

## Ithihasa

It is proposed to divide the 1-½ years of professional course into three terms as envisaged by DAME. The three terms, study leave & periodical exams can be as follows:

Term 1 : Classes for 6 months, including examination & result

Term 2 : Classes for 6 months, including examination & result

Term 3 : Classes for 4 months including model examination & result.

Study leave + University Exam for 2 months

University Examination process 2 months

Total : 18 months

- Terminal exams should include viva.
- Examinations should be completed within the period of 18 months as stipulated by CCIM
- Third terminal exam may be conducted as model exam.

### Part – A

1. Eternity of Ayurveda
2. Ayurveda Avataranam according to
  - a. Vagbhata
  - b. Charaka
  - c. Susruta
  - d. Kasyapa Samhita
  - e. Brahma Vaivartha puranam
3. Ayurveda- Pre-historic/ Pre-Vedic Period
4. Historical / Vedic period
  - a. Vedas
  - b. Upavedas
  - c. Puranas
  - d. Upanishads
  - e. Vedic Physicians

5. Ayurveda in Non- medical sources
  - a. Ayurveda in Vyakarana
  - b. Ayurveda in Artha sastra
  - c. Ayurveda in Kavya sahitya
  - d. Ayurveda in Bramana (Jaina literature)
  - e. Ayurveda in Boudha literature
6. Samhitas and its commentaries
  - a. Atreya parampara: Detailed description of Acharyas
  - b. Dhanwantari parampara: and their commentaries
7. Bruhath thrayee
  - a. Vagbhata and their detailed description
  - b. Charaka and contributions
  - c. Susruta
8. Laghuthrayee
  - a. Sarangadhara - Their detailed description
  - b. Madhavakara and contributions
  - c. Bhavamisra
9. Nighandu: General information
  - a. Bhavaprakasha Nighandu
  - b. Raja Nighandu
  - c. Dhanwantari Nighandu
  - d. Nighandu Ratnakara
  - e. Kaiyyadeva Nighandu
  - f. Horthus Malabaricus
  - g. Madanapala Nighandu
  - (Itti Achuthan)
10. Samgrahakala

### **Part – B**

1. History of Rasasastra – Mythological origin, Contributions of Nagarjuna and Rasavagbhata

2. Ayurveda in Veterinary science and Agriculture.
  - a. Vruksha Ayurveda
  - b. Hastya Ayurveda
  - c. Aswa Ayurveda
  - d. Pasu Ayurveda
  - e. Pakshi Ayurveda
3. Comparative study of Ayurveda with Greek medicine
4. Spread of Ayurveda (Ayurveda sarvabhowmathwa), Hippocrates – Humour Siddhanta
5. Arvacheena (Modern period) – Contributions of the following luminaries in the filed of Ayurveda
  - a. Gananath Sen
  - b. Yamini Bhushan
  - c. Yadavji Trivikramji
  - d. P. V. Sharma
  - e. Dwarakanath
  - f. Srikanda Murthi
  - g. Raghavan Thirumulpad
  - h. P. S. Warriar
  - i. Kaikulangara Rama Warriar
  - j. Edakkat Narayana Vaidhyar
6. Contributions of Asoka, Bhor committee - 1945
7. Ayurveda after independence
  - a. Chopra committee
  - b. Pandit committee
  - c. Dev committee
  - d. Udappa committee
  - e. Vyas committee
8. Research and development of Ayurveda
  - a. Establishment of Research, Post Graduate Institutions – Jamnagar, BHU, National Institute of Ayurveda, Jaipur, Gujarat Ayurveda University 1967, ICMR, CCIM&H, CCRAS, CCIM, Controlling of Ayurvedic education, ISM – AYUSH (Ayurveda, Yoga, Unani, Siddha and Homoeopathy)

- b. Publications / Journals
9. Role of WHO in health care (Viswa Swasthya Sangatana), Geneva conference, Alma – Ata declaration
10. Contributions of Kerala
- a. Ashta vaidyas
- b. Bala chikitsa, Visha vidya, Kalari, Marma chikitsa, Pizhichil, Shashtika Pindasweda, Dhara etc.

**First Periodical examinations**

	Chapter	Total
Part A	1- 4	
Part B	1- 3	7

**Second Periodical examinations**

	Chapters	Total
Part A	5 – 7	
Part B	4 – 7	7

**Syllabus for Third Periodical examinations**

	Chapters	Total
Part A	8 – 10	
Part B	8 – 10	6

**Distribution of marks**

Part A and B carries 50 marks each		
Short essay 5 marks x 2	=	10
Short Notes 4 marks x 4	=	16
Short answer question 3 marks x 8	=	24
Total	=	50

## QUESTION PAPER 1 (Model)

Time: Three hours

Maximum: 100 marks

(Parts A and B should be answered separately)

### Part A

Short essays on the following (5 marks each)

1. Define Ayurveda and ashtangas of Ayurveda
2. Ayurveda avatharanam - Brief notes on (4 marks each)
  1. Medical references in Rigveda
  2. Ayurveda in Upanishads
  3. Pre-Vedic period
  4. Ayurveda in puranas

Short notes on (3 marks each)

- |                    |                              |
|--------------------|------------------------------|
| 1. Brahma          | 2. Indra                     |
| 3. Bhaskara        | 4. Medicinal plants in Vedas |
| 5. Bharadwaja      | 6. Eternity of Ayurveda      |
| 7. Dakshaprajapati | 8. Dhanwantari               |

### Part B

Short essays on the following (5 marks each)

1. Different Nagarjunas and their contributions
2. Vruksha Ayurveda

Brief notes on (4 marks each)

1. Mruga Ayurveda
2. Similarities between Indian and Greek medicine
3. Origin and development of Rasasastra
4. Rasavagbhata and Ashtangahridayavagbhata

Short notes on (3 marks each)

1. Salihotram
2. Aswa ayurveda
3. Rasarnavam
4. Pakshi ayurveda
5. Role of Alexander in spreading Indian medicine
6. Important Rasasastra books
7. Rasaprakasa sudhakaram
8. Palakapya

QUESTION - PAPER II

Time: Three hours  
Maximum: 100 marks

(Parts A and B should be answered separately)

Part A

Short essays on the following

(5 marks each)

1. Ayurveda in Ramayana
2. Contents of Susruta samhita

Brief notes on (4 marks each)

1. Ashtanga samgraha
2. Ayurveda in Jain literature
3. Ayurveda in Boudha literature
4. Ayurveda in Mahabharata

Short notes on

(3 marks each)

1. Bhattara Harichandra
2. Chakrapani dutta
3. Gangadhara Roy
4. Bhaskara Govinda Ganekar

5. Milindapanha
6. Ayurveda in Kautilya's Artha sastra
7. Dhanwantari sampradaya
8. Agnivesa

Part B

Short essays on the following

(5 marks each)

1. Hippocrates
2. Different Committees on Ayurveda

Brief notes on

(4 marks each)

1. Asoka's Shilalekha
2. Medical system in ancient Egypt, Assyria & Babylonia
3. Basava rajiyam
4. Vrinda madhavam

Short notes on

(3 marks each)

1. P.V. Sharma
2. Humour Sidhhanta
3. Udappa Commitee
4. Sivadasa
5. Raghavan Thirumulpad
6. Kaviraj Haranachandra Chakravarti
7. Yadavji Trivikramji Acharya
8. P. S. Warriier

## MODEL QUESTION PAPER

II

Time: Three hours  
Maximum: 100 marks

(Parts A and B should be answered separately)

### Part A

Short essays on the following

(5 marks each)

1. Ayurveda in Atharvaveda
2. Charaka samhita

Brief notes on

(4 marks each)

1. Miracles performed by Aswinikumaras
2. Ayurveda in Kautilya's Arthashastra
3. Ayurveda in Ramayana
4. Sharangadhara samhita

Short notes on (3 marks each)

- |                          |                     |
|--------------------------|---------------------|
| 1. Kalyana karakam       | 2. Madhava nidanam  |
| 3. Divodasa Dhanwanthari | 4. Bhavaprakasam    |
| 5. Atreya parampara      | 6. Bower manuscript |
| 7. Bhela samhita         | 8. Dridabala        |

### Part B

Short essays on the following

(5 marks each)

1. WHO in improving public health
2. Progress of Ayurveda through Research and development

Brief notes on

(4 marks each)



1. Hippocrates
2. UNICEF
3. Importance of Rasasastra
4. Important Journals in Ayurveda

Short notes on (3 marks each)

1. Chopra committee
2. Palakapya
3. Visha chikitsa
4. Rasaratna samuchchaya
5. Gananath Sen
6. Pakshi Ayurveda
7. Siddha system of medicine
8. Ashta vaidya families of Kerala.

1. Ayurveda is the Science of life by the which nature and span of life, juxtaposed with personal and social aspects, can be properly understood. Classically Vedas are the oldest recorded treasures of science and knowledge in the world written in a methodical and systemic way. Ayurveda has been derived & developed from these Vedas, mainly from Atharvaveda. Hence Etymologically science of life has been termed Ayurveda. Ayurveda is Ayus (life) + Veda (Science) = Science of life.

Ayu literally means life.

Ayusho Veda : Ayurveda

Knowledge of life is Ayurveda

According to Charaka

Hitha Ahitha Sukkam Dukkam Ayusthasya Hitahtam

Manam Cha Tacha Yatroktham Ayurveda Sa Uchyathe

That science is designated as Ayurveda where advantageous & disadvantageous, Happy & unhappy life along with what is good & bad for life, its measurement & life itself are described.

*Sarira Indriya Satwaatma Samyoga Dhari Jeevitam.*

*Nithyagachanubandacha paryayayuruchyathe*

The term Ayus stands for the combination of the body, sense organs, mind & soul and its synonyms are Dhari (the one that prevent the body from decay), Jeevitha (which keeps alive) Nithyaga (which serves as a permanent substratum of this body) Anubandth (which transmigrates from one body to the other).

*Ayurasmin Vidyate, anena va ayurvindhathi Ithyayurveda*

This Science deals with the knowledge of life or else longevity can be achieved through it, So it is called the "Science of life" (Ayurveda) .Ayurveda is a sub division of the Atharvaveda and Composed in one lakh Slokas arranged into thousand chapters by lord Brahma, before creating living beings. Three after in view of the shortspan of life of human beings and their limited intellectual capacities, he again compiled it in to 8 parts. They are

Salya tantra	Surgery
Salakya Tantra	Ophthalmology & disease of ENT
Kayachikitsa	Medicine
Bhoota Tantra	Psychiatry
Kaumara Britya	Pediatrics
Agada Tantra	Toxicology
Rasayana Tanta	Geriatrics
Vajeekarana Tantra	Science of infertility

### **Salya Tantra**

The Science in which Shala or surgical instrument are used for the surgical removal of Salya ie, the Substance which penetrate the body are called Shalya Tantra.

Salyatantra deals with the extraction of foreign bodies such as different kind of straw, wood pieces, stone, dust particles, metals, pebbles, bones, hairs, pus or secretions, contaminated ulcers, obstructed labour. This branch also deals with blunt & sharp instruments, alkali treatment, cauterization as well as diagnosis and

treatment of wounds.

