

The Department Of Medicine Of Dār Al-Funūn The Birthplace Of Iran's Modern Medicine

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Abstract—Iran which can be studied as an ancient civilization, had no university until 1851AD (1268AH). Nāsir al-Dīn Shāh Qājār, the 4th king of Iran made several trips to Europe and introduced services and amenities that he had observed. Most of his modernizing reforms happened during the chancellorship of Amīr Kabīr.

In 1851AD (1268AH), Amīr Kabīr founded the first Iranian School for higher education, called Dār al-Funūn (Polytechnic college) where many intellectuals and physicians of Iran received their education. Dār al-Funūn had a Department of Medicine where the instruction was given in French by teachers and instructors from Austria and Italy. A number of European texts were translated into Persian. (Loudon, P.53.) Among the subjects taught at Dār al-Funūn were medicine, surgery, pharmacology, natural sciences, mathematics, geology, and natural history. Number of students in medicine and pharmacology were 27; in medicine: 20 students, and in pharmacology 7 students.

Despite the problems of teaching, within a few years Dr Polak trained a number of students who were admitted to Medical Schools in Paris and carried out important researches (Polak, 1, PP. 310-311; Elgood, P.502). Some of them returned Tehran to teach at the Department of Medicine of Dār al-Funūn, establishing a tradition in which the best students remained attached to the institution. In 1338AH/1919AD, the Department of Medicine became the School of Medicine (Madrassa-ye Tibb)

which came to be the University of Tehran's first Faculty of Medicine in 1313SH/1934AD. Until 1319SH/1939AD, the Faculty of Medicine confronted many problems and difficulties. Therefore, at the request of Iranian officials the government of France introduced Charles Oberling, French physician, pathologist, oncologist and professor at Collège de France. He was appointed as the dean of the Faculty of Medicine of Tehran. Oberling with the cooperation of his Iranian colleagues and officials designed an educational curriculum based on the French medical faculties and the modern programs. Today, more than 100 universities of medical sciences and others are the heritage of Dār al-Funūn including its department of medicine.

Keywords—Nāsir al-Dīn Shāh, Amīr Kabīr, the Department of Medicine, School of Medicine (Madrassa-ye Tibb), the Faculty of Medicine of the University of Tehran.

Introduction

During the Qājār period (1993-1334 AH/1779-1925 AD) Iran became increasingly subject to Western influence; the misgovernment of a succession of weak, incompetent, and extravagant shahs made Iran politically and economically subject to the West. In 1324/1906, pressure from liberal Persian elements both within the country and abroad induced Muẓaffar al-Dīn Shāh to grant the Persian Constitution. (EI, Vol.9, P 402.)

Tehran, the capital city of Iran in the north-central part of the country, at the foot of the Elburz Mountains, 65 mi. south of the Caspian Sea originally a small village situated a few miles north of the medieval city Rai (Ray or Rayy) was known only for the exuberance of its fruit trees. The first ruler of the Qājār dynasty, Āghā (ĀQā) Muḥammad Khān, chose Tehran as his capital in 1203 AH/1788 AD. By the middle of the 19th century the town had been surrounded by a moat and 12 gates.

Nāṣir al-Dīn Shāh Qājār, the 4th king of Iran from 5th September 1256/1848 to May 1314/1896 (when he was assassinated by Mīrzā Rizā Kirmānī, a follower of Jamāl al-Dīn Afghānī, in the Shrine of Shāh ‘Abd al-‘Aẓīm where he was visiting a praying), made several trips to Europe and introduced services and amenities that he had observed there, including tramways, electric power plants, postal services, administrative offices and other modernizations (Ibid, Vol.17, P.548), for instance Dār al-funūm.

Most of Nāṣir al-Dīn Shāh's modernizing reforms happened during the chancellorship of Amīr Kabīr (figure 1) (Mīrzā Taqī Khān Farāhānī, 1807 – 10 January 1852, also known by the titles of Atābak and Amīr Nizām). He defeated various rebels in Iranian, most notably in Khurāsān, balanced for the first time the budget of Iran by introducing reforms to the tax systems, curbed the power of clergies in the judiciary, built some military factories, improved relations with other powers to curb British and Russian influences, opened the first newspaper called 'Vaqāye' 'Ittifaqīya, embellished and modernized cities by building for example the Tehran Bāzār and most importantly opened the first Iranian school for higher education, called Dar al-Funūn (lit., Polytechnic college), where many Iranian intellectuals received their education. Since Amīr Kabīr's reforms were unpopular with some people and Nāṣir al-Dīn Shāh himself, the Shāh first exiled him to Kāshān and then ordered his assassination. Nāṣir al-Dīn Shah also gradually lost interest for reforms. (Naser al-Din Shah Qajār-Wikipedia, P.3.)



Figure 1. Āmīr Kabīr the founder of Dār al-Funūn including the

Department of Medicine

Dār al-Funūn had a Department of Medicine which 83 years later in 1313 AS/1934 AD became the University of Tehran's first Faculty of Medicine. In 1318 SH (1938 AD) Charles Oberling (figure 2) a French professor, pathologist and oncologist was appointed dean of the Faculty of Medicine. He with the cooperation of his colleagues and the support of the government designed an educational curriculum based on the modern programs.

