DEVELOPMENT OF AYURVEDA

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CHAPTER II

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The history of Ayurveda began 5000 years ago in the great Himalayas when one of the greatest sages of India, Srila Vyasadeva, wrote the Vedas* for the first time. He included Ayurveda or the science of life as a part of the Vedas. Ayurveda, one of the systems of Indian medicine, which has been an integral part of the Indian culture, is considered to be the earliest medical science on positive health.

Apart from Vyasadeva’s compilation of hundreds of herbal drugs in the Vedas, there were descriptions of Ayurvedic surgeries, later on, by other renowned sages like Susrutha, Charaka and Kasyapa in their Samhithas. The subjects covered included prosthetic surgery to replace limbs, cosmetic surgery, brain surgery and even caesarian section. Archaeological evidence proves that some of these operations were successfully performed 3000 to 5000 years ago.¹

The science of ‘Ayurveda’ is closely related to Hindu mythology. It is learnt that medical science existed from time immemorial and Brahma transmitted the basic principles of this system of medicine to Prajapathi, one of the ten rishis created by him. One of the oldest and the most celebrated texts of Ayurveda, Ashtangahrudayam, written by Vagbhata states that Prajapathi

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* Vedas are the ancient books describing Indian culture and philosophy. The four Vedas are the Rigveda, the Samaveda, the Yajurveda and the Adharvaveda.
communicated these ideas to other rishis such as Indran and Athra and they, in turn, transmitted them to the later generations.

Ayurveda is the sub-division of the Adharvaveda. Though medical treatment methods are mentioned in all the four Vedas, it can be seen that the methods laid down in the Adharvaveda are more beneficial to human beings than those mentioned in the Rigveda, the Samaveda or the Yajurveda. Charaka and Susrutha in their books on Ayurveda opined that all Vedas depend on Ayurveda and hence it is the fifth Veda.²

While subjects related to health are described in mythological stories of the Rigveda, the Samaveda or the Yajurveda, the methods of treatment, usage of medicines in frequently occurring diseases and the study of different parts of human body are explained in the Adharvaveda. This proves the close relationship of Ayurveda with the Adharvaveda.

Indus valley civilisation is older than the Vedas. Black balls excavated from Mohanjodaro and Harappa were identified as kanmadam after chemical tests. Horns of deers which were not available there, but brought from the Himalayas, are also indications of the fact that the science and practice of Ayurveda were in vogue during this period. The yogamudras discovered from the regions show that the practice of yoga and the mental and bodily exercise which are closely related to Ayurveda, was prevalent during those days.

Ayurveda began to develop with the compiling and editing of the *Samhithas*. *Samhithas* are the sum total of the principles and practices of all the then known branches of medicines.3

There is a belief that Ayurveda existed even before Brahma or creation. Though such a thing cannot be acceptable to everyone, written history of Ayurveda can be traced from the very ancient times. For example, *Charaka Samhitha* is dated to fourth century B.C.4 No history of earliest writers on medicine in India would be complete without a mention of Charaka and Susrutha, who were considered to be the highest authorities in all medical matters. Charaka is said to have been an incarnation of Shesha, the Serpent–God with a thousand heads. He was the son of the sage Vishudha. He had been the greatest physician of his day and his *Charaka Samhitha* is still held to be a standard work on medicine.

Susrutha, on the other hand, dilates more on surgery than on medicine. His work *Susrutha Samhitha* is held by native *Vaidyas* as an authority on surgery. The works of Charaka and Susrutha are compendiums of Ayurveda.5

The surgical instruments during the period of Susrutha were classified into blunt instruments and sharp instruments. Susrutha described 101 blunt instruments and twenty sharp instruments in his books. Vagbhata, who is believed to have spent a considerable portion of his life time in teaching Ayurveda in Kerala, had added six more instruments to the instruments described by Vagbhata to constitute twenty six sharp instruments. Susrutha

3 Ibid., p.29.
defined eight types of surgeries. Vagbhata added five to them to constitute a total of thirteen surgeries. Excision, incision, scraping, punching, probing, extracting, draining, stitching, opening, pricking, drilling, catching and catarisation were those thirteen surgeries. These surgeries were grouped under three divisions, viz., pre-operative medication, main operation and post-operative measures. Thus, it can be stated that from the very ancient time itself, Ayurveda has developed very much in terms of general medicine and surgery. In surgery, Indians seem to have attained a special proficiency and the European surgeons, perhaps, even on the present day learn something from them.

It was Dhanvantri who taught Susrutha that Ayurveda had been composed by Brahma as a sub-division of the Adharvaveda. It consisted of a hundred thousand slokas or verses, divided into thousand chapters. But, considering the short span of life and limitations of memory of human beings, he reduced the book into eight parts as follows:

1. Shalya Tantra or Surgery:- Shalya Tantra deals, among other things, with the description and uses of various surgical instruments.

2. Shalakya Tantra or Eye & ENT:- It describes the diseases of outer parts of human body such as eye, nose, mouth and ears and their treatment.

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7 Encyclopaedia Britannica, Book 9, Volume 32, p. 672.
3. *Kaya Chikitsa* or General medicine: *Kaya Chikitsa* is the study of medicines intended for internal consumption and diseases of the human body such as fever, insanity, leprosy and urinary disorders.

4. *Bhuta Vidya* or Demonology: *Bhuta Vidya* indicates the rules to be observed in performing the various religious procedures. It includes psychiatry and curing the influence of evil spirits.

5. *Kaumarabhrtya* or Paediatrics: *Kaumarabhrtya* is related to the treatment of diseases of infants.

6. *Agada Tantra* or Toxicology: The methods of diagnosis and treatment of poisonous bites of snakes, insects, spiders, mice, etc., are dealt with in this division.

7. *Rasayana* or the Science of Tonics: Medicines for the preservation of youth and prolonged life, promoting intelligence and strength and giving power to resist diseases are described in *Rasayana*.

8. *Vajikarana Tantra* or the Science of Aphrodisiacs: This division is related to the treatment of semen disorders.\(^9\)

Around 1500 B.C., Ayurveda’s fundamental and applied principles got organised and enunciated. The *Adharvaveda*, considered to be one of the four most ancient books of Indian wisdom and culture, contains 114 hymns or formulations for the treatment of diseases. Ayurveda is said to be originated and developed from these hymns. It has two major schools of thought, viz., the

\(^9\) Ibid., pp.1-3.
school of physicians and the school of surgeons referred to in literature as
Atreya Sampradaya and Dhanvantri Sampradaya respectively.\textsuperscript{10}

Ayurveda had continuous development upto 500 B.C. It was in 1000
B.C. that Charaka and Susruta comprehensively documented the knowledge
of Ayurveda\textsuperscript{11}.