### **Salakya Tantra**

This derived from the word Salaka which implies rod like blunt instrument used for the application of medicine

Salakya deals with the management of diseases affecting the region of the body above the clavicle i.e. ears, eyes, oral & the nasal cavities

### **Kayachikitsa**

Kayachikitsa deals with the management of generalized systemic diseases such as fever, hemorrhagic tendencies, consumptive disease insanity, epilepsy, leprosy, urinary disease, diarrhoea etc.

### **Bhoota Vidya**

Bhoota Vidya deals with the management of psychic disorders in human beings produced as a result of invasion by some evil spirits such as Deva, Asur, Gandharv, Yaksha, Rakshasa, Pithru, Pishacha, Naga etc by means of treatment such as Bali, Homa etc to god.

### **Kaumara Britya**

This deals with the case of infants & children & treatment of diseases affecting the breast milk of wet nurses, it also deals with the management of diseases due to defective breast feeding & due to evil Spirits.

### **Agada Tantra**

This deals with the Sign and Symptoms and also the management of poisoning due to bites of snakes, insects and worms, spiders, rodents etc & also from the combination of various other poison.

### **Rasayana Tantra**

This deals with the methods to maintain youth, to increase Ayus,

Intellectual Capacities and Strength and also to enable the patient to be freed from disease.

### **Vajeeekarana Tantra**

This deals with increasing the reproductive capacity of human beings

### **Ayurveda Avatarana**

Ayurveda have been in existence since time immemorial

According to Ashtanga Hridaya - Brahma created the science of life for the benefit of all human beings. Later on, he passed the knowledge first to Daksha Prajapathi and then to Ashwani kumaras. Indra learnt Ayurveda from Aswanikumaras and from Indra Maharshis like Atreya and munis like Agnivesha learned Ayurveda.

According to Sushruta Samhitha - Ayurveda, the intimate part of Atharvaveda was composed by creator Brahma even before creating the universe in one lakh slokas arranged into thousand chapters, then looking to the shortness of life span & intellect of human beings, he again made it 8 fold. Brahma taught the science to Daksha Prajapathi and from him Aswani kumaras studied the science. Aswanikumaras taught the science to Indra. From Indra Dhanwantari studied Ayurveda. Divodas Dhanwantari taught Ayurveda to sushruta, Aupadenava, Vaitarana, Paushkalavata, Ourabra, Karavirya, Gopurarakshita. Each of them made their own samhita. Among these susruta Samhita become more popular in which he gave importance to salya chikitsa. This chikitsa shaka also called Dhanwantari Sampradaya.

According to Charaka Samhita - Bharadwaja learned Ayurveda from Indra. He also mentioned the story how Bharadwaja learned Ayurveda from Indra. At the end of Krita Yugas, people were effected with various types of diseases because of changes in lifestyle, improper food, air and water pollution. Out of these conditions, Maharsis like Kasyapa, Athreya etc. gathered together at the Himalayan valley to discuss about the diseases. Maharsis participated were Angeeras, Jamadagni, Vasishtan,

Kasyapan, Athreyan, Gauthaman, Vamadevan, Markandeyan, Agastian, Sankyan, Naradan, Bharadwajan, Bhikshurathreyan, Vishwamithran, Chyavanan, Abijith. They discussed many things to solve the problems affecting Ayus. Atlast, they decided one of them would have to learn Ayurveda from Indra. Bharadwaja himself came forward and he was sent to learn Ayurveda, from Indra. From Bharadwaja, Atreya got the knowledge of Ayurveda who in turn passed his knowledge to his disciples, Agnivesa, Bhela Jatukarna, Parasara, Harita, Ksarapani. Each of them made their own samhitas. They gave importance to Kayachikitsa later this chikitsa Shakha was famous as 'Athreya Sampradaya' or 'Kayachikita Shaka'.

According to Kasyapa Samhita - Brahma taught the science to Aswani kumaras. From Aswani's Indra studied science. Kasyapa, Vasishta, Atreya and Brugu learned the science from Indra and taught to their disciples. Vrida Jeevaka, The author of Kasyapa Samhita was the disciple of Kasyapa. He gave importance to Kaumara Britya.

According to Brahmavaivarta - "Purana, the mythology mentioned is slightly different. Like four Vedas, Prajapathi formed a fifth veda which is Ayurveda His Samhita is called prajapath Samhita. Bhaskara, the sun god learnt Ayurveda from Prajapati and wrote Baskara Samhita. He taught the science to his disciples and they made their own samhitas. They were Dhanwantari, Divodasan, Kasirajan, Aswini kumara's, Nakulan, Sahadevan, Arki, Chyavanan, Janakarshi, Chandrasuthan, Jabalan, Jajali, Pailan, Karadhan, Agasthyan.

#### 1. Write the Medical references found in Rigveda

Rigveda is the most ancient among Vedas. Vedas are holy writings consisting of religious hymns and were source books of late philosophical principles. The period of Rigveda is considered to be either B.C 2000 or B.C 4000. In Vedas Agni, Varuna, Indra and Marut were considered to be physician of gods, but most famous were Aswinikumaras who were known as Daivabhisak Physicians of gods. One of the most references in Rigveda is about Aswini's who performed many miracles. Some of them are:

1. Ashwins rejuvenated Chyavana who was very old rishi
2. Ashwins restored sight of Rijwasha
3. Ashwins gave an artificial leg made of loha to Visphala wife of King Khela who lost her leg in a war.
4. Ashwins cured blindness.
5. Deerga Tamas who was thrown into fiery pit was saved and restored to youth and strength by Ashwins.

Ashwinikumaras are considered as gods who give healthy life, offspring and prosperity. They knew all kinds of medicinal plants.

In Rigveda, Aushadisuktham is described which says about how to identify medicinal plants, the place where they grow, their clarification, their properties and uses. Rigveda mentions medicinal plants not only for the internal use but also were advised to use on the body externally. Both Yuktivyapasaraya and Daivavyapasaraya chikitsa were advised in Vedas.

The Rigveda – oldest of the four, contains many concepts of Ayurveda. Its three great gods-Indra, Agni, and Soma are related to the three biological humours of Ayurveda, Vata, Pitta and Kapha. References are found in it, to organ transplants in the case of an artificial limb, that was made for queen Visphala. The Rigveda also contains many hymns to soma, as a great curative herbal preparation used to treat many diseases of the body and mind and to promote long life. Explanation about Surya, Jala and Agni chikitsa were given in Rigveda. There is a clear explanation about internal organs, diseases, immunity and tridosas. Description about Panchabhuta theory is obtained in Atharvaveda

In Rig, Yajur & Atharvaveda, Medical plant Brahmi & other Vishishta Oushada's is mentioned. In Vedas, the word Yakshama is used to tell about the diseases. There is description of diseases such as jwaram and its classification like Sathata Jwaram, Tritiyaka Jwaram, Greeshmaka Jwaram and Varshika Jwaram. Diseases are mainly classified into two: Caused by curse, Caused from vitiated food.

Very clear description about vishama jwaram is given. Diseases occurring to eyes, head, lungs and heart were described. Treatment for Kamlla (jaundice), Shwitra, mootrakrichram etc were explained.

## 2) Explain about Ayurveda in Upanishads

Upanishads are synonymous with Indian culture. The original meaning of the word seems to be "sitting at the feet of teacher" and "the secret of life". Upanishads deal with knowledge. Upanishads and Aranyakas form the last part of Vedic literature. The rise and progress of all spiritual knowledge are from Upanishads. Digestion and metabolism are also described. There are references about salyachikitsa also.

In Bruhadaranyaka Upanishad, the word meaning of "Hrudaya" is mentioned.

- Hru means to bring. This involves bringing impure blood from the body to the heart.
- Da means to give, involves giving pure blood to the body.
- Ya means to set right all the activities and maintain the stability of the body.

There are also references about Gandharvas in Upanishads that prove the existence of Bhootavidya. References about the functioning of pulse are also found. Thus it is very clear that Ayurvedic culture and thought are portrayed in Upanishads.

## 3. Pre-Vedic period

India was occupied by people of different races claiming a high degree of civilization, even before the entry of Aryans from North West. The recent discovery of the ruins of Harappa and Mohenjodara is a good example. It was told that relatively uncivilized people whom the Vedic Aryans called "Dasyus" were inhabiting there but these are indications of a highly developed urban civilizations in the North as well as in the Deccan, and South where the Dravidians lived. They build towns and

temples and were learnt the art of agriculture, carpentry etc. Some historians are having the opinion that the Aryans invaded India through the north western.

Some of the historians mention that Aryans were never invaded and neither Mohenjadaró and Harappa had shown a well organized civic administration.

With such attention to sanitation, they also possessed a system of medicine. Though many metallic implements were discovered in this chalcolithic (Copper and stone) age civilization no direct evidence is available with regard to surgical instrument. Some of the five metallic rods are supposed to be used for the application of collyrium to the eyes. It is interesting to note that silajit (Black Bitumen) a drug still used in Ayurveda has been found in the excavations. It is not only Harappa and Mohenjadaró alone that this civilization was discovered, The same type of cities have been unearthed in many areas to the east of the Indo-Pakistan border. The Harappa civilization seems to collapse between 2000 and 1500 B.C. probably due to some natural disaster like some major earthquake.

But Ramayana certainly refers to a condition of natural life and Aryan their origin was outside India. Aryan invasion is a myth. Aryans very much belong to this country and residing in the foothills of Himalaya, Whatever may be the race Mohenjadaró civilization belong, it was certainly pre-vedic in its date and its general characteristics.

#### Mohenjadaró Civilisation

The excavation of this city showed that the people of those times lived in well planned cities made of uniformed sized bricks. The dwelling houses which were numerous, vary in sizes from two rooms to many rooms. The big houses had two or three storeys and were provided with living rooms, bathrooms, toilets etc. In addition to residential houses, there were also community building. Historians have shown that this well advanced civilizations existed about 5000 years back.

The streets were well planned with covered drains, the great house at Mohenjadaró is the most imposing structure of the city. It is in the form of a large



open quadrangle with galleries and rooms on all sides. It is surrounded by a courtyard into which opened a corridor. In short colonialisation. That type Aryans had not spread beyond the southern region of Ganges and certainly not beyond the Vindhya. Rama during his Vanavasa traveled through the forest and reached Deccan. Again Rama found allies in the Deccan to help him and regain his wife from Ravana. Both Bali and Sugreeva were brothers and rivals, wise and important people like Hanuman and Jambavan had played an important role in Vanarakingdom. Sushena is the name of the famous physician of Vanararaja when Lakshmana became injured and unconscious by the arrows of Ravana, Hanuman flew to the north of Himalaya where life saving herbs were growing and carried the complete mountain to the battlefield. The vanara vaidya received the herbs and treated their wounds.

4. Explain about Ayurveda in puranas

Puranas are of great importance because they narrate stories relating to the vedic period. They comprise several literary works said to have been compiled by Vyasa. There are more than 110 puranas. Among them 18 puranas are more important and are called as Ashtadashapuranas. Puranas give a detailed description about Srushti, Utpathi, Pralaya, Rishivamsha, Rajavamsha etc.