The Department of Medicine of Dār al-Funūn

In the middle of 19th century the plague befell Istanbul (the largest city in the Republic of Turkey, formerly the capital of the Ottoman Empire, and earlier, under the name Constantinople, the capital of the Byzantine Empire), and the Traditional medicine seemed to do little to combat it. Therefore, the Ottoman Sultan Muṣṭafā III ordered a Turkish translation to be made of two treatises by Hermann Boerhaave (1668-1738), (Loudon; P.53) eminent Dutch chemist and physician and instructor who gave the first description of urea, wrote in 1708, Medical Principles, and described gout, dialation of the heart, and spread of smallpox by contagion. (Lee, P.14). The Turkish versions were completed in 1768/1182AH by

the court physician Şubhī-Zāde Abd al-'Azīz with the assistance of the Imperial Austrian interpreter Thomas von Herbert.



Figure 2. Professor Charles Oberling, French professor, pathologist

and oncologist who designed an educational curriculum based on French medical faculties.

Şubhī-Zade attempted not only to translate Boerhaave's ideas but also to reconcile and harmonize them with traditional medicine. In the 19th century, profound changes occurred in the teaching of medicine in the Near East and Middle East. In 1825/1241, Antoine-Barthélemy Clot, a physician and surgeon at Montpellier, was appointed by Egyptian ruler Muhammad 'Alī (1769-1849), (Ottoman Viceroy of Egypt and founder of former ruling dynasty in Egypt) to be surgeon-in-chief to the Egyptian army. By 1828/1244AH, he had established a medical school near Cairo at which French, Italian, and German teachers taught. In 1851/1268/AH (After Higera), a Department of Medicine was founded at Dār-al-Funūn (polytechnic), in Tehran (figure 3), where the instruction was given in French by professors from Austria and Italy. A number of European medical texts were also translated into Persian. (Loudon, P.53.)

Department of Medicine of Dār al-Funūn, the mother of modern medicine

Dār al-Funūn including the Department of Medicine which officially inaugurated on Sunday, 5th Rabī

'al-Awwal 1268/1851, was the first modern university and modern institution of higher education which marked the beginning of up-to-date learning in Iran. Within two years of Mīrzā Taqī Khān Farāhānī/Amīr Kabīr's appointment as chancellor/Şadri a'zim, in October 1265/1848 the first step was taken to establish the educational institution that subsequently became known as Dār al-Funūn (Adamīyet, P.355). Amīr Kabīr in his initial letter of instruction to Jan Dāwūd, first secretary of Persian legation at St.Petersburg (city in northern Russia which was founded by Peter the Great) in 1267/1850, he stressed the military and technical natures of the subjects to be taught at the new academy, which in subsequent letters and in the official news paper Waqāye'-eittifāqīya Amīr Kabīr referred to different names as "Ta'līm-khāna", "Madrasa-ye Jadīd", "Madrasa-ye nizāmiya", and "Maktab-khāna-ye pādashāhī (Adamīyet, PP. 357-358; Oarīb, P.10; Mahbūbī Ardakānī, P. 255). Foreign observers also considered the institution to be part of Amīr Kabīr's far-reaching reforms, primarily intended to improve the cadre of officers who were held generally responsible for the inefficiency of the Persian army. Therefore, he believed that the foundation of an academy is a requisite of the independent and development of Iran. (Iranica, P.2 of 11.)

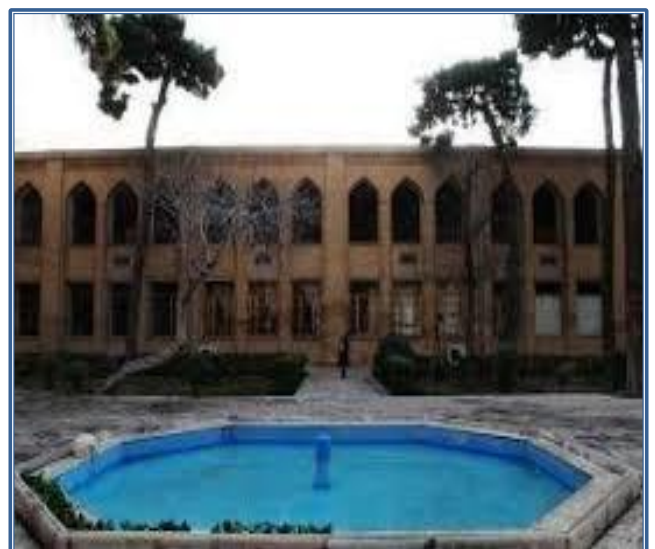


Figure 3. Dār al-Funūn, the first university of Iran which was founded in 1268AH/1851AD.