Nambiar pointed out that the system of Ayurveda is, probably, more
than 4000 years old. Charaka Samhitha and Susruta Samhitha dealing with
pharmacopoeias were written around 900 B.C. and 500 B.C. respectively. It is
estimated that as many as 3226 of 4752 communities in India (about 70 per
cent of Indian population) are dependent on traditional plant based medicines.\textsuperscript{12}

One of the important authorities on the Hindu medicine of Ayurveda is
Vagbhata who flourished about the second century before Christ. In his work
Ashtangahrudayam, he acknowledges the information borrowed from the
writings of Charaka, Susruta, Agnivesha, Bhela and others. He wrote another
book with the title Ashtangasangraham. A popular couplet describes
Vagbhata, Susruta and Atreya as the three great medical authorities for the
three Yugas, viz., Kali, Dvapara and Kritha respectively. Among the students
of Ayurvedic medicine, the three are popularly known by the name Vridha
Trayi or the "Old Traid".

\textsuperscript{10} Indian Systems of Medicine and Homoeopathy in India, New Delhi: Department of ISM and
\textsuperscript{11} Feasibility Report On Ayurvedic Medicines with Details of GMP, Chennai: Industrial and Technical
Consultancy Organisation of Tamil Nadu Ltd. (ITCOT), 2001, p.1
\textsuperscript{12} Nambiar, Krishnan, V. P. "Improved Harvesting, Processing and Storage of Medicinal Plants and
Raw Drugs-Their Role in Conservation and Quality of Plant-based Drugs", 
Coming nearer to the modern period, the name of Madhavacharya who wrote several books on the branches of Hindu learning is noteworthy. In his works on Ayurveda, he dwells exclusively on the diagnosis of diseases. Bhava Mishra who lived in the sixteenth century was the first physician to make mention of certain medicinal drugs of countries other than India.

The work of Sharnagadhara who lived after the period of Bhava Mishra is divided into twenty five chapters and is very popular in Western India. Smaller works like Vaidyamrita by Bhatta Moleshvar, Vaidya Jeevana by Lolinbraja, Bopadeva Shataka by Bopadeva, Vaidya Vallabha by Hasti, Chikitsasangraham, Chakradatta and Chikitsanjana by Vidyapati are frequently referred by the native practitioners.¹³

Though different books were written on Ayurveda, an authenticated record of this system of medicine cannot be traced out. It happened due to the fact that Ayurveda, at the time of its inception, had one lakh slokas or verses and thousand chapters. On the other hand, today’s Samhithas contain 120 chapters only as human life span is considerably reduced today and all the thousand chapters cannot be studied by anyone. In the earliest times of civilisation, it is said that human beings lived up to 400 years.¹⁴

The masters of each Samhitha used to teach their disciples the principles of each branch of medicine which the disciples compiled into books of reference. The following are the important Samhithas:

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1. **Charaka Samhitha**

   Atreya’s advices collected by his disciple Agnivesha are brought to light in the well-known book *Charaka Samhitha*. The book is named as such since it was compiled and edited by Charaka after some years.

2. **Susrutha Samhitha**

   It is believed that Susrutha, one of the disciples of Dhanvantri who was born in the family of the great king of Kasi, wrote *Susrutha Samhitha*.

3. **Kasyapa Samhitha**

   The teaching of Maareechakasyapan is transformed into this *Samhitha* by his disciple Vrudhajeevakan.

4. **Bhela Samhitha**

   Bhela, another disciple of Atreya, wrote this *Samhitha*.

5. **Hareetha Samhitha**

   Hareetha, who was another disciple of Atreya, compiled this old *Samhitha*.

6. **Books of Vagbhata**

   *Ashtangasangraham* and *Ashtangahrudayam* are the famous books of Vagbhata. Some historians opined that *Ashtangahrudayam* was written by Vagbhata’s son.
7. Navaneethakam

In 1890, Bover, a British military officer, discovered seven hand-written books from the remains of an old pillar in the Middle Asia. Three of them were related to medical science and Navaneethakam was the most important one among them. It is certified that this book was written during the Guptha Dynasty. The printed version of it is available today.\(^\text{15}\)

GREEK CIVILISATION AND AYURVEDA

The origin of European civilisation is considered to be the Greek civilisation. It is said that Indian civilisation is older than Greek civilisation. But, Western historians always tried to place Indian civilisation at low esteem. The famous German critic Haas described our civilisation as having borrowed from the Greek. On the other hand, researchers like Dr. Hoernle took the courage to establish that the opposite was true. He found that though Ayurveda dates back to 5000 B.C., its steady growth began between the tenth and sixteenth centuries after the birth of Christ.

The French scholar Sylvianlevi had mentioned in his book the name Charaka as one of the Ayurvedic physicians who lived in the second century when Kanishka was the king. He opined that this physician is the author of Charaka Samhitha. It is learnt that Susrutha Samhitha is more systematic in presentation than Charaka Samhitha. These two books and Ashtangahrudayam (written by Vagbhata) had their base on the same treatment methods.\(^\text{16}\)

\(^\text{15}\) Ibid., pp. 32-33.
\(^\text{16}\) Ashtangahrudayam contains the abstracts of Charaka Samhitha and Susrutha Samhitha and extracts from Bhela Samhitha and Hareetha Samhitha. Nothing new is added in this book. Ibid., p.139.
Scholars opine that *tridosha* principles of Ayurveda could be traced back to the period of the *Rigveda*. Literature during the Budha era makes it clear that diseases are the result of disequilibrium of *tridosha*. Historical records prove that *tridosha* principle and Ayurvedic treatment methods were in vogue even before the birth of Budha.

Emperor Alexander’s invasion over our country marks the beginning of any possible influence of Greek civilisation in the change of Indian culture. The famous historian Arrian, who lived during this period, wrote about the development of the Indian system of medicine viz., Ayurveda in this era. There are ample proof of adoption of Indian medicines with plant base by the Greek.

**OTHER COUNTRIES AND AYURVEDA**

*Adharvaveda* is the oldest *Veda* for the treatment of diseases. Systems of medicine and treatment methods equivalent to *Adharvaveda* were prevalent in Babilonia. Berthlot observed that ancient Egyptians made use of treatment methods similar to *Adharvaveda*. Surendranath Das Gupta is of the opinion that medicated oils and *grithas* were the important medicines of those days. Garrison, in his book *History of Medicine*, has mentioned about borrowing of the principles of Ayurveda by the Chinese people.

In 479 B.C., the Indian army fought against the Greek army to assist the then Iranian king Darius-I. Ayurveda found its root in Iran from this relationship between India and Iran.17

17 Ibid., p.157.
Interest in Ayurveda in the United States of America began in the nineteen seventies which was largely due to the efforts by the Maharishi Mahesh Yogi Organisation of Transcendental Meditation. This interest continued as Indian physicians like Dr. Vasant Lad, Dr. Sunil Joshi and Dr. B.D. Triguna came to the United States in the nineteen eighties. In addition to this, several American pioneers have been influential in helping Ayurveda grow. They include Dr. David Frawley of the American Institute for Vedic studies and Dr. Robert Svoboda, a Westerner, who passed India’s B.A.M.S. Degree. As interest and awareness grew, training programmes of various degrees on Ayurveda have emerged.

