

History of Asian medicine

History and evolution of western medicine in Thailand

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Background: Western medicine entered into the Kingdom of Siam for the first time in Ayutthaya Period. In 1686, Chevalier de Forbin, a French military officer described a surgical operation in which the stomach and intestine of a patient were restored into the abdomen and the surgical wound closed by suturing, without complication. Soon after this the relationship between Thailand and Europe was severed until it was renewed in the Bangkok Period. Thailand's first hospital was built in the province of Petchaburi in 1878. The first hospital built by the government of Thailand was Siriraj Hospital in 1887; and the Red Cross Society was founded in 1893. King Chulalongkorn Memorial Hospital was established in 1914. Chulalongkorn University was established with the Faculty of Medicine in 1916. In 1942, the Ministry of Public Health was established to regulate medical services and public health of the people of Thailand.

Objective: To introduce the history and development of western medicine in Thailand.

Keywords: Anesthesia, history, medicine, public health, surgery, Thailand.

Thailand is a member of the Association of Southeast Asian Nations (ASEAN), located just above the equator in an ancient land of Asia known as Suwannabhumi (The Golden Land). According to the stone inscription of King Chaivorman VII, the ancient Khmer civilization of the Khmer dominated Southeast Asia before the rise of the Sukhothai Kingdom. The king established over 102 hospitals called Aroyayasala (Sanskrit for healing halls) in the northeastern region of the current Thailand and its vicinity. These Aroyayasalas were staffed with various professionals, namely, doctors, nurses, pharmacists, recorders of statistics, food and drug preparers. There is a complete excavation of stone building of Aroyayasala in the Village of Khwa, a district of Mahasarakham province [1].

A stone inscription of King Ramkhamhaeng of Sukhothai (the first capital of the Thai Kingdom in Suwannabhumi) tells us that the King established a huge herb garden on Khaoloung Hill (Thai: Royal Hill) for his citizens as their source of medicine. This

mountain is located in Amphoe Kirimas, Sukhothai province. During the period of Sukhothai, Buddhist monks versed in the use of herbal medicine were the vanguard in the care of the people [2]. Later during the Ayutthaya period, medical practices in the country were greatly influenced by India, Khmer and China.

The arrival of western medicine in Ayutthaya

In 1518, during the reign of King Ramathibodi II of Ayutthaya, Siam established trades with many countries in Europe. The first European visitors to Ayutthaya were the Portuguese. Among them, there might have been a few doctors. The use of balm for wound healing which is common among the Thais, could be traced back to the old pharmacopeia of the Portuguese [3]. In 1752, during the reign of King Narai, Ayutthaya initiated diplomatic relations and trade with French King Louis XIV. French visitors to Ayutthaya were Catholic priests, merchants, guilds, soldiers, as well as missionaries versed in medicine [4].

Founding of hospitals in Ayutthaya and Phisanulok

The entry of the French during the reign of King Narai was based on two objectives; to promote trading between the two countries, and to propagate

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Catholicism. The French mission demanded the inclusion of Catholic priests. Evidently, King Narai donated a plot of land along a river bank of Ayutthaya for the construction of St. Joseph Church. Later in 1669, Bishop Lambert and Bishop Ballue constructed a small hospital, staffed with Father Lano as the head doctor. In less than a decade, the hospital grew into two buildings, one as a ward for male patients and the other for female. The number of the patients once rose to 90 [5]. In the hospital, there was a facility for the distribution of medicine where 200-300 people waited each day for their medicine. Apart from Fr. Lano, a medical doctor, Mr. Rene Charbonneau, and Catholic brother worked there as a nurse. Another hospital was later established in Phitsanulok [5].