- 1) Brahmavaivarthapurana - The origin of Ayurveda is described in this purana. Brahma created the science of Ayurveda and passed on the knowledge to Bhaskara.
- 2) Agnipurana - This has much more references about Ayurveda. Many slokas from this purana are seen in Charakasamhita also. It mentions about Aswachikitsa and Gajachikitsa. It also describes about Sidha oushadhas, Sarvarogahara oushadhas, Rasas, Vrukshayurveda, Mantra, Mruthasanjeevani etc. Shadangapaniya is also described. The use of Doorva swarasa for the treatment of nasal bleeding and the use of Dhathu in the form of Basma are explained in this purana.
- 3) Garudapurana - This purana also contains references about

Ayurveda. In addition to that described in Agnipuranas, Ratnapareeksha, Shudha oushadhalakshana, Rangadaranavidhi are also explained. There are also many chapters that deal with treatments. In this Hitha-Ahitha, Pathya-Apathya, Anupana, Vajeekarana, Netraroga etc. are mentioned.

- 4) Skandapurana - This contains the medicinal equipments that are required for a health center.

- 1) Write short notes on Brahma.

Brahma is believed to be the creator of the Universe and is one among the trimurthies of the Hindu philosophy. He propounded the four Vedas and its numerous branches. For the progress and welfare of mankind, he is worshipped even today as the originator of all phenomena. Brahma created Ayurveda and taught it to Daksha Prajapati. Different samhitas have different opinion about the origin of Ayurveda, but all accept that Ayurveda originated from Brahma. According to Susrutasamhita, Brahma composed a treatise Brahmasamhita with one lakh slokas arranged in thousand chapters. These were sub-divided into eight major parts later. They are Salyatantra, Salakyatantra, Kayachikitsa, Bhoothavidya, Kaumarabhrtya, Agadatantra, Rasayanatantra, Vajikaranatantra.

- 2) Write short notes on Indra

Indra the chief of Gods studied Ayurveda from Aswinikumaras and taught it to the Rishis on the Earth. In Rigveda, he occupies a very high position and is prayed for protection against all kinds of evil spirits. During the time of Rigveda, this deity used to come down from heaven to help the kings of the Earth in battles, to protect cows of herdsmen from dasayus, to safeguard cities and forts from foreign invaders. Indra cured diseases like baldness, tuberculosis etc. He was described to have great skills in medicine and surgery and taught Ayurveda to Bharadwaja. A few formulas told in Ayurvedic classic are known by his name. Some medicinal treatments done by Indra are the following:

- 1) The skin disease of Apala was treated successfully.

- 2) He cured the baldness of Apala's father.
- 3) Indra enabled the cripple legged Shrona walk.
- 4) He gave eyesight to the blind Paravruja.

3) Write short notes on Bhaskara

Bhaskara, the Sun God is the deity of sight. He is worshipped in Rigveda for cure of diseases. According to Brahmavaivartapurana, he is said to have learnt Ayurveda directly from Brahma. Two treatises Bhaskarasamhita, a treatise on medicine and Jnanabhaskara, dealing with the evils of human existence, their causes and cures are attributed to Bhaskara. He taught the science of Ayurveda to his disciples who made their own samhitas. The prominent disciples were Dhanwantari (Chikitsatavignyanam), Divodasa (Chikitsadarsanam), Kasiraja (Chikitsakoumudi), Aswinikumaras (Chikitsasaratantra, Bramagnam), Nakula (Vaidyaka Sarvaswom), Sahadeva (Vyadhisindhuvimardana), Arki (Gyanarnava), Chyavana (Jeevadanam), Janakarshi (Vaidyasandehabhanjana), Chandrasutha (Sarvasaram), Jabala (Tantrasaram), Jajali (Vedangasaram), Pailan (Nidana), Karadhan (Sarvadharam), Agasthya (Dhwaidhanirnayatantra).

4) Medicinal plants in Vedas

In Oushadhavishaya, usage of drugs like Syama etc. in Kilasam and Palitham about Prashniparni's body nourishing action is explained. Medicinal properties of Harinasrangam in diseases like Kshayam, Apasmaram, Kushtam, etc. are given. About the action of the drug Rohini in the re-union of fracture and healing of wounds. Action of Guggulu dhoopanam in Yaksmaroga is given.

5) Bharadwaja

Bharadwaja is the first Acharya who started Atreya Sampradaya. He studied Ayurveda from Indra and taught it to Rishis like Atreya. Bharadwaja's father is Brihaspati and mother is Mamta. Dronacharya is his son. Paurava king Bharata adopted him and thus he is known Paurava. His name mentioned in Rigveda, Atharvaveda, Ramayana and Mahabharata. In Ashtanga Hridaya and Ashtanga Samgraha it is mentioned that Atri and his son studied Ayurveda from Indra. In

Caraka Samhita mentioned that the disciples of Indra are Bhrugu, Angiras, Athri, Vasista, Vamadeva Kasyapa etc. here we can't see the name of Bharadwaja. According to some scholars atreya and Bharadwaja are same persons but according to Chakrapani who wrote the commentary. Ayurveda Deepika, they are not the same persons. Bhava Mishra also considered Atreya and Bharadwaja as different persons. Bharadwajiyam and Bhesaja Kalpam are the two works of Bharadwaja. The original manuscript of these two are now kept in Madras Manuscript library. Brihatphalagritha Mentioned in Vrinda Madhava and Phalagritha mentioned in Sharangadara Samhita are the two medical preparations known by the name of Bharadwaja.

6) Eternity of Ayurvedic medicine

According to Charakasamhita, the following are the reasons for Ayurvedic medicine to be considered as eternal.

*Ayurveda saswatho nirdisyathe, anadithwath,  
swabhavasamsiddha lakshanathwath bhavaswabhava nityathwath cha*

The three main causes for eternity of this system of medicine are identified as

- 1) Anaditwath – means no beginning
- 2) Swabhavasamsiddha lakshanathwath – Arogya (health) and Roga (disease) are identified through different lakshanas (symptoms) produced by the body. Every disease can be identified by certain peculiar lakshanas. A combination of certain lakshanas can give rise to new types of diseases. These lakshanas are according to rogaswabhav. As the nature of the disease is the same, lakshanas are also the same.
- 3) Bhavaswabhava nityathwath – 'Bhava' means dravyagunakarma. (Substances taken as food or medicine, their properties and their actions on the body). The gunakarma of dravya remain the same.

The ideas of Ayurvedic medicinal prescriptions were developed from the very beginning of life. It gave importance to hetu (cause), linga (signs and symptoms), Oushada (medicine) with fundamental basis on Tridosha. The nature of scientific development in all aspects indicates its eternity.

While certain other medical systems give importance to the treatment of diseases only, Ayurveda considers all aspects of the body system. This holistic approach considering the body, mind, diseases, weather etc. have given Ayurvedic medicine a separate identity as against other medical systems. Moreover, it exists today as the mother of all medical systems. Thus we can conclude that Ayurveda is an eternal science that has no origin or end.

7) Daksha prajapati

Daksha known by the name prajapati ie lord of living beings. He learned the science from Brahma and transferred the knowledge to Aswini Kumar's. Not much references are available either in general Sanskrit literature or Ayurveda literature as to his contribution. In Brahma Vaivarta purana, it is said that Prajapati has written Prajapati Samhita

8) Dhanvantari

One who has seen the end of Dhanu or sastravidhi is called Dhanvantari. Dhanvantari is the Acharya of shalya chikitsa so later experts of Shalya tantra were called as Dhanvantari. He is the Acharya of sushruta, Aupadhenava, Aurabhra, Karavirya, Paushkalavata and Gopurarakshita.

According to puranas, Dhanvantari is the Avathara of Vishnu. Puranas, indicate that Dhanvantari was God's physician. He is considered not only as shalya chikitsa. Expert, he is the god of Ayurveda.

Different reference about Dhanvantari is seen in ancient literature. In Susruta Samhita, Purvatantam in the beginning part the author remembers his guru as Divodasa Dhanvantari and in other context he remembers only as Dhanvantari. In susruta Samhita Uttaratantam, he uses the single word Divodasa

only. Dhanvantari was one among the Navaratnas of King Vikramadhitya.

According to Mahabharata, Dhanvantari studied Ayurveda from Bharadwaja and he taught Ayurveda to his disciples. In Mahabharata there are references about the Kasi-King Divodasan.

In Agnipooranam, during Samudramathanam, Dhanvantari appeared with Amrutha Kalasham, Shangh, Sastram and Chakram in his four hands. As Dhanu or Sastram was with him, he is Sastradhari or Dhanvantari.

It is interesting that some places two Dhanvantari were said to be arisen. One is Kshatriya Dhanvantari and other is Vaidya Poorvika Dhanvantari. Kshatriya Dhanvantari considered as the Acharya of susruta. But in Susruta samhita and puranas Dhanvantari is referred only as Devaloka Physician.

The Vaidyas who know 300 medicine for a diseases was given the surname 'Dhanvantari' in those days. Bhisak was one who knows 200 medicines for a disease and Vaidyan was one who known 100 medicines for a disease.

It is said that Aupadhenava, Vaitarna Aurabhra have studied Ayurveda from this Dhanvantari. He was the king of Kasi was also known as Divodasa-Dhanvantari he himself says that he is the Avatara of God Dhanvantari.

Dhanvan was the king of Kasi Rja Vamsha, he prayed Dhanvantari to get a son and this son was named as Dhanvantari. It is this Dhanvantari who approached Bharadwaja to study Ayurveda. He was respected even by Devas so he was called as Divodasa Dhanvantari. another opinion is that Divodasan is the grand son of Dhanvantari. In Mahabharata Divodasa was attacked in a war and Bharadwaja protected.

Dalhanan also agrees with this opinion that Divodasan Dhanvantari was the teacher of Susrutan. From this we can conclude that Dhanvantari told in puranas need not be Dhanvantari explained as the Guru of Susruta.

References about Dhanvantari can be seen in Vayupuranam, Vishunupuranam, Brahma puranam. Dhanvantari's father is Dhirgatamas and Danvantari is described as an Ayurvedic Physician. He was not only an expert of Salya tantram but also a scholar of all eight branches of Ayurveda. In Brahmavaivarta purana a conversation between Dhanvantari and Nagadevi is given which indicates that he was an expert of Visa Chikitsa also.

The books written in Dhanvantari's name :

1. Chikitsa Darshnam
2. Chikitsa Kaumudi
3. Chikitsa Sara Sangraha
4. Yogachintamani
5. Vaidya Chintamani
6. Dhanvantari Nighantu.

These books are famous in the name of Dhanvantari. Sometimes, these books were written by different authors. They may have given the name of Dhanvantari in respect towards Dhanvantari. Some preparations in Dhanvantaari's name,

1. Dhanvantara Ghrita
2. Dhanvantara Tailam
3. Dhanvantara Kasaya
4. Dhanvantara Gulika.

1) Write about Nagarjunas

Nagarjuna : Nagarjuna is considered as the father of Hindu chemistry.