In 1995, the California College of Ayurveda opened its doors for education on Ayurveda in the United States. This College was the first government approved institution offering a recognized vocational programme in America, but an infrastructure has not yet been developed to regulate or set standards of Ayurvedic education. Some institutions are moving in the direction of offering Masters or Ph.D. programmes.

Currently in the United States, two independent associations are engaged in the development of Ayurveda. One is the California Association of Ayurvedic Medicine. The other is the National Association of Ayurvedic Medicine.18

The National Institute of Ayurvedic Medicine (NIAM) is recognized as the largest and the most authentic resource of information on Ayurveda in the

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18 Halpern, Mare, Dr. “Status and Development of Ayurveda in the United States”, Aptha (Malayalam), March, 2000, pp.19-21.
United States. Established by Scott Gerson in 1982 and located in Brewster, New York on six and half acres, the facility is a seven thousand square foot spacious building designed to be both a residential Panchakarma retreat centre as well as a research and educational centre for seminars and workshops. Many medicinal plants are grown in the premises. It has a library with a good collection of Ayurvedic literature and research reports in English, Hindi, Sanskrit, Malayalam, Tamil and several other dialects.

The National Cancer Institute research projects are involved in the evaluation of a traditional Ayurvedic phytomedicine, *semicarpus anacardium* for anti-tumour effects. In the Central Council for Ayurveda and Siddha Medicine Research Project, a specific herbal–Yoga meditation treatment protocol for asthma is being evaluated. A four-year study evaluates the effects of *Panchakarma* therapies on the human immune system.

Major institutions abroad engaged in research, documentation, teaching and development of Ayurveda are given in Appendix IV.19

Today, demand for Ayurvedic medicines and treatments from abroad is increasing day by day. Therapeutic centres have already been functioning in countries like Switzerland, Italy and Germany.20

**AYURVEDA IN INDIA-BEFORE INDEPENDENCE**

Since ancient times, the Ayurvedic system has undergone many transformations. It was first started as a hereditary system (*paramparya*

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system) and community practice was the norm. Each community had a Vaidya (hereditary doctor), a spiritual leader or guide, who was aware of the health conditions of its people. If anyone outside the family of the Vaidya wanted to study Ayurveda, he was admitted to the Gurukula. The gurus (teachers) taught the sishyas (students or disciples) who in turn spread the knowledge to various parts of the country. From India, Ayurveda spread to neighbouring countries like Tibet, Sri Lanka, Malaysia and Singapore.\(^21\)

The days of Charaka and Susrutha are one of the most celebrated periods in the history of Ayurveda. Upto the ages of Budha and Ashoka, Ayurveda in India developed very much especially in terms of surgery. Historians have recorded that all the parts of human body were subject to surgery in those days. Birch Berg, who is said to have lived on earth between 500 B.C. and 200 A.D., had rightly mentioned it in his book as follows: “The Indians knew practical indigenous operations which were unknown to the Greek and which Europe only learnt from them with surprise.”\(^22\)

The oldest medical system of Ayurveda had been the sole medical system of India until the Muslims introduced their medicine in the eleventh century A.D.\(^23\)

It is said that the modern age of Ayurveda began from 1835-'36 when Madhusudanan, a Brahmin by birth operated a human dead body to study anatomy. In 1836, he printed and published Susrutha Samhitha. The losing of


the war of Independence in 1857 aroused the Indian people to be self sufficient in all respects. But, the British people deprived them from getting access to all modern amenities such as modern education.

Before English education got established in India, teaching in all the bodies of knowledge including in Ayurveda was carried out through the Gurukula type of education. Alongwith other areas of studies like literature, Ayurveda was taught with fervour. One of the first contributions to Ayurveda in the modern age was Jalpakalpatharu written by Kaviraj Gangadharji of Murshidabad which is deemed to be an important version of Charaka Samhitha. Another veteran of this age was Kaviraj Harayana Chandra Chakravarthijji who created a new version of Susruta Samhitha.24

Only the traditional systems of medicine (Ayurveda, Siddha, Unani, Naturopathy and Yoga) were in practice in India as late as the beginning of the nineteenth century. The practitioners of these systems spoke local language, lived among the people and were always available.25

Gananathaji Sen, the author of Prathiakshasareeram had been conversant with Ayurveda as well as Western medical systems. The book was a perfect blend of these systems and the knowledge imparted could be taught through the kind of educational institutions existing today. Such an institution started functioning in 1918 at Kangadi. Most of the books on Ayurveda, written in Sanskrit and were later translated to Hindi and available today, were written by students of this institution.

The Government of India appointed the Drugs Manufacture Committee in 1918 whose primary functions were to investigate the possibilities of the cultivation of medicinal plants in India and the manufacture of drugs from them on large scale and on a commercial basis. Considerable progress had been made in this regard and several drugs which were imported before the First World War were thereafter being manufactured in India.\textsuperscript{26}

The Nagpur Session of the Indian National Congress in 1920 adopted a resolution that earnest and definite efforts should be made by the people in India to popularise schools, colleges and hospitals for instruction and treatment in accordance with the Indian systems of medicine (ISM). Later Mahatma Gandhi inaugurated Ayurvedic and Unani Dawakhana in Delhi and Pandit Madan Mohan Malaviya started a college for Ayurveda in Benaras. Several State governments followed the lead, first by starting, teaching and training institutions followed by appointing committees to suggest ways of strengthening Ayurveda and Unani health services.

In 1943, the Government of India appointed the Health Survey and Development Committee, known as the Bhore Committee, for recommending future development of health services in British India. The conference of the health ministers, which followed this committee recommended rehabilitation of the ISM. The health ministers recommended that adequate measures should be taken by the Central and State governments.

i) for research in the application of scientific methods for the maintenance of health and prevention and cure of diseases by indigenous systems of medicine like Ayurveda and Unani;

\textsuperscript{26} p.171, Op. Cit., Mokhopadhyay, Girinath, and Bhisagacarya.
ii) for starting educational institutions in indigenous systems of medicine; and

iii) for starting post-graduate courses in Indian medicine for graduates in Western medicine.

Several significant steps in this direction were taken. The States enacted laws for teaching and conducting of research in Ayurveda and other Indian systems. The States were to assume the responsibility of strengthening the educational set up, hospitals and pharmacies. Almost all States established Directorates of Indian medicine. Financial outlay for investment in the indigenous systems of medicine was considerably enhanced. At the Central Government level, the Central Council of Indian Medicine (CCIM) was established by an Act of Parliament regulating the teaching and practice of Ayurveda and other systems of Indian medicine. Provisions regulating these systems were incorporated in the Drugs and Cosmetics Act, 1940 as amended in 1966 and the Drugs and Cosmetics Rules, 1945 as amended in 1964 and 1970.27

AYURVEDA IN INDIA—AFTER INDEPENDENCE

In India, the development of Ayurveda and Unani systems of medicine gained considerable momentum after independence. The herbal cures began to be accepted as alternative therapies with minimal side effects.

