1.1 Introduction

In the society of each nation and language, there is a learning process for accumulating human experiences until they become arts, technology, morality, laws, beliefs, customs, and traditions, which are instilled and transmitted continually from generation to generation. They have become ways of life or living traditions commonly adopted in society until they become a social identity so-called culture.

Any old culture that has advanced consistently with material, spiritual and mental prosperity to a full extent becomes civilization.

In Thai society, there are diverse cultures, each with its identity; some of them have advanced and civilized as “Thai ways of life”, including cultures and traditions related to religions, indigenous beliefs, architecture, dramatic arts and music, national dresses and habits, etc.

Another significant feature of civilization is that it originated when humans were able to get settled permanently in a comfortable and safe environment rich in four basic needs for human life, namely food, clothing, shelter and medicine.
Implicitly, in the process of seeking security of the four basic human needs, traditional medicine originated in Thai society through the learning and development of drug formulas and arts for health care. In particular, the evolution of traditional medicine to become present-day Thai traditional medicine has been linked to the old civilization of Buddhism as well as Hinduism for more than 2,000 years, without taking into consideration health-care practices derived from trial-and-error experiences in local cultures of each region so-called indigenous medicine, which had a long period of evolution before the mainstream religious beliefs came into Thai society.

Ancient Thai traditional medicine, which is in the forms of textbooks, scriptures, or knowledge of illness healing, is not obsolete; rather it is the traditional Thai ways of life as part of the cycle of common characteristics of birth, ageing, illness, and death, which have existed for generations until today. So it can be said that Thai traditional medicine is an old culture that is meaningful to the present world and also an important element of Thai civilization.

Illness and death are problems of all human societies in all periods of time. Even though such problems may occur with an individual, they are so huge that the family, community, and entire society are to be involved in finding ways to resolve them. This is because if the illness and death problems are imbalanced, they will be regarded as an immense threat that may lead to the destruction of the society. Human beings have been trying constantly to overcome illness and death through the accumulation of experiences and beliefs until they become the knowledge that has been passed on from one generation to another for use in preventing and dealing with such problems. So all societies have to develop a system or institute that can serve as a source for collecting the body of knowledge about the treatment of diseases that will help resolve the problems of their own members.

However, the knowledge of health care is not separated from the social context. Thus, cultural beliefs about health have been developed in parallel with dynamic changes in each society. Health cultures in different societies in the ancient time were different and numerous in accordance with their fundamental beliefs and the environment in such societies; they were not in the same standards as they are in the present time, which are based on the same knowledge of bio-medical science throughout the world.

Although modern medicine is the world’s mainstream medical care system, the World Health Organization (WHO) proclaimed in 1978 that to achieve the goal of “Health for All by the Year 2000”, using only modern medicine will not help achieve it. So a pluralistic medical system has to be adopted.
In Thai society, which has a heterogeneous culture, open to cultural diversity already existing locally and imported from overseas, by the same token, the pattern of health care in Thailand is integrated or pluralistic in nature, both informally and formally, even before the WHO’s declaration.

At present, Thailand’s health-care system is pluralistic, both by law and traditionally practised through the constant passage of practices for a long time. A study of the evolution of traditional medicine, including Thai traditional medicine (TTM), indigenous medicine (IM), and alternative medicine (AM), is important for the capacity development of the integrated medical services system, so as to help resolve the problem of medical personnel shortages. In this context, it is essential to have the knowledge of pluralistic medicine that is efficient and effective for medical treatment, disease prevention, and health promotion in Thai society with increasingly complex health problems since a single medical system is unable to cope with the problems in all localities.

Thus, the direction for developing the Thai health system has to be geared towards the promotion and support of diverse medical system beyond the current modern medicine system. This can be undertaken by developing TTM/IM/AM in accordance with the lifestyles, beliefs, and local cultures of each region of the country until Thailand has got a health system that is self-reliant at the individual, community and national levels.

However, TTM/IM/AM are different in terms of the levels of evolution, background, medical philosophy and epistemology, as well as methodology and practice patterns.

1.2 Development of Thai traditional medicine in each era

Origin and background of the TTM theory

Thai traditional medicine has got its clear original concept and theory as well as scriptures or textbooks together with practice patterns as references passed on from generation to generation for so long that it has been formally recognized in the royal court as “royal medicine”.

At present, it has been accepted that Thai traditional medicine originated from ancient Indian civilization in line with Buddhism. Originally, it was understood that TTM had its roots in Ayurveda or Ayurvedic medicine, a branch of Hindu medical science, existing before the Buddha’s time. However, a study of Kenneth G. Zysk reveals that the first phase of Hindu Ayurveda was a magico-religious healing tradition derived from the Veda scripture, which contained a lot of information about healing of diseases. The oldest scripture found 300 years before the Buddha’s
time (843 B.C.) was Rgveda (Rigveda) and later on Atharvaveda; the majority of both sacred texts dealt with illnesses resulting from the powers of evil spirits and contained prayers to the gods that helped in the healing of illnesses.

So in the early stage, Veda medicine was the healing system derived from black magic or supernatural arts involving evil spirit’s powers that attacked the body of the victim resulting in physical illness. Some time, the physical illness or injury was said to be a result of the victim’s violation of a taboo, the curse of god or the act of a wizard.

Hindu Ayurvedic medicine, which was Veda or magico-religious healing tradition, has transformed into “empirico-rational healing tradition” derived from the system of “medicine in Buddhist monastery”; in other words, it is a medical system derived from the philosophy and teachings in Buddhism.

So it can be said that although Thai traditional medicine was influenced by Indian traditional medical culture, it was the Indian medical system transcended along the line of Buddhism. Buddhism is said to be the core of TTM as evidenced in the Buddhist principles and original sermons that have been the sources of the scripture of TTM as exemplified below:

The origin and background of human beings

According to “Maha-tanha-sankhayasutta”, the factors contributing to pregnancy are as follows:

“Monks, when there are three contributing factors, a foetus is conceived in an animal in the world; parents having had sex but the mother has no menstruation and the baby to be born does not appear, a childbirth will not occur; parents having had sex when the mother has menstruation, but the baby to be born does not appear, a childbirth will not occur. Monks, whenever parents have sex, the mother has menstruation and the baby to be born also appears, childbirth will occur as all these three factors co-exist.

Monks, the mother normally holds the foetus for nine or ten months, after that she will deliver a baby who is a heavy burden, risking her life, and then she will look after the burdensome newborn with her own blood, with the risk of her life.” (Majjhimanikaya Mulapannasaka)

Yakkha-sangyut-intakasutra No. 1 mentions about Intarayak, who had an audience with the Lord Buddha, asking how the human body was formed:

“All learned persons state that a body (rupa) is not life and how will this animal find the body? Where do bones and flesh come from? How will this animal get into the womb?”
The Lord Buddha responded:

“The body is an embryo (kalala) first; the embryo becomes mucus (apputa) that becomes a piece of flesh (pesi), and then it will have hair and nails. Whatever the mother of the animal in the womb consumes, be they rice, water and any other food, the animal in the womb will survive with such food.” (Samyuttanikaya sakathavak)

During the first week in the womb, the foetus is like an embryo (kalala) that means a very small drop of clear liquid equal to the remaining particle of oil on a yak’s hair after the hair has been dipped into sesame oil and flicked seven times. In the second week, it becomes mucus (apputa) that is a thicker liquid, and then it becomes a piece of flesh (pesi) in the third week and a mass of flesh (kana) in the fourth week. Around the fifth week, it has five buds (panja sakha) that include a head, two arms and two legs; after that there are hair, nails, etc., which gradually develop into a complete human body at the full term of pregnancy, ready for delivery.

Akhkanya sutra

The Buddha’s sermons are regarded as the origin of the Pathomjinda (or Prathomjinda) scripture, an important scripture dealing with pregnancy, prenatal care for pregnant woman and foetus, and post-natal care.

Components of life

The Buddha’s teachings or dhamma see things to be composed of various factors connected to one another or assembled; there is no real “self”, but existing as “five aggregates” or benja-khandha or panca-khandha, meaning five piles or groups of material objects and abstract concepts assembled for instance as an animal, a person, a self, myself, or himself; or “aggregates” (khandha) also mean five types of sensory organs (pasada rupa) assembled as life, namely:

1. Corporeality or materiality (Rupa) includes the entire material objects, the body and behaviours, or substances and energy of the objects as well as their properties and behaviours.
2. Sensation (Vedana) includes the feelings of happiness, suffering, or indifference sensed by the five sensory organs and the mind.
3. Perception (Sanna) includes the determination of knowing and remembering certain things.
4. Mental properties (Sankhara) includes the components or properties of the mind leading to goodness or badness or neutrality, mental feelings as well as bodily and verbal expressions, which are the cause of action (karma), or they may be called the components of the mind, opinion and action.

5. Consciousness (Vinnana) means the clear knowledge through the five sensory nerves and the mind, i.e. hearing, smelling, tasting, physical sense of touch, and mental perception.

In brief, the five aggregates are two things: abstract concepts and material objects. Corporality (rupa) is a material object, while the other four aggregates are abstract concepts. According to the Three Baskets of Buddha’s Teachings (Tripitaka), the aggregates are described as follows: “The elderly, the aggregate of clinging (upadana-khandha) is corporality consisting of four primary elements (mahabhutarupa) and derivative materiality living on the four primary elements. The four primary elements are earth, water, fire, and air or wind”. (Majjhimanikaya mulpannasaka)

Moreover, Majjhimanikaya uparipannasaka mentions about the earth, water, fire, and wind elements in detail that:

1. **Earth elements** include 19 things:

   “Monks, what are earth elements? There are internal and external earth elements. The internal earth elements include solid objects in the body, i.e. body hair, hair, teeth, skin, flesh, tendons, bones, bone marrow, spleen, liver, membrane or fascia, kidneys, lungs, colon, small intestine, new food, old food, or any other solid matters existing in the body. Both the internal and external earth elements can be seen with the right wisdom as they actually are and in determining that they do not belong to us, they are not ourselves, and they are not our personal entities or “atta”. So, having seen such earth elements, we might feel bored with them which cause the mind to have less desire to acquire them.”

2. **Water or fluid elements** include 12 things:

   “Monks, what are water elements? There are internal and external water elements. Internal elements are the things that permeate or are absorbed into the body such as the bile, lymph, blood, sweat, thick oil, tears, solid fat, saliva, synovial fluid, urine, or any other permeating or absorbed things in the body. Both internal and external water elements can be seen with the right wisdom as they actually are and in determining that they do not belong to us, they are not ourselves, and
they are not our personal entities or “atta.” So, having seen such water elements, we might feel bored with them which cause the mind to have less desire to acquire them.

3. **Fire elements mean** four things:

“Monks, what are fire elements? There are internal and external fire elements. The internal fire elements range from warm to hot stuff existing within self, making the self become warm, deteriorating, and restless, and the elements that make the stuff eaten, drunk, chewed and tasted become digested properly, or any other thing that makes the self warm or hot. All existing in the self can be seen with the right wisdom as they actually are and in determining that they do not belong to us, they are not ourselves, and they are not our personal entities or “atta.” So, having seen such fire elements, we might feel bored with them which cause the mind to have less desire to acquire them.

4. **Wind elements mean** six things:

“Monks, what are wind elements? There are internal and external wind elements. The internal wind elements are the things that blow and vary within self. They are the winds that blow upwards and downwards, in the abdomen and intestines, flowing through large and small organs, and becoming exhaled and inhaled air. All the winds can be seen with the right wisdom as they actually are and in determining that they do not belong to us, they are not ourselves, and they are not our personal entities or “atta.” So, having seen such wind elements, we might feel bored with them which cause the mind to have less desire to acquire them.

The five aggregates and the four elements in Buddhism became the upstream of Thai traditional medicine as evidenced in several major scriptures, namely *Samutthanvinijchai* Scripture, *Chanthasart* Scripture, *Roknithan* Scripture, *Tartwiphang* Scripture, *Tartwivorn* Scripture, and *Tartbanjop* Scripture.

The important issue hidden in the theory of five aggregates and four elements in Buddhism is the indication that one will not cling to them (upadana). If considered according to the principles of “three characteristics” (tri-lak) or “common characteristics” of everything in the world, no matter whether the Buddha had taught or not, the common characteristics include “impermanence” or aniccata, “state of suffering” or dukkha, which is physical and mental suffering as well as unbearable condition, and “not-self or “soullessness”, or anattata.
1.3 Evolution of Thai traditional medicine

Background of Thai traditional medicine in Indian ancient time

During the Buddha’s time

Thai traditional medicine originated from the monks’ role as healers, in the early stage, among fellow monks. One part of the Mahavagga scripture mentions about the linkage between such a role to the establishment of a monk’s hospital, i.e. when a monk had a stomach illness, lying with piles of urine and faeces. As the sick monk had never been of any benefit to the monkhood, no one else was helping him. Having learned of the illness and taken care of the monk, the Buddha said something that is important to the ethics of the Thai traditional medicine as follows:

“Monks, you don’t have any mothers or fathers to provide you with medical care. If you don’t give such care to each other, who else will do so. Whoever will give medical care to me, such a person should do the same to the monk who is sick.”

Providing medical care to sick monks is regarded as a great support. So the monk healers’ institution using the medical principles was organized within the disciplines of Buddhist monasteries or temples that evolved in parallel with the medical system aimed at providing medical care for sick monks. The Mahavagga scripture of the Buddhist Basket of the Discipline, or Vinaya Pitaka, also mentions about the characteristics the monk with medical skills or khilanupatthak as follows:

“Being the person who is able to formulate medicines, knowing what are useful and what are not useful, acquiring useful things and not bringing non-useful things to the sick, treating the sick monk with loving kindness, not for remuneration, having no aversion to disposing of faeces, urine, saliva or vomit, and being capable of making the sick monk to often feel joyful, fresh and delighted with Buddha’s teachings.”

The Vinaya Pitaka also mentions about the Patients Pavilion, or Khilanasala, located in the pointed-gable pavilion (kutakharn sala) in Mahawan forest near the town of Vesali, showing that there was a separate building to care for sick monks and priestesses (or bhikkhuni, female monks) during the Buddha’s time, as evidenced in the Nakharnchunikondha stone inscription made in around 535 B.C. (the eighth year in the Buddhist Era or B.E. 8), indicating that the healing and rehabilitation building was part of the Buddhist monastery, as inscribed in the stone inscription that: “The main chapel (vihara or wihan) of the spectacular monastery was where recuperating patients reside.”
During the Buddha's time, the persons who provided medical care for monks and bhikkhuni are also monks and bhikkhuni. But also there were laymen-healers who provided such care with no remuneration such as Dr. Jevaka Komarapaj (Komarabhacca) and Dr. Arkaskotta of Rajagaha city, the most renowned laymen-doctors during that period. Dr. Jevaka was the Buddha's physician who presented a mango forest in the city to the Buddha for use as a monastery named “Jevakaram”.

It was said that the treatment provided for monks without service fees by Dr. Jevaka caused many people to get into the monkhood so as to receive free medical care and Dr. Jevaka's reputation to spread widely.

The practices of Dr. Jevaka showed two paradigms of healing techniques, namely the empirical medicine with Buddhism’s reasoning and the magico-religious medical approach as evident in the Buddhist scriptures of India that were translated from Pali and Sanskrit into many major languages such as Chinese, Tibetan, and Khotanese of central Iran. This has shown that the Buddhist-style medical practices have been widely spread via Buddhism from India to be integrated with local cultures in each country in South Asia, Central Asia, East Asia, and Southeast Asia.

Around the third century of the Buddhist Era (343–233 B.C.), there was evidence showing that monks/physicians and Buddhist monasteries disseminated or provided medical services to monks as well as the general public.

According to the second stone inscription, King Ashoka the Great (of India, 269–231 B.C.) announced that medical services would be provided for humans and animals everywhere throughout the kingdom. Anywhere without medicinal herbs, roots and fruits, such things were to be imported and planted; water wells were dug and medicinal plants were grown along the walkways.

The stone inscription has shown that the roles of monks/physicians in extending medical services to laymen occurred while Buddhism was being disseminated during the reign of King Ashoka the Great. The extension of Buddhism and monasteries was undertaken from Patalibutra, the capital city of Magadha of north-eastern India to other places along the trade roadways at that time. Monasteries were established near trading areas with money and essentials mostly from rich merchants. It was found that the monasteries were used as recuperating places for patients as well as relaxation and rehabilitation places for tired traders after their long journeys across the vast land.

The roles of Buddhist monasteries were not only the places for practising Dhamma and religious dissemination, but also the centres of medical services and facilities for lodging and health care for travellers. It was found that such roles of monasteries were extremely successful as the monks or Sangha councils and
the monasteries were growing and expanding extensively both in India and other countries.

After the review and revision of Buddhism in the reign of King Ashoka the Great, the King sent nine groups of Buddhist missionary monks out to disseminate Theravada Buddhism to different places, one of which included Phra Sona and Phra Uttama as senior monks to Suvarnabhumi presumed to be present-day Nakhon Pathom (of Thailand). The Buddhist style of traditional medicine from India then began to get into the Suvarnabhumi land introduced by the Buddhist monks; some of them were thoroughly knowledgeable about traditional medicine.