The different Nagarjunas are mentioned in history they are

1. Nagarjuna the author of Lohasastra
2. Nagarjuna the redacter of Susruta samhita.
3. Sidda Nagarjua who is the author of Rasaratnakaran, Rasendramangalam etc.
4. Badanta Nagarjuna who is the author of Rasa vaisheshika sutram
5. King Nagarjuna a Buddha follower
6. Nagarjuna the spokesman of Mahayana Prasthanam

Sri Girindranath Mukhopadhyaya in his work named history of Indian medicine has mentioned about 2 Nagarjuna. But according to Sri. Brajendranath seel in his work 'Positive sciences of ancient Hindus' mentions that Nagarjuna who redacted Susruta samhita & Nagarjuna who wrote Lohasastra are the same.

He was born in a brahmin family in Vidharba in A.D. 78 Vidarba was also known Dakshina Kosalam.

The Chinese traveler Huan – sang who visited India in A.D 629 also has the same opinion that he was born in Dakshina Kosalam. He later went to Pataliputra and acquired knowledge in Vedas. He accepted Budhism in his 18<sup>th</sup> age and was completely involved in the Budhism and Ayurveda. After studies he set his life in a place called 'Gaya'.

According to different acharyas the period of Nagarjuna is considered as the period of the King of Sathavahan & Kanishka between A.D 80 to 104.

He had written books like Tatwaprakasham, Samayamudra, Tarkasastra, Upayahridayam, Yukthi sashtika, Adisastram, and Lohasastram.

He was an eminent writer and wrote on many subjects and what ever he wrote became famous. His works were mainly on Philosophy, religion, medicine, chemistry and alchemy. His "suhrllekha" was a short manual which he wrote to the king of Salivaha. The famous Chinese traveler Itsing who visited India in A.D 7<sup>th</sup> century has written a commentary for this.

Nagarjuna is thought to have deep knowledge in Budhism and Darsanas. During that period of Budhism many scholars were against Vedic thoughts and we can see that the works of scholars except of Aswaghosha, are given in Pali language. It is interesting that though he himself was a Budhist he never had rivalry against Hinduism or Sanskrit language. His works were written in Sanskrit. This stand of Nagarjuna is well praised by all historians as a mediator between Vaidika and avaidika thoughts.



In Upayahridayam Nagarjuna had praised Susruta. Susruta samhita is a redacted work of Nagarjuna and we cannot see Nagarjuna saying his name as a redacter in any place of the work. This may be to avoid a possible quarrel among Buddhists, a Buddha follower making redaction on salyatantra predominant work. The last sections of presently available susruta samhita was not included in the original Grantha, but later on added by Nagarjuna. It deals with diseases of eye, ear, nose and head, management of diseases of children (12 chapters), General therapeutics (21 chapter), insanity, epilepsy and general considerations such as taste, hygiene, Tridosha theory, Nagarjuna is well known as Rasasastra acharya though his book Lohasastra is not available now. He passed away in A.D 180 in his 102 nd age.

Write about Vruksha Ayurveda

Vriksha Ayurveda, Aswayurveda, Hasthyayurveda, are considered to be branches of ayurveda. Since panchamahabhutas are the constituents of all living and non-living, Any disturbance in their balance can lead to disease.

They have observed that some plants drop their leaves during night indicating that they sleep in the night.

It is said that plants also have panchendriya and Atma. For eg.

1. Sunflower stands facing the sun. It indicates that it has the power of vision or darsana shakti.
2. Mimesa : indicate response to touch.
3. Smell of fox fat can induce flowering in pomegranate.
4. Taste of fish fat causes the mango tree to their fruits.
5. Asoka tree blossoms by the touch of a beautiful ladies foot.

These examples show that plants also have perception of sense like animals. Plants also have stages of childhood, Youth and oldage. These indicate the plants are living things like animals. Tree also got diseases due to the imbalance of vata, pitta and kapha like men.

Trees of vata prakriti will have the following characteristic features.

1. It will grow to a great height usually lean with roughness,
2. They won't droop the leaves during night.
3. Flowering and seed bearing will be rare.

Those of pitta prakriti will be pale, having no branches difficult to tolerate high temperatures and its fruit ripen before it matures. Trees of Kapha prakriti will be big sized with round stem with so many leaves and branches fruits and flowers.

Vata roga of trees are treated by Kunapajalam. This Jalam is prepared by the following way.

Majja & vasa of goat, deer fish etc is boiled in water. This is mixed with honey, ghee, hot water milk, gingilly and boiled black gram. This mixture is kept in hot place for 15 days. This is known as Kunapa Jalam. Like this cowdung, fat etc also used to cure vata roga of trees. Treatments were described for oldage, dhatusosham and agnimandyam. Dr. Lakshmi pati had classified the period of growth of Vrikshayurveda into three.

1. Prathama gatam - upto A.D 600
2. Madyama Gatam - 601 A.D to 1536 A.D
3. Adhunika Gatam - rest of the period.

Sharangadara padhathi, Brihatsamhita, Agnipuranam, Charaka samhita, Susruta samhita etc are the books which contain references about Vrikshayurveda in ancient days, people considered growing of trees around the premises as a sacred thing. They developed methods, to keep flowering throughout the year, to make seedless fruits, keeping fruits on the trees for a long time, etc. They knew techniques to convert non fragrant flower to fragrant flowers and how to give colours in cotton. The topics in Vrikshayurveda deals with all this subjects. It says about fertile soil, better time for plantations, controlling different diseases etc. Surapala's work in 'Vrikshayurveda' remains as an authorities text on Vrikshayurveda.

Write about Mruga Ayurveda

It is a branch of Ayurveda dealing with the care of animals. Also depends on the theory of Panchamahabhutas and tridosha.

Among them the branches like Aswayurveda, Hasthyurveda are well developed. During Asokas rule we can see that he had established veterinary hospitals for the care of animals in the various parts of the country.

Aswayurveda forms an important part of Mrigayurveda. In former days, horses had an important role in war, traveling and transporting. In those days, study of animals body also was a compulsory subject for medical students.

In caraka samhita siddhi stana 11<sup>th</sup> chapter there is a references about vasthi karma (Enema therapy) to be performed in cows, goats, camels, elephants etc. In Harita samhita treatments, for horses, camels, cows, elephants, etc are given.

The most famous name in veterinary sciences in those days was salihothram. He was an expert in horse treatment. Salihothram is a book written by him. He is considered as the son of Hayaghoshan and he was the teacher of susruta. There is a different opinion that the book salihothram is written by Nakhulan of Pancha Pandavas. Nakhulan had studied Aswayurveda and Sahadevan had studied Gavayurveda from Dronacharya.

Aswaryurveda has different synonyms like Hayayurveda. Turangasastram. There are references about aswayurveda in books like Agnipooranam, Mathsyapuram Garroda Pooranam. The other books present in these days are given below Turangaparisksha written by Sarangadharan, Aswavidya sashtra by Deepanguram, yuktikalpataruby king Bhojan, Sarasangraham by Indrasenan.

Aswagoshan was a scholar in Aswayurvedam according to the opinion of Nakhulan, Susrutans father is one Hayaghoshan. Some others says that this Hayoghoshan is Aswaghosha Bothisatwan. Aswaghoshan lived in the period of

Kanishka. He lived in Peshwar in A.D 2 century. His birth place was Saketham. He was a Brahmin but he later accepted Buddha religion. But Hayaghoshan was a Brahmin who lived in Chempakavdi of Himalayan valleys. So Aswaghoshan and Hayghoshan are different persons.

Hasthya Ayurveda deals with the diseases and treatments given to elephants. Palakapyam, Mathangaleela and Gajchikitsa were the other main books coming under this branch. Palakapyam is the most famous book among all these. This book is written by Palakapya.

The book written by Sayanan named Subhasita Sudhanidhi has 2 chapters deals with Gaja and Aswa. From Atharvavedam, some explanation about the treatment of animals is obtained, worm problem in cattles and the treatment for different diseases is described in it. So it is understood that during very ancient time itself treatment for animals was well developed.

#### Similarities between India and Greek Medicine

While going for comparison between different medical systems, we can see many similarities between Greek and Indian Medicine. In the books of Hippocrates, there are narrations of some medicines like (Jeera), Yavani (Ginger), Ardrakam (Pepper), Maricham (Cardamon), Elam etc. which are very similar even in pronunciation to that of Ayurvedic books.

Aswini Kumara's are considered as sons of Sun God in Ayurveda like that Greek people considers Appollo and Artemis as the twin sons of Zeus who is the God of light.

According to the book " India in Greece" written by 'Pocoke' Phythagoras is believed as Buddha Guru. According to the book 'History of Philisiphy' by 'Enfield', phythagorus has accepted medical knowledge from India. It is seen in Ashokas rock inscriptions that Buddhist monks have traveled to Greece, Asia minor and Egypt to spread Buddha religion, this also helped to spread Indian medical system, Ganita Shastram and Indian culture to these countries.

The Roga nidana, names of diseases, Medicine, et. are seen in Hippocrates book. Hippocrates Sidhanthas are very similar to that of Ayurvedic Sidhanthas. Homer has written that like Indian medical System, ancient Greeks also believed that anger of God caused disease. Indian medicine and Greek medicine were very closely related to philosophy, much similarity is seen in between the Tridosa theory of Ayurveda and Humor theory of Greek medicine. There are reference about tridosa in Atharvaveda and Kausika soothram which were very old compared to Hippocrates period, even in Rigveda tridosa mentioned as tridhatu. According to J.J. Modi's opinion, Humor theory of Hippocrates is the imitation of tridosa theory.

The theory of Panchamahabhutas are also purely of Indian origin. Indian believed all objects, living and non – living are formed by the union of Panchamahabhutas and any change in Panchamahabhutas causes destruction or death. This theory was accepted by Dhanvantari, Atreya, Kasyapa, et. A Greek physician Empedocles, after coming to India accepted Chaturbhuta Siddhanta. It consist of Prithvi, Ap, Teja, Vayu, and spread this theory in Greece.

Ayurvedic medicines like Gingelly oil, Jaggery, Pippali, Maricham, Srungiveram, Jatamamsi etc. are included in the materia medica of Hippocrates. A medicinal preparation named "Hipocras" prepared by Hippocrates contained Jaggery, Srungiveram and lavangam.

Thephrastus in B.C 350 has mentioned about a medicinal plant 'Ficus India' of which the word 'Indica' is closely related to India.

Write about the origin and Development of Rasasastra

Lord Shiva is supposed to be deity of Rasasastra. It also involves the nucleus the Parada, the mercury, which is infact the nucleus of the science of rasasastra. Lord Sankaras blessings can be aquired by Yoga sadhana (by following the yogic practices) and it is obvious that he can eradicate the sins of humanbeings.

A Description of the origin of Parada is available in various text of Rasasastra

like Rasaratnasamuchaya. The origin of it is described with a mythological story. In Himalayan mountains, Lord Shiva and Parvathi were engaged in sexual act. Agni went in disguise of a bird. When Lord Shiva saw him, he took the semen and hurled it at Agni. Unable to bear its intensity, Agni threw it in the river Ganga. She too could not bear it and expelled it out, which turned into Parada. Along with it several metals and ores were also formed, which were said to be blemishes of Parada. According to modern concept, mercury is a product of volcanic activity.