The financial outlays show the Government’s shift towards the recognition and support for the traditional systems of medicine (TSM). The total sums allocated for them were Rs. 4 million in the First Five Year Plan,

27 Ibid., pp.127-128.
Rs. 160 million in the Fourth Plan, Rs. 257 million in the Fifth Plan and Rs. 1290.5 million in the Seventh Plan. The total health allocation for the Ninth Plan comes nearly Rs. 5000 million.  

After independence, institutional training gained priority over the Gurukula system of education and institutions teaching Ayurveda were affiliated to the Universities. The Central Council for Research in Ayurveda and Siddha (CCRAS) was formed and this body designed the syllabary and framework of the Ayurvedic courses. Now, there are standard syllabary followed by all the States. The Government of India also started the Central Council of Indian Medicine (CCIM) which functions in the same line of Indian Council of Medical Research (ICMR). The CCRAS is under the control of CCIM.

Ayurveda is now becoming popular with more and more people accepting its holistic approach to healing. There are around 170 Ayurveda colleges in India, with Karnataka and Maharashtra having the highest number. Post-graduate courses in Ayurveda started in the South at the Government Ayurveda College, Thiruvananthapuram.

It was in 1959 that the Drugs and Cosmetics Act was amended to include drugs derived from traditional Indian medicine. The Ayurvedic Pharmacopoeia Committee was set up to prepare pharmacopoeia for Ayurvedic drugs. In 1993, an expert committee developed guidelines for the safety and efficacy of herbal medicines, which were incorporated in the Drugs and  

Cosmetics Act and Rules. A drug is treated as a classical preparation if prepared as per any of the classical texts of Ayurveda which are mentioned in Schedule 1 of the Drugs and Cosmetics Act, 1940 (see Appendix V). Schedule 1 is referred to in the GMP notification also in the context of labelling, packaging, limit of alcohol, maintenance of batch manufacturing records, etc.\textsuperscript{30}

In course of time, Ayurveda, which started as a magico-religious practice, matured into a fully developed medical science with eight branches or specialities which have parallels in the modern Western system of medicine. The growth of these eight specialities gave Ayurveda another name of Ashtanga Ayurveda. In the last fifty years of development in the teaching and training, it has developed into the following sixteen specialities:

1. *Ayurveda Siddhantha* (Fundamental Principles of Ayurveda)
2. *Ayurveda Samhitha*
4. *Kriya Sarira* (Physiology)
5. *Dravya Guna Vigian* (Materia Medica & Pharmacology)
6. *Ras-Sastra*
7. *Bhaishajya Kalpana* (Pharmaceuticals)
8. *Kaumarabhrtya* (Paediatrics)
9. *Prasuti Tantra* (Obstetrics & Gynaecology)
10. *Swasth-Vritia* (Social & Preventive Medicine)

11. *Kaya Chikitsa* (Internal Medicine)

12. *Rog Nidan* (Pathology)

13. *Shalya Tantra* (Surgery)

14. *Shalakya Tantra* (Eye & ENT)

15. *Mano Roga* (Psychiatry)

16. *Panchakarma*\(^\text{31}\)

**THE DEPARTMENT OF ISM & HOMOEOPATHY**

The Department of Indian Systems of Medicine and Homoeopathy (ISM & H) was established under the Ministry of Health and Family Welfare in March, 1995 with the following objectives.

i) To upgrade the educational standards in the ISM & H colleges in the country.

ii) To strengthen the existing research institutions and ensure a time bound research programme on identified diseases for which these systems have an effective treatment.

iii) To draw up schemes for promotion, cultivation and regeneration of medicinal plants used in these systems.

iv) To evolve pharmacopoeial standards for ISM & H drugs.

Statutory bodies were set up under the Indian Medicine Central Council Act, 1970 and Homoeopathic Central Council Act 1973, namely, the Central

Council of Indian Medicine (CCIM) and the Central Council for Homoeopathy with specific objectives. Similarly, apex research bodies, educational institutions, laboratories and pharmacopoeia committees were set up to fulfill the objectives in teaching, research standards etc. The Pharmacopoeial Laboratory for Indian Medicine (PLIM) located at Ghaziabad support the pharmacopoeia committees in their work. In order to make available quality Ayurvedic medicines to government dispensaries and ordinary citizens, a manufacturing unit has been established at Mohan in Uttar Pradesh. The following cells are working under the Department:

1. **Drug Control Cell (ISM)**

   The Cell was set up in 1992 to assist the Drug Controller in matters pertaining to licensing and control of misbranded/adulterated and spurious manufacturing of Ayurvedic drugs. The Cell deals with issues pertaining to quality control, import, export and classification of drugs under Drugs and Cosmetics Act, patent related issues and establishment of Traditional Knowledge Digital Library (TKDL). This Cell is also looking after the implementation of legislation relating to drugs of ISM & H.

2. **Medicinal Plants Cell**

   The medicinal plants cell was set up to implement the central scheme for development and cultivation of medicinal plants and developing agro-techniques.
3. Patent Cell

Medicines in the systems of Ayurveda and Unani are based on descriptions in classical texts and cannot be patented because they are not new discoveries. However, there is the need to safeguard intellectual property rights (IPR) in plants for Ayurveda and Unani medicines on the one hand, and for acquiring patents for drugs and processes on the other hand which may be evolved henceforth. The Patent Cell was set up in 1997 with this objective and to take measures for effective Indian Intervention whenever claims relating to patents by other countries arise but that cannot or should not be granted.

INSTITUTIONAL FRAMEWORK

The institutional framework developed by the Department of ISM & H consists of the following statutory regulatory and apex research bodies for Ayurveda:

1. Central Council of Indian Medicine (CCIM)

This is a statutory body constituted under the Indian Medicine Central Council (IMCC) Act, 1970. Five members each for Ayurveda, Unani and Siddha from each State, who are practitioners of Ayurveda, Unani and Siddha respectively are elected as the members of the body. One member each for Ayurveda, Unani and Siddha from amongst the ISM faculty members are also elected as members of the body. The objectives of the Council are:

i) to prescribe minimum standards of education for courses in the ISM;

ii) to maintain the Central Register of the Indian Systems; and
iii) to regulate practice in the Indian medicines and prescribe standards of professional conduct, etiquette and code of ethics to be observed by the practitioners.

2. **Central Council for Research in Ayurveda and Siddha (CCRAS)**

CCRAS, an autonomous body under the Department of ISM & H was registered in 1978. This is the apex body for the formulation, co-ordination, development and promotion of research in Ayurveda, Siddha, Homoeopathy, Yoga and Naturopathy. Headquartered at New Delhi, the Council carries out its objectives through the network of 86 research institutes functioning under its direct control and located in universities and colleges of ISM & H in different parts of the country.