Evidence of surgical operation in Ayutthaya

During the reign of King Narai, a document written by Chevalier de Forbin described an uprising of Muslims from Makasan at the Wichaiprasit Citadel in Bangkok. He described a life-saving operation to rescue a young French man named Beauregard who was stabbed with a dagger which drew his stomach and bowl out of his abdomen, as follows [6,7] "As I drew near the bed and examined the young man more strictly, I saw that he breathed still, but he could not speak and his mouth was all in a froth. I found his belly open and his very entrails and stomach hanging out upon his thighs. Not knowing what to do to help him, because I had no remedy nor surgeon, I ventured to manage him in the best manner I could myself". Having to this end provided a couple of needles and some silk, I restored his entrails to their place, and sew the wound up, in the manner as I had before observed on the like occasions. I then made a couple of ligatures, which I tied together, and after having beat the white of an egg and mingled it with some fied it for ten days together upon the patient, with such success that he was cured. Indeed Beauregard never had any fever, or other bad symptom. I observed that when I replaced his entrails in his belly, they were grown as dry as parchment, and clotted with coagulated blood, yet it did not hinder the perfect cure which followed in a few days."

Chevalier de Forbin was a military officer and not a physician. However, he had seen such medical procedures in battle. This event which took place in the middle of July 1686, is known to be the first record of surgical operation in Thailand. Relations between Ayutthaya and Europe ended abruptly at the end of

the reign of King Narai. This gloomy situation did not improve throughout the Ayutthaya and Thonburi periods. Siam's relationship with the West began to flourish again during the early Bangkok period under the Chakri Dynasty.

Fig. 1 shows a sketch of Chevalier de Forbin. Chevalier de Forbin received the title of Ook Phra Saksongkram in the feudal system of Siam.

The return of western medicine

In 1828 a group of Christian missionaries led by Reverend Dr. Carl Augustus Freidrich Gutschlaff, a German, and Reverend Jacob Thomlin, a Britain, entered Siam. They published books for propagation of the Christian religion with distribution of medication for the ill. Evidently, the works of missionaries in Thailand had a great role in the development of modern medicine in the country [3]. Their works are summarized.

Dr. Dan Beach Bradley, MD, an American, and recognized medical pioneer in the country, arrived in Siam on July 18th, 1835. (**Fig. 2**) In 1836, he established a store for the distribution of drugs, similar to modern dispensaries. He pioneered small pox vaccination. Apart from his services as a caregiver for patients with common diseases, he was known



Fig. 1 Chevalier de Forbin in the costume of a grand admiral of Siam. This supposed portrait appeared as the frontispiece to the first French edition of Forbin's memoirs published in Amsterdam in 1729 [6].



Fig. 2 Dr. Dan Beach Bradley (1804-1873).

for his care for those with contagious diseases and of epidemics, common in those days such as small pox and cholera. He also designed the Thai alphabets for printing in 1837. In 1841, he authored a book for vaccination of smallpox and translated an American textbook on prenatal care into Thai which was the first book on obstetrics in Thailand [8, 9].

First operation record by surgeon

In August 27th 1835, Dr. Bradley described an incision of an abscess on the forehead above the left eyebrow of a Chinese man named “Doung”. The circumference of the base of the abscess was eight inches. The procedure was done without any anesthesia or ether. He had to operate while the crying patient was restrained by his assistants. The operation was 5 minutes [10].

On January 13th, 1837, a tragic accident took place. A canon, normally used for signaling, exploded during a temple festival sponsored by a high-ranking officer (Chaophraya Phra Klang) in Thonburi. Eight people were killed instantly and many were injured. Among the injured was a Buddhist monk whose arm was badly wounded and fractured. To save his life, Dr. Bradley had to amputate his arm right on the spot. Recovery from the operation was uneventful and the wound healed normally. This operation brought great fame to Dr. Bradley [9].

First blood transfusion

Dr. Bradley gave the first blood transfusion to one of his peers who was suffering from postpartum bleeding. This was the first blood transfusion in the

orient. However, the procedure did not succeed due to the lack of the knowledge of blood groups in those days, and the American patient died.