During the 10th century in the Buddhist Era (around the 5th century A.D.), Chinese monk and pilgrim Fa Hian travelled to India and recorded that, in the city of Patalibutra, the Buddhist monastery would set up a building for donation of medicines and necessities, so the poor, the disabled and the sick could reside and get all the help. There would be physicians doing physical examinations for them and they would get food, herbal medicines including boiled medicines as necessary; and they would receive medical care with convenience until they were cured before getting out.

The medical care building was Arokayavihara of the Buddhist monastery in Patalibutra city; the building was built with burned bricks and there is a trace of inscription “Sri Arokayavihara Bhikkhu Sanghasai” meaning “within Arokayavihara which is an auspicious thing of monks or Sangha”.

Besides, at a Buddhist place near Kathmandu in Nepal there is a stone inscription made in around the 12th century of the Buddhist Era (600 A.D.) saying about the king bestowing a plot of land for establishing a hospital (arokayasala). And at the Buddhist monastery near the town of Varanasi, the excavation had found some mortars and pestles for pounding herbs. That shows the use of a building in a Buddhist monastery in India as a health-care facility in the 14th to 15th centuries B.E. (9th to 10th centuries A.D.).

The influence of Buddhist empirical traditional medicine and Hindu magico-religious medicine during the early Veda era spread to the land of Suvarnabhumi and was transformed into the medicine for the royal court or royal medicine in Thailand beginning in the Sukhothai period, which later became the present-day Thai traditional medicine. The evidence of such influence is clearly seen in the first chapter of the Chanthasart Scripture, which is the principal textbook of Thai traditional medicine dealing with the love for patients and for the knowledge of traditional medicine, especially in the sections on paying respect to teachers, or wai khru, and ethics of practitioners.
In the *wai khru* prayer, TTM practitioners have to pay homage to the Buddhist Triple Gems and the eight Hermits, who were related to independent ascetics and Hindu priests, the originators of some scriptures of Thai traditional medicine such as Taksila Scripture, *Ruesi Dadton* (self-stretching or hermit body twists), and traditional herbal knowledge, including herbal medicines in the Benjakul Formula. And then the ceremony will proceed to pay respect to Hindu's high-level gods, namely Shiva (*Phra Isuan*) and Brahma (*Phra Phrom*), who are believed to have given medicines to the earth; and then the prayers of respect will go to Teacher Komarapaj, the great teacher of Thai traditional medicine, and finally to present-day teachers who are teaching students or disciples.

Importantly, the ultimate goal of being a TTM practitioner is “attaining enlightenment, or *nirvana*, and accomplishing all the given blessings” that is the highest-level goal in Buddhism.

However, although most of the medical ethics in the Chanthasart Scripture are clearly Buddhist ethics, namely the Eight Precepts, Five Precepts, *Hiri Ottappa* (moral shame and moral fear), Four Biases, Five Hindrances, loving-kindness and compassion, and the belief in the law of action (*karma*), the scripture also gives importance to magic healing as stated: “being a physician not knowing magic healing, but knowing only medicines and treating without fears”.

The aforementioned magic healing scripture means the Hindu Arthanpaveda in the early era of Veda, which is inserted in many scriptures of Thai traditional medicine.

Besides, the magic healing and empirical-rational knowledge in Thai traditional medicine have dimensions different from those in indigenous medicine. Thai traditional medicine is a medical system derived from ancient cultures of India along the lines of Buddhism and Hinduism; but indigenous medicine is a medical system that is closely related to local superstitious beliefs, community’s ways of life, ethnic groups, and local cultures, specific to each locality and group. Such practices include the thinking system and practice patterns combined with beliefs in local superstitious powers, healing with magic words or incantation power, which is a different dimension, compared with the supernatural power of the Buddhist and Hindu’s Devapakornnam beliefs. Even in the use of medicinal herbs, they tend to use only locally available herbs together with the ritual of giving sacred offerings to local spirits of the village as major components through verbal language and cultural symbols as well as the communityship in the healing process.

Moreover, the knowledge of indigenous medicine is chiefly passed on from generation to generation through direct experience and learning by doing. Indigenous healers grow up in the local culture and have absorbed the feelings,
faiths, and thinking methods in the community, as well as the implied appearance including experience in supernatural phenomena, in gaining the knowledge of different dimensions. So the knowledge and practices are closely related to the cosmic perspective as well as the understanding through the language, symbol and ritual mediums, based on the common culture of the community. Such paradigms, epistemology, and methodology of indigenous medicine are different from those of Thai traditional medicine, which is characterized as and practised by specialized physicians, using complex knowledge, through the language and symbolic systems, transmitted from ancient civilization of India, which has the dimensions that can be integrated, but some cannot be integrated, into indigenous medicine of each locality.

**The Pre-Sukhothai Period**

Between the 6th and 11th centuries of the Buddhist Era (1st–6th centuries A.D.), according to the Chinese annals, the Kingdom of Funan spread to the Chao Phraya River basin, the Northeast and the South (of present-day Thailand) even though the discussion on where its centre was situated has not been settled. Similarly, discussions are going on regarding the first ruler of Funan – whether it was an Indian or a local. However, it was found that Indian civilization especially Brahmanism had spread into this region.

During the 12th century B.E. (7th century A.D.), the Dhavaravati culture was flourishing in the Tha Chin and Mae Klong river basins (in Nakhon Pathom, U-Thong, and Ratchaburi province’s Khu Bua subdistrict) and deteriorated in the 17th century B.E. (12th century A.D.), during the time that the Khmer from Cambodia were spreading their civilization into that region, while Dhavaravati was having ties with large and small neighbouring territories such as Lawo, Si Thep, Si Mahosot, and Nan Chao. Dhavaravati also accepted Indian civilization and chose to accept, adjust and interpret them according to local identity until they became specific Dhavaravati arts and culture associated with Buddhism and a core pillar of the kingdom during that period of time. For instance, medicine grinding stones of the Dhavaravati period were found in U-thong of Suphan Buri province and Si Mahosot of Prachin Buri province.

During the early Chiang Saen period or the Yonok Nagaphan period (around 1300 B.E. or 750 A.D.), in the reign of King Singhanawat, son of King Kalahong of the Nan Chao Kingdom (in present-day Yunnan of China), Thai traditional medicine had a textbook of genuine indigenous medicine based on the local beliefs as well as medicinal herbs and black magic. Moreover, there was an integration of Indian traditional medicine spreading into the Lao Kingdom in around 600 B.E. (50 A.D.)
together with Buddhism. The evidence leading to the belief that Thai traditional medicine originated from the Indian medicine was the fact that Thai Traditional medicine textbooks often have a section praising Dr. Jevaka Komarapaj as the teacher; and in most of the textbooks, Dr. Jevaka was often mentioned as author. Besides, many terms in the medical textbooks were written in Pali, which is the principal language in the Tripitaka and there are a lot of prayers in Buddhism.

During that period, there was the influence of traditional Chinese medicine, which is regarded as alternative medicine as evident by the fact that the heart-stimulating and elixir formulas of Thai practitioners are also composed of Chinese herbs such as herbaceous plant rhizomes/roots, eaglewood, *ka-lam-phak* (*Euphorbia antiquorum*), cinnamon, (*cha-aim-thet*, or *Glycyrrhiza glabra*), seven pollens, and ambergris. Besides, many minerals such as mercury, arsenic, and iron, and animal parts such as antlers, rhinoceros’ blood, bones, and gallbladders as well as medicinal plants are also used for healing purposes. But for diagnostic purposes, very little has Thai traditional medicine combined its practices with traditional Chinese medicine, taking into account their different diagnostic approaches. For instance, Chinese medical practitioners in ancient times gave importance to pulse taking and the Yin-Yang theory, while Thai practitioners chiefly give importance to the causes and symptoms of illnesses, using the pulse as a supplement. Moreover, Thai practitioners also take history of patient’s previous illnesses and age, check the time of onset and the temperature by touching the body or forehead, and examine the tongue, the inner eyelids and the skin colour.

During the reign of Queen Chammathewi (661–907 A.D.), according to the legend of Lampang Luang Pagoda, it was said that Hermit Wasuthep and Hermit Sukkathanta established the city of Hariphunchai (present-day Lamphun in northern Thailand) and agreed that a male ruler would not be able to rule the city for a long time; so they decided to have a female ruler instead. Thus, Princess Chammathewi (daughter of the city ruler of Lawo Pura, or present-day Lop Buri province in Thailand) was invited and crowned as the Queen of the city in 661 A.D. The new Queen asked for some auspicious things from her father to perform useful activities within and outside the royal court as follows:

1. 500 monks who were knowledgeable of Tripitaka
2. 500 white-clad people observing the Five Precepts
3. 500 pundits
4. 500 craftsmen
5. 500 jewellers
6. 500 wealthy men
(7) 500 wealthy women 
(8) 500 astrologers 
(9) 500 traditional medicine practitioners 
(10) 500 silversmiths 
(11) 500 goldsmiths 
(12) 500 blacksmiths 
(13) 500 artists/painters 
(14) 500 other craftsmen 
(15) 500 construction workers 

That means traditional medicine practitioners were among the groups of important people in the ancient society.

During the reign of King Jayavarman VII (or Chaiyaworaman VII, 1181–1219 A.D.) of Khmer (present-day Cambodia), who was enthroned in 1181 A.D. after defeating a rebellion in Angkor Thom, the King spent as much as 10 years renovating the city and building permanent structures as described in section 123 of the Phra Khanchaisi stone inscription that the King had ordered the construction of 17 roads, 121 houses with lights (which possibly meant shelters for travellers), and 102 hospitals (arokayasala), across the kingdom in around the 18th century B.E (13th century A.D.), or about 800 years ago. It was assumed that most of the hospitals were built with wood; so most of them have deteriorated, the remaining are only the religious places of the hospitals and inscription stones built with brick, stone or laterite. There are six inscription stones found in the hospitals’ compounds in north-eastern Thailand as follows:

1. Stone inscription from Ta Muean Tot Khmer Ruins (or Prasat Ta Muean Tot)
2. Prasat Stone Inscription, Prasat district, Surin province 
3. Stone inscription from Prakham boder checkpoint, Nang Rong district, Buri Ram province 
4. Phimai Stone Inscription, Nakhon Ratchasima province 
5. Wat Ku Stone Inscription, Nong Bua village, Mueang district, Surin province 
6. Stone inscription from Ku Kaeo, Mueang district, Khon Kaen province – the most recent inscription on King Jayavarman VII discovered in 1986.
In all the aforementioned stone inscriptions, almost all of them are about the same things, namely praising the Lord Buddha, kings, and health-care facility management including the distribution of food and drugs from the royal treasure or warehouse, specifying names of drugs, herbs, and other items. Thus, the essential information on beliefs and management of arokayasala can be summarized into four components as follows:

1. Worshipping Bodhisattva (Phra Phothisat) in the Mahayana Sect of Buddhism as well as Phra Phaisatchayakhuru Waithurayaprapha (Buddha’s physician episode).

2. The interest of King Jayavarman VII in people’s sufferings and illnesses and his order to build arokayasala for providing medical treatment for local residents.

3. The number of personnel and the amounts of supplies used each day at arokayasala.

4. The designation of arokayasala as a place for performing religious rites.

According to the concept and study of Prof. George Coedès, the patients at arokayasala would be hospitalized in a wooden building, which has actually deteriorated, not in a stone or laterite building as such a building was reserved only for Gods (or enshrining revered statues). Even the king, the most important person, had to stay in a wooden royal residence. The stone inscriptions about hospital were found at Ta Muean Tot Khmer Ruins in Surin province, Chaiyaphum province, Khon Buri Phanomwan district and Prakham border checkpoint in Nakhon Ratchasima province (as shown at Hor Vajirayana, or Vajirayana Library). The inscriptions mention about the praise for the honour and benevolence of King Jayavarman for establishing the hospital, medicinal herbs, the management of 102 hospitals including 798 Buddha images on platforms in the hospitals, 117,200 kharika of rice per year for the patients’ consumption (kharika was a unit of weight used in 1181 A.D. in the Golden (Southeast Asian) Peninsula, i.e. 2 pana equaled masa, 4 pana equaled kuthuwa, 4 kuthuwa equaled parasathu, 16 parasathu equaled thorana, 4 thorana equaled kharika, 11 pala equaled dula or dulakatti or 1 chang), 81,640 rice farmers, both male and female, growing rice for the hospitals, and 838 rice farming villages.

Regarding hospital administration, each hospital had the following personnel:

- Health-care providers: 4 (2 physicians and 1 male and 1 female statistical workers)
✿ Treasers: 2 (males, handling assets, dispensing drugs, accepting rice paddy and firewood)
✿ Cooks: 2 (males, doing the cooking/cleaning, distributing water, and procuring flowers and grass for worship purposes)
✿ Charity workers: 2 (males, handling/giving donations, tickets, and firewood for boiling drugs)
✿ Caretakers: 14 (males, taking care of the hospital and delivering drugs to physicians)
✿ Drug grinders: 6 (females, milling or grinding/boiling drugs with water)
✿ Rice pounders: 2 (pounding or de-husking rice paddy)
✿ Total (according to Inscription No. 2 from Surin): 98

As the hospital-based medical care including drug supplies was inadequate, supernatural power and incantation as well as religious faith played a significant role in medical treatment as evidenced in the building of Phra Phaisatchayakhuru Waithurayaprapha, a Buddha image, which represented the guru of all drugs with the radiance like or blue gemstone, highly respected by the people in those days, and its illness-healing power. Normally, the Buddha images were built as adorned ones in the position of spreading “naga” or serpent (pahng nahg prok); on some of them, although there might not be any naga’s multi-headed hood, its coiled tail would be there. The difference from the typical pahng nahg prok Buddha image is that there is a funnel-like object on the crossed hands over the lap, which has been assumed to be various things such as:

✿ a drug, flower or diamond (watchara);
✿ a myrobalan fruit (sa-moh), which is a herb used for making traditional drugs for healing illnesses; or
✿ a holy water pot or a container or pha-op (a cup with a foot and tapering lid) containing drugs for treating patients.

It was believed that having Phra Phaisatchayakhuru Waithurayaprapha at each hospital was to have the Buddha image’s power and loving kindness towards the patients at arokayasala. It could not be said which was more important – the medical treatment or the faith; but the interesting aspect was that the teacher/instructor and healing practitioner had to be a virtuous person. This concept is still valid until today. So it could be concluded that the elements of medical treatment
include drugs or herbal medicine, faith and respect for teacher’s morality, and the
power of Phra Phaisatchayakhuru Waithurayaprapha.

The evidence related to Phra Phaisatchayakhuru Waithurayaprapha at
arokayasala that appears on the Prasat Stone Inscription of King Jayavarman VII
discovered in Surin province is the following statement:

“Physical illnesses of the people are an extreme mental pain as they are
people’s sufferings. Even though they are not the King’s personal sufferings, they
are the sufferings of the Ruler. The King and physicians as well as the brave and
learned people competent in Ayurveda and Astraveda (weaponry, which is medicines)
have enemies, which are people’s illnesses, with the weapons, which are medicines.
Having carefully resolved people’s sufferings or illnesses, the King has got the
hospital together with the images of Phra Bodhisattva Phaisatchayasukot and Phra
Chinaros built around the hospital for the subsidence of people’s illnesses. The King
ordered the construction of the hospital together with the image of Phra Bodhisattva
Phaisatchayasukot as well as Phra Sukot’s temple, with the moon that is like his
heart in the sky that is like his delicate body. The King has also got replicas of
Phra Wairojanachinchao built, beginning with beautiful Suriya and Chanthara, for
destroying the illnesses of the people including the diseased ones here.”

However, the stone inscription does not mention about where the 102
hospitals got the medicines and supplies from. It mentions only about the lists of
drugs and supplies used each year. But it was understood that they were obtained
or purchased with the taxes collected from the people. Rare items of supplies that
were not available in the locality would be sent directly from the royal warehouse
in the capital. The inscription of King Jayavarman VII mentions in several places
about the appointment of the ruler and tax collector for each locality. In those
days, taxes were paid in the forms of natural resources and forest products at
arokayasala each day. Supplies from the royal warehouse would be sent to the
arokayasala three times a year: on the full moon day of the 5th lunar month, Wan Sart
(or the festival day at the end of the 10th lunar month), and the day the Sun moves
towards the south. They were, for example, 50 sa-moh fruits, 2 roots of curcuma or
turmeric, 3 kuthuwa of honey, 1 parasatha of jujube vinegar, 1 pala of plant rok-fa-
khao (Terminalia spp.), and 1.5 pala each of kanthong, hua-lai, chan-sayong, and
theptaro bark. Besides, the hospital inscription also mentions about several other
plants and plant products with healing properties such as ivy gourd (tamlueng)
fruit, eagle wood (kritisana), barley, long pepper (dee-plee), bunnak (Mesua spp.)
plant, nutmeg (janthet) fruit, small cardamom (kra-wan) fruit, dried ginger, pepper
corn, morning glory (phak-thod-yod), cinnamon (ob-choei), bent (kra-dang) grass,
garlic, small chillies, jujube, de-husked rice, beans, camphor (karabun), tha-ni seeds, yard-long beans, turpentine (yang son), mitthewa, tharawachet, and flowers. These herbs were used in performing sacrifices; the rest would be given to patients. The herbs listed in the inscription might not be all the herbs used at aroKayasala; part of them might be obtained from forests as inscribed: “offerer...one male is a caretaker of property...is the person who gets paddy, drugs and firewood.” This showed that, in addition to getting from the royal warehouse, some of the herbs had to be obtained by themselves. So it cannot be mentioned as to what kinds of herbs were used for treating patients at aroKayasala in the past as most of the items on the inscription were for sacrifice purposes. The medicinal herbs on the list were only those bestowed by the King to the people.