The health care research programmes carried out by the Council gathers data pertaining to the nature and frequency of prevalent diseases, food habits, standards and types of treatment methods available, etc. The drug research programmes consist of medical-botanical survey, cultivation of herbs and interdisciplinary research programmes.

3. **National Institute of Ayurveda**

National Institute of Ayurveda was established in 1976 merging the existing State Ayurvedic College, Jaipur. The institute aims to become an apex institute for teaching and training in all specialities of Ayurveda. It is also engaged in research and gives guidance for Ph.D. in Ayurveda. The Institute has two hospitals with 180 beds, a pharmacy in which 116 varieties of medicines worth Rs. 10.37 lakhs were manufactured during 1999-2000.
4. **Institute of Post-graduate Teaching and Research in Ayurveda (IPGTR)**

Established in 1957 in the Gujarat Ayurveda University, Jamnagar, this institute is financed by Department of ISM & H. This is the first post-graduate teaching and research institute for Ayurveda in India. It imparts training to M.D. (Ayurveda) students in 13 specialities. It facilitates research work leading to Ph.D. and M.D. (Ayurveda) degrees as well as research by teachers and technical staff of the Institute.

5. **Rashtriya Ayurveda Vidyapeeth, New Delhi**

Rashtriya Ayurveda Vidyapeeth (The National Academy of Ayurveda) is an autonomous body set up under the Ministry of Health and Family Welfare in 1988 to transfer the knowledge of Ayurveda from eminent experts to younger generations. The existing teaching and training programmes in various colleges and universities in the country lack the core knowledge of ancient Ayurvedic texts like *Charaka Samhita*, *Susrutha Samhitha* and books of Vagbhata and skills like *Nadi Vigyan*, *Netra Vigyan*, *Asthi Chikitsa*, etc. preserved in the family of *Vaidyas* hereditarily. The main objective of the academy is to fill this knowledge gap.

6. **Ayurvedic Pharmacopoeia Committee**

Pharmacopoeial standards are important under the Drugs and Cosmetics Act. Maintenance of such standards are essential to check the samples of drugs available in the market for their safety and efficacy. The Ministry of Health and Family Welfare had, therefore, taken up the task of developing pharmacopoeial standards through pharmacopoeial committees.
pharmacopoeial committees were set up for preparing official formularies/pharmacopoeias to evolve uniform standards in the preparation of Ayurvedic, Siddha, Unani and Homoeopathy medicines. Research institutions and laboratories including Universities are provided financial assistance for carrying out standardisation work of single as well as compound drugs of Ayurveda and other systems of Indian medicine. The Ayurvedic Pharmacopoeia Committee (APC) has carried out the following work during 1999-2000:


ii) Preparation of three volumes of Ayurvedic Pharmacopoeia of India, Part III and Part IV.

7. Pharmacopoeial Laboratory for Indian Medicine (PLIM)

PLIM located at Ghaziabad was established in 1970 as a standard-setting cum drug-testing laboratory for Indian medicines including Ayurveda, Unani and Siddha at national level. The worked out standards in the form of monographs are published by the Ministry of Health and Family Welfare in the form of Ayurvedic, Siddha and Unani Pharmacopoeia of India. The first volume of Ayurvedic Pharmacopoeia of India (Part I) containing 80 monographs on single drugs has already been published.

8. Indian Medicines Pharmaceutical Corporation Limited

The company is a public sector undertaking established by the Department of ISM & H located at Mohan, Uttar Pradesh. The primary
objective of the company is to manufacture and supply quality Ayurvedic and Unani medicines for use in Central Government hospitals, dispensaries and research councils in the field of ISM.

**Major Development Schemes of the Department of ISM & H**

In the field of education and training, the Department of ISM & H offers the following schemes:

1. **Grant-in-aid Scheme for Improving and Strengthening the Existing Under-graduate Colleges of ISM & H**

   Assistance is given to the ISM & H institutions, both government and private, for infrastructure development to the following extent:

   i) Equipment for laboratories, hospitals and teaching faculties and books and furniture for library upto Rs. 10 lakh.

   ii) Hospital building, college building and hostel building up to Rs. 20 lakh.

2. **Scheme for Upgradation of Post-graduate Departments of ISM & H**

   The Scheme was formulated during 1990-’91 as a centrally sponsored scheme for providing financial assistance to ISM & H colleges for upgradation of departments for post-graduate training and research. The two schemes for post-graduate ISM and post-graduate Homoeopathy colleges have been clubbed together since 1998-’99.

3. **Central Scheme for Re-orientation Training Programme of ISM & H Personnel**

   This scheme was introduced in the Eighth Plan as part of continuing education to upgrade the knowledge of ISM & H personnel like the
government doctors, practitioners, research workers and inspectors with respect to the latest developments in their field.

4. **Increasing the Availability of Raw Materials**

The Department of ISM & H has been concerned with the development of medicinal plants as they are the important raw material required for the preparation of medicines. A number of steps have been initiated to promote and conserve medicinal plants through other departments like agriculture, forest and science and technology. The Department has introduced a central scheme for development and cultivation of medicinal plants to augment the production of raw herbs. As per the present pattern of the scheme, assistance is provided to government and semi-government organisations and autonomous and statutory bodies for setting up/expansion of herbal gardens for growing identified plants.

5. **Setting up of Vanaspati Vans**

The availability of medicinal plants from forests has decreased considerably over the past few years due to over exploitation and several species have become endangered. The Department of Family Welfare has implemented a scheme to set up *Vanaspati Vans* with the objective to increase availability of medicinal plants for reproductive and child health programmes. *Vanaspati Vans* are proposed to be set up by taking up plantation of medicinal plants over wastelands or denude forest land of 3000 to 5000 hectares. The scheme is implemented in Haryana and Himachal Pradesh. The proposal from Madhya Pradesh, Andra Pradesh, Rajasthan, Kerala and Utter Pradesh are under consideration.
The WHO–Role and Policy

The WHO established the Traditional Medicine Programme in 1977. It stresses the need for the government to give adequate support to traditional medical practitioners. The WHO is aware that many elements of traditional medicines are beneficial, but others are not. In this respect, it encourages and supports countries to identify and provide safe and effective remedies and practices for use in the public and private health services.

Several countries have requested the collaboration of WHO in organising and conducting workshops to elaborate national policies on traditional medicines. They have also requested for the promulgation of legislation that defines and standardise basic elements of traditional practices and remedies. The WHO will assist those developing countries, where most people depend on traditional medicines, to incorporate traditional practices into national health systems. The programme will assist national programme for development on rational use of local resources for primary health care. A draft document entitled *Legislation on Traditional and Alternative Medicines: A Comparative Review* has been prepared. There are twenty five WHO collaborating centres for traditional medicines of which eighteen conduct research on medicinal plants and seven on acupuncture.