First anesthesia in Thailand

In 1857, Dr. Samuel Reynolds House, MD, another American missionary from the state of New York, arrived in Siam. He offered medical services and gave free medicine to his patients. Later, he brought the knowledge of science to the nobles of Siam. He dedicated himself to education and was one of the cofounders of the Bangkok Christian College. Dr. House removed a big piece of wood from the foot of an elderly woman under general anesthesia. He could be considered as the first anesthesiologist in Thailand [9]. **Figure 3** is a sketch of Dr. Samuel Reynolds House.

Early hospitals in Thailand

The first hospital

The missionary group of Dr. House later expanded the hospital to provincial areas, beginning with Petchaburi. This led to the construction of the first hospital in the province of Petchaburi by Dr. E.A. Sturg [9].

The first public hospital established by the government

In 1881, cholera struck Bangkok and vicinity. King Chulalongkorn, Rama V, immediately commanded constructions of 48 hospitals for cholera treatment. These hospitals were demolished after the epidemic ended [11].



Fig. 3 Dr. Samuel Reynolds House (1847-1876).

The founding of Siriraj Hospital

In 1887, His Royal Highness Siriraj Kakuthapan, beloved Crown Prince of King Chulalongkorn, Rama V, died of dysentery. The king donated a piece of land and money for the construction of Siriraj Hospital as the first royal hospital for the care of the Thai people [11, 12].

The founding of the Thai Red Cross Society

In 1893, King Chulalongkorn, Rama V, established a charity organization called Sapha Unalome Daeng, having Queen Sawangwattana as the Chair of the Founding Committee, and Queen Sawaphapongsri as the Chair of Administration Board, which later became the Red Cross Society of Siam and then the Thai Red Cross Society [13].

The founding of King Chulalongkorn Memorial Hospital

When King Chulalongkorn, Rama V, passed away, King Vajiravut, Rama VI, and 42 other members of the royal family donated their money into the fund of Queen Sri Patcharin for the construction of a hospital as his memorial monument. An Italian architect was employed to design the hospital to serve as an oriental-style memorial for the beloved King Rama V. In the beginning, the project was under the control of Ministry of Defense and later passed on to the management of the Thai Red Cross Society. The hospital was built on a plot of land of 136 *rai* (54.4 acres) donated by King Rama VI, a royal property in the district of Pathumwan close to the construction site of the new university. The hospital officially opened on May 30th, 1914 and was named King Chulalongkorn Memorial Hospital [14]. It currently hosts the Faculty of Medicine of Chulalongkorn University.

The founding of Chulalongkorn University

Chulalongkorn University originated from the long building adjacent to the Pimanchaisri Gate of the Royal Grand Palace, established in 1899 as a school for civil servants to serve during the reign of King Chulalongkorn, Rama V. Later, King Vajiravut, Rama VI, upgraded the school to Chulalongkorn University on March 26th, 1916, having the Faculty of Medicine, Siriraj Hospital as one of the four founding faculties [15]. Later, Prince Mahidol of Songkhla, the father of our current King Bhumipol, contacted the Rockefeller Foundation to establish academic

collaboration with Chulalongkorn University and improved medical education and training for the Faculty of Medicine at Siriraj Hospital to meet modern standards [15]. The Faculty of Medicine was then the forerunner of the University of Medicine, later named Mahidol University, and later of Chulalongkorn University, Faculty Medicine.

Royal bestowal of medical degrees

On October 25th, 1930, King Rama VII (Prachatiok) together with his Queen, visited Chulalongkorn University to preside over the ceremonial awarding of the first degrees to graduates of the medical school. The ceremony began with a solemn declaration, and after the degrees were awarded, it ended with graduates taking The Oath. King Bhumiphol, Rama IX, has revised The Oath, which is currently used in the degree ceremony for graduates of medical school. It was used for the first time on July 11, 1994 in the ceremony for graduates who were trained at King Chulalongkorn Memorial Hospital [15].