Among Amīr Kabīr's different measures, the foundation of Dār al-Funūn, had possibly the most

lasting effects. Decades later, some parts of this institution were turned into University of Tehran, and the remaining became Secondary School of Dār al-Funūn. Among the subjects taught at Dār al-Funūn were medicine, surgery, pharmacology, natural history, mathematics, geology, and natural sciences. The instructors for the most part, were Austrians, recruited by Jan Dāwūd Khān, an Assyrian who had become acquainted with Mīrzā Taqī Khān during the work of the Ottoman-Iranian border commission. (Amir Kabīr-Wikipedia, P.4 of 8.)

European instructors

On 12 Shawwal 1267/10 August 1851, a small party of instructors including Czech, Italian, Swiss and Austrian left Vienna with Jan Dāwūd. The instructors were:

- 1- Alfred Baron de Gumoëns/Gumants (infantry).
- 2- Johan Von Nemiro (cavalry).
- 3- Captain Zatti/Zatiee (engineering, and geometry).
- 4- Captian Joseph Czarnotta/Charntta (mineralogy) who died at Tehran in cholera epidemy of 1269/1852.
- 5- Liewtenant Agust Kržiž/Kreziz (artilary); he also taught history, geography, arithematic, and geometry.
- 6- Focatti / Focchette who taught chemistry and pharmacology; Mīrzā Kaẓīm Mahllātī was his outstanding and talented pupil.
- 7- Jakob Eduard Polak (physician and surgeon) (figure 4). (Iranica P.2; Polak, P.2; Amir Kabir-Wikipedia, P.4; Qarib, P.10.)

On the contracts of the instructors was stipulated that:

- 1- The length of service: Five years.
- 2- Annual salary: 600 tumans.
- 3- Travel from and to Persia (Iran): 400 tumans.

Arrival of the instructors

The instructors arrived in Tehran on 29 Muḥarram 1268/24 November 1851. Jan Dāwūd arrived in Tehran two days earlier of Amīr Kabīr's dismissal. (Iranica, P.2 of 11; Adamiyet, PP. 358-359.) The instructors initially

did not know Persian, so interpreters assisted them in teaching, but among them, some learned Persian language well enough to author textbooks in Persian language on various natural sciences.

Dār al-Funūn had large fluctuations in its enrollment, primarily due to Nāṣir al-Din Shāh's fluctuating (between hope and fear) commitment in funding put into the institution. A clear decline in investment was appeared when a visitor reported in 1287/1295 that 70 students and only one single European teacher were enrolled at Dār al-Funūn. Mīrzā Āqā Khān Nūrī, the successor of Amīr Kabīr, sought to persuade the Shāh to abrogate the whole project, Dār al-Funūn, soon became a posthumous monument to its outstanding founder, Amīr Kabīr. (Amīr-Kabir-Wikipedia, P.4 of 8.)

Number of students in medicine and pharmacy

About 105 students had enrolled in the seven main subjects:

In medicine: 20 students, 19.04 percent. (Figure 5)

In pharmacy: 7 students, 6.66 percent.

Infantry: 30 students.

In Cavalry: 5 students.

In artillery: 26 students.

In engineering: 12 students.

In mining: 5 students.

Total: 105 students. (Figure 6)



Figures 4: Jakob Eduard Polak, the first European instructor

of medicine at the Department of Medicine of Dār al-Funūn.

Because of the divisions into the levels, the size of classes were usually small, which placed considerable demand on the foreign instructors' time. The more experienced students served as teaching assistants at the lower levels. (DAR AL-Fonūn-Encyclopedia Iranica, P. 4 of 11.)

Excellent results in Medicine

Despite the problems of teaching, within a few years, Dr. Jakob Eduard Polak trained a number of students who were admitted to medical schools in Paris and carried out important research (Polak, 1, PP. 310-311; Elgood, P.502). Some of them returned Tehran to teach at the Department of Medicine at Dār al-Funūn, establishing a tradition in which the best students remained attached to the institution.



Figures 5. Rizā Khān, the son of Muḥammad Khān Sayyāḥ a medical student of the Department of Medicine of Dār al-Funūn.

The collaboration among European instructors and Persian translators had a profound impact on the general scientific and cultural life of Iran. The first group of instructors had to write their own textbooks, as nothing was available in Persian language. In few years most of them had produced medical works that were published at the government printing house which was attached to Dār al-Funūn. Polak wrote eleven works on different aspects of medicine, surgery, anatomy, pathology, and ophthalmology, most of which were published during the nine years he was living in Iran.

Polak's first medical work was "Tashrīh-e badan-e insān" (The Anatomy of Human's Body) published on 25 Rajab 1270/22 April 1854 (Maḥbūbī Ardakānī, Vol.1, P.299; Najmābādī, 1354 SH/1975, PP.206-207). Polak took two or three of his pupils on his medical visits and to the surgical operations. He succeeded Dr. Louis-André-Ernest Cloquet as Nāsir al-Dīn Shāh's personal physician, initiating a link between the royal position and teaching or examining at Dār al-Funūn that continued into the next century. (DĀR AL-Funūn-Encyclopedia iranica, P. 5 of 11.)



Figure 6: Medical students of the Department of Medicine of Dār al-Funūn in educational uniform.

Among the group that came Iran with Jan Dāwūd on 12 Shawwāl 1267/10 August 1851, Nemiro and the two most successful Austrian, Polak and Kriziz stayed beyond the terms of their contracts. Polak was succeeded by Johann Louis Schlimmer in 1277/1860.