A review on the principles of regulation and legislation of herbal medicines will be prepared and exchange of information on country experience will be strengthened. In order to facilitate proper use of traditional medicines, a number of technical documents and guidelines will be developed. The documents include model monographs of widely used medicinal plants, list of
herbal medicines and guidelines for clinical research methodology on traditional and alternative medicines.\textsuperscript{32}

HEALTH CARE FACILITIES AND EDUCATIONAL INSTITUTIONS IN INDIA

It is very encouraging to note that the plan allocation for ISM & H has been increasing till the Ninth Plan period. The following table (Table 2.1) explains the plan-wise allocation in this regard.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Plan</th>
<th>Allocation (Rs. in Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First Plan</td>
<td>0.40</td>
</tr>
<tr>
<td>2</td>
<td>Second Plan</td>
<td>4.00</td>
</tr>
<tr>
<td>3</td>
<td>Third Plan</td>
<td>9.80</td>
</tr>
<tr>
<td>4</td>
<td>Fourth Plan</td>
<td>15.83</td>
</tr>
<tr>
<td>5</td>
<td>Fifth Plan</td>
<td>25.07</td>
</tr>
<tr>
<td>6</td>
<td>Sixth Plan</td>
<td>29.00</td>
</tr>
<tr>
<td>7</td>
<td>Seventh Plan</td>
<td>43.25</td>
</tr>
<tr>
<td>8</td>
<td>1990-’91</td>
<td>12.33</td>
</tr>
<tr>
<td>9</td>
<td>1991-’92</td>
<td>13.91</td>
</tr>
<tr>
<td>10</td>
<td>Eighth Plan</td>
<td>104.43</td>
</tr>
<tr>
<td>11</td>
<td>Ninth Plan</td>
<td>266.35</td>
</tr>
<tr>
<td>12</td>
<td>1997-’98</td>
<td>35.30</td>
</tr>
<tr>
<td>13</td>
<td>1998-’99</td>
<td>50.00</td>
</tr>
<tr>
<td>14</td>
<td>1999-2000</td>
<td>59.13</td>
</tr>
</tbody>
</table>

Source: Ministry of Health and Family Welfare, Government of India

Compared to the allocation in the First Five Year Plan period, the amount allocated for the Ninth period had been increased to 666 times. In the Second Plan itself the increase is by 9 times. The allocations in the years 1998-'99 and 1999-2000 are more than the total figure for the Seventh Plan period and around 50 per cent of the allocation for the Eighth period.

Appendix VI gives the picture of medical care facilities in India under the ISM & H and their management status as on 1st April, 1998. Majority of the medical care facilities is available with Ayurveda which is very much more than the figures related to other ISM & H. The number of hospitals and dispensaries under the control of the various State Governments and administrations of Union Territories is far above the figures of local bodies and others.

In terms of the number of registered medical practitioners and educational facilities also, Ayurveda is far above the figures related to other components of ISM & H. Homoeopathy stands second and Unani system of medicine occupies the third place. In the case of Yoga, no information is available as on 1st April, 1998. The only figure available for Naturopathy is the number of registered medical practitioners which is 402. These are shown in Table 2.2.
### Table 2.2

**Summary of Medical Man Power and Medical Educational Facilities under ISM & H as on 1-4-1998**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Faculties</th>
<th>Ayurveda</th>
<th>Unani</th>
<th>Siddha</th>
<th>Yoga</th>
<th>Naturopathy</th>
<th>Homoeopathy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Registered practitioners</td>
<td>366812</td>
<td>40748</td>
<td>12911</td>
<td>-</td>
<td>402</td>
<td>188527</td>
<td>609400</td>
</tr>
<tr>
<td>2</td>
<td>Under-graduate college</td>
<td>154</td>
<td>31</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>118</td>
<td>305</td>
</tr>
<tr>
<td>3</td>
<td>Admission capacity</td>
<td>6300</td>
<td>1252</td>
<td>150</td>
<td>-</td>
<td>-</td>
<td>5357 + 100$ + (1045)</td>
<td>13059 + 1005 + (1045)</td>
</tr>
<tr>
<td>4</td>
<td>Post-graduate college</td>
<td>33</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>10</td>
<td>47</td>
</tr>
<tr>
<td>5</td>
<td>Admission capacity</td>
<td>437</td>
<td>55</td>
<td>24</td>
<td>-</td>
<td>-</td>
<td>99</td>
<td>615</td>
</tr>
</tbody>
</table>

**Note:**  
- = Nil information  
$ = Admission capacity for graded degree course

**Source:** Ministry of Health and Family Welfare, Government of India
The number of registered medical practitioners under Ayurveda as on 1st January, 1999 is 366812 which is nearly double the number of registered practitioners for Homoeopathy. The number of under-graduate and post-graduate colleges taken together for Ayurveda as on 1st April, 1998 is 187 which is nearly 50 per cent more than those related to Homoeopathy. The figure for Homoeopathy is 128. The admission capacity for under-graduate Homoeopathy courses is 6357. The corresponding figure for Ayurveda is 6300 but, it is lower than the figure related to Homoeopathy. The figure of admission capacity of post-graduate courses of Homoeopathy is 99. The related figure of Ayurveda is 437 which is four and half times the figure for Homoeopathy. This analysis indicates that the prospects for Ayurveda is brighter than other systems of Indian medicine.

Appendix VII gives a picture of the growth of establishment of Ayurvedic hospitals in India since 1980. Compared to the figure for 1980, the number of government Ayurvedic hospitals has increased to 9 times (i.e., 1986 numbers as on 1st April, 1998). Though there is no considerable growth of hospitals owned by local bodies, the number has increased to 82 from zero during these 18 years. From 1980 to 1996, there is not much change in the growth of other Ayurvedic hospitals owned by government. But, their number has recorded a steep increase between the two years 1996 and 1998 (from 94 to 121). The total number of all the government owned Ayurvedic hospitals has increased to nearly 9 times during the years from 1980 to 1998.

The year-wise progress of Ayurvedic dispensaries under the ownership of government, local bodies and others is given in Appendix VIII. The number
of dispensaries under the local bodies recorded decline till 1998. The rate is more than 2 times. The total number of dispensaries has increased from 11631 to 14252. (i.e., an increase of 23 per cent) which is a highly unfavourable trend when compared to the growth of the hospitals (i.e., 870 per cent-See Appendix VII also).

AYURVEDA IN KERALA

Kerala, a small State with 38863 square kilometers of area, is tucked in the South Western corner of India. It represents only 1.18 per cent of the total area of India, but around 3.5 per cent of the total population of the country. The State may be divided into three geographical regions, viz., the Highlands, the Midlands and the Lowlands. The Highlands slope down from the Western Ghats, the mountains situated in the eastern border, rises to an average height of 900 metres. This is the area of major plantations like tea, coffee, rubber, cardamom and a large number of medicinal plants.