Even from the Vedic period, Indian men were aware of the use of minerals and metals. Rig Veda and Yajur Veda mention about Loha of metals, but the knowledge was very primitive and hence the use of metals was limited in diseased conditions. Lohas were used internally for Krimivikaras. Reference about gold as Hiranya in Rig Veda, reference about Gold, Iron (Au, Fe) in Yajur Veda is also seen. Arthashastra, the famous book of Kautilya mentions about the laws to be maintained during mining, purification and sale of metals. The cleaning methods for Iron, Copper, Zinc, Lead (Fe, Cu, Sn, Pb) and bronze vessels are given in Manu Smriti. Saindava, Kaseesam, Manashila, Gandaka, Parada, Tamra etc were mentioned as medicines in Garuda Purana. Charaka Samhita says about 5 lawanas, use of Orpiments and Sulphur, but it was indicated mainly for the external use. Au, Panchatoham etc, are classified as under Bhauma Aushadhis. In Susruta Samhita, Saindava, Shilajith, blue vitrol etc, are included in Ushakadiganam. Before the period of Nagarjuna himself, Rasashastra had much developed in India. During Nagarjuna's period, certain methods for purification and usage of metals were well explained. Nagarjuna had invented methods for making lower metals to higher metals, called Vedhanam. Rasashastra treatment of present day is thought to be evolved from the Dhathavedhanam in those days. Processes like Pathanam, Maranam, Jaranam etc were added which made to the progress of Rasa Chikitsa. Formulations like Kajjali or Black sulphide is added. Several instruments for Rasamedicinal preparations and many other therapeutic formulations are significant in Nagarjuna's name.

Rasa Vagbata and Ashtangahridaya Vagbhata

Author of Rasaratna Samuchaya styles himself as Vagbata, son of . Points

which shows that Vagbhata who is the author of Rasaratnasamuchayam is different from vagbhata the author of Ashtanga Hridaya and Ashtanga samgraha.

1. Ashtanga Hridaya and Ashtanaga samgraha begins in the style but this way of beginning is not seen in Rasaratnasamchaya. No references about ancient Rishis is seen in it.
2. There is no mentioning about his birth place or about his father in this graitha.
3. Vagbhata had pointed that he had written Ashtanga samgraha before Ashtanga Hridaya, but he never said about Rasaratnasamuchaya.
4. Difference in the style of writing indicates that they are two different persons.
5. 'Sreeparnyadithailayogam" is taken from Chakradatha which is written by chakrapani in A.D 11<sup>th</sup> century. This is seen quoted in Rasaratnasamuchaya. So it is assumed that the author of Rasaratnasamuchaya lived after the period of chakrapani.
6. It is seen that the author of Rasaratnasamuchaya had depended Rasendrachoodamani, Rasarnavam and Rasaparakashasudhakaram which are the works of A.D 12<sup>th</sup> century.
7. The author of Ashtanaga samgraha gave importance to the four pramanas Prathyaksha, Anumana, Upamana and Aaptopadesha. But Rasaratnasamuchayakara gave importance to Prathyakshapramana only.
8. In Rasaratna samuchaya there is reference about somaroga. Nobody has mentioned about it before Vangasena who lived in A.D 12<sup>th</sup> century.

This points shows that author of Ashtanga samgraha and Ashtanga Hridaya is different from the author of Rasaratnasamuchaya, he lived in 13<sup>th</sup> century A.D and he was also known as 'Rasavagbhata'.

Write short notes on Salihothram

The book 'Salihotram' was written by Salihotran who is the son of Hayaghoshan and father of susruta. The book Salihotram contains Unnaya sthanam, Uttaraasthanam, Saaririka sthana, Chikitsa sthana, Sisubhaishajya sthana, siddhisthana, and Rahasya sthana.

Based on this book in 1812 Kind Indrasenan had written a book named sara samgraha. Methods for determining the age of horses is described in a book name Manapriyamam, First chapter concern with Ayurveda Aswasastram and its treatment. Second chapter is Vidhya dhyanam in this Upanayanam of a student is explained. In Unnaya sthana, pregnancy of horses, colour and nature of horses etc are explained.

Uttara sthana contains an important chapter called Mahaprashnam Diseases like vathathisara, diseases of thorax and abdomen and pangu are also explained. In saririka sthana, origin & growth of the embryo of the horse are explained. In chikitsa sthana, diseases of nerves, eyes, and mouth of the horses are explained. Uttara sthana details with the building of Aswalayam.

In siddhi sthana knowledge about Vasti Karma, Sneha, Ksheera, sura, Danya lavana Vyapath etc are explained.

Rahasya sthana contains the importance of lines or patches on the body of the horse is mentioned. It also deals about the life span, Rishta Lakshanas different medical preparations like Lakshakalpam, Guggulukalpam, Triphalalakalpam and books aswaprasamsa and Aswa lakshna Sastram.

Write short notes on AswaAyurveda

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vasthi karma (Enema therapy) to be performed in cows, goats, camels, elephants etc. In Harita samhita treatments, for horses, camels, cows, elephants, etc are given. The most famous name in veterinary sciences in those days was salihothram. He was an expert in horse treatment. Salihothram is a book written by him. He is considered as the son of Hayaghoshan and he was the teacher of susruta. There is a different opinion that the book salihothram is written by Nakhulan of Pancha Pandavas. Nakhulan had studied Aswayurveda and Sahadevan had studied Gavayurveda from Dronacharya. Aswaryurveda has different synonyms like Hayayurveda. Turangasastram. There are references about aswayurveda in books like Agnipooranam, Mathsyapuranam Garroda Pooranam.

The other books present in these days are given below Turangaparisksha written by Sarangadharan, Aswavaidya sashtra by Deepanguram, yuktikalpataru by king Bhojan, Sarasangraham by Indrasenan.

#### Rasarnavam

This is written in A.D 12<sup>th</sup> century. References from this are seen in Rasaratnasamuchayam. Different instruments used for the processing of Rasa are described in this book. The colour of the flame when different dhatus are put into the fire is described in it. The book gives information that gold gives yellow colour, silver gives white colour, iron gives kapila varna and Lead gives kapotha varna, Vajra gives different colour when put in to the flame. In 1910 this work was published by Asiatic society from Calcutta.

#### Write shorts on Pakshi Ayurveda

Shyainika Sastham by Rudradeva is the most notable work about the treatment of birds. Formerly the birds were used as a food stuff. The therapeutic action of different types of meats of birds are explained in different parts of Ayurvedic classics. Different types of birds of different regions, their nature of search of food, identification of birds, method of growing eagles, treatment for its diseases, etc are the main subjects coming in this books.

Some classification of birds are given below.

Vishkiras : The birds that scratch the ground with their legs and pick up their food – comes in this group Eg: Kukubha, Sikhi (Peacocok).

Prathuda : Birds which pick the food and eat comes in this group. Eg. Kapootham (Pigeon).

Prasaham : Which catch the food by beak, tear it and eat comes in this goup eg. Vayasa (Crow), Uluka (Owl).

Describe the role of Alexander in the spread of Indian medicine

During the golden period of Ayurvedic medicine its glory has reached nearby countries by Tradesmen, travelers, monks etc. So foreigners were attracted to Ayurvedic system of medicine. There existed chance for the spread of Ayurvedic medicine even before the Emperor Alexander invaded India. He invaded India during the period of king Chandragupta and Chanakya i.e.B.C. 327.

During the period of Alexander, places like Takshasila, Varanasi Ujjain were having Indian universities. During Alexanders invasion Takshasila was the most famous university of the Asia. There were students from different countries and different culture to learn, arts, science literary training and Ayurveda in particular.

People of Takshasila gave much importance to their food patterns and they lived upto 130 years. This peculiarities was attracted by Alexander. Kalyan, a famous scholar of Takshasila was admired by Alexander. On his wayback to Greece. Alexander took kalyan with him, Max Muller has written about this.

During his invasions, he brought Greek physicians with him. Alexander had made arrangements for his physicians to learn the art of Sarpa-Visa-Chikitsa from Takshasila University. Through an incident the glory of ancient India was propagated, i.e. one of its soldiers had a snake bite, which was attended completely by an Indian physician and was succeeded. Alexander advised his soldiers to take treatment from India physicians, specially for poisonous snake bites. While returning after invasion he took some of the Indian physicians to his country. Thus the glory

of Indian medical system spread to different countries.

Write important Rasasasatra books

1. Rasaratnakaram - Sidha Nagarjuna
2. Kaksha putatantram - Sidha Nagarjuna
3. Rasarnavam - 12<sup>th</sup> century A.D. In 1910 published in Calcutta.
4. Rasendra Choodamani - Somadevan (A.D 12-13)
5. Rasendra Sarasangraham - Gopalakrishnabhattacharya
6. Rasaraja lakshmi kamadhenu - Vishnudevan
7. Rasaratnakaram - Choodanimisram
8. Rasatharangini - Kaviraj Sadananda in 1934
9. Rasaratnasamuchayam - Vagbatan

Rasaprakashasudhakaram

This is written by Yasodharabhattachan. This book mentions about Somadeva, the author of Rasaratnasamuchaya. In Aushada prakaranam this book follows the same order as in shodalanigandu. The method to prepare Rasakarapuram is described in this. The lakshanas of Dhatus, Maharasas, Uparasas, Ratnas are explained in this. The drugs like Ahiphena is mentioned in Sukrasthambana Prakaranam.

Write short notes on palakapya

Palakapya is the most famous book among all these. This book is written by Palakapya and it has four stana. Maharogastana

1. Kshudraroga stana
2. Salya stana
3. Uttara Stana

The first chapter of Plakapya is presented as the advice of Rishi Palakapyan to the king Romapada. The book says that the cause of diseases in elephants is mainly due to loss of natural habitat.

Maharoga stana deals with Abyanga therapy, bathing and nourishing foods for elephants. The cause of diseases like pandu, anaha, moorcha, siroabithapam, padarogam, and special type of jwara 'pakala' is mentioned.

In Kshudraroga stana there are 72 chapters and it contains explanation about diseases like vomiting, Madanajaganda roga, over exertion, improper food, different Karnaroga, 12 types of skin diseases and various types of poisons which can affect elephants.

In salya stana, there are 34 chapters. Treatment for various types of Vrnas (Ulcers) management of pregnant conditions of elephant, management of fracture, treatment of moodagarba etc are explained

In uttara stana, there are 36 chapters Vastividhi snehapanam, nasyam anjana vidhi, diet regimens, etc ritu charya, Pathya apathyam, Jalukaprayogam, (leech therapy) This subject is also mentioned in Agnipuranam, Kaudilyas Arthyastra and in Kanmandaki's Neethisaram. The book written by Sayanan named Subhasita Sudhanidhi has 2 chapters deals with Gaja and Aswa. From Atharvavedam, some explanation about the treatment of animals is obtained worm problem in cattles and the treatment for different diseases is described in it. So it is understood that during very ancient time itself treatment for animals was well developed.

Explain Ayurveda in Ramayana

Ramayana written by Maharshi Valmiki is the first epic in Indian literature. This is also considered as one among the oldest epics in World literature. The story of Lord Rama is narrated in Bala, Ayodhya, Aranya, Kiskindha, Sundara and Yuddha kandas. It contains many references about Ayurveda, some of which are the following:

1. According to Indian literature, Oil (tailam) and Honey (madhu) were used as preservatives. As per Ramayana, the dead body of King Dasaratha was kept in Tailadroni for eight days without decay till the arrival of Bharatha.