The success of Polak's first students in Paris encouraged the idea of sending a much larger group abroad, and when Ḥassan-'Alī Khān Amīr Nizām Garrūsī was appointed minister to Paris, a number of students were dispatched with his retinue, which left in 1276/1859. Forty-two students, at least half of them from Dār al-Funūn were selected, along with a few skilled craftsmen. These students were to study

Medicine, metallurgy, and the three main branches of military sciences as well as more practical skills like carpentry, the manufacture of porcelain and paper.

Popularization of western medicine

From the 1860s, it was the Persian teachers and their assistants who taught the core subjects, medicine was entrusted to generations of French-trained physicians on their return to Iran: Mīrzā Rizā Doktor (Doctor), Dr. Muḥammad Khān Kirmānshāhī, and Mīrzā 'Alī Doktor Hamadānī (figure 7) were the forerunner of a large number of Persian physicians trained either at Dār al-Funūn or abroad, who taught regularly at the Department of Dār al-Funūn after 1298/1880-1881. (Rāhnimā, P.50.)

These teachers produced a range of textbooks that had a wide impact on Persian medicine. The publications of Mīrzā Rīza Doktor, Mīrzā 'Alī Doktor, and Abū al-Qāsim Ḥakīm-bāshī helped to popularize Western medicine and to allay prejudice against it.

Figure 7. Mīrzā 'Alī Doktor (Doctor), one of the Iranian medical instructor of Department of Medicine of Dār al-Funūn.

The leading European doctors of that time like Isidor Albu and Johann Louis Schlimmer, the author of the famous "Terminologie medico-pharmaceutique et anthropologique (Figure 8), also made valuable contributions to the study of anatomy and therapeutics. Other teachers of Dār al-Funūn also wrote studies on their own specialities. (Figure 9).



Figure 8. Schlimmer's medical work, "Terminology medico-pharmaceutique et anthiropologique (Terminology medico-pharmaceutic and anthropologic).

Downgrading of Dār al-Funūn to secondary school

By the 1308s (1890s) Dār al-Funūn had lost its pre-eminence as the only Persian institution of modern education, because:

- 1- In 1302/1885, the Military college (Madrassa-ye Nizāmī) established with 150 pupils and a budget of 10000-12000 tumāns, the first rival of Dār al-Funūn.
- 2- In 1317/1899, the college of political sciences (Madrassa-ye 'ulūm-e Sīasī was organized within the foreign ministry (Pahavān, P. 330).
- 3- The enrollment in the Medical Department of Dār al-Funūn had already suffered from the availability of alternative tuition from several distinguished physicians and teachers who had all at one time been associated with it. (Rāhnemā, P. 61). Despite these challenges and financial constraints during the Constitutional Revolution Dār al-Funūn continued to attract large number of pupils and retained its staff. In 1323AH/ 1905AD there were 316 students, 40 of whom were studying medicine. In 1329/1911 there were 177

students, but only 24 of them were studying medicine and engineering. Although the annual budget of about 40000 tumāns accounted for a third of the total budget of the Ministry of Science, at the higher and even intermediate levels, Dār al-Funūn was gradually being surpassed in numbers of students by the Military college and the college of political sciences. When plans for a separate medical college, first prepared in 1329/1911, were implemented in October 1918 (1337AH/1297SH) 13 Persian physicians and 34 medical students formed the nucleus of an independent medical faculty, financially separate from though still situated in the ḥayāṭ-e nizām, or main complex, of Dār al-Fonūn (Rāhnemā). Establishment of separate colleges for dentistry, music, and the fine arts in the following year helped to hasten the inevitable downgrading of Dār al-Funūn to a secondary school in the educational reforms of the 1299s SH/1920s. (DAR Al-Fonūn-Encyclopaedia iranica, P. 80 f 11.)

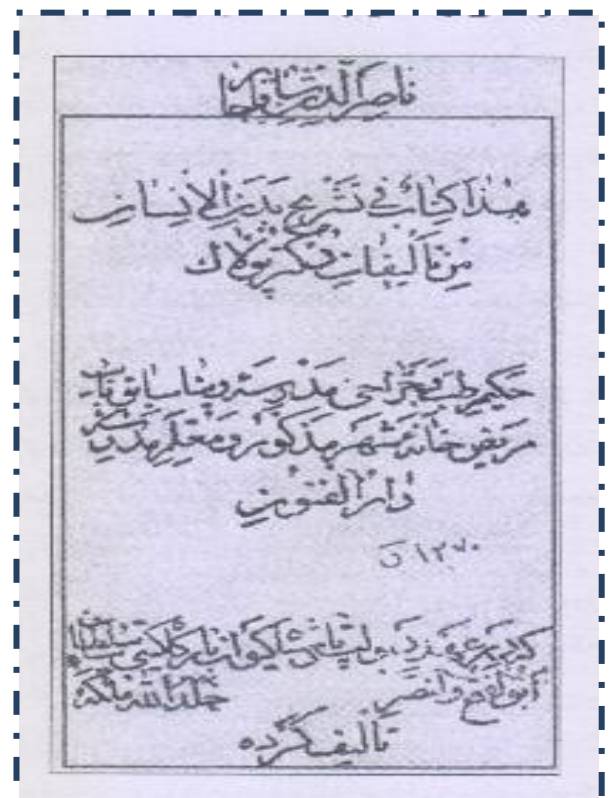


Figure 9. First page of Polak's medical work, Anatomy of body (Tashrīh-e badan).