Some rare and imported or seasonal medicinal herbs had to be stored in the royal warehouse and would be dispensed only when they were to be used. It can be seen that some of the herbs shown in the inscription were actually widely used worldwide in those days. Some of them were imported such as nutmeg (cha-aim thet), which was an indigenous plant on the Moluccan or Maluku Islands (in Indonesia) and used as an anti-flatulence drug. Some herbs that were also used generally as cooking spices were not stored in the royal warehouse; so their names did not appear in the inscription and it was not known which medicinal herbs were used at aroKayasala. However, according to section 123 of the inscription at the Phra Khanchaisi Ruins, it could be assumed that there was an integration of herbal medication based on the experiences of the ancestors of each locality. This kind of traditional medicine practice was not openly transferred in writing as the drug formulas were highly valued and protected; and it was not easily transferred. If the learning-from-instructor rite was not performed, the practice would be regarded as recalcitrant.

In the final part of the blessing inscription on hospital construction in B.E 1726 (1186 A.D.), King Jayavarman VII inscribed: “To all the people who will represent me in the future, please keep in mind that all the meritorious or good deeds I have done so far are for merit-making purposes. You all are not supposed to abandon such actions. Please be determined to maintain and protect them as the good deeds shall vest in yourselves too. This is true as scholars say that whoever tries to maintain the good deeds will also receive one large part of the merit from the original merit-maker.” Despite the King’s request, after his death (in 1219 A.D. at age 94), the Khmer kingdom began to deteriorate as the Thai Kingdom became more powerful. The succeeding king who had faith in Brahmanism disagreed with King Jayavarman VII. So the hospitals, or aroKayasala, did not have enough caretakers and they began to gradually deteriorate and were finally disbanded. As
a result, the wooden buildings became disintegrated; and only stone or laterite structures remained to be seen today.

The fact that as many as 102 hospitals, or *arokayasala*, built by King Jayavarman VII had no caretakers was presumably due to religious influence. During that period of time, King Jayavarman VII was the only king who had faith in Mahayana Buddhism; all the other kings had faith in Brahmanism. After the death of King Jayavarman VII, there were efforts to destroy or not to support what King Jayavarman had built. Moreover, many Mahayana Buddhists had to find other places for performing religious rites, while *arokayasala* had no caretakers; so they had to be abandoned.

**The Sukhothai Period (1220–1438)**

According to historical evidence, there was no information about traditional medicine during that period, but it was believed that there must be a medical system using herbal medicines, especially boiling or grinding herbal drugs for taking orally, or for plastering the affected area of the body. That was evident when drug-grinding stones of the pre-Sukhothai Dhavaravati Period were discovered; also found were some stone inscriptions on traditional massage in the area of Khiri Mat district in Sukhothai province.

During that period, it was believed that illnesses were the act of ghosts; so there were rites performed to show respect as stated in the book “*Trai Phum Phra Ruang*” (The Three Worlds of King Ruang) written by King Lithai (in the Sukhothai Period): “Whoever pays respect to the glass wheel (*kongjak kaeo*) with popped rice and flowers, the royal household (*thian*) will help heal the illness”. Besides, in the old Sukhothai city and at the pottery kiln, a lot of offering or worship dolls in the forms of mother or father holding baby, which showed that during that period there might be problems of childhood illness and stillbirth, or both maternal death and stillbirth. The worship with such sacrificial offerings was performed when a newborn was ill due to the act of ghost. The beliefs and rites related to ghost’s acts were the fundamentals of indigenous medicine that appeared in Buddhist literature.

However, during the Sukhothai period, there was evidence related to illnesses as stated in one part of *Trai Phum Phra Ruang*:

“Scabies, leprosy, wart, bump, gland, node, being crippled, fatigue, eye disease, deaf, disability, decomposed tissues, tiredness, body-ache, flatulence, bloated stomach, stomach discomfort, headache, dizziness, fever, and weariness should not be found in any citizen of this northern kingdom during any time period.”
The Ayutthaya Period (1350–1767)

Documentary evidence on Thai traditional medicine began to be available for research in the Ayutthaya Period. There was no definite evidence in this regard in the Sukhothai Period or before; rather, there was only assumption based on historical circumstantial evidence. During the Ayutthaya Period, there was some evidence on Thai traditional medicine in some reigns as described in the following order:

King Trailokanat (1448–1488)

The story about Thai traditional medicine during the Ayutthaya Period was first evidenced in the directory of feudal status in terms of farmland (or sakdina in rai, which is equivalent to 1,600 sq.m. or 2.53 acres) for civil servants (law relating to civil servants’ status, enacted in 1455). The law remained in force until the early Rattanakosin (Bangkok) Period, under which there were civil servants in the Departments of Medical Services (Krom Phaettaya), Pharmacy (Krom Phaettaya Rongphra-osot), Internal Medicine (Krom Moh Ya), Massage Therapy (Krom Moh Nuad), Ophthalmology (Krom Moh Ya Ta), and Tuberculosis (Krom Moh Wannarok).

1. Department of Medical Services (Krom Phaettaya)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phra Srimahosot Rajaphaettayathibodi Sri-ongkarak</td>
<td>Director-General, Front (Chao Krom Phaettaya – Na)</td>
<td>1,600</td>
</tr>
<tr>
<td>Khun Rajaphaettaya</td>
<td>Permanent Secretary (Palad-thunchalong)</td>
<td>600</td>
</tr>
<tr>
<td>Khun Phromkawi</td>
<td>Assistant Permanent Secretary (Palad-nangsan)</td>
<td>400</td>
</tr>
<tr>
<td>Phra Srisak Rajaphaettayathibodi Sri-ongkarak</td>
<td>Director-General, Rear (Chao Krom Phaettaya – Lang)</td>
<td>1,600</td>
</tr>
<tr>
<td>Khun Rattanaphaet</td>
<td>Permanent Secretary</td>
<td>600</td>
</tr>
<tr>
<td>Khun Srikawi</td>
<td>Deputy Permanent Secretary</td>
<td>400</td>
</tr>
<tr>
<td>-</td>
<td>Phan (officials in department)</td>
<td>100 each</td>
</tr>
</tbody>
</table>
2. Department of Pharmacy (*Krom Phaettaya Rong Phra-osot*)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okya Phaettaya Ponsawisutthathibodi</td>
<td>Director-General (Jangwang-Phaettaya)</td>
<td>2,000</td>
</tr>
</tbody>
</table>

3. Department of Internal Medicine (*Krom Moh Ya*)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okphra Thipjak</td>
<td>Director-General, Right</td>
<td>1,400</td>
</tr>
<tr>
<td>Okphra Sitthisan</td>
<td>Director-General, Left</td>
<td>1,400</td>
</tr>
<tr>
<td>Luang Rajanithan</td>
<td>Deputy Permanent Secretary (Palad-thipjak-khwa)</td>
<td>800</td>
</tr>
<tr>
<td>Luang Rajaphromma</td>
<td>Deputy Permanent Secretary (Palad-thipjak-sai)</td>
<td>800</td>
</tr>
<tr>
<td>Luang Sitthiphromma</td>
<td>Deputy Permanent Secretary (Palad-sitthisan-khwa)</td>
<td>800</td>
</tr>
<tr>
<td>Luang Thevaphromma</td>
<td>Deputy Permanent Secretary (Palad-sitthisan-sai)</td>
<td>800</td>
</tr>
<tr>
<td>Khun Thip-osot</td>
<td>Khun (officials in department) 400 each</td>
<td></td>
</tr>
<tr>
<td>Muen Thip-osot</td>
<td>Muen (officials in department) 200 each</td>
<td></td>
</tr>
<tr>
<td>Phan Thip-osot</td>
<td>Phan (officials in department) 100 each</td>
<td></td>
</tr>
<tr>
<td>Khun Prasert-osot</td>
<td>Senior Supply Officers (Phanakngan Khruaengton)</td>
<td>600 each</td>
</tr>
<tr>
<td>Muen Thep-osot</td>
<td>Supply Officers (Huamuen Khruaengton)</td>
<td>400 each</td>
</tr>
<tr>
<td>Junior Supply Officers (Phanphanakngan Khruaengton)</td>
<td>300 each</td>
<td></td>
</tr>
</tbody>
</table>
4. Department of Paediatrics (*Krom Moh Kuman*), reporting to Luang Rajanithan

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khun Kumanprasit</td>
<td></td>
<td>400 each</td>
</tr>
<tr>
<td>Khun Kumanphet</td>
<td></td>
<td>400 each</td>
</tr>
<tr>
<td>Khun Kumanprasert</td>
<td></td>
<td>400 each</td>
</tr>
<tr>
<td>Khun Kumanphaet</td>
<td></td>
<td>400 each</td>
</tr>
<tr>
<td>Phan Rokwinat</td>
<td></td>
<td>200 each</td>
</tr>
<tr>
<td>Phan Chadpralai</td>
<td></td>
<td>200 each</td>
</tr>
<tr>
<td>Phan Rokpralai</td>
<td></td>
<td>200 each</td>
</tr>
<tr>
<td>Phan Krai-osot</td>
<td></td>
<td>200 each</td>
</tr>
</tbody>
</table>

5. Department of Massage Therapy (*Krom Moh Nuad*)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luang Rajaraksa</td>
<td>Director-General, Right</td>
<td>1,600 each</td>
</tr>
<tr>
<td>Luang Racho</td>
<td>Director-General, Left</td>
<td>1,600 each</td>
</tr>
<tr>
<td>Khun Phakdi-ong</td>
<td>Permanent Secretary, Right (Palad-krom-khwa)</td>
<td>800 each</td>
</tr>
<tr>
<td>Khun Ongkarakska</td>
<td>Permanent Secretary, Left (Palad-krom-sai)</td>
<td>800 each</td>
</tr>
<tr>
<td>Muen Kaeo-woralueak</td>
<td></td>
<td>600 each</td>
</tr>
<tr>
<td>Muen Wayowat</td>
<td></td>
<td>600 each</td>
</tr>
<tr>
<td>Muen Wayochai</td>
<td></td>
<td>600 each</td>
</tr>
<tr>
<td>Muen Wayonat</td>
<td></td>
<td>600 each</td>
</tr>
<tr>
<td>- Khun (officials in department)</td>
<td></td>
<td>400 each</td>
</tr>
<tr>
<td>- Muen (officials in department)</td>
<td></td>
<td>200 each</td>
</tr>
<tr>
<td>- Phan (officials in department)</td>
<td></td>
<td>100 each</td>
</tr>
<tr>
<td>- Phan Mo (officials in department)</td>
<td></td>
<td>100 each</td>
</tr>
<tr>
<td>- Nai Phrarong (officials in department)</td>
<td></td>
<td>80 each</td>
</tr>
</tbody>
</table>
6. Department of Ophthalmology (Krom Moh Ya Ta)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khun Rajanet</td>
<td>Director-General, Right</td>
<td>800 each</td>
</tr>
<tr>
<td>Khun Thippanet</td>
<td>Director-General, Left</td>
<td>800 each</td>
</tr>
<tr>
<td></td>
<td>Khun (officials in department)</td>
<td>400 each</td>
</tr>
<tr>
<td></td>
<td>Muen (officials in department)</td>
<td>200 each</td>
</tr>
<tr>
<td></td>
<td>Phan (officials in department)</td>
<td>100 each</td>
</tr>
</tbody>
</table>

7. Department of Tuberculosis (Krom Moh Wannarok)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Farmland entitlement (rai)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luag Sitthiphaet</td>
<td>Director-General</td>
<td>800</td>
</tr>
<tr>
<td>Khun Mahaphaet</td>
<td>Permanent Secretary, Right</td>
<td>600 each</td>
</tr>
<tr>
<td></td>
<td>(Palad-krom-khwa)</td>
<td></td>
</tr>
<tr>
<td>Khun Saraphaet</td>
<td>Permanent Secretary, Left</td>
<td>600 each</td>
</tr>
<tr>
<td></td>
<td>(Palad-krom-sai)</td>
<td></td>
</tr>
<tr>
<td>Khun Chaiyaphaet</td>
<td></td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>Khun (officials in department)</td>
<td>400 each</td>
</tr>
<tr>
<td></td>
<td>Muen (officials in department)</td>
<td>200 each</td>
</tr>
<tr>
<td></td>
<td>Phan (officials in department)</td>
<td>100 each</td>
</tr>
</tbody>
</table>

**King Ramathibodi II** (1491–1529)

Hundreds of Portuguese were the first Westerners that came in and got settled during the Ayutthaya Period; and it was believed that there were some physicians among them. The Portuguese medicinal formula that has been transferred to the present-day generation is anti-infection ointment for certain kinds of wounds.

**King Chairachathirat** (1534–1546)

The King bestowed a certain plot of land to 120 Portuguese people as rewards for their participation in winning the Chiang Kran War. At the plot, the King ordered the building of a settlement with houses and a church for them; and among whom, it was believed, there must be some physicians. So it could be true that the Portuguese were the first group of foreigners that brought Western
medicine into the country. They also brought in Roman Catholic Christianity and got it disseminated among Thai people, presumably with the royal permission. But due to language barriers, the dissemination was not so successful.

**King Narai the Great (1656–1688)**

The Portuguese merchants brought Western medicine into the country for the first time and got it developed continuously. In 1662, the contact with France was initiated during the reign of King Louis XIV by Monsieur Lambert de la Motte together with two assistant missionaries who came in via Tanaosi, a town then in the Thai territory. The evidence shows that France established a hospital in Ayutthaya (but no trace could be found where it was located; and it could not be assumed that it was the same as Phra Nakhon Si Ayutthaya Hospital) as stated in the French Mission’s Report of 1679 that Ayutthaya Hospital had 50–90 inpatients and 200–300 outpatients each day.

Then Western medicine had become alternative medicine, a major competitor of Thai traditional medicine, which was the mainstream medical practice during that period. Before that traditional Chinese medicine had been alternative medicine in Thai society since the Sukhothai Period.

Western hospitals at that time were used to relieve the sufferings and promote happiness of Thai people, which might caused the feeling that Thai traditional medicine was being challenged. Thus, all royal physicians jointly collected all drug formulas for the first time in the history of Thai traditional medicine and called it “King Narai’s Thai Pharmacopoeia (Drug Formulary),” or *Tamra Phra Osot Phra Narai*. When French physicians came in and worked in the palace; they were trusted to prepare drugs for King Narai and also had a chance to record European drug formulas in the Pharmacopoeia, which is transmitted to the present-day generation. The Pharmacopoeia was discovered during the Rattanakosin Period, in which several drug formulas also show the names of royal physicians as well as the date on which the formulas were recorded, between 1659 and 1661 in the reign of King Narai the Great.

In King Narai’s Thai Pharmacopoeia, among all traditional pharmacists whose names were mentioned, nine were those who actually prepared traditional drugs for the King. Among them, seven were royal physicians and two were private practitioners; and, in terms of nationality, four were Thai (Okphra Phaettayapongs, Okphra Sithithis, Okkhun Prasit-osot, and Okkhun Thippajak), one was Chinese (Khun Prasit-osotchin), one was Indian (Okphra Sithisarnphramthet), and one was Westerner (Phra Phaet-osotfarang).
Chapter 1. History of Development

The Thai private practitioner was Mr. Phetpanya and the Western private practitioner was Dr. Mesie.

It is noteworthy that titled physicians (with bandasak or royal titles) who were royal physicians were not only Thai practitioners, but there were also foreign alternative medicine practitioners, especially Chinese and Western ones.

In the Chinese drug formulas, the commonly used medicinal herb was “ginseng,” which was used for preparing a tonic or stimulating drug for the first time. And in the Western drug formula, saltpetre (potassium nitrate, used since ancient times as diuretic) was also used. The drugs were efficacious and well liked by the King; and so they were given 1 chang (or 80 baht) of money as reward. When Thai traditional medicine ancestors felt that saltpetre was effective as diuretic, it has been adopted for use in formulating Thai medicine as currently practised.

Regarding the wound-healing ointment of a private Western physician named Mesie, His Royal Highness (HRH) Prince Damrong Rajanupab gave an observation: “...it is strange that the Western physician’s textbook is still used by the Kudijeen community at present...” In this drug formula, a foreign herb called “mastagi” is used; the herb has never been mentioned in any of Thai traditional drug formulas. Mastagi or mastic is wood resin obtained from plant Pistacia lentiscus growing in the coastal areas around the Mediterranean Sea. It is used for dental care (temporary filling of tooth cavity), for making chewing gum and plaster, and for coating medicine tablets for the medicine to disintegrate in the intestine.