2. Ramayana mentions about several medicinal trees in different contexts. They are Kutaja, Arjuna, Kadamba, Sarjaneem, Saptachadha, Asoka, Asana, Saptaparni, Kovidara etc.
3. In Yuddha kanda, the chapter Aushoudhi Parvathanayana describes many medicinal plants that are found in mountains. They are Mruthasanjeevani, Visalyakarani, Saavarnyakarani, Santhanakarani etc.

*"Mruthasanjeevanichaiva visalyakaranimapi*

*Saavarnykaranichaiva santhanakarani thatha*

Tha: sarva hanuman grihya kshipramaganthumarhasi" (Yuddha kanda)

4. Ramayana mentions about the changes that occur to the human body on death. In the war of Ramayana, when Lakshmana got hurt and became unconscious, Rama thought that he was dead. On an examination of his body, Sushena vaidya, on the strength of certain evidences proclaimed that he was alive.

*"Nahyasya vikrutham vakthram na cha syamathwamagatham*

*Supthaya cha prasannam cha muramasya nireekshyatham*

*Padmapathralouhasthou saprasannae cha lochane*

*Nedrisham drishyathe roopam gathasoonam visamyathe"*

(Yuddha kanda)

His face has not changed, it has not turned black, and it has not lost its complexion. It is still glowing, it looks lively and cheerful. His eyes are bright and clear. His hands resemble a red lotus. These are not the features of a dead person. Hence Lakshmana is alive.

5. It is in Ramayana that physicians were referred to as 'Vaidya' for the first time. Before Ramayana physicians were referred to as 'Bhishak' in Vedic literature.

6. When Rama left for the jungle, his mother Kausalya tied Visalyakarani plant on his wrist to ward off all evil forces and protect him from dangers.
7. Ramayana describes about Salyachikitsa in Bala kanda. When Indra lost his potency, Aswinikumaras replaced his genitals with that of a mesha (sheep)
8. There are references about the Paana bhumi of Ravana in Ramayana. A wide variety of asavas like Pushpasava, Balasava, Madhvikasava etc. are discussed in detail.

All the instances mentioned above in Ramayana amply prove the dependence and usage of Ayurvedic medicine, for treatment and prevention of diseases during the period of Rama.

Write about the contents of Susruta samhita

A work comprehending the surgical traditions of Indian medicine ascribing to the sage Susruta, the original of which may have been composed around 600 B.C. or before 1000 B.C. It was one of the four treatise regarded as the source books for the branch of surgery and for the all the later surgical works in India.

The present Susrutasamhita has three layers, the original treatise by the elder Susruta (Vruddha Susruta) the later another And the still later additions and amendments by Nagarjuna. But it is impossible to segregate them in the present corps of susruta samhita. How ever the last part (Uttarathantra) which is in the form of supplementary section is decidedly a later addition.

The present susruta samhita consist of 6 sthanas and 186 chapters but it was obvious that the original samhita consisted only of 5 books and 120 chapters. While the 5 sthanas deal almost extensively with surgery, the last sthana is assigned to deal briefly with the other 6 branches of Ayurveda (Salakyatantra, Kaumaratantra, Kayatantra, Bhutatantra, Rasayana and Vajikarana) leaving out toxicology Agadatantra.

Sutrasthana (46 chapters) deals with preliminary matters concerning medical study. It provides the frame work of surgery as the focal theme of work. Surgical instruments are described and instruments regarding operations are given. Diseases are classified and prognostic details are mentioned. Drugs are classified and their curative merits (emetics, purgative) etc. is specified.

Nidanasthana (40 Chapters) - The causes and symptoms of various diseases are described. Diseases of the nervous system, hemorrhoids, calculus in bladder, fistula in-anus abdominal tumours, enlargement of glands & diseases of mouth etc are explained.

Sarirasthana (10) chapters is mainly devoted to anatomy and physiology. Vital parts of the body (Marmasthana) the vascular system, Vine section, Management of pregnancy and handling of children have been explained.

Chikitsa sthana 40 chapters is an elaborate account of therapeutics in various diseases. Ulcers, wounds, haemorrhoids and fracture are dealt with Preventive medicine is considered next followed by prescriptions of standard formulae. Rejuvenation and virilification are also dealt with here.

Kalpasthana (8 chapters) deals with vegetables, animal and mineral poisons. It opens with possible food poisons and goes on to deal with snake bites, bites of other animal like rats, dogs etc. Treatment and drugs are also described.

Uttarasthana, that is voluminous (66 chapters) is now regarded as 6<sup>th</sup> sthana. In the first division (26 chapters) pertaining to salakya, 19 chapters deal with diseases of the eye and their treatment. The next 2 chapters are devoted to the disease of the ears. The next three, to the diseases of the nose and the last two to the diseases of the head.

Twelve chapters about pediatrics, 21 chapters related with general therapeutics, three chapters deal with insanity and epilepsy with reference to supernatural aetiology and the final division of the section with four chapters is general

in nature dealing with the six tastes, principles of hygiene, medical terminology and the abnormal operations of the dosas.

The Susrutasamhita is remarkable in many respects. As many as 76 kinds of eye diseases are described of which 51 are regarded as cases for ophthalmic surgery. The work describes 101 blunt instruments (yantras) and 20 sharp instruments (sasthram) suitable for surgery. As many as 300 surgical operations are considered here. The amputation of limbs, setting of fractures, treatment of splenic enlargement, removal of fistulas and hemorrhoids, reduction of hernia, and obstetric manipulation are some of the surgical problems that have been attended to. The work describes 12 kinds of leeches 16 of which are poisonous for purposes of blood letting.

Explain briefly the contents of Ashtangasamgraha.

A voluminous and comprehensive medical treatise, included in the Brihatrayi of Indian medicine, Ashtangasamgraha deals with all eight branches of Ayurveda. The Ashtanga is divided into 150 chapters with 6 sthanas.

1.	Sutrasthana	40
2.	Sareerasthana	12
3.	Nidanasthana	16
4.	Chikitsasthana	24
5.	Kalpasthana	8
6.	Uttarasthana	50
		150

The subject dealing with health, long life, food seasonal requirements, daily conduct, personal hygiene, the nature classification of drugs, the importance of taste (Rasa) the doshas, the therapeutic procedures, surgical operations and blood – letting by leeches.

Sareeram treats of human anatomy, pregnancy, difficult labour, complications, classification of individuals and prognostic signs (Arista Vijnanam.)



Nidanasthanam deals with pathology and diagnosis. Several diseases like Jvara, Raktapitta, swasa, Yakshma, Madatyaya, Arsas, Atisara, Prameha, Vidhradhi, Udara, Pandu, Kusta, and Vata vyadhi are considered in detail with regard to their pathological conditions.

Chikitsasthana elaborates the treatment procedures for the diseases dealt with in the previous book.

Kalpasthanam deals mainly with emesis (Vamana) and purgation (Virechana). Complications of Basti are also considered. The last chapter called dravyakalpa describes the suitable drugs and the manner of their collections.

Uttarasthanam is the most elaborate one. Diseases of children, treatment of insanity and epilepsy, diseases of eye, ear, nose, mouth and head, toxicology, rejuvenation, aphrodisiacs are treated in this book, thus covering the 6 divisions which are not dealt with in the rest of the work.

The work is a compilation of information, explanations and prescriptions to be found in Charaka samhita and Susruta samhita. But the value of the work is undoubtedly great, for it has neatly collected the essential details from the 2 classics. The author has prepared this treatise without irrelevant matter, unnecessary elaboration, repetition, and other defects. The main frame of reference is treatment of diseases and Ashtanga Samgraha does not seek to justify the medical science with philosophical assumption as Charaka samhita and Susruta samhita do.

Explain Ayurveda in Jain literature

There were twenty-four theerthakaras (saints) in the religion Jainism. From very old times, there has been a long tradition of theerthakaras in Jain religion. Rishabhdev is considered to be the first theerthakara in this tradition. Vardhaman or Mahavira is supposed to be twenty-fourth and the last theerthakara of this series. His period is reckoned to be during the 6<sup>th</sup> century B.C (540 B.C- 467 B.C). The first twenty-two saints belonged to the pre-historic period.

Texts about Ayurveda are found in Jain scriptures. These describe Ayurveda as Pranavayu. The discourses of Jainacharyas are classified under 12 chapters in Dwaadashanga. According to Rajavartika, 1) Kayachikitsa and other branches are described 2) Methods for Bhootha santhi by mantras etc 3) Yogic methods to control Vayu etc are explained.

In Pranavaya, there is a grantha called Kalyanakaraka, written by Ugradityacharya in 8<sup>th</sup> century A.D. during the period of King Amogavarsha of Chalukya vamsa in Andrapradesh. He was proficient in both religious and scientific literature. He strongly deprecated the use of Mamsa, Maduya and Madhu both as food and medicine.

Kalyanakaraka contains 26 chapters of which the first 7 chapters deal with topics of Sutrastana, 8 to 18 chapters with lakshana and chikitsa of rogas, 19 to 25<sup>th</sup> with topics of sareera, kalpa, Agada, Rasayanatantra and the last dealing with Arishta lakshna. Classification of diseases in accordance with Tridosha are also mentioned. Kalyanakaraka is considered as one of the authoritative works on medicine among Jain literature.

In Jain literature, 8 branches of Ayurveda is described and gave importance to Vaidya, Rogi, Oushadi, Paricharaka. Mantras and salya chikitsa are also explained. Vaidya's were called Pranacharya in Jain literature.

Write about Ayurveda in Buddha literature

Ayurveda is the name that the ancient Indians gave to their science of medicine. It is surprising to note that Buddhist literature, belonging to Tripitaka, does not mention the word Ayurveda. This may be because the word Ayurveda is not mentioned in the Vedic literature also every branch of Ayurveda is mentioned in Suttapitaka. The old Indian Medical science is come across by the name Tikiccha. The King Milinda is said to have been well versed in medical science or Tikiccha in the university of Taksila. We can see the existence of the branches of Ayurveda in the Tripitaka. Five branches of Ayurveda are mentioned in Dhiganikaya of Suttapitaka. They are

- 1) Vassakamma or Vajikarana
- 2) Salakiya or Salakya tantra
- 3) Sallakattiya or Salya tantra
- 4) Mullabhesajjanan anuppadanan or Kayachikitsa.

Bhutavijja or Bhutavidya and Visavijja or Vishavidya are also mentioned. Geriatrics or rasayana has not been imparted in the literature of Buddhism because the main goal of the life of a Buddhist monk or bhikshu was to attain emancipation during their lifetime and there was no need of prolonging life. Like other literature, Buddhist literature also possesses the esoteric material of medical science. The source material of present work is the whole Tripitaka literature.

The onset of Buddhist literature is considered to be after the demise of Lord Buddha and occurred in 544 B.C. Like other literature of Indian culture, initially Buddha literature was also preserved in oral form and took the form of script in 29 B.C. The tripitaka of Buddhist literature was composed in pali. Tripitakas consist of:

- 1) Vinayapitaka that deal with the rules of monastic order.
- 2) Suttapitaka that deal the ethical principles of Buddhist teachings.
- 3) Abhidammapiṭaka that deals with the metaphysical principles underlying the doctrine

In Buddhist literature 435 medicinal plants, metals like gold, minerals like red arsenic, and eight causes for the origin of diseases are explained.

