere of patronage and established many hospitals. To Nureddin Zangî, Salahuddin and Mansur Kalavun goes the credit of setting up the world famous hospitals of Damascus and Cairo. While Nureddin and Mansur Kalavun were pure Turks, Salabuddin was half-Turk and was the protégé of Nureddin Zangi. Cairo had the unique distinction in the early centuries of Islam of having five first rate hospitals. Maqrîzî, the renowned

historian says that the first of these was built by Ahmed Tulun in 873 A.D. and the last, that is the fifth, was founded by Mansur Kalavun in 1284 A.D.

The Seljuqs of Rûm who ruled Anatolia contemporaneously with Zangids, Ayyubids and Memluks of Syria, built numerous welfare institutions in their kingdom including many fine hospitals which are known in Turkish history as *bimaristan, daru'sh-shifa, daru's-sehha, daru'l-āfiye* with hastane *'hastane'* as their Turkish equivalents. As explained by Dr. Suheyl in his learned research on Seljuq medicine, these hospitals were carefully planned to serve as medical institutions and were functionally perfect. They also served as medical schools. These most up-to-date welfare institutions were generally founded by kings, members of the royal family or nobility of the kingdom and were invariably endowed with large *wkf* i.e. large enough estates to keep them functioning free of financial stress. Some *waqf* documents which are extant provide illuminating guidance in respect of efficient hospital management.

According to modern Turkish researchers the Seljuq school *(medrese)* served as the model for hospital buildings of Seljuq period in Anatolia. They consisted of eyvans, that is, vaulted antechambers, open in front, with rooms arranged around an arcaded courtyard. Unlike the cubicles of a *medrese* the rooms were joined together to form large wards where patients were provided free medical treatment and care.

Let us now have a look at some of the important hospitals of the Seljuq period:

Kayseri

One of the earliest hospitals of the period was the one located at Kayseri. It comprised two adjacent buildings known as Shifaiye and Ghiyasiyeh. They were called *chifte* in Turkish, which means twin medrese. Sultana Nesibe Khatun, daughter of Sultan Kilich Arsalan II, built the Shifaiye hospital. Ghiyasiyeh which served as the medical school was built by Sultan Ghiyaseddin Keykhusrev(1204-1210), brother of Nesibe Khatun. Both buildings were modelled on the Seljuq *medrese*. Of course the hospital is larger than a normal *medrese*. It is 32 metres in width and 40 metres in length. Both buildings combined are 60 metres long and 40 metres wide. They are connected by an inner passage.

Both buildings were built with locally available yellow stone. The hospital has a more detailed division of the rooms. It has two doors that open into the street. The main gate—the bigger one of the two—is more monumental and richly decorated. There is a small dome over the portal. Its general appearance is still quite a few stages away from the monumental Seljuq gates. Each stone in the filling of the arch that surrounds the muqarnas over the portal is decorated, in perfect symmetry, with a large rosette. On the corner fillings of the portal three rosettes are placed apiece. The marble inscription over the rosette is written in *naskh.* Stones on the sides of the inscription are decorated with star-shaped rosettes. On the central stone there is a lobbed rosette and a relief. This relief, and the entrance portal formed by a wide archway is in advanced stage of decay and is partially damaged. One of the two side-niches is totally demolished.The upperstone on the niche on the other side contains the figure of a lion. Dr. Serare Yetkin is of the opinion that this figure is perhaps connected with Kilij Arslan, father of both Gevher Khatun and Sultan Ghiyaseddin Arslan in Turkish means a lion.

The Sivas Hospital

Izzeddin Keykavus (1210-1219 A.D.) built the Sivas hospital in 1217 A.D. The Sultan suffered from tuberculosis, so he paid special attention to the development of the science of medicine. This hospital followed the design of Ghiyasiyeh and Shifaiye and was originally constructed as twin--building. This type of buildings comprising a hospital and a medical school adjacently located, is typical of the Seljuq institutions architecture. It denotes the special importance the Seljuq rulers attached to medical teaching.

The existing hospital at Sivas is the largest of all similar buildings and measures 68x48 metres. It follows the classical *medrese* plan and has an arcaded courtyard with *eyvân.* Facing the entrance there is a broad *eyvân,* on the top of which there is a pointed arch. In one of the rooms to the right of the courtyard is the tomb tower of Izzeddin Keykavus. This tomb tower, incidentally, is one of the finest specimens of Seljuq art. It contains rich glazed brick-sand tiles with their intricate mosaic decorations. Richly inter-twined inscriptory decorations form the most spectacular part of the architecture with varied shades of blue, white, navy blue, and turquoise.