The compilation of the pharmacopoeia was actually completed as a textbook in the reign of King Phetracha as evidenced in one of the drug formulas prepared by a Western physician for the king. During the Ayutthaya Period, the Thai traditional medical system was the one that had been in use since the Sukhothai Period, based on the traditions and cultures transmitted from generation to generation. The knowledge of medical care was in accordance with the textbooks compiled and transmitted by the ancestors; the textbooks were considered as a holy thing that nobody thought of revising it. So the disease prevention and treatment procedures were in the same patterns. Even though there were foreigners coming in with Western medicine, such practice had no influence in causing any change in the Thai traditional medicine practices; rather, there were adoptions of Western drug formulas. That might be due to the fact that such foreigners had not associated with Thais long enough to lay the foundation of Western medicine during that period and that the king did not support such practices as they were against the Thai traditions. King Narai’s Pharmacopoeia was first published in 1917 by Queen Mother Sri Bajarindra (or Queen Saovabha, a consort of King Rama V) for distribution at the funeral of Phraya Phaetpongsa (Nak Rojanaphaet)
Monsieur De La Loubere, ambassador of France’s King Louis XIV, based in Siam in 1687-1688, wrote an archive on Thai traditional medicine in the reign of King Narai the Great during the Ayutthaya Period in one section of the Royal Chronicles of Siam:

“The medicine (or o-sot) will not be scientifically efficacious in Siam. Among the Siamese King’s royal physicians, there are more Chinese physicians than Thai and Mon (from Pako) physicians. For the past two or three years, the King has favoured a French Christian missionary named Monsieur Pumat and appointed him as a civil servant in the Department of Royal Physicians (Krom Moh Luang). As the King trusts him the most, whenever the King is ill, other royal physicians have to inform him of the King’s symptoms and take the medicine he has prepared from his hand to be presented to the King.”

“One important ignorant thing of Siamese physicians is that they do not know what are in the human body and how they are. Regarding what are in the body, they have to depend on Western physicians, they are told not only about drugs but also the cause of illness. The difficulties will be related to the surgery on internal organs in the patient’s body, they are not skilled even in a simple blood-clotting procedure. The Siamese physicians are not knowledgeable about surgery at all.”

“The Siamese physicians do not try to know of the tastes of drugs, especially to see which taste is good for treating which disease. They blindly follow the formulas they have learned from their parents or instructors; and the physicians of new generation obstinately use the textbooks without any revision. They do not care about examining the cause of illness to see what its major cause is; so, they just give medications haphazardly as stated in the textbook. Even so, they are able to cure most of the illnesses. For the hard-to-cure illnesses, the Siamese physicians spare no effort to blame that such illnesses are caused by the act of black magic or ghost, beyond the capacity of human beings to fight.”

In conclusion, De La Loubere has illustrated the pictures of illnesses and medical treatment in those days: “The illnesses of Siamese people in Ayutthaya include cholera (rok puang), dysentery, catarrhal fever (khai kamdao), common cold, malaria, tetanus, epilepsy, paresis (rok jabolom), paralysis, yaws, joint pain (khao-kho) and abscesses; rarely found are infected subcutaneous nodules (pruad-pit), ulcer, scurvy and leprosy; but rather prevalent are mental disorder, black magic-inflicted symptoms, venereal diseases due to promiscuity, and communicable diseases (but not plaque as in Europe). ‘Rok ha’ in Siam is smallpox and cholera.”
And in another part he said, “Siamese physicians neither know about the internal organs nor surgery,” and “Siamese physicians have got only drugs only as described in the textbook, but they never try to learn which drug is good for which disease. They blindly follow the formulas they have learned from parents and instructors. And the physicians of new generation obstinately use the textbooks without making any revision. They do not care about examining the cause of illness to see what its major cause is; so, they just give medications haphazardly as stated in the textbook. Even so, they are able to cure most of the illnesses. For the hard-to-cure illnesses, the Siamese physicians spare no effort to blame that such illnesses are caused by the act of black magic or ghost, beyond the capacity of human beings to fight.”

La Loubere mentioned about masseurs: “They like to squeeze or pinch all over the body. Whenever someone is sick in Siam, the masseur will step or tread on the patient’s body. Even a woman also likes to have a child tread on her back so that she will have an easy childbirth.”

Moreover, La Loubere mentioned about patient’s food: “Patients in Siam normally eat only boiled rice, but regard animal meat or soup as injurious food. When they feel better and are able to eat some solid food, they will normally be given only pork as it is regarded as less injurious and better than other kinds of meat.”

La Loubere mentioned about Siamese physicians when he was sick: “The Siamese King would ask royal physicians from the entire Department, including Siamese, Mon and Chinese physicians, to examine and give treatment. When they arrived, they would take turns taking pulse for a long time and then concluded that I slightly had catarrhal fever and diarrhoea....”

During the reign of King Narai the Great, there was a record saying that there was a clear drug procurement system. For the people, there were sources selling drugs and herbs within and outside the city walls. For civil service agencies and royal courts, there was a royal pharmacy or dispensary (rong phra osot) in the palace.

But after the end of the reign of King Narai the Great in 1688, there was a political turbulence caused by Khunluang Sorasak and his successor King Phetracha; the French were expelled from Ayutthaya city as they were considered as untrustworthy, resulting in the decline and disappearance of Western medicine.

The accounts of Khunluang Wat Pradusongtham indicated that in the end of the Ayutthaya Period, on Ayutthaya island, there were shops selling medicinal herbs to the people. It was said that on Paya Road there were shops selling all kinds of Thai and foreign medicinal herbs at the place called Paya Market, or market
of drugs. And it was stated that “there were at least two royal drug preparation houses called Rong Phra Osot, or royal pharmacies, one outside the Phaichayon Gate and the other in front of the vineyard.” (The vineyard was located at the end of the great pond where the Banyongrattanat Throne Hall was situated.) Besides preparing drugs for use in the palace, the royal pharmacies also prepared drugs for the armed forces for use when going to war.

The aforementioned evidence has shown a good picture of the medical system during the Ayutthaya Period when Thai people mostly favoured Thai traditional medicine and there were shops selling Thai and Chinese medicinal herbs within and outside the capital city’s walls.

**The Thon Buri Period (1768–1782)**

In 1769, when the King of Thon Buri (King Taksin) established Thon Buri as a new capital city, specifying the city boundaries on both sides of the Chao Phraya River. So, as the river was in the middle of the city, it was in the city’s territory; Wat Photharam (a Buddhist monastery or temple) located on the east bank of the river was upgraded as a royal monastery governed by a Phrarachakhana, a titled senior Buddhist monk since then. It was assumed that, probably due to the fact that the country was in the times of regaining independence, the recording of medical knowledge was neglected; so, there was no clear evidence to be seen. When Ayutthaya was burned down by the Burmese troops, many textbooks especially those on medical practices were destroyed, dispersed or burned. Moreover, during the war times, many people including royal and private physicians died. But it was believed that the medical knowledge remained to be used during the period especially in caring for war-wounded people.

However, during that reign, there were two high-level royalties with expertise in Thai traditional medicine, i.e. HRH Prince Thatsapong and HRH Thatsaphai, sons of King Taksin the Great. Both princes continued to work as civil servants in the reign of Phrabat Somdet Phra Buddhya Yodfa Chulalok the Great (King Rama I) before being executed in the reign of King Rama II.

**The Rattanakosin Period (1783–present)**

The practice pattern of Thai traditional medicine in the Rattanakosin Period (present-day Bangkok) was transmitted from the Ayutthaya Period through various pharmacopoeias (tamra ya) and medical textbooks (khamphi phaet), partly passed on from previous generations of physicians and partly from the re-collected and transcribed textbooks in the early Rattanakosin Period. In such efforts, a meeting
was called for invited physicians and experts to bring personal pharmaceutical and medical textbooks as well as those from Buddhist monasteries and people’s households for review, revision and re-composition, selecting only the drug formulas regarded as good and reliable for re-transcription and collection for use as textbooks in the Royal Physicians Department (Krom Moh Luang). Later the textbooks have been widely disseminated.

The documented pharmaceutical and medical textbooks are something that physicians use in transmitting the knowledge to their younger generations as well as the general public. The documentation or recording was actually done by the physicians as personal memoirs for their own use and learning purposes as they need to learn about the causes of illnesses, herbs’ medicinal properties, drug preparation, and healing practices with too many details to memorize all of them. So the knowledge had to be documented for use as their own manuals and after being used for a long time before they became textbooks, which were transcribed by younger generations of physicians and other people for use continuously, making Thai traditional medicine become transmissible to next generations.

In the aforementioned process, in addition to all experts and physicians, the kings also play a significant role as detailed below for each reign:

The Reign of King Rama I (1782–1811)

When King Buddha Yodfa Chulalok (Rama I), who established the Chakri Dynasty, ascended to the throne by conquer and moved the capital city to the east bank of the Chao Phraya River. The new Grand Palace was built and the old Wat Photharam (or What Pho) was renovated as a royal Buddhist monastery named Wat Phra Chetuphon Vimolmangklaram. It was assumed that the monastery was built between 1688 and 1730 during the reign of King Phetracha by a commoner in Tambon (subdistrict) Bangkok near the mouth of the Chao Phraya River in Thonburi Township. Its real builder was unknown; the monastery was divided into two sectors: one as Buddhavas, or chapel, for performing religious rituals and the other as Sanghavas, or monks’ living quarters. That was regarded as the beginning of the evolution of Thai traditional medicine as King Rama I also ordered the collection and inscription of drug formulas and ruesi dadton (self-stretching) postures on the cloisters of the monastery. Regarding drug procurement for official use, pharmacies called Rong Phra Osot were set up under the Physicians Department (Krom Moh) like those in the Ayutthaya Period. In the civil service, physicians were called royal physicians (Moh Luang), while those providing services to the people were called private physicians (Moh Rat or Moh Chaloeisak).
The pattern for knowledge transmission in the past focused on personal relationship between the instructors and disciples. When King Rama I had Wat Pho restored as the place for knowledge dissemination of the people, the transmission of medical knowledge has changed more towards the people. The monastery has a lot of stone inscriptions on several disciplines of sciences and arts to learn from such as archaeology, literature, poetry, Buddha image sculpture, sculpture/pottery, sculpture/carving, painting, construction, massage (with massage textbooks showing positions of lines and pictures), body exercises with inscribed poems as well as ruesi dadton postures (sculptures), and traditional medicine with stone inscriptions describing causes of illnesses, traditional drugs for healing purposes in both children and adults, planted rare medicinal plants/herbs, and medical and pharmaceutical textbooks describing how to treat all illnesses.

There was a remark as to from where the ruesi dadton sculptures, bestowed by King Rama I in Wat Phra Chetuphon, were derived. HRH Prince Dhamrong Rajanupab explained that he had seen ruesi (hermit) sculptures in the postures of asceticism in India’s Chaipura or Jaipur City Museum like those in Wat Phra Chetuphon, but those in India were smaller than the Thai sculptures.

Thus, it was assumed that the Thai ruesi dadton sculptures were derived from India’s ancient hermits, i.e. different body stretching postures of hermits performed after a long period of one sitting yoga (asana yoga) position in the process of asceticism in search of freedom from suffering (mokkha-dhamma). But the Thai postures were intended for the relief of body aches as inscribed in the “Ruesi Dadton Poem” during the reign of King Rama III.

Nevertheless, the art of ruesi dadton and its sculptures might not definitely began in Thailand in the reign of King Rama I because at least they should also exist during the late stage of the Ayutthaya period through the early Rattanakosin period. But they could not be found as they might have been completely destroyed during the second fall of Ayutthaya. Luckily, TTM practitioners and sculptors were able to transmit the ruesi dadton practices from the Ayutthaya period to the early Rattanakosin period.

**The Reign of King Rama II (1809–1824)**

During the reign of King Buddha Loetla Nabhalai (Rama II), the restoration of medical services was undertaken as the King had found that the medical textbooks at the royal pharmacy in Ayutthaya had been lost. So the King instructed that medical textbooks from various places be searched and compiled so that they would not deteriorate or be lost. Then in 1813, the King commanded that all medical experts
and drug formula owners bring and present them to the King and assigned Prince Pongnarin Rajanikun, King Taksin’s son, who was a royal physician, to search for and select good drug formulas and get them transcribed for use as royal drug formulas at the Royal Pharmacy. The textbook was called Royal Pharmacopoeia of King Rama II (Tamra Ya Rong Phra Osot Ratchakan Ti Song), first published in 1916 as directed by Somdet Phra Maha Samana Chao Krom Phraya (Prince) Vajirananavarorasa, the 10th Supreme Buddhist Patriarch of Thailand; the later printings’ records were unclear.

Besides, during the reign of King Rama II, while King Nang Klao (Rama III) was still Prince Jetsadabodin, the prince had Wat Jomthong renovated as a royal monastery and renamed it Wat Ratcha-orasaram. During the renovation, the Prince had textbooks on drug formulas and massage as well as ruesi dadton postures inscribed on the boundary walls (kamphaeng kaeo) of the Buddhist chapels (phra vihara and phra ubosot) of the monastery.

In 1816, King Rama II had a law enacted on royal pharmacy officers (Kodmai Phnakgnan Phra Osot Sowoie), which showed that the King gave importance to drug preparation and regarded it as advanced science and art. The persons who were trusted to work as royal pharmacy officers had to possess honesty, carefulness, and uniformity in drug preparation with a high level of responsibility. So the study to become royal pharmacy officers is confined only to the families with the knowledge transmitted from their ancestors. With regard to health care, during the reign, Thai traditional physicians were divided into two categories: royal physicians and private physicians. The transmission of medical knowledge was similar to that for pharmacy, i.e. study only within the same family or in certain cases to someone who had been working as assistant (or disciple) of a physician for several years until he was familiar with the medical care as he had seen a lot of it. Another type of physicians would start with self-study from textbooks, trying to understand the text and experiment with themselves before treating other people. This type of physicians was highly experienced and well respected. For example, after the second fall of Ayutthaya, there was a shortage of physicians, when the wife and children of Phraya Vichayathibodi (Klom), former governor of Chanthabun Township, were sick and could not find any physician, he had to study medicine himself.

In the process of knowledge transmission, the learners would start with familiarizing themselves with medicinal plants as well as their properties; and then they would study from the medical textbooks, followed by practices on examining patients’ symptoms with their instructors’ advice for comparison. When they were familiar with the practices, they would be allowed to treat patients by themselves. There was neither specific timeframe for the study nor a certificate or symbol
to signify the study completion or capacity certification. However, among royal physicians, what can indicate the physicians' capability was their royally bestowed noble titles (bandasak) such as Phraya, Phra, Luang, and Khun.

Royal and private physicians were different in the following aspects:

Royal physicians (Moh Luang) were specialized physicians working as civil servants in the Royal Physicians Department (Krom Rajaphaet); so, they were actually civil servants with feudal status (sakdina) and given annual remunerations to provide medical care for the king and royal family members as well as other people in the royal court, and for other people as royally directed. The study of medicine of royal physicians was systematic and reliable as the persons who would be civil servants as royal physicians had to receive training that began at a young age so that they would be familiar with medical care; and then they would be promoted as medical assistants accompanying royal physicians to provide medical care until they were competent in examining patients and preparing drugs. When they grew up and became knowledgeable to enter civil service, and when there were vacancies in the royal physicians department, they would be appointed to work there. Royal physicians had more privileges than private physicians; for example, they could pick or collect any medicinal herbs from anybody's household or any other places by showing a red club (krabong daeng) as symbol. If there was a shortage of any medicinal herbs and the royal physicians could not get it in the capital city, an official document would be issued in the name of Chao Phraya Chakri to townships to collect such herbs and send them to the royal pharmacy. With regard to income of royal physicians, they would normally receive a lot of money when going out to provide medical care to royalties or officials as royally commanded. Even though traditionally the royal physicians sent by the king to provide medical care would not charge any fees, the patients would normally give them some money in expression of thankfulness.

Private physicians (Moh Chaloeisak, Moh Rat, or people's physicians) were those who were not civil servants, but practised traditional medicine that they had learned from their ancestors/physicians or from textbooks and self-practice until they were competent, mostly using the same Thai traditional medicine theory as royal physicians. Most of them were famous and had a lot of disciples, both laypersons and Buddhist monks. Generally, they were male (except midwives, normally being female), working as a physician and pharmacist. That meant after having examined and diagnosed the patient, the same individual would prepare drugs for treating the patient. In the physician's medical kit (luam ya), there would be small bags of herbal medicines. Upon agreeing to treat any patient, the patient's relative would set up a healing-fee package (khwankhao) consisting of milled rice, bananas, betel-nuts/
leaves, and money (1.50 baht, or 6 salueng, on a candle), all called a khwankhao or healing fee, for paying respect to the physician’s teacher (Jevaka Komarapaj). The physician might ask the patient’s relative to collect some medicinal herbs and the physician might ask for some money to buy foreign medicinal herbs. If the illness was not serious and the patient was quickly cured, the patient’s relative would give the entire package together with a drug price of 3 baht to the physician. If the physician was unable to cure the illness, he would get nothing, no matter how much he had invested. In the case of a well-off patient, the patient’s relative might be afraid that the physician might not fully provide medical treatment, so the relative might set up a very high reward (fee); and when any physician was able to cure it, the physician would get the entire reward. Besides, in the case of a well-known physician, sometimes there might be a request for money before actually giving the treatment, called a “medical-kit-opening fee”, or “kha poed luam ya”. However, such practices might vary from one locality to another and it was not always certain whether the physician would get any money or not. In those days, the law prescribed that the physician could ask for something else other than money as a treatment fee, in case the patient had no money. So, the income of private physicians was uncertain and they had to have other occupations too.