The Birth of the Faculty of Medicine of University of Tehran

The history of the "University of Tehran" goes back to the days of Dār al-Funūn (the first small university of Iran) established in 1268AH (1851AD) in the reign of Nāṣir al-Dīn Shah (reign 1264-1313AH/1847-1895AD) and chancellorship of Mīrzā Taqī Khān Amīr Kabīr (1264-1268AH/1847-1851AD). Then the first Department of Medicine was founded at Dār al-Funūn, and the pioneering graduates started the practice of modern medicine in 1273AH/1856AD.

School of Medicine (Madrassa-ye Tibb)

In Muḥarram 1337AH (1918AD), The Department of Medicine was changed to School of Medicine (Madrassa-ye Tibb) (Figure 10). Luqman al-Dowla, a famous physician of the Qājār court became the chief of School of Medicine. (Salnama-e Vizārit-e Mu 'arif wa Uqāf wa Sanāy'a Mustazrafa, 1297SH, P.9.)

The Birth of University of Tehran and its Faculty of Medicine

The first step for the founding of University of Tehran (figure 11) occurred on 31 March 1931 (1310 SH) when the minister of Court 'Abd al-Ḥussein Teymūrtash wrote to 'īsa Sedīq who was completing his doctoral dissertation at Columbia University in New York to inquire as the requirement for the establishment of a university in Tehran. Sedīq considered the letter as an invitation to outline a comprehensive scheme for the establishment of a university.

In January 1933, during the cabinet meeting, the subject was brought up. 'Alī Asqhar Ḥikmat the acting minister of the Ministry of Education stated the following words there: "Of course, there is no doubt on the thriving state and the glory of the capital, but the only obvious deficiency is that this city has no 'university'. It is a pity that this city lags far behind other great countries of the world". His words had a profound impact on everyone in the meeting, resulting in the acceptance of the proposal. (University of Tehran – Wikipedia, P.20 f 17)

Finally, the "Department of Medicine" 83 years later in 1313AS / 1934 became the University of Tehran's

first faculty of medicine. Until 1318/1939 it confronted many problems and difficulties.



Figure 10. School of Medicine (Madrassa-ye Tibb) in

1311 SH (1932 AD) in Lālihzār Street, Tehran.

Therefor the government of Iran requested the French authorities to introduce somebody to reorganize the Faculty of Medicine of Teheran on a modern program. Professor Charles Oberling came to Iran and with the cooperation of his colleagues and support of the Iranian officials designed an educational curriculum based on the modern programs.

Notable alumni, in medicine

- 1- Mīrzā 'Alī Akbar Khān (Nāẓım al-Aṭibba) (1847-1924), physician.
- 2- Ḥussein Khān Mu 'tamid (1893-1955), surgeon.
- 3- Muḥammad Qarīb (1901-1975), physician.

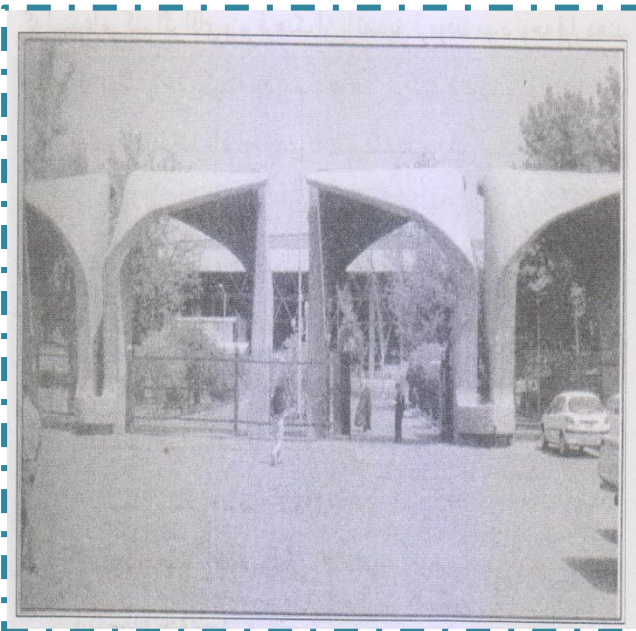


Figure 11: University of Tehran, in 1313SH (1934AD).

University of Tehran, in 1387SH (2008AD).

Scientific medical products of the Department of Medicine of Dār al-Funūn from 1269 to 1306 AH

A translated and transliterated list of printed and published medical works of the European and Iranian teachers and instructors of the Department of Medicine of Dār al-Funūn from 1852 to 1888 (1269-1306AH/1231-1267SH).