On the arch of the main door there is an inscription which contains the royal builder's thoughts about life and death, which are both lyrical and tragic.

The complex of hospital-cum-medical school is architecturally one of the most monumental works of the Seljuq period. It was given an enormous *waqf* and its management was left to Jamaleddin Ferrukh bin Abdullah who had himself built a hospital. This institution which had adequate financial resources, had a number of expert physicians, surgeons and oculists on its regular staff.

The Keykubad Hospital, Konya

Many hospitals were established in Konya, the capital of the Seljuq kings of Anatolia, and other areas adjacent to it, during the 13th century. The one built by Sultan Alaeddin Keykûbad (1219-1236 A.D.) was the biggest of all. The same Sultan built a hot-spring bath-house in Konya.

Another hospital was built by Jalaleddin Karatay, a powerful minister to many Seljuq kings. It stood in front of Karatay *Medrese* which still exists though only partially. The *waqf* document of this hospital shows that Jalaleddin Karatay had commissioned this hospital for his brother who was a physician.

There were hospitals at Aksaray and Akshehir in Konya. They were most probably by Alaeddin Keykûbad, the greatest of Rum Seljuqs. Unfortunately they no longer exist.

The Divrigi Hospital

Divrigi, a small town in the province of Sivas, was a large city during the Seljuq period. It was the capital of the Menguch Dynasty from 1071 to 1252 A.D. The Menguchs were vassals of the Seljuq kings. Turan Malik, the wife of Ahmed Shah and daughter of Fekhreddin Behram Shah, built a complex in 1028 A.D. which comprised a mosque, a hospital and a tomb. It is a masterpiece of Turkish art and architecture.

The hospital is situated next to the mosque. Its plan follows the traditional *medrese* type, which has been described above, but with one difference. The usual open court is closed with a threesided barrel vault which stands on four huge pillars. On the middle part of the vault stands a lantern which is placed directly underneath an octagonal pool.

The vaults that cover the *eyvâns* have beautiful star-forms and other elegant decorations. On the second floor is a gallery which runs along the southern and western sides of the buildings. A domed room to the left of the large *eyvân* is the tomb with several sarcophagi which are covered with tiles. Another door leads into the mosque. It is said that the Menguch *amîr* Ahmad Shah and his wife Turan Malik are buried in the tomb.

The hospital at Divrigi measures 24x32 metres. Its portal has a decoration which is absolutely different from the usual portal ornamentation. It brings to mind the Gothic portals. On the upper-facing of the portal there are five cornered stars, symbolising the starry heavens. Down below, there is a window that is divided by a small pillar, with its prismatic shaft completely covered with palmettes and *Rûmîs*. The space underneath the window has the appearance of wooden casettes, embellished with geometrical stars, plastic palmettes and Rûmîs. The decorations are over the clustered colonnettes that originate from the bottom of the large muqarnas (stalactite) consoles on which the pointed portal arch rests and which moves downward after forming a knot, over these colonnettes which consists of palmettes.

The Chankırı Hospital

Chankırı is now a small town on the Ankara-Zonguldak railway. It was an important city during the Seljuq period. A hospital was built here in 1235 A.D. by Atabey Jemaleddin Ferrukh, an *amîr* at the time of Seljuq Sultan Alaeddin Keykubad. The inscription which is much damaged, is in Arabic. The building now houses the Chankırı Museum.

The Kastamunu Hospital

The famous Seljuq vezir Muineddin Suleiman Pervâne, a devote of Maulana Rûmî is reputed to have built many public buildings such as *mosques, medrese, kervansarai* (inns) and *hamams* (public baths) in different parts of Anatolia. He also built a hospital at Tokat in 1275 A.D. A little earlier, i.e. in 1272 his son Ali bin Muineddin Suleiman Pervâne founded a hospital at Kastamunu. Later on this building was converted into a Kâdirî monastery. Nowadays it is generally knows as Yılanlı Darush-Shifa. There is a legend about this hospital which is current to this day as to how it was constructed and took the name of the snake. There is a figure of a coiled snake on the stone decoration of the hospital. The Arabic inscription says that the building was constructed to serve as

a *mâristan* or hospital. Its architect was a person named Sâd who belonged to Kayseri. Only a small mosque, a tomb, two rooms and the library sections of this hospital are extant and give some idea of the graceful patterns of the Seljuq stone-carving.

The tomb tower has 18 graves. It is generally believed that the saint Abdulfettâh and his disciples are buried here. It is not known when the hospital was converted into a monastery. Some experts have, however, suggested that the saint Abdulfettâh was in all likelihood a physician and so were his disciples.