A private physician might have a chance to become a royal physician if he could show the capability to the satisfaction of the king. If so, the king would appoint him as a civil servant in the royal physicians department, or to work in large townships such as Nakhon Si Thammarat as a township physician under the royal physicians department.

**The Reign of King Rama III (1824–1851)**

Western medicine began to have an influence on Siamese people’s health lifestyle in the early reign of King Rama III of the Rattanakosin Period.

The person who had a significant role in the introduction of Western medicine and public health in Siam was Dr. Dan Beach Bradley, or commonly called “Dr. Paladley”, an American missionary of the Presbyterian Church of Protestant Christianity.

In connection with medical services, what Dr. Bradley initiated in 1835, when he first arrived in Bangkok, was the opening of a health centre, or Osot Sala, in Sampheng market, near Wat Ko, which was a slum area with high prevalence of diseases. In one section of Dr. Bradley’s archives, it says “There were a lot of patients coming to see the missionaries, crowding the place, from morning until evening. All the patients were seriously ill; so they came for medical treatment.”
It could be said that Western medicine took root in Thai society at that time as the missionary's record says, after having been in operation for three years: “The medicine section has done the most beneficial job, i.e. treating more than 3,800 high-, middle- and low-class patients, from all parts of the country; and it has initiated the new discipline of medicine in Siam.” And the “medicine section” of the missionary group dispensed the most modern drugs for that period, i.e. quinine sulphate for treating malaria in Thailand, only 15 years after it was initially extracted for use for the first time in the world.

The more important role that Dr. Bradley played was that he initiated a communicable disease prevention programme for the first time in the public health history of Thailand. He actually introduced smallpox vaccination in 1830, after Dr. Edward Jenner, a British physician discovered the inoculation method about 40 years earlier (1796). And when there was a major smallpox outbreak in Siam and worldwide in late 1838, King Nang Klao ordered that all royal physicians practise the smallpox inoculation technique from Dr. Bradley so that they could go out to give that kind of service to the general public in the capital as well as in other cities of the country. It was found that a large number of people’s lives could be saved.

Actually, the smallpox prevention method introduced by Dr. Bradley could be done in two ways: (1) vaccination with vaccinia virus vaccine on the human skin and (2) inoculation, with the pus containing variola virus from a smallpox patient, on other people’s skin. The second method was very dangerous, but during that smallpox epidemic, the amount of imported vaccinia virus vaccine was not sufficient, Dr. Bradley together with Thai physicians had to use the inoculation method instead. Later on, the Siamese government had the Smallpox Prevention Act B.E. 2468 (1925) enacted, prohibiting anyone from using the inoculation method, as prescribed in section 14 of the Act. Moreover, King Rama III ordered the printing of 10,000 copies of a leaflet asking residents of the capital to get smallpox vaccination. That was regarded as the first printed material in the Thai government’s printing history.

King Rama III had Wat Phra Chetuphon renovated again on Wednesday, the 10th day of the waning moon of the 10th lunar month of Pi Marong (the year of dragon, or 1832), in honour of his grandfather, King Rama I. Moreover, the king also intended to assemble experts on various branches to transmit their knowledge to younger generations, to revive the people’s ethics, and to make it a source of various kinds of Thai knowledge. The renovation was undertaken 40 years after the previous one, whereby a number of textbooks were screened and selected, especially those that should be studied in special education classes, for revision
or writing as new textbooks; and then get them inscribed on marble tablets which were kept in the monastery. There are also paintings and sculptures or statues for use together with the textbooks. The place is for use by the general public of any family or social status; anyone interested to learn can come and study from the stone inscriptions in Wat Phra Chetuphon.

In the education system of Thai traditional medicine, for non-family members of the physicians, if they wanted to study this aspect of medicine, they had to have great perseverance as Thais did not like to pass on any knowledge to those who were not their own children or grandchildren. Thus, to get themselves accepted as a disciple was not easy, they had to pass so many steps before the physician/teacher would accept them as students. Studying medicine was not easy as it required perseverance, persistence and determination for years to memorize by heart what the teacher taught by word of mouth; so the leaner had to be in close contact with the teacher, taking good care of him and keeping asking him whenever he went out to provide medical care to patients. That was to learn from the beginning about the causes and names of diseases, and medicines for treating the diseases, especially which medicine for which disease; this aspect of learning had to be undertaken with accuracy.

So, it could be noted that the policy on setting up the traditional medicine formulas and ruesi dadton (self-stretching) postures for the public of King Phra Buddha Yodfa Chulalok and King Phra Nangklao was a great benefit, not confining the transmission of Thai traditional medicine only within the two reigns; rather, it has been passed on until today through the kings’ inscription on marble tablets. Not only are they used for dissemination of such knowledge to the general public, but they are also regarded as medical records in preserving the Thai traditional medicine knowledge, which has been used widely since the stone inscriptions are made of durable material. Thus, the knowledge that has been inscribed for more than 200 years is still available until today despite the disinterest in studying this subject for a certain period of time in the past.

The stone inscriptions of traditional medicine formulas in Wat Phra Chetuphon Vimolmangklaram (Wat Pho) were made to the order King Rama III in 1832 [and in 1962, Somdet Phra Wannarat (Pun Punnasiri, a senior Buddhist monk) had Wat Phra Chetuphon publish the text of the formulas so that they would not be lost]. The contents of the textbooks include symptoms of diseases as well as their superstitious and medical healing methods. There are several medicines or drug formulas for each illness; the next formula can be used when the first one is inefficacious. Each drug formula comprises 10–50 items of medicinal plants or animal products, not mentioning the medicinal properties of any single item.
King Rama III also ordered the search for and collection of sacred medicine textbooks and all diseases textbooks from Phra Racha-khana (senior chief monks), government officials and the general public for inscription on marble tablets. In the process, the textbook givers had to swear that their formulas had good healing properties; and then Phraya Bamroe-rajaphaet would check all of them before getting them inscribed.

The stone inscriptions in Wat Pho are divided into four major categories: ruesi dadton (self-stretching), medicine (vechasart), pharmacy, and massage. For the subject of ruesi dadton, the king had ruesi dadton sculptures done, bestowed four parts of a royally written poem on ruesi dadton, and had civil servants as well as monks write a poem for each of the 80 ruesi dadton postures. The work was completed in 1836; and later on, the king had the ruesi dadton postures copied into a Thai notebook in 1838.

The head of the Wat Phra Chetuphon renovation effort was Phra Phetphichai under the supervision of Prince Krom Muen Nuchitchinorot. According to the records or archives on the renovation of Wat Phra Chetuphon, there were 37 writers of Wat Phra Chetuphon inscriptions on medical services, 3 of whom only are mentioned below:

King Nang Klao (Rama III): ruesi dadton poems (1) self-stretching for relieving body ache (khi-kiat); (2) self-stretching for relieving waist and leg stiff (eo-khod khadkha); (3) self-stretching for relieving waist ache (lom-nai-ok-nai-eo); (4) self-stretching for relieving waist sprain (khad-eo); (5) self-stretching for relieving headache (lom-puad-si-sa).

Prince Krom Muen Nuchitchinorot: ruesi dadton poems (1) self-stretching for relieving heel sprain (son-tao); (2) self-stretching for relieving stomach ache and angle sprain (puadthong and kho-tao); (3) self-stretching for loosening the phlegm in the throat and for relieving arm ache (lom-nai-khaen); (4) self-stretching for relieving flatulence (lom-nai-ok); (5) self-stretching for relieving shoulder, chest and abdomen sprain (kae-lai, kae-thong and kae-ok); (6) self-stretching for relieving vertigo (lom-wian-si-sa).

Prince Krom Muen Kraisornwichit: ruesi dadton poems (1) self-stretching for healthiness and longevity (damrong-kai a-yu-yuen), (2) self-stretching for relieving leg ache (kae-kha).
Knowledge about Thai traditional medicine in the inscriptions in Wat Phra Chetuphon

<table>
<thead>
<tr>
<th>Branch of knowledge</th>
<th>Knowledge media</th>
<th>Source of knowledge</th>
</tr>
</thead>
</table>
| **Medicine**
Branch: Physical well-being & physical therapy
- 82 ruesi dadton sculptures | Sculptures made of zinc-tin alloy
Marble tablets | Verandas of all cloisters (multi-purpose pavilions, or sala rai) |
- Poems on ruesi dadton | Paintings | Walls of cloisters around temple |
- 60 pictures of human massaging | | |

**Branch: Pharmacy**
- Plant varieties and medicinal properties | Medicinal plant varieties | Plants growing near the gates, walls and other places in the Wat |
- Medicinal herbs, plants and substance and formulas for treating diseases | Stone inscriptions | North and south pavilions in front of the main pagodas (Maha Chedi) |

**Branch: Medical care**
- Symptoms of illnesses and medicines for treatment | Stone inscriptions | North and south pavilions in front of the main pagodas (Maha Chedi) |

The inscription of traditional medicine formulas on marble tablets was done not only at Wat Phra Chetuphon, but also at Wat Ratcha-orasaram – the number being smaller here as the work was done when King Nang Klao was Prince Jetsadabodin (1821). That indicated the king’s interest in medical services; and the drug formulas were inscribed on 3-metre-wide rectangular marble tablets, as well as circular and oval-shaped ones, for decorating on the walls of the Reclining Buddha image hall and small pavilions (sala rai) adjacent to the marble walls (kamphaeng kaeo) in the front of the main chapel. All together, there are almost 100 formulas for use by the public and for the purpose of conserving Thai traditional medicine textbooks.

Another person who was important in the revival on Thai traditional medicine was HRH Prince Krom Luang Wongsaa Dhiraj Snid, who initially served as a civil servant in the royal physicians department during the reign of King Rama III and was later established as HRH Krom Muen Wongsaa Sanid. He was the author of textbook on 116 traditional Thai medicine formulas, which was the first herbal drug textbook of Thailand written as a technical document, with the description
and analysis of parts of each medicinal plant. He was the first Thai physician to receive an honourary certificate from a European medical institute and was invited to be a member of the New York Medical Institute. He also wrote the descriptions of illness treatment with herbal medicines and two *ruesi dadton* (self-stretching) exercise postures for stone inscription at Wat Phra Chetuphon or Wat Pho.

In 2008, the United Nations Educational Scientific and Cultural Organization (UNESCO) honoured the prince as a UNESCO world-ranked Great Personality (a scholar and poet) on the occasion of his 200th birthday anniversary.

**The Reign of King Rama IV (1851–1868)**

During the reign of Phrabat Somdet Phra Chom Klao Chao Yu Hua (or King Mongkut, Rama IV), Siam began to change and adjust itself towards the new era, especially the Western-approach development. It was the great opening of the country to international trade, which had an impact on national economic development. It was assumed that Western medicine (including Western obstetrics) was introduced to the country around the end of King Rama III’s reign and was supported by King Rama IV. But it was unable to draw the people’s interest because Thai traditional medicine had been the traditions and cultures passed on from previous generations until it had become an integral part of Thais’ livelihoods.

During King Rama IV’s reign, there was one foreigner who had a significant role in Thai traditional medicine, i.e. Dr. Samuel Reynolds House, commonly known among Thais as “Dr. House”. In providing medical care, Dr. House opened a health centre, or *osot sala*, at the old office of Dr. Bradley. For the first 18 months of the health centre’s operation, there were 3,000 patients coming in for medical care and he was the first surgeon to use ether for surgical anaesthesia for the first time in Thailand, or probably the first time in Asia (after ether had been used in surgical operation in the world for only two years).

Regarding disease prevention, Dr. House played a significant role in the control of the major cholera outbreak in 1849 (coinciding with the second pandemic), which killed at least 40,000 people in Bangkok and neighbouring provinces. Later on Dr. House wrote a report and got it published for distribution in the United States of America (1865) on the treatment of cholera patients in those days. In conclusion, giving camphorated tincture mixed with water to patients to drink often was very efficacious and no patients treated with this therapy died.

Later on, the Western medical services of the Presbyterian missionaries were expanded to the provincial area; the first branch was set up in Phetchaburi province in 1861, led by Professor S. G. McFarland. And finally it could establish a
hospital, the first hospital of Western medicine in Thailand (8 years before Siriraj Hospital was opened).

Another major medical and public health activity of the missionaries was carried out in Chiang Mai, led by Daniel McGilvary, a religious teacher and Dr. Bradley’s son-in-law. Even though he was not a physician, Mr. McGilvary actually laid the foundation of medical services of the missionaries in Chiang Mai, beginning in 1867, until it became McCormick Hospital. And importantly he initiated the malaria control programme in the North and had carried it out for almost 30 years before the technical aspect of malaria transmission was discovered.

During that period, although the king as well as members of the royal family and nobility would prefer Western medicine, the general public still preferred Thai traditional medicine for healing their illnesses.

Some documents recorded during the reign of King Rama IV stated that the officials of Bowornsathanmongkon Palace, or the Front Palace (Wang Na), of King Phra Pinklao Chao Yu Hua, dealing with medical services were those of the Physicians Department (Krom Moh), the Internal Medicine Department (Krom Moh Ya), the Massage Therapy Department (Krom Moh Nuad), the Pediatrics Department (Krom Moh Kuman), the Ophthalmology Department (Krom Moh Ya Ta), and Western physicians as follows:

1. **Physicians Department (Krom Moh)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phraya Prasertsarthamrong</td>
<td>Jangwang (Senior Royal Attendant)</td>
</tr>
<tr>
<td>Phraya Prasitwittaya</td>
<td>Jangwang (Senior Royal Attendant)</td>
</tr>
<tr>
<td>Phra Srimahosot</td>
<td>Director-General, Front</td>
</tr>
<tr>
<td>Phra Srisakdiraj</td>
<td>Director-General, Rear</td>
</tr>
<tr>
<td>Luang Ratanaphaetaya</td>
<td>Assistant Jangwang (Palad Jangwang)</td>
</tr>
<tr>
<td>Luang Prathetphaetaya</td>
<td></td>
</tr>
<tr>
<td>Luang Jinda-osot</td>
<td>Director-General</td>
</tr>
</tbody>
</table>

2. **Internal Medicine Department (Krom Moh Ya, Left and Right)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luang Thiparaka</td>
<td>Director-General</td>
</tr>
<tr>
<td>Luang Wiset-osot</td>
<td>Director-General</td>
</tr>
<tr>
<td>Khun Raj-osot</td>
<td>Director-General</td>
</tr>
<tr>
<td>Khun Prasert-osot</td>
<td>Assistant Director-General</td>
</tr>
<tr>
<td>Khun Thewa-osot</td>
<td>Assistant Director-General</td>
</tr>
<tr>
<td>Khun Thep-osot</td>
<td>Assistant Director-General</td>
</tr>
</tbody>
</table>
Khun Udom-osot Assistant Director-General
Khun Manee-osot Assistant Director-General

3. Massage Therapy Department *(Krom Moh Nuad)*

Phra Worawongraksa Jangwang
Luang Samphahaphaet Assistant Jangwang
Luang Samphahaphakdi Assistant Jangwang
Luang Prasartwijit Director-General, Left
Luang Prasit-hattha Director-General, Right
Khun Wata-phinat Assistant Director-General, Right
Khun Srisamphaha Assistant Director-General, Left

4. Paediatrics Department *(Krom Moh Kuman)*

Phra Kumaranurak Jangwang
Luang Sitthikuman Director-General

5. Ophthalmology Department *(Krom Moh Ya Ta)*

Khun Prasartnaiyanet Director-General
Khun Wisetnaiyana Director-General
Muen Phaewnaiyana Assistant Director-General, Right
Muen Thewaphinet Assistant Director-General, Left

6. Western Physicians, Left and Right

Khun Chamnanrangabphit Director-General, Right
Khun Sanitwettaya Director-General, Left
Muen Metriwittaya Assistant Director-General, Right
Muen Chamnanmettriwettaya Assistant Director-General, Left

It is noted that, during the reign of King Rama IV, Western physicians began being appointed as royal physicians in the royal court officially with noble titles *(bandasak)* like those during the Ayutthaya period.

**The Reign of King Rama V** *(1782–1811)*

Phrabat Somdet Phra Chulachomklao Chao Yu Hua (King Chulalongkorn, or Rama V) deemed that the textbooks on Thai traditional medicine and indigenous drug formulas were extremely useful as they had been studied, transcribed and passed
on for generations with perseverance among physicians and interested persons. But some of the original textbooks and royal textbooks that had been used for a long time had been lost. Deeming that the medical textbooks had to be preserved as records and for dissemination in the future, in 1870, only two years after acceding to the throne, King Rama V ordered that a meeting of royal physicians be held to compile medical textbooks from various places and get them reviewed and revised to conform to the originals. In this effort, a royal medical committee was appointed consisting of “Prince Krom Muen Phubodi Rajaruethai”, senior royal attendant on medical services (Jangwang Phaet), as well as other senior physicians such as “Phraya Amornsartprasitsilp, Luang Kumanphet, Luang Kumanphaet, Khun Kumanprasert, Khun Kumanprasit, and Khun Kumanthep”. The committee was tasked with reviewing and revising the textbooks so that they were all correct and then forwarded to the Scribes Department (Krom Ahlak) for proofreading by “Prince Krom Muen Aksornsarnsophon”, Jangwang of the Department, Luang Sarnprasert and Khun Nimit-aksorn. Then the revised textbooks were scribed in Khmer (Khom) alphabet in golden ink by Krom Muen of the Royal Institute Department (Rajabandit Sathan) and in Thai alphabet in mineral (horadarl) ink by the Scribes Department. Upon completion, the textbooks were presented to the king as merit making in his honour and as the country’s property for years to come.