The Midlands, lying between the Highlands and the Lowlands, is made up of undulating hills and valleys. This is an area of massive cultivation. Cashew, coconut, arecanut, topioca, banana, rice, ginger, pepper, sugar-cane and vegetables of different varieties are grown in this area. Medicinal plants are grown in some gardens, most of them owned and managed by large scale manufacturers of Ayurvedic medicines.

The Lowlands or the coastal area, which is made up of river deltas, backwaters and shore of the Arabian Sea, is essentially a land of coconuts and rice. Fisheries and coir industry are the major industries of this area.
Kerala, a densely populated State with a population of over 3 crores, is generally renowned as the land of healthy people and health care practices. Unlike the other States of India, the intrusion of different communities like Jews, Buddhists, Brahmans, Muslims and Christians to the State had been notable. The development of better health care systems had been the result of the social habits of the people of the land and their living practices.

There are a number of tribal groups in Kerala. Most of them flourished in the Western ghat region. Each tribe follows its own hereditary medical system. Generally their medicines are for common illnesses. Most of them were hesitant to share their knowledge with the outsiders. Due to the constant efforts of researchers and government agencies, some tribal physicians were brought to limelight and have started visiting villages and towns. They come to these places with herbal medicines. Knowledge of medicinal plants has converted some of these tribes as herb collectors.

As in other parts of the world, treatment through folk medicines was followed in Kerala and still prevalent in various parts of the State. These medicines are combinations of locally available herbs. Some families prepared their own traditional medicines for serious diseases and never visited physicians for medical treatment. There are some lower caste groups like Mannan, Velan, Kaniyan and Ezhava who were famous physicians. Mannan and Velan treated the patients alongwith black magic. The women of Mannan caste (Mannathis) were specialised in labour room service. Until the days of the European invasion, she acted as the village gynaecologist and mid-wife. The physicians from the Ezhava caste were very famous as palace physicians.
One of such physicians by name Itti Achuthan helped the Dutch administrator Van Rheede in the compilation of the famous twelve-volume work of *Hortus Malabaricus*.

*Kalarippayattu*, evolved as a physical cum martial art of Kerala during the early centuries of the Christian era, had been enlarged in the later years with the addition of physiotherapy, bone-setting and *marma chikitsa* systems. Institutions practising *Kalarippayattu* developed into treatment centres for *marma* disorders and rheumatic ailments. Medicated oils were widely being used for *Kalari* exercise. Massage or *uzhichil* was considered to be one of the essential parts of this exercise to attain flexibility for different parts of human body. It could be learnt that the *Kalari* masters have been influenced by the knowledge assimilated from the folk medical systems and Ayurveda. The exercise and therapy attached to *Kalarippayattu* have paved the foundation for the health of the people of the State through centuries.\(^{33}\)

Ayurveda is closely related to Sanskrit because traditionally Ayurvedic knowledge was imparted through *gurukula* system, the curriculum of which commenced with an in-depth study of Sanskrit. There was not even a single text on Ayurveda at that time as the method of teaching had been imparting the knowledge by the *guru* to his pupils.

The ancient system of medicine was named 'Ayurveda' only after the *Samhithas* by Charaka and Susrutha were written in Sanskrit. Ayurveda became popular in Kerala with the influence of Sanskrit in Kerala culture.

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But, the medicines and treatment methods in vogue in the State reveal that the medical practices pursued in this part of the country had some additional features. The Kerala Vaidyas (traditional Ayurvedic doctors of Kerala) might have borrowed some principles and medicines from the tribal people, folk culture and Kalarippayattu. There are a number of medicines in Keraleeyayoga (Ayurveda of Kerala) which one cannot trace in the books of Charaka, Sasrutha or Vagbhatta. For instance, gulikas (tablets) such as Kasthooryadi, gorochanaadi, konpanchaadi, dhanwandaram, karutha gulika and marma gulika and oils such as kottanchukkadi, chemparuthyaadi and aaranya thulasyaadi and eye drops like ilaneer kuzhambu did not find any place in the Sanskrit books. Similarly, there are certain treatment methods like dhara, pizhichil, thalapothichil and thalam which have their origin in Kerala.³⁴ Sahasrayogam, a celebrated book on Ayurvedic principles and practices followed in ancient Kerala will certify this fact. This book had been deemed to be the reference manual not only by the Vaidyas but also by most well-to-do families of those days.³⁵

Kerala, being the land of Kathakali and Kalarippayattu, many types of uzhichil were practised to build flexibility for different parts of the human body. This later on led to the growth of another branch of treatment, viz., Kalarichikitsa.

Historians are doubtful as to when Sanskrit literature began to change the outlook of Keralites and the medical treatment practices in the State. Most

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³⁴ Ravikumaran, K., Dr. “Keraaleeya Chikitsa-Keralathile Ayurveda Chikitsa-Keralathinte Sambhaavanakal” in Ayurvedam-Arogyamaargam (Malayalam) ed. Dr. C. Ramankutty, Dr. P.V. Vatsan and others, Kottakkal: Arya Vaidya Sala, p.48.
researchers agree that the upsurge of Sanskrit over the State of Kerala could have happened during the fifth, sixth and seventh centuries A.D. But, evidences prove that Sanskrit literature and *Arya* culture had influenced the culture of Keralites many years before the beginning of the fifth century.\(^{36}\)

In Kerala, the job of *Vaidya* was not confined to a particular caste. The job of *Vaidya* was assumed by the forward castes of Hindu religion like the *Brahmins* and people of lower strata like the *Ezhavas* as well and some families of these castes came to be known as *Vaidyas*. Marco Polo who visited the State by the end of the thirteenth century A.D. wrote that Kerala was a land of famous *Vaidyas* and astrologers.

In ancient days, most of the *Vaidyas* of Kerala belonged to the *Namboodhiri* (*Brahmin*) caste. Being the people of forward caste, they were placed at high esteem by the kings and the lords. Prominent personalities among them were regarded the successors of Vagbhata and came to be known as *ashtavaidyas*. They were named as such as they had in-depth knowledge in *Ashtanga Ayurveda*. Though they belonged to the *Namboodiri* caste, they were popularly regarded as *Nambi* or *Mooss*. It is believed that in the beginning, eighteen such families existed. *Pulamanthole, Alathiyoor, Kuttanchery, Thrissur, Thaikkattu, Elayidathu, Chirattaman, Vayaskara* and *Vellottu* are the well-known families which exist today.

Apart from the branches of Ayurveda mentioned hitherto, there existed a system for treatment of plants and animals which included *Hastyayurveda* (Ayurveda for elephants) and *Vrukshayurveda* (Ayurveda for trees).