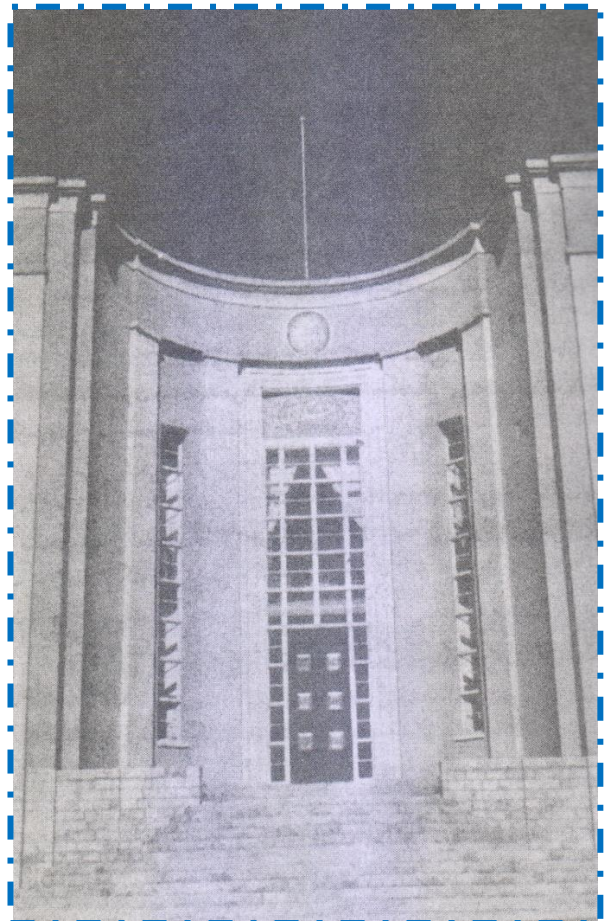


Figure 12: Faculty of Medicine of University of Tehran.

The list is according to the titles, authors and dates of issues:

- 1- Mu'alājāt wa tadābīr-e amraḍ-e nūba wa ishāl (About the treatment of malaria and diarrhea), Polak, 1852AD/1269AH.
- 2- Bīst bāb dar tashrīḥ (Twenty chapters in anatomy), Polak 1852AD/1269AH.
- 3- Vabāeya (About cholera), Polak, 1852AD/1269AH.
- 4- Tashrīḥ-e badan-e insān (Anatomy of the body of human), Polak, 1853AD/1270AH.
- 5- Zubdat al-Ḥikma (Essence of the science of medicine), Polak, 1855AD/1272AH.
- 6- 'Alāj al-Isqām (Treatment of diseases), Polak, 1856AD/1273AH.
- 7- Kitāb-e jarrāḥī (Book of surgery), Polak, 1856AD/1273AH.
- 8- Pathologie (Pathology), Polak, 1860AD/1277AH.