The revised textbooks were called “Royal Textbook of Medicine” or “Vejasart Chabab Luang”, which was the source of the Medical Textbook, or Tamra Phaetsart Songkroh, the principal textbook on Thai traditional medicine that has been used for teaching/learning purposes until today.

The aforementioned background has reflected the prudent judgement of King Rama V, who is regarded as “Somdet Phra Piya Maharaj”, or the Great Beloved King, of Thai people. The king had deemed that Thai traditional medicine and pharmaceutical wisdom was valuable cultural heritage, which has been accumulated over the past generations until it became Thai traditional wisdom and the nation’s cultural heritage. Besides, there are records showing that the king was very concerned about this field of knowledge being extinct if the people of the next generation did not see its value but turn to Western medicine. The king’s concern over “Thai physicians and Thai drugs” appeared in his handwritten letter to HRH Prince Damrong Rajanupab, dated 18 November 1890, as follows:

“...I warn that Western physicians are good, but Thai drugs should not be allowed to be extinct. Whether or not there should still be Thai physicians in the future, I personally prefer Thai drugs and still trust Thai physicians. If all Thai...
physicians will follow Western physicians, it seems like respecting others but disrespecting monks. I am quite old now and may not live until all Thai physicians are gone; all the people of future generations will prefer Western practices and may not be worried like me. I just warn as a conservative person....”

Previously, Thai traditional medicine and pharmaceutical textbooks were written or inscribed with the ancient Khmer alphabet, Pali and Thai; and they were read and memorized similarly to Buddhist sermon scriptures inscribed on palm leaves. For the ancient royal courts of Siam, a “Medical Textbook” (Khampi Phaet) or “Royal Textbook” (Phra Tamra Luang) was a medical textbook of the royal court. Such royal textbooks were holy things; many members of the royal family were physicians. Therefore, Thai kings had drug depots and medical libraries called “Khlang Phra Tamra Khang Phra Thi” for use in research studies in the royal court and by most of the royal physicians. It was assumed that it had been like that since the Ayutthaya period until the Rattanakosin period.

The reign of the King Rama V was regarded as the period during which the ancient Thai medical textbooks, scattered and used in the previous generations, were gathered and revised so that they were consistent with the originals; and the evidence was recorded and kept in the royal library. The medical textbook of each physician/teacher generally mentioned about diseases/symptoms, treatment methods, and drug formulas including properties for healing such an illnesses. Even though they were redundant in some aspects, they had different perspectives but with the same goal. For example, the Prathomjinda Scripture dealt with the fertilization in the womb, menstruation, and childhood illnesses as well as drugs for healing such illnesses; the Taksila Scripture dealt with all kinds of toxic fever; the Ka-sai (Wasting Disease) Scripture dealt with 26 kinds of wasting. Besides, Prince Sai Sanidwongse, who was a royal physician and supervisor of the Royal Physicians Department, always paid attention to the acquisition of traditional and Western drug textbooks; and he selected drug formulas and compiled them as a textbook called “HRH Prince Sai Sanidwongse’s Drug Formulary”, or Tamra Ya Phra-Ongchoa Sai Sanidwongse.

During the reign, the knowledge of Thai traditional medicine was fully revived with the teaching and practices in the Medical Department of Bowornsathanmongkon Palace (Prince Krom Phra Rajawang Bowornsathanmongkon), which could be deemed as a medical school originated before Paetrayakorn School (School of Medical Practitioners) at Siriraj Hospital. Even though Western medicine was gaining more and more influence during that period, Thai people still preferred seeing a Thai physician and were afraid to see a Western physician. Even after the establishment
of Siriraj Hospital in 1887 for providing medical services to the general public, tricks had to be used and monetary as well as other incentives had to be given to patients to persuade them to attend the hospital. Two years later, there was a shortage of physicians; so in 1889, HRH Prince Damrong Rajanupab set up a medical training school, which later in 1900 became the Royal Medical College (Rajapaettayalai) offering a 3-year curriculum in medicine. In the beginning, the medical teaching, learning and services were in both Thai traditional and Western medicine, the kind of services being up to the patients to choose. The reason for including Thai traditional medicine was because it was difficult to find Western physicians to work at the hospital; so, Thai physicians had to be assigned to work there. At the medical school, both medical disciplines were taught in parallel.

**Thai physicians at Siriraj Hospital**

The construction of Siriraj Hospital, as the symbol of the country’s public health reform based on Western medicine practices, was completed in 1888. In the beginning, King Rama V assigned his younger brother HRH Prince Srisaowaphang as director-general of the Medical Services Department responsible for the management of the hospital. HRH Prince Damrong Rajanupab, who was responsible for the construction wrote in the book “Nithan Borankhadi,” or ancient tales, about getting physicians to work at the hospital undertaken by Prince Srisaowaphang that:

“The Prince has invited royal physicians to work at the hospital, but found that the physicians had regarded themselves as being in a different group, using the treatment methods and medicines only among the physicians who were in their own group, e.g. their children, sons-in-law, or disciples. I then asked the Prince whether the royal physicians’ textbooks could be used at the hospital. He said that he had asked the physicians and they all responded that the royal medical textbooks could not be really used because, when King Rama III ordered the compilation and inscription of the textbooks at Wat Phra Chetuphon, each of the physicians concealed their good drug formulas, so such good things were not included in the royal drug formulary. That means there are revived textbooks with the very old formulas commonly known by all concerned, but the good treatment methods and drugs currently in use are not there.”

When Prince Srisaowaphang was unable to get the physicians to cooperate with each other, he invited and assigned one well-known physician as the chief medical officer, who would recruit other deputy chief medical officers that might
be his grandchildren or disciples. In that effort, the invited physician was Phra Prasitwitthaya (Moh Nu, who later became Phraya Prasertsartthamrong) serving as the hospital’s chief medical officer; and the deputies were his disciples named Moh Khong and Moh Nim (who later became Phraya Phitsanuprasartvej and Phraya Prasertsartthamrong, respectively).

In the first year of its operation, the medical services at Siriraj Hospital were provided by Thai physicians only. But when Prince Srisaowaphang was ill and hospitalized at the hospital until his death in 1889, he assigned Dr. T. H. House as the chief medical officer for Western medicine and Dr. Peter Gavan, a physician of the Royal Household Bureau, as an advisor, and Phra Prasitwitthaya (Nu) as the chief medical officer for Thai traditional medicine. After establishing Siriraj Hospital, the Medical Services Department also established several other hospitals, namely Pom Mahachai, Khon Sia Jarit (psychiatric patients), Bang Rak, and Thepsirintarawat. In addition, there were private hospitals also such as Children’s Hospital (Rong Phayaban Liang Dek) and Red Cross Hospital (Rong Phayaban Sapha Unalom Daeng), which was connected to the Medical Services Department.

Records have shown that Thai physicians working at the hospitals at that time were all physicians from the Physicians Department of Bowornsathanmongkon Palace (Wang Na), namely Moh Thuam, Moh Nim, and Moh Phuk. Regarding the medical care, the patients were allowed to choose either a Thai physician or a Western physician as they liked; and there were both Thai traditional and Western medicines. Powder drugs would be prepared at Siriraj Hospital and then distributed to other hospitals; but boiled drugs would be prepared by each hospital.

### Thai physicians at the medical school

The difficulty in getting Thai physicians to work at hospitals had caused Prince Krom Muen Damrong Rajanupab (the title at that time) to consult with Dr. Peter Gavan, a Western physician attached to the Royal Household Bureau, and Prince Srisaowaphang; and they all agreed that a medical school should be established to produce physicians to work in various hospitals instead of Thai physicians. The medical school taught Western medicine using the building of Siriraj Hospital on a temporary basis; and the Ministry of Education (Krasuang Thammakarn) was asked to hire Dr. T. Heyward Hays, a missionary physician, to serve as a teacher/lecturer. The Paetayakorn School called for applications to the medical training curriculum in May 1889 and the class began on 5 September 1890. For first- and second-year students, they studied only Western medicine, but for third-year students, they also studied Thai traditional medicine as the Medical Services Department had assigned
Mom Chao Jiak Dinakara, director-general of the Physicians Department of the Royal Household Bureau, to serve as teacher.

The addition of Thai traditional medicine teaching in the curriculum was a result of King Rama V’s letter to Prince Damrong Rajanupab (1890) in response to the Prince’s report on the application/admission of medical students requiring that they sign a scholarship contract with the Medical Services Department, and asking royal permission to allocate budget for students’ salaries as well as miscellaneous expenses.

The King’s letter had caused the inclusion of Thai traditional medicine in the medical curriculum as evidenced in part of a letter from Prince Damrong Rajanupab to the King:

“The teaching and practice will be on both Western methods and Thai drugs, using only the good parts of both disciplines together. The students will be taught various Western subjects such as characteristics of the body, medical treatment, surgery and wound suturing, midwifery, and drug chemical analysis. The Thai methods that will be taught are medicines and nursing techniques. The full support will be provided for its prosperity.” Later on, Paettayakorn School was royally given the premises of the royal opium processing plant near the Bangkok Noi Canal for use as the new school site; the school construction was completed in 1890 and renamed as Rajapaetthayalai, or Royal Medical College.

Between 1893 and 1915, Thai traditional medicine was part of the medical school curriculum. In the early stage, in addition to Mom Chao Jiak Dinakara, other Thai traditional medicine instructors were Mom Chao Pranee Dinakara, Mom Chao Punsawat, Mom Chao Pan, Khun Phinij, and Luang Vikhanet. The teaching was based on the royal textbooks in the Vajirayana Library; later on, new textbooks were written for easier learning and understanding by Mom Chao Pranee on the topics of element diagnosis (tart vinijchai), cause diagnosis (samuttathan vinijchai), supernormal power (tart apinyan), foul-smelling stools (hasurinthayan tart), fertilization and childhood illnesses (Prathomjinda), and diseases and medicines. And in 1908, there were two more assistant instructors: Phraya Phitsanuprasartvej (Kong Thavornvej) and Khun Pinijvaithayakorn.

In connection with the production of common household remedies (ya tamra luang), in 1901, eight formulas of such remedies were produced for the first time: anti-malaria (quinine), laxative, anti-diarrhoea, anti-round worm, anti-dysentery, blood tonic, anti-yaws, and anti-flatulence (soda mint) drugs.
Three volumes of textbook of medicine were published for the first time in 1889, named *Phaetsart Songkroh*, for use at the medical school, with several parts covering both Thai traditional and Western medicine disciplines.

In 1901, officials of the Medical Services Department, Ministry of Education, had an idea that the medical school had been operational for 12 years, but there were no principal medical textbooks for use by physicians and the general public for health care purposes. So, they undertook the compilation of all Thai and Western medical textbooks used in the school, including, for example, the revised royal medical textbook (*Phra Tamra Luang*) and those on supernormal power (*tart api*nyan), converged elements (*tart banjob*), and examination and treatment of diseases re-written by the physicians of the hospital, based on their previous and current medical experiences or practices with details. The new version was named the Textbook of Medicine, or *Tamra Phaetsart*, published in several volumes in extension to the discontinued *Paetsart Songkroh* textbook writing efforts.

After the establishment of the Medicine Club (*Vejasart Samosorn*), the Ministry of Education jointly published medical textbooks again in 1904, titled Textbook of Medicine (*Tamra Phaetsart Songkroh*), similar to the previous textbooks, but its content almost entirely covered the methods and practices of Western medicine. However, some Thai traditional medicines were included in cases where no Western medicines could be obtained. Its publisher was Captain Damrongpaettayakhun, who planned to publish 12 monthly issues a year; but after publishing only 4 issues, the plan was discontinued due to lack of funds; and the publication was moved to be included in the archives of the Witthaya Wijarn (or technical review) newspaper. So, it was noted that the writing and publishing of textbooks of medicine as well as Thai traditional formulary in the name of *phaetsart* (medicine) had been struggling all the time; even most of the teaching materials newly printed mentioned only about Western medicines, and in the subject of pharmacognosy of today’s medical students, no textbooks are seen on Thai herbal medicines.

On 1 March 1907, two textbooks were published: one was Textbook of Descriptive Medicine (*Tamra Vejasart Wanna*) dealing with various Thai traditional scriptures and Textbook of Medicine (*Tamra Phaetsart Songkroh Chabap Luang*), 2 volumes, covering 10 scriptures of Thai traditional medicine, regarded as the first national drug formulary of the country.

**Volume 1** deals with different scriptures on such topics as poetry (*Khamphi Chanthasart*), maternal and child health (*Khamphi Pathomjinda*), and elements of life (*Khamphi Tartwiphang*), covering causes of illnesses, symptoms and treatment with herbal medicines. For example, during childbirth if there is a torn placenta
in the womb, the following can be ground together with liquor for drinking for placenta expulsion: 7 tips of red cotton plant, 7 peppercorns, 7 pieces of ginger, and 7 garlic cloves. In the last part, the book deals with medicinal plants including sedges (wahn) as well as the medicinal properties of their parts, for example, black pepper whose leaves, corns, flowers and vines have different properties. In addition, it also covers drug ingredients of some formulas such as benjakul, tri-phala, tri-katuk, tri-sarn, etc., and medicinal properties such as those for koat (medicinal roots or rhizomes), kinds of thian plants, etc, like the textbook on drug properties of Prince Krom Luang Wongsa Dhiraj Snid.

Volume 2 covers the scripture on diagnoses of causes of illnesses and groups of medicines with different names and their ingredients as well as the properties of such drug groups. For example, drug Parasukathikhana is comprised of eight kinds of fruit for enhancing appetite and relieving dizziness, thirst, and urinary disease. It contains also Maha Chotirat Scripture dealing with drugs of different names for treating various diseases such as drug Kamlangratchasi; Chawadarn Scripture dealing with drugs of different names such as drug Khiao-prathanphit containing 80 ingredients for relieving wind-related illnesses; and several other scriptures, some were said to be derived from traditional medicine instructor Komarapaj. The characteristics of these scriptures are similar to the aforementioned scriptures, i.e. dealing with disease features and several drug formulas for treating such illnesses.

Tamra Vejjasart Wanna, or descriptive medicine textbook, was authored by Phraya Prasertsartthamrong (Moh Nu) for use in teaching medical students. The textbook mentioned about the scriptures of Chanthasart, Taksila, Tartwiphang, Tartwiworn, Samuttathanwinijchai, Jaranasangkaha, Chawadarn, Thulawasa, Prathomjinda, Mahachatrat, Krasai, Aphaisanta, Atisarn, Manchusarnwichian, Moranayanasut, Mukkharok, etc. Later on, the textbook was published for sale on 1 June 1907, but other physicians’ teaching documents/textbooks were not published for sale or distribution; so, it is hard to retrieve them.

In 1908, Phraya Phitsanuprasartvej (Moh Khong) deemed that it was hard for students to learn from such textbooks and thus a new edition was written and published for easier understanding called Textbook of Medicine in Brief (Tamra Phaetsart Sangkhep or Vejjasartsueksa), comprising three volumes. The new version deals with several drug formulas such as Ya Kamlangratchasi (a tonic), Ya Janlila, Yahom Inthajak, Ya Tarbanjob, Yahom Nawakoat, etc. The five Thai traditional drug formulas were produced for sale by the government dispensary, or Osot Sala (before World War II), in 10 preparations (kha-nan). Other drug formulas in all the Tamra Phaetsart Sangkhep that are still popularly used are Ya Prasakanphlu,
Ya Khiao Hom, Ya Khiao Benjakhan, Ya Amaritwathi, and Ya Mahanil Thaengthong. The three volumes of *Tamra Phaetsart Sangkhep* were later on designated as the Royal Drug Formulary Textbook (*Tamra Luang*); so, totally there are five volumes, the other two volumes being *Tamra Phaetsart Songkroh Chabap Luang* all of which can be publicly used by traditional pharmacists in preparing their medicines.

All the textbooks of medicine, i.e. *Tamra Phaetsart Songkroh Chabap Luang* and *Vejjasartsueksa*, have been the principal textbooks used in the teaching and learning of Thai traditional medicine until today.

In connection with the management system, the Royal Dispensary Department (*Krom Phra Osot*) established during the reign of King Rama I was reorganized as the Medical Services Department under the Ministry of Education in 1888 to be responsible for providing medical services, smallpox vaccination, establishing hospitals including Siriraj Hospital, and training of medical students at Paettayakorn School.

In 1891, dispensaries were set up under the Medical Services Department called *Osot Sala*, the first one taken over from a missionary physician selling only Western medicines and the other selling only Thai traditional medicines, which also served as the government drug depots. Later on, many dispensaries were established in the provinces for selling drugs and for use as the offices of physicians.