\(^{36}\) Ibid., p.338.
Due to the spread of colonial culture, Sanskrit study became unwanted. The few well-known masters of Ayurveda confined their activities either as court physicians of feudal families and were inaccessible to the common mass. On the other hand, due to their political and academic interests, a number of Europeans collected and codified details of Ayurvedic and folk medicines. The best example is the publication of *Horthus Malabaricus* written by the Dutch commandant Van Rheede. The book written on the medicinal plants of India by Garcia Da Orta, the famous Portuguese researcher, was one of the first of its kind on the subject.

Most Sanskrit scholars of Kerala had in-depth knowledge in Ayurveda as well. Indu, the author of *Sasirekha*, the Sanskrit version of *Ashtangahrudayam* and *Ashtangasangraham*, was a Keralite. *Bruhalbattyam* and *Kairali* are the other versions. The author of *Kairali* is one Pulmanthole Mooss and hence it is known as the ‘Pulamanthole Version’. *Chikitsamanjari* is another famous text on Ayurveda written by the same author. *Hrudayapriya* and *Sukhasadhakam* written by Paachumooth are the edited versions of *Ashtangahrudayam*. It is believed that the famous poet Thunchatthezhuthachan had also published his own version of *Ashtangahrudayam*, but another renowned poet of Kerala, Ulloor had denied it.\(^\text{37}\) There had been a number of other publications from Kerala including those written in Sanskrit related to various medicines and practices prevailed in the State.

The development of Western education and the resultant establishment of a chain of schools and colleges had slowed down the importance of the study

\(^{37}\) Ibid., p.346.
of Sanskrit and allied branches of traditional knowledge. In course of time, Keralites restored the pace which led to the emergence of colleges for Ayurvedic studies in the last decades of the nineteenth century and the early phase of the twentieth century. This was the beginning of the modern period of Kerala Ayurveda.

The first educational institution teaching Ayurveda was established in 1886 by Paachu Moothattun, who had been a famous Ayurvedic physician of Divan Sankarasubbayya. The king Sreemoolam Thirunal took the necessary steps for the take-over of the institution by the government as per the recommendations of the Divan. In 1918, the institution was upgraded to the status of a college and a new syllabus introduced in the year 1943-'44. It was in 1957 that D.A.M. course was introduced by the then Health Minister Dr.A.R. Menon.

A registered association, with the name ‘Aryavaidyasamajam’, comprising the renowned Ayurvedic physicians of the erstwhile Malabar and neighbouring regions of Kerala, formed in 1902, was later on taken over by Vaidyaratnam P.S. Varier, the founder of Arya Vaidya Sala, Kottakkal to convert it into a full fledged educational institution in 1917. ‘Aryavaidyam’ had been the first diploma course in Ayurveda conducted in the institution. The curriculum included the study of anatomy also. After the formation of the State of Kerla, D.A.M and B.A.M.S. courses were introduced in the institution.

‘Keraleeeya Ayurvedasamajam’ is another association constituted by the Ashtavaidyam formed in line with ‘Aryavaidyasamajam’. The association, which had been transformed into a college in 1946, now conduct D.A.M. course.
During the period of national awakening, a number of centres for Ayurvedic studies like Pattambi Samskrita Padasala, Madhava Memorial Ayurveda College, Kannur, Madhava Ayurveda College, Ernakulam and Sanskrit study centre at Thripunithura were established. The famous Narayanan Mooss of *Elayitathu Thaikkattu* established Vaidyaratnam Ayurveda College in Thrissur District. The State now has a number of Ayurveda colleges under government or private management. The syllaby of the courses offered under these colleges are the syllaby prescribed by the Government of India. The prominent institutions among them are situated at Thiruvananthapuram, Thripunithura, Ollur, Kottakkal and Kannur. In addition to them, the following are the research institutes or units in Kerala which come under the control of the CCRAS:

i) Indian Institute of Panchakarma (Ayurveda), Cheruthuruthy, Thrissur District (with 50 bedded Research Hospital).

ii) Regional Research Institute (DR), Poojapura, Thiruvananthapuram. (with one research hospital in which the beds are maintained by the State Government).

iii) Clinical Research Unit (Ayurveda), Arya Vaidya Sala Hospital Complex, Kottakkal.

iv) Pharmacological Research Unit, Department of Pharmacology, Medical College, Thiruvananthapuram.

v) Research Scheme on Screening of Contraceptive Agents, Department of Obstetrics and Gynaecology, S.A.T. Hospital, Medical College, Thiruvananthapuram.
vi) Research Scheme on Screening of Contraceptive Agents, Department of Pharmacology, Medical College, Thiruvananthapuram.\textsuperscript{38}

The state-wise distribution of Ayurvedic hospitals and beds thereof in India are given in Appendix IX. The highest number of Government hospitals as on 1-4-1998 is in Uttar Pradesh, i.e., 1594 followed by 107 numbers in Kerala; but, there is a wide difference of 1487 numbers between the two States. In terms of total number of beds in these hospitals, the number of Uttar Pradesh is three times (i.e., 9421) higher than that of Kerala (i.e., 2309).

But, looking into the figures as shown in Appendix X, it can be assessed that the number of dispensaries owned by government and others in Kerala is 759. The corresponding figure for Rajasthan is 3469 which is nearly 5 times the number for Kerala; the figure for Madhya Pradesh is 2093 which comes to 3 times the figure for Kerala.

The district-wise distribution of hospitals, beds and patients treated in the years 1958-’59 and 1997 in Kerala are given in Appendix XI.

The rapid growth of all modern sciences has helped the growth of modern medical science also. Today, modern medical science has so developed that treatment methods either to eradicate or to control diseases such as plague, small pox, cholera and malaria are being widely applied. Though a number of inventories related to complicated surgeries are there to the credit of human beings, much is yet to be done for the treatment of diseases like diabetes, cancer and mental diseases.

As modern medical science takes into account the changes occurring in the internal and external constitution of human body only to diagnose diseases and prescribe medicines, Ayurveda makes it clear that it is not necessary for a disease to strike to make one sick. The circumstances that make germs enter the body also lead to illness. Along with the symptoms which cause the disease, the reasons for the imbalance between the constituents of the body, viz., *vata*, *pitta*, and *kapha* are studied. As part of the treatment, pieces of information regarding the past generations of the patient are collected. Ayurveda, thus, tries to analyse the social causes of the illness as human being is a social animal. I.P. Pavlov, the nobel laureate and head of the Physiologists of the world had recognized and inculcated this idea. People of different walks of life around the world are following suit and Ayurveda is going to be widely accepted like the acupuncture of China.

The History of Ayurveda reveals that Ayurveda is as old as the ancient *rishis*. As revealed by the *Vedas* and as per the belief of some people, it existed even before Brahma. Today, it makes use of most of the equipments and devices of modern medical science and is the last resort in curing some prolonged diseases. The evolution and development of Ayurveda is not complete without a discussion about the system of Ayurveda and Ayurvedic medicines which is dealt with in the next chapter.