- 9- Jalā' al-'Uyūn (Brightness of the eyes), Polak, 1882AD/1300AH.
- 10- Sumūmāt wa teryāq (Poisons and antidote/theriaca), Polak, 1886AD/1304AH.
- 11- Kitābche-e ṭibb-e niẓāmī (Booklet of military medicine) Polak, dates of compilation and issue are not known.
- 12- Kaḥḥalī (Ophthalmology), Polak, the dates of compilation and issue are unknown.
- 13- Sirr al-Ḥikma (The Secret of Wisdom/medicine), Schlimmer, 1862AD/1279AH.
- 14- Zīnat al-Abdān (Ornament of bodies), Schlimmer, 1862AD/1279AH.
- 15- Shifāeeyā (Health giving/curative), Schlimmer, 1867AD/1284AH.
- 16- Lughat-nama (Farsi-Francevī) (A Medical dictionary-Persian-French), Schlimmer, 1874/1291.
- 17- Qavā'd al-Amraḍ (Medical rules of diseases), Schlimmer, 1875AD/1292AH.
- 18- Asbāb al-tadavyya (Causes of medical treatment), Schlimmer, the dates of compilation and issue are unknown.
- 19- Miftāḥ al-khavāṣ (Key of properties), the dates of compilation and issue are unknown.
- 20- Jalā' al-'Uyūn (Brithness of the eyes), Schlimmer, the dates of compilation and issue are unknown.
- 21- Zubdat al-Ḥikma (The Essence/Selection of the science of medicine), Tholozan, 1863AD/1280AH.
- 22- Angal shināsī (Parasitology), Tholozan, the dates of compilation and issue are unknown.
- 23- Jarraḥī wa darshay-e clinic (Surgery and clinical lectures), Albu, 1888AD/1305AH.
- 24- Thérapeutique (Therapeutic), Albu, 1888AD/1283AH.
- 25- Bīmārīḥaye chashm (Diseases of eye), Polak, the dates of compilation and issue are unknown.
- 26- Pathologie (Pathology), Polak, the dates of compilation and issue are not known.
- 27- Tashriḥ (Anatomy), Polak, the dates of compilation and issue are not known.
- 28- Tashriḥ-e badan-e insān (Anatomy of the body of human), Polak, the dates of compilation and issue are not known.
- 29- Jarrāḥī (surgery), Polak, 1893AD/1311AH.
- 30- Jarraḥī wa darshay-e clīnīc (Surgery and clinical lectures), Polak, 1888AD/1306AH.
- 31- Jalā'al-'Alaja-ye maraz-e vabā (Dissertation of treatment of cholera), Polak, 1852AD/1269AH.
- 32- Jalā'al 'Uyūn, (Brightness of the eyes), Polak, 1870AD/1287AH.
- 33- Risala-ye Mu'alājā-ye Maraz-e Vabā (Dissetation of treatment of Cholera), Polak, 1852AD/1269AH.
- 34- Zubdat al-Ḥikma (Essence of the science of medicine), Polak, 1862AD/1279AH.
- 35- Risala dar Jarraḥī (Dissertation in surgery), Polak, 1884AD/1302AH.
- 36- Adviyeh wa nuskhaha (Drugs and prescriptions), Schlimmer, the dates of compilation and issue are not known.
- 37- Asbāb al-Tadavyya (Causes of medical treatment) Schlimmer, 1875 AD/1292AH.
- 38- Amraḍ al-Sibyān (Dieases of children), Schlimmer, the dates of compilation and issue are not known.
- 39- Pathologie (Pathology), Schlimmer, the dates of compilation and issue are not known.
- 40- Tuḥfa-ye Nāsirī (Gift of Nasirī), Schlimmer, the date of compilation and issue are not known.
- 41- Tashriḥ-e Maddeh-e 'assabī (Anatomy of neural matter), Schlimmer, 1887AD/1294AH.
- 42- Jalā' al-'Uyūn (Brightness of the eyes), Schlimmer, 1860AD/1277AH.
- 43- Zīnat al-Abdān (Ornament of bodies), Schlimmer, 1895AD/1313AH.
- 44- Sirr al-Ḥikma (Secret of wisdom/medicine), Schlimmer, the dates of compilation and issue are not known.
- 45- Qarābādīn (Pharmacopoeia), Schlimmer, 1875AD / 1292AH.
- 46- Miftāḥ al-Khavāṣ (Key/Guide of properties), Schlimmer, 1800AD/1277AH.
- 47- Muntakhab al-Shifaeeyā (selected health giving/curative), Schlimmer, 1887AD/1305AH.
- 48- Abaleh-cubī (vaccination), Tholozan, 1862AD/1279AH.
- 49- Badāy 'al-Ḥikmaye Nasirī (Innovations of wisdom/medicine of Nāsirī), Tholozan, 1862AD/1279AH.

50- Bayān-e Maraḍ nāshī-ye az khūrdan-e gūsht-e khūk (Explanation of disease arising from eating pork), Albu, 1882AD/1300AH.

51- Thérapeutique (therapeutic), Albu, the dates of compilation and issue are not known.

52- Jarraḥī (Surgery), Albu, the dates of compilation and issue are not known.

53- Jarraḥī wa darsha'ye clinic (Surgery and clinincal lectures), Albu, 1888AD/1306AH.

54- Ṭibb-e jadid ya darsha'ye clīnīc (Modern medicine or clinical lectures), the dates of compilation and issue are not known. (سلامت مردم ایران، صص 316 و 317).

Medical works of Iranian lecturers and students of Dār al-Fuñn from 1882 to 1897AD (1300 to 1315AH.)

1- Pezeshk nama (Letter of physician), 'Alī Akbar Nafissi, 1897AD/1317AH.

2- Javāhir al-Ḥikma (Essence of wisdom/medicine), regarding pathology, 'Alī Raeīs al-Aṭibba and Dr.Khalīl Khān Thaqafī, 1887AD/1305AH.

3- Amrāḍ a'shāb (Diseases of nerves), 'Alī Raeīs al-Aṭibbā and Khalīl Khān Thaqafī, the dates of compilation and issue are unknown.

4- Amrāḍ nisvān (women) (Diseases of women), 'Alī Raeīs al-Aṭibbā and Khalīl Khan Thaqafī, the dates of compilation and issue are not known.

5- Amrāḍ aṭfāl (Diseases of children), 'Alī Raeīs al-Aṭibba and Khalīl Khān Thaqafī, the dates of compilation and issue are not known.

6- Dī'a' al-'Uyūn ("Lights of eyes" in ophthalmology), 'Alī Raeīs al-Aṭibba and Khalīl Khān Thaqafī, 1882AD/1300AH.

7- Pathologie (Pathology), Abū al-Ḥassan Bahrāmī, 1882AD/1300AH.

8- Thérapeutique (Therapeutic), Abū al-Ḥassan Bahrāmī, 1887AD/1305AH.

9- Ḥifẓ al-Siḥḥa, (Hygiene), Abū al-Ḥassan Bahrāmī, 1894AD/1312AH.

10- Tashrīḥ (Anatomy), Abū al-Ḥassan Bahrāmī, 1894AD/1312AH.

11- Physiologie (Physiology), Abū al-Ḥassan Bahrāmī, 1897AD/1315AH.