The Amasiya Hospital

The dynasty known as the Ilkhanids took over Anatolia from the Seljuqs towards the end of the thirteenth or beginning of the 14th century. A great hospital was built in Amasiya soon after, i.e., in 1308, during the reign of Ilkhanid Sultan Oljaytu Khudâbende. In the inscription it is said that the construction was undertaken by Amber bin Abdullah, a slave of Yıldız or Ildus Khatun, the wife of Sultan Oljaytu. The plan is like a *medrese* with an arcaded courtyard. The building measures 24x34 metres. The *waqf,* drawn up in 1312 A.D. was managed by Alaeddin Ali Pervâne, a brother of Yıldız Khatun. The Amasiya complex was a hospital-cum-medical school. It produced a large number of fully qualified physicians and continued functioning well into the 19th century. The hospital had an up-to-date surgical theatre where delicate operations were performed. The medical department was manned by physicians who had the requisite expertise to treat all kinds of diseases, including psychic disorders and severe cases of neurosis. Şerefettin Sabunjuoglu, who worked in this teaching hospital for fourteen years as a physician, has left to posterity a book named *Kitâb al-Jarrâhiye-i Ilkhâniye* (Book on Ilkhanid Surgery) which proves that medicine including surgery had made remarkable advances during this period. Several manuscripts of this work still exist one copy is preserved in the library of Ali Emiri Efendi, (No. 79 at Fatih); another copy with 134 miniatures is in the Bibliotheque National in Paris. The manuscripts written by the author contained many original illustrations.

The portal of the Ilkhanid hospital at Amasiya has decorations in the traditional Seljuq style. The decorations seen on the portals of the *medrese* at Erzurum and Sivas are repeated here. Its distinctive feature is the embellishment on the keystone of the main door. It shows a human figure

sitting cross-legged. It might well have been the portrait of the founder or was intended to present a physician in his typical posture.

In addition we have sound evidence that Anatolia had well established medical institutions at Tokad, Erzurum and other places prior to the advent of the Ottomans.

The Ottomans continued the Seljuq tradition of setting up new hospitals. The institutions established in the earlier times were incorporated by the Ottomans in the huge medical complexes built by them. Bayazıd Yıldırım built the first hospital of the Ottoman period in 1400 A.D. at Bursa and was given the name Darut-tibb. Dr. Osman Shevki in his work *The Turkish Medicine* says that the building housed a medical school. But due to the fact that the *waqf* document makes a mention of a school, Dr. Adnan Adıvar disagrees with him. The factual position is that the tradition during that period was that a hospital was always a teaching institution as well. The hospitals established earlier at Jundishapur and Baghdad which had served as a model for the Seljuq institutions were also teaching institutions. It would, therefore, be quite reasonable to assume that the Daru't-tibb at Bursa performed a dual function. This hospital of the Ottoman period served also as a medical school.

The Fatih Hospital, Istanbul

A vast complex was built around Fatih Mosque in 1470 A.D. It included a series of buildings which housed eight educational institutions, known as Medrese Semaniye. Another eight schools, smaller in size were constructed as an annexe at the back of the main *Medrese.* On the western side of the Mosque there was a well-stocked library exclusively meant for the teachers and the students of the schools. A *Misafir-Khâne* or a travallers guest-house was located at one end. At the other end lay the great hospital. The hospital had two expert physicians, one highly skilled surgeon, one pharmacist and one oculist on its staff, besides a servant and a door-keeper. The *waqf* laid down that physicians would be employed one the basis of their expertise talent, irrespective of their nationality or the creed they professed. The rules of the hospital required the physicians to visit and examine their patients twice every day — morning and evening, and the servants to show every courtesy to the latter. Indoor patients were provided food and other facilities. According to Evliya Çelebi the hospital comprised seventy rooms and employed two hundred persons — physicians, surgeons, pharmacists, attendants, etc. He also says that

mental therapy in this hospital included the use of music, mainly instrumental, and that there were separate wards for male and female patients. The hospital though much dilapidated continued to function till the time of Mahmud II (1808-1839 A.D.).

The Bâyazîd Hospital, Edirne

This hospital was built by Bâyazîd II, son of Mehmed Fatih, at Edirne in 1488 A.D. Its architect was Khayreddin. Like the Fatih Hospital, it too was a part of a large complex built around the Mosque of Bayazid II. It specialised in ophthalmology and psycho-therapy. Because of the latter, the fame of this hospital had spread throughout Europe. It is very gratifying to note that here mental patients were cured by means of music and hypnosis, whereas European nations during this period burnt them alive because they were thought to be haunted by demons and witches. Evliya Çelebi says that this hospital employed 10 singers and 10 instrumentalists for treating mentally deranged patients. Attached to the hospital was a teaching institution or in Evliya Çelebi's words, *Medrese-i-Etibba,* where highly erudite physicians discussed Socrates, Aristotle, Galenos and Pythagoras amongst themselves as well as with their pupils. The hospital was located in a lush garden adjacent to the outher courtyard of the Bâyazîd Mosque.