In 1902, another dispensary was established called Government Dispensary (*Osot Sala Ratthaban*), run by a hired German pharmacist, responsible for producing and selling medicines to government agencies; and in the same year, a Drug Council (*Osot Sapha*) was established to produce medicines for selling to rural residents at low prices. Later on in 1906, the operations of the Drug Council were incorporated into those of the Government Dispensary. In the beginning, the Western drugs produced by the Drug Council were not popular among the people, so 10 preparations of Thai traditional medicines were also produced, namely:

1. Ya Hom Inthajak
2. Ya Hom Nawakoat
3. Ya Thepjitrarom
4. Ya Naraithonjak
5. Ya Kamlangratchasi
6. Ya Uthai
7. Ya Suksai-yat
8. Ya Pathawi-tartpikarn
9. Ya Jantha-lila
10. Ya Tartbanjob

Regarding medical services and epidemic prevention during the reign of King Rama V, improvements had been undertaken and they were set as state policy since 1906. When the services were made available, the people were allowed
to choose either Western or Thai traditional treatment method as they liked as there were both Thai and Western medicines in the hospitals; and Thai powder drugs were prepared at Siriraj Hospital for distribution to other hospitals under the Medical Services Department. But boiled drugs had to be prepared by each hospital, including nine pots as follows:

- Pot No. 1 for treating different kinds of fever
- Pot No. 2 \((ya \ hom)\) for treating dizziness, enhancing appetite and blood nourishment
- Pot No. 3 for treating wasting \((krasai)\)
- Pot No. 4 for treating dysentery
- Pot No. 5 for treating flatulence and enhancing appetite
- Pot No. 6 for treating tuberculosis, fever, cough, out of breath, fatigue
- Pot No. 7 for treating joint pain, gonorrhoea-related joint pain, swelling, infected wound
- Pot No. 8 for treating haemorrhoids
- Pot No. 9 for treating jaundice fever \((khai \ ta \ lueang)\), expelling phlegm, out of breath, and enhancing appetite

Hospitals other than Siriraj and Bang Rak would treat patients with only Thai traditional medicine.

In 1908, the systems for disease prevention and treatment were revised; the Phalamphang Department \((Krom \ Phalamphang,\) or present-day Department of Provincial Administration\) of the Ministry of Interior was assigned to take charge of the Government Dispensary and smallpox vaccination, and the Medical Services Department was transferred to the Ministry of Education \((Thammakarn)\) in charge of education (for medical personnel). Later on, a Medical Services Department was also set up under the Ministry of Interior.

During the reign of King Rama V, some medicinal plants were imported into the country for the first time such as eucalyptus trees. That occurred when the railroad to Nakhon Ratchasima was under construction through Dong Phaya Fai Forest \(\text{Jungle of the Fire Lord}\), as commanded by the king, many workers fell ill with malaria resulting in a lot of deaths; and the Western physicians made a recommendation on the preventive measures to HRH Prince Sai Sanidwongse that eucalyptus trees be planted on both sides of the road, deep into and all the way through the forest. That was based on the fact that the odour from the leaves
of the plant would be diffused into the humid forest and might suppress malaria germs.

In connection with the medical services act, there was no enactment to directly enforce it but leaving it up to the people’s preference as they were afraid of and did not accept Western medical practice, which was regarded as alternative medicine in during that period. However, it was regarded that King Rama V’s reign was the beginning of the change in Thai traditional medicine that had been used for a long time, based on the textbooks or knowledge passed on from several schools of medical teachers, and then turning to the revised, standardized textbooks.

The Reign of King Rama VI (1910–1925)

After the death of King Rama V, the changes within the Royal Medical College (Rajapaettayalai) occurred after the King’s younger brother, HRH Prince Krom Muen Jainad Narendhorn, returned from Germany upon completion of his law and education studies and worked in the Ministry of Education as the supervisor of the medical college in 1913. The prince was appointed by Phrabat Somdet Phra Mongkut Klao Chao Yu Hua (King Vajiravudh, or Rama VI) as the commander of the college in 1915; and he ordered that the medical school curriculum be revised and the teaching of Thai traditional medicine be discontinued, reasoning that:

“...The teaching of traditional medicine is the teaching on how to use Thai traditional drugs, which sounds reasonable, but actually it is useless because such teaching does not correspond with the teaching of Western medicine, causing confusion among students and a waste of time. Western drugs are produced carefully as indicated in the textbook, but Thai drugs belong to the individual physicians who use the drugs and mostly keep the formulas confidential; the ingredients used are also different. So, experts in that field will not know which direction to proceed, wondering whether they are genuine or not, good or not; the remaining are non-experts who will not know the facts. The number of traditional drugstores has been decreasing to almost nil. Mostly, the drugs being used are personal properties so-called quack medicines or nostrums, not many of which really existing. Thus, I think it is impossible to ask physicians graduating from the medical school to find their own medicinal plants or materials. For this reason, I think it is a waste to teach traditional medicine in the medical school; rather, the time should be added to that for the sessions on modern medicine and the students do not need to worry about Thai traditional medicine. So, the teaching of Thai traditional medicine is discontinued.”
Professor Dr. Sud Saengwichian stated in his analysis of the cessation of Thai traditional medicine that it was because Thai physicians did not come to work in hospitals as they used different kind of drugs. The practices of both medical disciples are non-compatible; Thai traditional medicine does not have any teaching/learning curriculum and specific treatment procedures. The learning depends entirely on memorization, lacking the good impression and thus boring. The textbooks are rather limited only to the royal textbooks; the teaching of practical aspects relies solely on the records, i.e. the drug administration method, but there is no practice method. That is different from the teaching of modern medicine, which firstly depends on examination and diagnosis.

In 1912, the Ministry of Interior transferred the public health service from the Department of Provincial Administration (Krom Phalamphang) to the newly established Medical Services Department.

In 1916, the Medical Services Department of the Ministry of Interior was reorganized and renamed as the Department of Public Protection (Krom Prachaphiban); the Government Dispensary (Osot Sala Ratthaban) was under the Medical Materials Division under this Department. And in 1918, all public health programmes were merged and placed under the Department of Public Protection, renamed as Department of Public Health, Ministry of Interior; the Government Dispensary was upgraded as the Division of Government Dispensary.

In addition, the teaching of Thai traditional pharmacy (wicha ya Thai) in the pharmacy training curriculum (laksut phaetprungya) was discontinued in 1918, only five years after its beginning. Since then Thai traditional medicine had been neglected by the new generation of technocrats who supported Western medicine that is in line with scientific principles, coupled with the hindrance by the Practice of the Art of Healing Act, enacted in 1923.

That was in 1923, King Vajiravudh (Rama VI) proclaimed the Medical Act, whose preamble stated that:

“Whereas the practice of the art of healing had a significant influence on the people’s welfare; whereas Siam at this time has no regulations on this matter, allowing the people to live without any protection from danger resulting from the practice of the persons who have no knowledge and skills; the King deems it necessary that such practice be controlled and thus the regulations be enacted so that the status for the healing art practice be raised.”
The drafting of the 1932 Act which was the first Act of Thailand for the registration and control of the medical practitioners, which was regarded as the first law related to consumer protection in medical care, was initiated by the Public Health Department of the Ministry of Interior, and carried out by two foreign physicians (Drs. M. Carthew and I. Ayer). Its essential provisions related to Thai traditional medicine are as follows:

Section 3 defined the “art of healing” as the treatment of diseases with drugs or medicines and surgery, including midwifery, dentistry, veterinary medicine, pharmacy, nursing, massage or any treatment methods for patients.

Section 10 prescribed that no person was allowed to practise the art of healing, or self-proclaim with any means that he was prepared to practise any of the profession that was specified as the art of healing, and no person could provide curative care to a patient in return for benefit or remuneration, directly for himself or any other person, except and until:

(a) that person had submitted a request for undertaking such practice to the Medical Council and had been registered and had received a licence in accordance with this Act; and in addition,

(b) that person had submitted a registration certificate for being recorded in the register and had received the registration certificate in accordance with the ministerial regulation; but it was understood that a civil servant having a permanent official position and receiving a salary from the government did not have to seek registration as prescribed in Section 10 (b).

Section 16 prescribed that there would be a ministerial regulation specifying the levels (of civil servants) for use in appointing various kinds of professionals in accordance with this Act, for the benefit of registration and licence issuance, and the characteristics and limitations had to be specified as to what extent the registered and licensed persons at different levels were able to practise their own professions.

**The Reign of King Rama VII (1925–1934)**

During this reign, after the teaching of Thai traditional medicine was discontinued and the Medical Act was promulgated in 1923 for controlling the practice of the art of healing, the practice of Thai traditional medicine had been declining and deteriorating, having an impact on the development of medicinal herbs in producing Thai traditional drugs. Thus, traditional drugs were not widely used
as before. Moreover, the Medical Act also prescribed various levels of practitioners of the art of healing; six years later (in 1929), the ministerial regulation was issued, categorizing the healing art practitioners into modern and traditional disciplines.

(a) The Modern Discipline included the healing art practitioners who practised on the basis of international technical principles, progressed and developed from studies, examination, and experiments by learned persons in science worldwide.

(b) The Traditional Discipline included the healing art practitioners who practised on the basis observations and skills passed on through generations, or based on the ancient textbooks, not on scientific principles, and categorized into branches, namely medicinal therapy, pharmacy or drug distribution, midwifery, and massage therapy.

Such a definition of Thai traditional medicine as traditional discipline had been an obstacle to the development of Thai traditional medicine. However, 10 formulas of Thai traditional drugs continued to be produced by the Government Dispensary Division until 1941; after that the government’s role in Thai traditional medicine was totally discontinued.

In accordance with the aforementioned ministerial regulation, the registration of Thai traditional medicine practitioners was undertaken for the first time in the Thai history. According to the statistical records on the numbers of such practitioners in 1934, there were 44 traditional practitioners in the first class medicinal therapy branch, 3,629 in the second class medicinal therapy branch, 1,020 in the pharmacy branch, 494 in the midwifery branch, and 295 in the massage therapy branch, totalling 5,482.

Later on, the Practice of the Art of Healing Act, B.E. 2479 (1936) was enacted, repealing the Medical Act of B.E. 2466 (1923). The 1936 Act categorized the practice of the art of healing into modern medicine and traditional medicine, the latter having only three branches, i.e. Thai medicine, Thai pharmacy, and Thai obstetrics (phadungkhan), but there was no massage branch as in the previous law.

In 1932, the year when there was a coup and change in the country’s administrative structure, banning the gathering of five or more people causing Thai physicians, who previously used to hold regular meetings, to set up the “Traditional Medicine Practitioners Association of Thailand” to serve as a forum for meeting and knowledge sharing among its members. It is the first society for Thai traditional medicine practitioners in Thailand whose first president was Moh Yai Sitawathin. In the beginning, the association’s office was located at Ban Dokmai, a community near
Wat Saket (in Bangkok), and later on moved to Moh Yai’s residence on Worachak and Unakan Roads, to Wat Thephidaram, and finally to Wat Parinayok, which is its current location. Its major activities include teaching/training in traditional medicine, traditional pharmacy and traditional massage for those who want to take the examination to become a licensed healing art practitioner.

The establishment of the Traditional Medicine Practitioners Association of Thailand became a model for setting up a number of other associations, each playing a role in the conservation of Thai traditional medicine and serving as a place for providing traditional medicine services to the general public as well as for meetings and performing other activities of traditional practitioners.

**The Reign of King Rama VIII (1934–1946)**

**During this period,** the Ministry of Public Health (MoPH) was established in 1942; its policy on herbal medicine was to search for knowledge of properties of medicinal herbs and other drugs in the country for modification or processing as Western drugs and for producing more drugs in terms of formulas and quantities.

In 1942 and 1943, World War II spread to Southeast Asia, resulting in the shortages of medicines; during that period, Professor Dr. Ouay Ketusingh was conducting a research study on herbal medicine for treating dysentery and malaria at Sattahip Hospital. After the War had ended, the shortage of Western drugs was still a problem. So, the government set a policy for the pharmacy plant to produce medicines from medicinal herbs. That was the effort to produce modern drugs from herbs; and the study was led by Dr. Charler, German professor and herbal medicine specialist of Germany-based Bayer Company. In addition to carrying out the study, a medicinal plant garden was grown in Ban Ang subdistrict of Ma Kham district, Chanthaburi province. Under the study, the properties of almost 400 kinds of Thai medicines were compiled for printing in two languages.

In 1938, cinchona trees were planted on an experimental basis in Chiang Mai for extracting quinine. That was an effort to produce modern drugs from medicinal plants, but it had to be discontinued later since it was appraised that it was not cost-effective.

When the shortages of modern drugs had eased, the interest in herbal medicines declined; however, some studies were still carried out by some agencies. Some foreigners, especially from Europe and America, came in to study and collect samples of medicinal plants and buy palm-leaf traditional medicine scriptures as well as a lot of textbooks; and then took them back for research purposes.
The Reign of King Rama IX (1946–present)

In 1951, His Majesty King Bhumibol Adulyadej (Rama IX) visited Wat Phra Chetuphon (Wat Pho) and said that Wat Pho was the central place where all Thai traditional medicine textbooks were collected, why a school was not established for teaching Thai traditional medicine in the branches of Thai medicine, midwifery, massage and pharmacy. In response to His Majesty the King’s initiative, the temple committee as well as existing experts in traditional medicine established a school named “Traditional Medical School of Thailand”, being the first one at Wat Pho and offering training courses on Thai medicine, Thai pharmacy, and Thai manual therapy. Later on, the knowledge and practice of traditional medicine has spread throughout the country.

After the end of World War II, medical services were extensively extended to the provincial area. In 1942, when the Ministry of Public Health was established, there were only 14 provincial hospitals; and during the seven-year period between 1949 and 1956, there were provincial hospitals in all 71 provinces; the control and prevention of major communicable diseases were effectively carried out until yaws could be eradicated, the malaria prevalence had declined, and there had been no cases of plague and smallpox.

During that period, there were a lot of textbooks on Thai traditional medicine printed in the reign of King Rama V, most of which had been transcribed from old textbooks in almost complete form. Whenever there were people seeing their value, they were re-printed for distribution on certain occasions, namely:

- **Textbook of Medicinal Properties (Tamra Sappakhun Ya)** of Prince Krom Luang Wongsa Dhiraj Snid; the two original volumes at the National Library were written in white pencil in black Thai notebooks, which are now in a deteriorating condition. They cover medicinal properties of various Thai medicines. So far there have been a number of reprints.

- **Textbook of Special Medicines (Tamra Ya Phiset)** compiled and written by HRH Prince Krom Somdet Phra Pawaretwariyalongkorn and printed in 1910. It covers drugs for general use as well as elixir.

- **Textbook of Medicine: Thai Medicines (Nangsue Wicha Phaet Phanaek Ya Thai)** written 1907 by Lieutenant Colonel Mom Chao Kammassit, assistant director-general of the Medical Services Department, covering brief symptoms of illnesses and tastes/types of drugs for the illnesses as well as drug aqueous adjuvants or vehicles.
Textbook of Poetry on Diseases (Tamra Rok Nithan Khamchan) written by Phraya Wichayathibodi (Klom) and compiled as the palm-leaf version; the revised version with an addendum was printed in 1913. It is easy to read, but hard to understand; and its characteristics are similar to the aforementioned textbooks with disease descriptions and drugs for treatment.

Textbook of Medicine for Households (Tamra Phaet Samrab Ban) 1921, transcribed by Mr. Rod Butri from an unspecified textbook and printed for distribution at the funeral service for Khun Suphanrasmi. The book covers selected good drug formulas such as ya-kha-thaengthong, ya-hom, etc.

Textbook of Phruetthathalaeng Medicines (Tamra Ya Phruetthathalaeng), written by Phraya Kaset-hiranrak in 1921. It is a short textbook, but contains an interesting chapter on drug formulas for treating “rok phaak” and rabies. Rok phaak was described as a serious illness that might be fatal within 12 hours or 7 days and could be treated with the bark of beleric myrobalan (sa-moh phiphek or Terminalia bellirica), the kind that did not turn black when mixed with liquor (using its powder for taking orally or applying on the skin). For treating rabies, use a gold leaf or foil mixed with lime juice. It should be noted, however, that such drug formulas had not been tested to see whether or not they were really efficacious as stated.

Textbook of Thai Medicines (Tamra Ya Thai), printed in 1930, deals with 53 drug formulas such as Ya Kamlangratchasi (an elixir), Ya Tartbanjob (for treating diarrhoea and stomach upset), etc.

Drugs of the same names, such as Ya Kamlangratchasi, that appear in various textbooks have slightly different formulas or ingredients, probably due to revisions deleting unnecessary or rare ingredients, or errors in successive transcriptions.

Wijit-ying Proverbs and Household Remedies Textbook (Tamra Ya Prajam Ban), printed by Venerable Phra Uttamamongkol Chaimangkalo for distribution in commemoration of his ecclesiastical rank promotion in 1931, including an elixir formula of Venerable HRH Prince Pawaretwariyalongkorn, which was found by himself to be efficacious.