Write short notes on Bhattara Harichandra:

Bhattara Harichandra (4<sup>th</sup> – 5<sup>th</sup> A.D.) was the court physician of King Sahasanka. He was a great scholar both in literature and medicine and was acclaimed by one and all. The great poet Bana has mentioned his name respectfully. His commentary on Charaka samhita called 'Charaka Nyasa' is one of the earliest known commentaries on this treatise. This is not fully available presently, only a few chapters are found in manuscript form at The Oriental Library at Chennai. As stated by Indu, he is also credited with redacting 'Kharanada samhita'.

Write short notes on Chakrapanidutta.

He was a famous commentator, compiler and physician. Chakrapanidutta occupies an enviable position on account of his valuable contributions to Ayurveda literature. His monumental works include

1. Commentaries on Charaka samhita and Susrutha samhita
2. Chikitsasara samgraha, a compilation work on Kayachikitsa.
3. Dravyaguna samgraha
4. Two lexicons of Ayurveda drugs.

Ayurveda Deepika his commentary on charaka samhita is considered an authoritative one on this great treatise. This scholarly commentary won for him the title 'Charaka Chaturanan'. Ayurveda deepika is the only commentary of antiquity available to us in its entirety.

'Bhanumathi' his commentary on susruthasamhita is another great work, where in chakrapani has shown himself equally conversant with surgical knowledge. This has given him the title susruthasahasranayanan unfortunately this book is not available today except a few passages quoted by later authors.

'Chikitsasarasangraha' also known popularly as 'Chakradatta' is a compilation of great merit. He has collected and arranged the treatment of diseases according to Madhavanidana. He has described very effective medicine for all diseases and the medicines are of both vegetable and mineral origin. Modelled on the earlier work of Vrindas siddhayoga, chakradatta has still remained a good guide to practitioners.

Dravyaguna samgraha deals with the properties of all the drugs mentioned in the Brihatrayi, especially those that are used as articles of food.

Write short notes on Gangadhara Roy

He was the Son of Bhavaniprasad Roy and important personality of the 19<sup>th</sup> century Bengal. He was a voluminous writer and has to his credit nearly a dozen outstanding books on Ayurveda. The foremost among his Ayurvedic works is his

commentary 'Jalpalkpataru' on charakasamhita. In this he has discussed many disputed points of the original treatise, comparing the merits of various views held by scholars from the earliest times.

His chief works are :-

1. Paribasha
2. Bhaishajya Ramayana
3. Agneya Ayurveda Vyakhya
4. Rajavallabhiya Dravyaguna vritti
5. Prayogachandraodaya
6. Nadi pareeksha
7. Mrityunjaya Samhita
8. Ayurveda samgraha
9. Bhaskarodayam
10. Arogyasthothram

Gangadhara Roy (19<sup>th</sup> century A.D)

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15. Prayogachandraodaya
16. Nadi pareeksha

- |                         |                       |
|-------------------------|-----------------------|
| 17. Mrityunjaya Samhita | 18. Ayurveda samgraha |
| 19. Bhaskarodayam       | 20. Arogyasthothram   |

Write short notes on Bhaskara govinda ganekar

He hails from satara district of Maharashtra. He joined the Banaras Hindu University Ayurveda college as professor of surgery & earnt a name as a scholar. He devoted all his time for writing and teaching. He has written commentaries for susruta – sootram, sareeram and Nidana sthanam. His translation of susruta samhita especially of sareerasthana is considered as a great one where in he has substantiated the pride of the place susruta in Anatomical Knowledge.

Write short notes on Milindapanho

This work has its origins in northwest India about 2<sup>nd</sup> century B.C. and was probably written in Sanskrit or any north Indian dialect. The original text is lost and the present work is in pali translation of the original. The work captures the conversation between the Greek king Milinda (Menander) and Nagasena centered on the myriad problems and disputed points in Buddhism. The king Milinda is said to have been well versed in medical science or tikiccha. It mentions about Narada, Dhanwanthari, Angeeras, Kapila who were all well versed in Ayurvedic science. This describes twenty-five weaknesses of mind like sadness, anger, enmity, jealousy etc. Mature and premature death are explained. This also explains panchamahabhoota and tridosha. Milindapanho is the only work that defines dream. Dream is a suggestion that comes across the mind. Many medical references are seen in this book

Write about Ayurveda in Kautilya's Arthasastra.

Kautilya's Artha Sastra is a valuable document of cultural data including status of medicine and physicians. Some opine that Kautilya is the minister of Chandragupta Maurya (321-297 B.C) and place him as his contemporary while some others fix his date as 3<sup>rd</sup> century A.D.

The chikitsaka (physician) had a very important place and enjoyed high royal privilege. He received free land from the state and his salary was two thousand

panas while that for astrologer was one half of this physicians. He also accompanied the military expedition duly equipped with surgical and other instruments, remedies for poisons, ornaments and dressing materials.

There was strict control on medical profession. In diseases like leprosy and insanity physicians certificate was honoured. At the same time, severe punishment was awarded in case of carelessness, suppression of facts and administration of adulterated or substituted drugs use of poison to kill enemies was common. Formulations having narcotic poison was known as 'Madana Rasayoga'. The test of poison on animals and fire is described.

There was punishment for inducing abortion. In the chapter on 'secretmeans' a number of diseases are mentioned such as Kushta, Unmada, Prameha, Shosha, Vishuchika and Jwara.

The concept of 'balanced diet' by the terms 'sarvagraha' (total quantity) and parigraha, (quantity of individual items) is already in Ayurveda. The Arthasastra described it as Aryabhakta (ideal diet). 100 different varieties of plants are mentioned, cultivation of plants was also encouraged.

Among inorganic substances, metal (Dhatu) ores (rasa-dhatu) are mentioned. Musa (crucibles) were used in metallurgical processes. There was one Lohadyaksha (Superintendent of basic metals) treating metals and their alloys other than gold and silver. Though Hingula (Cinnabar) a natural compound of mercury was in use, mercury itself is not mentioned in the Arthasasthra.

Arthasastra, introduced a new unit of weight known as Dharana. It also prescribed weights, made of iron or stone obtained from Magadha or Mekhala.

In the last chapter 32 Tantrayuktis are described. An important contribution of Arthasastra is Aashumrtaka – pariksha (post mortem examination) by which the causes of health such as hanging, drowning, poisoning etc. were determined.

On the basis of parallelism between the Arthashastra and the Susruta-samhita, it can be said that the redactor of the latter has followed the former. The tantrayukti's are in the uttaratantra which are later additions and are probably based on those in the Athashastra.

#### Dhanwanthari Sampradaya

According to Susruta, the knowledge of life (Ayurveda) from Brahma came to Dhanvantari (Divodasa) through Prajapati, Aswins and Indra.

Dhavantari had got many disciples namely Susruta, Aupadhenava Vaitarna, Pauskalavata, Bhoja, Karavirya, Kankayana Galava, etc. They learned Ayurveda from Dhanvantari with surgical importance. Each of them made their own samhitas. This Chikitsa Shakha also called Dhanvantari Sampradaya.

#### Agnivesa

The Acharya is considered to be the authority of Agnivesa Samhita which was redacted by Caraka and known as Caraka Samhita. Agnivesa was one among the brilliant and smart disciple of Atreya and it was he who prepared the first treatise out of his teacher's lecture notes. Susruta Samhita counts him first among the authorities in therapeutics. He learned medicine from Atreya and nourished the Atreyan tradition of general therapeutics or kaya cikitsa, One more compilation made by Agnivesa namely Anjananidhana is not at all mentioned by any commentator. It contains 235 slogans and deals with the diseases of eye. Acharya Vagbhata quoted some of the poems from this to his work, Ashtanga Hridaya.

Hippocrates :- Hippocrates considered as the father of modern medicine. He was born in a place called Cos in Greece in B.C. 460 as the son of Heraclides. Heraclides was a monk in the temple at Aesculapius. Hippocrates studied medicine from his father Heraclidus. Another opinion is that his teacher was Herodicus.

Hippocrates left his native place in his young age itself. Unfortunately, his library was burnt and he left his native place in an ambition to enrich his knowledge.



He was a famous physician even when he was very young. N B.C. 430 kings of Marsidonia and Persia invited him to their countries to treat for the plague epidemic. Hippocrates passed away in his 83<sup>rd</sup> age. Plato and Aristotle has written about Hippocrates in their books.

Modern medical men claims that modern medicine has evolved from Greece but ancient Greek people, Egyptian and Arabics admit that they have collected medical knowledge from Hindus.

According to Hippocrates, Susruta has studied medicine from Greek people, but it is a very false opinion because even centuries before Hippocrate birth, Vedas have given medical knowledge to us.

Galen has an opinion that Hippocrates has written all his book before B.C. 427 and 400 B.C. The group of books which he has written within a period of B.C.450 and 350 B.C are grouped together to the name as Hippocrates Corpus. There are 70 books in this group, these books are concerned with diseases and treatment. He says that mantras and religious ceremonies have no effect on diseases. Hippocraters said that epilepsy is not related to God. He tried to save medical knowledge from myths, blind believes and philosophy. Four books of Hippocrates corps are the most important.

1. The aphorisms (formulas)
2. The prognostics
3. The regiments in acute diseases
4. Monograph on wounds in the head.

Books of Hippocrates were more popular in Europe than Greece. Books got also popularity in Arabia, Barcelona etc. Hippocrats has written a book about relation of health to water, air and land. He has believed that disease is cured when the natural temperature of the body destroys the cause of the disease. Hippocrates oath is the oath taken by medical students before they start medical profession. It begins like " I take oath in the name of Apollo and Aesculapius". His treatments was

based on the theory of four humours which was very similar to Ayurveda's tridosha theory. The four humours are blood, Phlegm (Plasma), yellow bile (Pittu) and black bile (Vata). His treatment was based not only in curing disease but also to increase the immunity power. He gave importance to regiments and fasting during treatment. He tried to prevent diseases like Malaria, Coryza (Common Cold) Pneumonia, etc. which were common among the people of those days

Humour Theory :- Raktham, Kapham, Peeha Pitham, Krishnapitham together in the body in a state of equilibrium maintains health. Any changes in the above equilibrium may lead to diseases. This principle was accepted and adopted by all in Grece. He had also mentioned about the curative factors and preventive aspects of Malaria, Common Cold, Pneumonia etc. which were common in Grece at that time. According to him an efficient doctor can predict the change in the body from the early symptom of a disease itself. Hippocrates method was to use minimum medicine to get back normal health. He has advised dietic and other routine regiments by which one can maintain good health. He had advised fasting as a treatment method and it has to be done according to the individual capacity.

The treatment method of Hippocrates is very much similar to the points explained in Ayurveda. Some western pandits say the ISM (Indian System of Medicine) had developed adopted the humor principle. This cannot be accepted because thousand of years back itself Vedas mentioned about Ayurveda, Panchamahabhua Siddhanta etc. All the aspects explained in Ayurveda are dealt in Vedic Grantha or factors collected from Vedas are arranged properly n Ayurveda. So we can conclude that Indian knowledge in due course spread to other countries and the Greek might have accepted our principles.