The Manisa Hospital

Hafsa Sultan, the wife of Sultan Selim and mother of Suleiman Kanunî commissioned the building of a huge complex, which was completed in 1535 A.D. It comprised *a mosque,* a *medrese,* a *hammam,* or *public--bath,* a *poor-house* and a *hospital.* Merkez Efendi, a distinguished physician and highly respected *Sûfî* served as the first head of the hospital. Merkez Efendi had developed a brain-tonic known in those days as Mesîr which was considered very effective in the treatment of mental diseases. The Manisa hospital building still exists and is the venue of a yearly festival which is held from April 15th to 23rd during which the *Mesîr Ma'jûni* is prepared and distributed to the needy.

The Haseki Hospital

Khurram Sultan, (1502-1561 A.D.) had got built a number of public welfare institutions in her name or in the name of her daughter Mihrimah Sultan, in suburban Istanbul known as Haseki. Among them was a hospital which formed part of a complex comprising, the Haseki

mosque, a *medrese,* a *sebîl* and a public kitchen meant to feed the poor. Evliya Çelebi says that this hospital which was completed in 1539 was a health house par excellence.

The Sulemaniye Hospital, Istanbul

Suleiman Kanuni, the greatest of the Ottoman Sultans, had built a vast complex around his mosque, of surpassing beauty and magnifcence, known as Sulemaniye Mosque, including schools, academies and a medical college. A hospital known as Sulemaniye Darush-Shifa was built, adjacent to the medical college in 1557 A.D. It stands at Askari Matbaa, or the military press, as certified by Dr. Adnan Adıvar. Dr. Süheyl Ünver has published pictures and the plan of the hospital in Vakıflar Dergisi and has produced material regarding its management on the basis of its *Waqf--nama.* Its medical staff included one chief physician, three associate physicians, two surgeons and two oculists. Besides, it had one steward, one secretary, four distillers for preparing soft sweet beverages, one butler four care-takers, two washermen, one hair dresser and one masseur. Evliya Çelebi, quite overcome by admiration, says, "The hospital is so wonderful, such a surecure house, that a patient is completely cured, by Allah's Grace, within 3 days. The surgeons are masters of their art. Indeed it is a heaven of comfort, a miracle house of healing."

The Sultan Ahmed Hospital, Istanbul

The last great complex of the Ottoman period is the Sultan Ahmed set of buildings in Istanbul. Mohammed Aga, the master architect of his time built it at the command of Sultan Ahmed I. It took 17 years to complete this gigantic complex between 1600 to 1617 A.D. It comprised a mosque, a travellers inn *(a karvenserai),* a public kitchen for the poor, a school, a hospital and an edifice for the tomb. According to the Evliya Celebi "the indolent and the mentally sick are brought to the Sultan Ahmed Hospital for treatment. The climate here is generally pleasant and the hospital staff looks after the patients with loving care." Only the Suleimaniye Mosque, which is a gem of Islamic architecture, is extant. It stands in unique splendour and majesty—a thing of matchless beauty, a glorious sight which fills the beholder's heart with worshipfulness.

Some other hospitals were built in different parts of Turkey during the Ottoman period but no material is available about them except their names. With the decline of the Ottoman Empire this great tradition of

building hospitals and medical schools came to an end and was replaced by influences derived from the West.

Before concluding this short survey a mention must be made of two hospitals built exclusively for the lepers in the 15th and 16th centuries. One was built in Edirne, during the reign of Sultan Murad II (1421-1151 A.D.) and the other at Secutari, now called Uskudar, in 1514 A.D. by Sultan Selim I. It was called Kharaca Ahmed Juzzam Hastanesi.

The Seljuqs and the Ottomans built a large number of world famous Turkish *Hammams*. They too served as health houses in their own way. The renowned traveller Ibn Batuta says that Anatolia had over three hundred spas which were used by people suffering from different diseases. But they do not specifically fall in the purview of this discourse.

I hope this evaluation of the progress of the science of medicine and medical faclities in Turkey from the beginning of the medieval times to the 18th century has proved beyond doubt that hospital planing and administration had reached a high standard of scientific excellence at a time in human history when the concept of public health was hardly known, much less put into practice in most countries of the Occident. I am sure there is much scope for further research in this rich field and that much more detailed and fruitful information will become available in the not too distant future regarding contribution made by Turkey to medical history.

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