The Legends and Medicinal Properties of Some Plants written by Phraya Sihasak Sanidwongse in 1938 is a collection of miscellaneous Thai drugs (ya-kred) with different variations for his own use and found
efficacious. As a grandson of Prince Wongsa Dhiraj Snid and Prince Sai Sanidwongse, he had been told about the medicinal properties and legends of some plants, for example, a story about Prince Wongsa Dhiraj Snid, a private physician to King Rama IV, using cinchona bark before anybody else in Siam. During that period, there was quinine, one of the Western drugs, for use but Thais did not like to use such drugs. Then the Western physician advised that cinchona bark be imported for grinding as powder and then used like Thai medicines. It was thus considered that cinchona bark was first imported into Thailand during the reign of King Rama IV. And there were legends about eucalyptus trees and being used widely in Siam during the reign of King Rama V, the use of spinach for treating diabetes of Prince Sai Sanidwongse, as suggested by a Chinese, by cooking it as food for consumption, which was found efficacious. Regarding some other plants’ properties, it was found that eating boiled flesh of aloe vera (wahn hang-jora-khe) with rock sugar in lieu of swallow’s nest helped refresh the body better than the bird’s nest; and peanuts could be used to help relieve coughing due to common cold and as antidote for wild yam (kloi or Dioscorea hispida) poisoning.

Thai Medicines Textbook (Tamra Ya Thai) is another book, printed in 1939 for distribution at the funeral of Muen Chamnanphaettaya (Ploy Phaettayanon, grandfather of Dr. Pirote Ningsanonda, former minister and permanent secretary of the Ministry of Public Health), that contains a number of selected drug formulas such as Ya Khiao-hom, Ya Inthajak, Ya Suksai-yaht, anti-pyretic drug, anti-dysentery drug, herbal liquor tonic, etc.

In 1949, Professor Dr. Samran Wangsapha compiled and transcribed the drug formulas from the marble tablets on the walls of the cloisters at Wat Ratcha-orot, except those that had been deteriorated or unreadable, in a total of 55 volumes of notebooks called the Textbooks of Inscribed Drug Formulary of Wat Ratcha-orot (Tamra Ya Ja-ruek Wat Ratcha-orot). The textbooks deal with illness characteristics and several drug formulas to choose for treating them. Some well-known formulas are, for example, Ya Sang-rasmi, Ya Samutkluean, etc. Some of the drug formulas have 4 to 40 ingredients; some with more descriptions of amounts, but all with preparation and administration methods.

Some Articles on Herbal Medicines, a book compiled and printed in 1979 by Professor Dr. Ouay Ketusingh deals with home remedies that
he had ever used for himself and found efficacious, categorized into 47
groups of illness symptoms including a total of 118 drug preparations,
some of which had been told by other people, but are reliable. Almost
all preparations are single herbal drugs such as yah-nguang-chang
(Heliotropium indicum), plai (Zingiber cassumunar), salt or benzoin
(kam-yan, or gum benjamin) can be used for treating sore throat. Besides
its interesting preface, the book has also warnings about the danger
from the use of Thai medicines, written by Dr. Krungkrai Jenpanich,
who had selected and included some of them in the book, totalling 49
preparations.

**Home Remedies Textbook** (*Tamra Ya Klang Ban*) compiled by Venerable
Phra Thepvimolmolee, who invited Buddhist monks and other people
to donate drug formulas that were efficacious in treating illnesses, each
with the name of its owner endorsing its properties with confidence as
he/she had used it for him/herself, including the drug administration
methods. (This kind of compilation was similar to those undertaken
during the reigns of Kings Rama III and Rama V.) The textbook was first
published in 1881, containing 244 preparations, and the second printing
containing 299 preparations, including those that could treat the same
disease such as 8 preparations for dysentery, 1 for menstrual fever, 1
for malaria, etc. Having several preparations makes it convenient to
choose and use at different localities. At the end of the book, there is the
directory of medicinal plants (for home remedies) indicating the names
of the plants commonly called in all four regions of the country.

In 1952, the **Association of Thai Traditional Pharmacy of Thailand** was
set up at the Thai Wattana Osot drugstore (near the Wat Liap Power Plant), whose
first president was Moh Daeng Tanvejjakul. Later on, in 1960, its office was moved
to Wat Sam Phraya; and in 1961, Khun Sophisbannarak (Amphan Kittikhajorn) was
elected president and Mrs. Saisanom Kittikhajorn as vice president and administrator.
And in 1962, the association’s name was changed to **“Traditional Pharmacy and
Medicine Association of Thailand”**. After that there have been many traditional
practitioners taking turns serving as president; today the association has moved
its office from Wat Sam Phraya.

In 1957, the **Wat Phra Chetuphon Traditional Medicine Association** was
established and in the beginning of its operations the training courses on Thai
medicine and Thai pharmacy only were offered by the association’s School of
Traditional Medicine. Later on, in 1961, His Majesty King Bhumibol Adulyadej
(Rama IX) graciously attended the poetry contest at Wat Phra Chetuphon and while passing the Traditional Medicine School and receiving the school’s textbooks presented by the teachers, the King asked about the art of Thai massage, whose training course was later started in 1963.

In 1962, the “Northern Traditional Medicine Centre” (Sathan Phayaban Banthao Thuk Phak Nuea) was established in Chiang Mai by Mr. Sinthorn Chaichakan; later on until the present time, it has become the Northern Traditional Healing Art Practitioners Association and the Jivaka Komarabhacca School of Thai Traditional Medicine.

In 1972, the “Traditional Medicine Association of Chumphon Province” was established; its first president was Mr. (Master) Soen Somboon. Currently, its name has been changed to “Thai Medicine Association of Chumphon Province”.

In 1972, the “Wat Mahathat Traditional Medicine Association” (in Bangkok) was established by Luang Buretbamrungkarn, Moh Prasert Phramman and Lieutenant Sek Saralamp (previously, three of them were masters or teachers of traditional medicine at Wat Pho); and the Thai Traditional Pharmacy Association was established in the Tha Phra Chan area (in Bangkok).

In 1973, the “Traditional Pharmacy and Medicine Association of Songkhla Province” was established; its office was at Wat Liap in Mueang district, Songkhla province.

1.4 The development of Thai traditional medicine, indigenous medicine and alternative medicine under the Primary Health Care Programme

After the World Health Organization (WHO) had held a meeting on policy and planning for the promotion and development of indigenous medicine in 1977, with the support from the Asia Foundation, a technical seminar was held on modern and traditional medicine (in Thailand). At the seminar, a manual for the use of herbal medicines written by Associate Professor Somporn Putiyanan of the Faculty of Pharmacy, Chiang Mai University, was distributed. And then training courses were organized on primary health care and herbal medicines including Lanna Thai indigenous medicine; two classes were held in 1977 and other classes on 20–29 September 1979, 24 April – 3 May 1980, and 29 May – 7 June 1980, in collaboration with the Chiang Mai Family Welfare Association, the National Council on Social Welfare of Thailand under the Royal Patronage, and the Lampang Project of the Ministry of Public Health. The manual for the use of herbal medicines written
by Assoc. Prof. Phayao Muanwongyaht, printed and distributed in 1981, covers 348 medicinal preparations for treating 57 common ailments; many preparations are of the same medicinal plants with other names, parts to be used, dosages and administration methods, but there are no scientific names.

In 1978, the World Health Organization (WHO) issued the Alma-Ata Declaration on Primary Health Care, calling on Member States to use indigenous medicine as well as herbal medicines as part of their Primary Health Care Programmes. As a result, the Thai government paid more attention to the study and development of Thai traditional medicine including herbal medicines. Thus, in 1979, the policy on primary health care was officially issued and the Primary Health Care Programme was incorporated into the Health Development Plan under the Fourth National Economic and Social Development Plan (1977–1981). The herbal medicine in primary health care programme was then supervised by the National Herbal Medicine Development Committee, which currently is the National Herbal Medicine Committee.

In addition, Mahidol University also organized a seminar on traditional medicine on 1–3 October 1979, which recommended that Thai traditional medicine and pharmacy be promoted and further developed, and that an agency be established to take responsibility for such efforts as well as the integration of Thai traditional medicine into modern medicine, and to promote the use of more traditional Thai drugs.

In 1980–1981, the Office of the National Economic and Social Development Board (NESDB) assigned the Faculty of Pharmacy of Mahidol University to conduct a study on herbal medicines and develop guidelines for formulating a policy on herbal medicine development. The study made four recommendations as follows:

1. Development of herbal medicines for primary health care
2. Development of herbal medicines for traditional and modern pharmaceutical industry
3. Development of herbal medicines for use as strategic commodities
4. Development of herbal medicines for export purposes

In 1981, the government set a national drug policy, whose part related to herbal medicines includes the following:

- Conduct a survey on essential raw materials domestically available for pharmaceutical production industry; and conduct a feasibility study on manufacturing larger amounts of medicines using local resources so that Thailand will become self-reliant.
Conduct research seriously so as to know about the therapeutic potential of traditional Thai drugs for use with safety and efficacy in primary health care; and the Herbal Drugs and Traditional Medicine Unit was established in the Office of the Primary Health Care Committee to support other operational units of the Ministry of Public Health to carry out their functions in promoting the use of herbal medicine in primary health care. Later on, the unit was upgraded as the Community Herbal Drugs and Traditional Medicine Section.

In 1982, there was a major change in the Thai traditional medicine system when Professor Dr. Ouay Ketusingh established the Thai Traditional Medicine Promotion Foundation aiming to revive the knowledge of Thai traditional medicine, promote the education and practice of Thai traditional medicine so that it has a higher standard, and promote the research on and use of medicinal plants for better health of the people, in coordination with other charity organizations. Moreover, the foundation also established Ayurved College, or Ayurved Vidhayalai (Jevaka Komarapaj), to accept high-school graduates to study in the three-year Thai traditional medicine curriculum which included basic sciences. Upon completion, they would receive a diploma and become an Ayurvedic medicine practitioner with the capacity to provide Thai traditional medical services and basic modern medical care as they could communicate with patients and modern medical doctors, as well as make and take referrals.

Thus, the teaching-learning process at Ayurved College was carried out on a teacher-student basis, in a classroom, using educational media or instructional materials for a better understanding. The students were selected through the written test and interview, which was different from the ancient-style teaching process, usually done only to the student or disciple who could closely follow and please the master or teacher until the teacher was willing to teach that individual follower. And in the old days, the discipline had to have a special capacity to observe, memorize, and help himself so as to enhance his own knowledge and experience.

Besides, the Thai Massage Revival Project was initiated in 1985 by the popular sector involving several non-governmental organizations (NGOs), namely the Public Health and Development Foundation, the Folk Doctor Foundation, the Coordinating Committee on NGOs for Primary Health Care, and several traditional medicine practitioners associations. Later on, they jointly set up the Federation of Thai Traditional Medicine Practitioners of Thailand in 1993 with a membership of more than 20 organizations. These networks have played an important role in restoring and developing Thai traditional medicine especially Thai massage so that it is widely recognized and well known at the national and global levels.
During the period of the Fifth National Economic and Social Development Plan (1982-1986), the Ministry of Public Health started a pilot project on herbal medicine promotion with the support from UNICEF in 1984 and 1985 in 25 provinces, 1 district in each province, covering a total of 1,000 villages. The project activities included providing research funds, distributing seeds or saplings of medicinal plants, producing traditional household remedies, supporting the information system for medicinal plants, disseminating the knowledge about medicinal plants, and promoting the use of herbal medicines. Under that project, 66 types of medicinal plants were selected for use and distribution.

Towards the end of the Fifth Plan, in 1985, another pilot project was implemented on medicinal plants and primary health care, with the support from the Federal Republic of Germany (GTZ Medicinal Herbs Project); the project was carried on until 1988, using the modified approach based on the UNICEF-funded project and the Wang Nam Yen Hospital’s project (in Prachin Buri province). The pilot project was implemented in only five districts, focusing on clinical research particularly related to the use of five herbal medicines at the clinics of the hospitals. The five medicinal plants including curcuma or turmeric (khamin-chan or Curcuma longa), kariyat (fa-thalai-jon or Andrographis paniculata), ringworm bush (chum-hed-thet or Cassia alata), phaya-yor (Climacanthus nutans), and aloe (wahn-hang-jorakhe or Aloe vera) were used with the aim of helping the hospitals to help themselves by planting the five medicinal herbs and using them to produce traditional medicines. Besides, the project also provided funding to hire Ayurvedic practitioners to work in the target hospitals. That was regarded as another major change in the use of medicinal plants and the integration of Thai traditional medicine into the government health service system.

During the period of the Sixth National Economic and Social Development Plan (1987-1991), more development activities were undertaken on the use of herbal drugs and Thai traditional medicine, through the inclusion of the Development of Herbs as Medicines Project in the Plan, focusing on five medicinal herbs, under the GTZ Medicinal Herbs Project, for industrial production and partial import substitution.

In 1987, in connection with Thai traditional medicine, the art of healing practice law was amended, categorizing traditional medicine practitioners into two types: general traditional medicine practitioners and applied traditional medicine (Ayurved) practitioners. In the same year, the Ministry of Public Health started the Thai traditional medicine revival project and published the recommendations obtained from the brainstorming meetings on the development of Thai traditional medicine as a book entitled “Thai Traditional Medicine: The Wisdom for Self-Reliance”, which was used as a guide for further development during the next period.
In 1989, the Ministry of Public Health, with the Cabinet’s endorsement, set up the “Centre for Thai Traditional Medicine and Pharmacy Development Cooperation” under the Office of the Permanent Secretary for Public Health, to set policies and guidelines for Thai traditional medicine development and to facilitate, coordinate and support the operations of agencies and institutions concerned in a suitable direction. The Centre began to lay the foundations for the development of Thai traditional medicine in collaboration with all public and private agencies concerned, as well as professional groups.

Later on, the Coordination Centre was upgraded as the “Institute of Thai Traditional Medicine (ITTM)” under the Department of Medical Services in 1993 to develop, coordinate, and support the Thai traditional medicine programme of the Ministry of Public Health, taking over the functions of the Coordination Centre. In the same year, the Federation of Thai Traditional Medicine Practitioners of Thailand was established; its membership includes 28 foundations, associations and clubs working on Thai traditional medicine. The Federation called for an amendment of the Practice of the Art of Healing Act, which was being reviewed at that time by the Public Health Commission of the House of Representatives, suggesting that the term “traditional” be changed as “Thai”, the definition of the “practice of the art of healing” to include the use of scientific knowledge in the practice, and Thai massage be included in the practice of the Thai traditional art of healing. That was the first gathering of Thai traditional medicine professionals and movement calling for changes in relevant law and policy.

The efforts for developing Thai traditional medicine, indigenous medicine, and alternative medicine were made continuously until the Seventh National Economic and Social Development Plan (1992–1996) as clearly evident in the strategies for public health development:

“Support and promote self-healthcare using the options that can be carried out by the people such as indigenous medicine, herbal drug use, and others at the individual, family and community levels in a correct and systematic manner, in coordination with the Western system of health care.”

Later on, the Practice of the Art of Healing Act of B.E. 2542 (1999) was enacted on 19 November 1999; several of its provisions are more favourable to the development of Thai traditional medicine, for instance, the term “traditional medicine” was changed to “Thai traditional medicine” and the definition does not have any feature that obstructs further development efforts; there is a provision
prescribing the branches of Thai traditional medicine, namely Thai medicine, Thai pharmacy, Thai obstetrics (or midwifery), and other branches as prescribed by the Minister (of Public Health); and the Act requires the election of members of the “Professional Commission in the Branch of Thai Traditional Medicine”, which is a professional organization comprised of appointed and elected members, functioning like a professional council.

The Protection and Promotion of Thai Traditional Medicine Wisdom Act, B.E. 2542 (1999), came into force on 27 May 2000, prescribing that the Institute of Thai Traditional Medicine (ITTM) be an agency under the Office of the Permanent Secretary, Ministry of Public Health. ITTM's duties include taking actions on the protection and promotion of education and training, research, and development of Thai traditional medicine wisdom and medicinal herbs, and serving as the administrative and technical office of the Committee on the Protection and Promotion of Thai Traditional Medicine Wisdom. The Act also prescribes for the first time that the registration is to be undertaken for drug formulas and Thai traditional medicine textbooks, and requires that national Thai traditional formulary (Tamrab Ya Phaen Thai) be prepared.

In 2002, there was a royal decree establishing the “Department for Development of Thai Traditional Medicine and Alternative Medicine” as the agency taking actions as prescribed in the law on the protection and promotion of Thai traditional medicine wisdom as well as other relevant laws. The Department has powers and responsibilities related to Thai traditional medicine, indigenous medicine, and other alternative medicine practices, essentially in connection with research studies, analyses, development, knowledge and technology transfer, standard development, promotion and support of the health service system management, and recommendations for consumer protection concerning Thai traditional medicine, indigenous medicine, and other alternative medicine practices.

Besides, the Department has the power to collect, conserve and protect the wisdom of Thai traditional medicine, indigenous medicine and medicinal plants with the important aim of developing “public and private health-care facilities, communities and the people to have access to appropriate Thai traditional medicine and alternative medicine services for health development on a sustainable basis, and for the self-reliance of the people and the country.” Its vision is the commitment to develop Thai traditional medicine, indigenous medicine and alternative medicine to play an important role in, and integrate them into, the national medical and health system amid the global economic, social and political changes in the 21st century.