12- Miftaḥ al-adviyeh Nasirī (Key/a guide of drugs of Nasirī), Ḥussayn Khān Nizām al-Ḥukumā Hanjan, the dates of compilation and issue are not known.

13- M'rafat al-Rūḥ (Psychology), Dr.Khalīl Khān Thaqafī, 1888AD/1306AH.

14- Risāla dar Jarraḥī (Dissertation on surgery), Dr Khalīl Khān Thaqafī, the dates of compilation and issue are not known.

15- Amrāḍ-e Muqārabatī (Venereal diseases), Dr. Muḥammad Kirmānshāhī, the dates of compilation and issue are not known.

16- Bīmārī shanāsī (Aetiology), Dr. Muḥammad Kirmānshāhī, the dates of compilation and issue are not known. (Salāmat-e-mardum-e Iran, P.308.)

More Researches

Dar al-Funūn was opened in 1268AH/1851AD, only 13 days before Amīr Kabīr was murdered. Unfortunately, therefore, the founder of Dār al-Funūn, Amīr Kabīr who had a great role in the construction of the school and recruiting foreign teachers, could not attend the opening ceremony. Many Amīr Kabīr's reforms plans were undone due to his assassination. Untactful dismissal of Amīr Kabīr and then his murder order by Nāṣir al-Dīn Shāh frustrated many of his development opportunities for Iran.

First major established in Dār al-Funūn were; infantry: 39 students; Artillery: 26 students; medicine and surgery: 20 students; engineering: 12 students; physic, chemistry and pharmacy: 7students; mineralogy: 5 students; and cavalry: 5students; total number: 114students. Thirty eight years after its foundation the number of admitted students increased to 387. (<https://eng.ut.ac.ir/en/page/1550/history>, P 1 of 4.)

• By 1275/1858, that is after seven years activity of Dār al-Funūn, half the original European instructors had died or left and the contracts of the remainder had expired. Nemiro and two most successful Austrians, Polak and Kržiž, stayed beyond the terms of their contracts. Kržiž was succeeded by the Frenchman Rousse in 1276/1859; Nemiro left in 1277/1860, and in the same year Jakob Eduard Polak was succeeded by Schlimmer. (DĀR AL-FONŪN-Encyclopedia Iranica, P.5.)

• A number of instructors, interpreters and teachers of Dār al-Funūn: In the picture number 13, eleven instructors, interpreters, and teachers of Dār al-Funūn including the Department of medicine are shown. (Figure 13).

Conclusion and Impact

Shapūr 1, Sasanian Persian King (241-272) in a war with Rome, took the Emperor Valerian prisoner in 260 AD a triumph illustrated in a rock relief at Naqsh-e Rostam. He authorized construction of large-scale public works including the extant Kārūn dam and the University (Academy) of Gundī Shāpūr and its international Faculty of Medicine. (EI, vol.16, P. 397.) The documents indicate that Gundī Shāpūr was in existence until the middle of the 8th century AD. (Sarmadi, Vol.1, P. 266.) Celebrated universities and institutions were created across Europe. Some of these were Oxford (founded in 1167), Cambridge (1209), Padua (1222), Prague (1348), Vienna (1365), and Leiden (1575). The first Universities of the Americas were in Mexico City and Lima (both 1551). Later to come were North American schools as Harvard (1636), Laval (1663), and Columbia (1754). (EI, vd. 18, P.517.)



Figure 13. The instructors of Dar al-Funūn, from right to left (standing): Yayā Khān, translator of

artialary; Martrūs Khān, Russian teacher; Mukhbar al-Salṭana, interpreter of infantry; Muzayyin al-Dawla, teacher of French language and painting; Amānullah Khan, teacher and interpreter of medicine. From right to left (sitting): Bāqir Khān teacher of mineralogy; Dr. Muḥammad Khān Kirmānshāhī; Mīrzā Kāzīm Khān Shīmī; Mīrzā ‘Alī Raeis al-Aṭibbā; Mīrzā Abu al-Qāsim Nāeīnī Sulṭān al-Ḥukūma, and Mīrzā ‘Alī Khān Qājār.

In Iran, about twelve centuries after Gundī Shāpūr, 684 years in pursuit of Cambridge, and 103 years in imitation of University of Columbia, Dār al-Funūn was established in 1851, as a modern institution (a small university) for higher education including medicine at Tehran. Many parts of Dār al-Funūn were later on, absorbed and merged into the newly establishing University of Tehran and its Faculty of Medicine in 1934 AD (1313SH). In 1986 (after 135 years), “Tehran University of Medical Sciences” separating from the Universiti of Tehran, came to existence to continue operating independently. Since 1994 (1373 SH) university of medical sciences including Tehran University of Medical Sciences came to assume the responsibility of rendering health care services while offering medical education. It includes ten different schools which deal with various academical studies related to medical sciences. (Tehran University of Medical Sciences-Wikipedia, PP. 2 of 8-3 of 8.) The Department of Medicine of Dār al-Funūn which was called “Clas-e Ṭibb” (Class of Ṭibb), developed and expanded its mission over the next about 150 years, eventually becoming the Tehran University of Medical Science and more than hundred university of medical sciences and medical schools.

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