The founding of the Ministry of Public Health

The Department of Nursing was the forerunner of the Ministry of Public Health, which was under the Ministry of Interior, during the reign of King Vajiravut, Rama VI. Later it was renamed the Department of Public Health. It was during the reign of King Anandhamahiol, Rama VIII that the Ministry of Public Health was founded by merging medical works and public health care into a ministry on March 7th, 1942. This establishment has led the progression of the public health system for the nation [16].

Progress of medical activities and public health services

Currently, the Ministry of Public Health has established healthcare services in every district. It is working to achieve modern accreditation at every local hospital. Several regional hospitals in different regions are working to develop medical schools capable of helping meet Thailand's need for medical doctors.

Thailand now has 17 faculties of medicine which are engaged in medical education and services as well as publications of medical research. Currently, the Faculty of Medicine of Chulalongkorn University, the Faculty of Medicine of Siriraj Hospital and of Ramathibodi Hospital Mahidol University published the largest number of research publications [17].

Remarkably, the Medical Society of Thailand has prompted thousands of patients from overseas to receive their healthcare services in Thailand [18]. Thailand has become a major medical hub in Asia.

References

1. Chumpol P. Thai traditional medicine before 1300 AD. In: Khongmuang P, ed. History of Thai traditional medicine. Bangkok: Matchon publishing, 2002:37-51.
2. Chumpol P. Thai traditional medicine during Sukhothai and early Ayuddhya periods. In: Khongmuang P, ed. History of Thai traditional medicine. Bangkok: Matchon publishing, 2002: 52-66.
3. Sukwan C. History of Thai medicine. In: Charupoonphol W, ed. The reports of history of Thai medicine. Bangkok: The Medical Association of Thailand, 1998:2-22.
4. Sangpetch. Relationship between France and Thailand. In: Srifa, ed. Foreign Officer in Ayuddhaya Royal Court. Bangkok: Blue Sapphire, 1999:81-98.
5. The history of Saint Joseph Church at Ayuddhaya. 2004
6. Smithies M. The Siamese memoirs of count claude de Forbin 1685-1688. Bangkok: O.S. Printing House, 1996:97-120.
7. Wongsethes S. The Makassar bloodbath in Bangkok. Bangkok: Pikkhanes Printing Center, 2002:59-82.
8. Logawatana K. Bradley. Art & Culture. 2004;25: 76-86.
9. Logawatana K. The Bangkok Christian Hospital 1947-1999. Bangkok: Udomsuksa.1999:26-46.
10. Bradly WL. Siam Then: The foreign colony in Bangkok and after Anna. Bangkok: Matchon publishing, 2004:69-81.
11. Charulukananan S, Sueblinvong T. King Chulalongkorn: biography and his activities in medicine and public health. J Med Assoc Thai. 2003;86 Suppl 2:S123-8.
12. Sangvichien S, Sirinavin J, Thongcharoen P, Ratanamaneechatr S. Siriraj centennial: history and evolution. Bangkok: Victory Powerpoint, 1988:1-163.
13. Vanichsombat V. Thai Red Cross Society Centennial (1893-1993). Bangkok: Jirametha Printing, 1993:1-129.
14. Napawan K. Seventy years anniversary of King Chulalongkorn Memorial Hospital. Bangkok: Niyomkij, 1986:3-14.
15. Luksanuyanawin S, Tamthai M, Sinlarat P, Phatharodom V, Khantavichian S. Portrait of a University: Chulalongkorn University at 75. Bangkok: Amarin Printing group, 1992:16-50.
16. Ministry of Public Health. Fifty-five years anniversary of ministry of public health. Bangkok: Ministry of Public Health, 1997: 115-21.
17. Svasti MR, Asavisanu R. Update on Thai publications in ISI databases (1999-2005). Science Asia. 2006;32: 101-6.
18. Milstein A, Smith M. America's new refugees-seeking affordable surgery offshore. N Engl J Med. 2006;355: 1637-40.