#### Different committees on Ayurveda

Under British rule Ayurvedic science faced serious neglect. This was noticed by Indian citizens even before Independence. So many state Governments like Madras, U.P, Mysore etc. had formed committies for the revival of Ayurveda. In all India level, some committies were formed since 1945. The details are given below.

### **Bohr Committee**

This committee was found in 1945 under the chairmanship of Bohr. The aims of the committee were to submit suggestions for the protection and revival of Ayurvedam. Bohr committee advised that state Governments should give necessary place for Ayurveda.

### **Chopra Committee**

A committee under the presidentship of Col. Ramanath Chopra was formed in 1946. Dr. Lakshmi pathi, Dr. Balakrishna Pathak, Dr. Shah, Dr. Dwaraka Nath, Acharya Yadav were the chief members of this committee. They submitted their suggestions in 1948. Their important recommendations are given below.

1. Their first suggestion was the formation of an integrated course between Ayurveda and Modern medicines. The government should take necessary steps for the formation of the textbooks for the course.
2. A common syllabus should be followed all over the India in the above integrated system.
3. Research labs should be functioned at all colleges.
4. State governments should make committees for making the textbooks for the above course.
5. State governments should make a list of qualified medical practitioners and an All India Register should be kept by the Central Government.

### **Pandit Committee**

This committee was formed under the Chairmanship of Dr. C.G Pandit. According to their suggestions, an Ayurvedic Research institute started functioning in 1952 at Jamnagar.

They suggested the importance of a unified syllabus all over India and

minimum qualification for the 5 year Ayurvedic course should be an intermediate examination pass.

### **Deva Committee**

It was formed in 1954 under the leadership of Sri. Dayasankar Thrikanji Dev. They recommended the following suggestions to the Government.

1. All the states should form medical faculties and medical boards. Faculties should look academic matters and Boards should look registration matters.
2. The salary and the status of qualified Ayurvedic and Allopathic practitioners should be equal.
3. The duration of the degree course should be 5 ½ years, and the minimum qualification for the admission should be an intermediate exam pass with science subjects.
4. Governments should make arrangements for preparing Ayurveda pharmacopia and Nighantu.
5. Necessary textbooks should be prepared under one committee.

### **Uduppa Committee**

This committee was formed by the India Government under the chairmanship of Dr. K.N Uduppa. They were asked to submit the reports about the condition of Ayurvedic research centers and about the grants that should be sanctioned for the centers etc. They submitted the following suggestions.

1. Integrated course is necessary for the betterment of Ayurveda, but these institutions where Ayurveda alone is taught can continue the same way.
2. All ayurvedic institutions should be brought under the universities..
3. Post graduate centers should be started at Benares, Pune and

Trivandrum for the benefit of Ayurveda college teachers.

4. Ayurvedic sections should be opened at all medical colleges.
5. Research Centers should be opened with qualified Ayurvedic and Allopathi graduates for research purpose.
6. A pharmacy course of Ayurveda should be started.
7. The salary of Ayurveda College teachers should be made equal with that of Allopathy.

### **Vyas Committee**

This committee was formed under the chairmanship of Dr.Mohanlal Vyas. The aim of this committee was to submit a syllabus for Ayurvedic education. Though this committee submitted for the betterment of Ayurveda, Govt started Central Council of Indian Medicine. So the institution of Maharashtra, Madras and Benarus which were following the intergrated courses were stopped. In 1971 July, BAMS degree Course approved by the Central Government with a unified syllabus started. The revised curriculam with a unified syllabus was adopted in the postgraduate centres in Benares and Jamnagar. Pest graduation in different subjects started in Kerala, Karnatka U.P and Gujarat and those who successfully completed the course were given the degree MD (Ayurveda).

### **Ashokas shilalekana**

The significance of religions victory by Ashoka is recorded through the inscription in India as well as 19 in foreign countries. From the thirteen rock writings of King Ashoka, it is evident that his message was reached countries like Serriya, Mishradesha, Masidonia, Yavanadesha, Greece, etc. It is said that Buddhism followed in foreign countries has the influence of these inscriptions. The inscriptions were symbolic, in representing the religion of India as well as the medical science. Ashoka's Empire has extended even to foreign countries. The monks of Buddhism who were deputed with the purpose of propagating the religion had the opportunity to teach and practice Ayurveda in foreign countries. The teachings were doen in local language.

In this way, Ayurveda was taught in countries like Persia, Egypt, China, Indonesia, Phillipines etc..

In the second rock inscription, it is said that Ashoka had established treatment centers for human beings as well as animals. The system of medicine of ancient India was in practice even in the surroundings countries of Greece during the period of Anthioc. The thirteenth rock writings of Ashoka mentions the name of greek kings Anthiyoc, Antegonos, Magas, Aleeka Sunder (Alexander). All these explains the spread of medicine to Greece. The incriptions installed are capable of giving information pertaining to Ayurveda like Bharatiya Vaidyaka Dravya, Chikitsa padhathi and Vaidya Grantha besides the religious aspects.

### **Medical system in ancient Egypt, Assyria and Babylonia**

It is understood from the inscription of Emperor Ashok that during the period of 273 B.C to 233 B.C the scholars of ancient India well practiced in Asyurveda connection, scholar by name Buck places his opinion in respect of mutual contact between these two countries. Even since the ancient times of invasion of Alexander. From the study of articles contributed by the scholars like Hippocrates, Dioscorides, Galan and others. It is understood that many drugs used in Indian system of medicine and many treatment methods were adopted in there. These scholars propagated Ayurveda in Mishradesa. In the book 'Ashokan' by D.K Bandarkar, says, king Thrrmaya iof Mishradesa had established Granthashala at Alexandria. He was very enthurissitic in getting the translation of ancient Indian literature in his own language.

There are some views expressed by scholar Will Durant about the medicinal systems which was prevalent in the ancient Misradesham. In counteracting the diseases, people of Mishradesa were making use of the blood of different animals, people of Mishradesa were making use of the blood of different animals, excretas of different animals etc. in the form of medicine. People of Mishradesa in those days were practicing Mantra Chikitsa. They were also worshipping a deity named 'Ra' for the purpose of eradicating some of the diseses as well as maintenance of health. It

means that the deity 'Ra' was considered as a supernatural power in respect of health and disease. It is assumed that God Rav in India is considered similar to 'Ra' deity.

The knowledge about the practices of medicine in Mishradesam is very limited to us. From the writings 'Ebirus payrrus' which dates back upto B.C 1600, some of references about different diseases and its treatment, different medicinal plants, importance of purgation etc. About 170 diseases are explained from snake-bites to T.B. some writings which explain different preventive measures against diseases are also seen.

In Assyria and Babylonia they had their own system of medicine indigenous to their own countries during those times, this is known from the manuscripts which also mentions that during the period of Hemoorvan, the emperor, diseases like Vruna (Ulcer) were treated successfully and the scholars used to receive rewards from the ruler. In case the treatment was failed, the governing body used to order for penalty against the treatment was failed, the governing body used to order for penalty against the physicians. After the demise of Hemoorvan and during the period of Asurancpalan the system of medicine achieved the highest standard but popularity of Mantra Chikitsa was lost. Babylonia is considered as the origin of medical system of Mishradesa. Evidences for the spread of Ayurvedic medicine to Babylonia, Assyria, Mishradesa, etc. is the similarity seen in between the words.

Much knowledge about Sira. Dhamani asthi, etc. Works of Hippocrates deals with very little anatomy. Keith states that the olden Greek books do not have any references about Sira, Dhamani, etc. The anatomical knowledge was achieved by the people of Greece through Mishradesha. Pandit Banerji has stated that Susruta Samhita is the only best Magadhadesa. Western countries developed small-pox vaccines only after 18<sup>th</sup> Century A.D. But Indians during the period of Dhanwanthari were using some particular methods which was something like small-pox vaccine itself.

### Anatomical dissection

Anatomical dissection was much known to Indians during the period of Susruta. During that period western countries had not developed such methods. Susruta had explained well in detail on the preservation of the body, dissection etc. Acharya has told about preparation of person for surgery (Pre-operative procedure), Different methods of surgery, preparation of surgical room, regiments, medicaments, etc, in detail. Susruta has explained around 125 surgical instruments used for surgical operations. Surgical instruments have similarity to that seen in Greece. While in books of ancient India, Babyonia, Sumaria, we can observe anatomical pictures of human body. But Greek books does not give us such pictures of human parts. Elaborated description about anatomy and surgery are not seen in Hippocrates book as that of Susruta Samhita. All this compel us to arrive in a conclusion about superiority of Indian medicine over Greek medicine in those days.

### Basarajiyam

Basavaraja is the author of Basavarajiyam, a compendium work in Sanskrit popular in South India especially Andrapradesh and Karnataka. Some details about the author are available in the work itself. He hailed from Kotturu, a Telugu desom. He describes himself as a celebrated physician. But little can be known about his precise identity, the time in which he lived. He is sometimes identified however wrongly with the famous social and religious reformers Basaveswara, or with the author of Siva-tatva-ratnakara.

### Basavarajiyam

Known as Vrusha-rajiyam in Sanskrit, this work is also called 'Basavakam' after the name of the author. This is an encyclopaedic medical work in elegant verse, composed by Kotturu sBasavarja. The work in 25 chapters has 6,400 verses dealing with all kinds of diseases, their causes, their favourable or unfavourable prognosis and their treatment.

The author mentions several important works on which this work is based. Besides the well known works of Charaka, Madhava and Vagbhata, the author has



mentioned the names of many medical works which are now lost, or the identity of which is hard to ascertain such as Bhairava kalpa, Siddha rasarnava, Bheshaja Kalpa, Devi Shastra etc.

The objective for preparing this work was to contribute to the wellbeing of the people by compiling the most acceptable recipes and ideas of all physicians. The work belongs to Agastya sampradaya or the so-called Rudra sampradaya of medicine that made an extensive of chemical and alchemical preparations. There is a wealth of information given in this work concerning medicinal treatment with several metals and minerals (lohabhasma, Rasasindura), popular among the siddha physicians. Mercury is given great importance. The medicinal value of precious stones and poisons is also considered.

Pulse examinations (Nadi-pareeksha) figure prominently in this work and the other diagnosed aids mentioned are Touch(sparsa), Appearance(Rupa) and Voice(sabda).

The work was very popular in Andrapradesh and Karnataka, especially in the former region. It was such a meticulous compilation of numerous authoritative prescriptions that the physicians acquainted with this work considered it unnecessary to study Charaka samhita, Susruta samhita and Madhava nidana. It has been printed many times often with Telugu translation.

Vrinda ma davam

Vrinda Madhavam is also known as Siddhayoga. Vrinda, its author states tht the book is modelled on the pattern as obtained in 'Rugvinischaya'. In ancient times in India, books were being indicated in the name of their author also and many times they became more popular. Siddhayoga has come to be known more popularly as Vrinda Madhavam. Fortunately this treatise is available in full and has been published.

The author: Except for giving out his name as Vrinda, the author has chosen to remain silent on informations regarding his parents, date, residence other

literary works etc. None of the later authors also has furnished any additional information.

It is said that Vrinda was his actual name, he was called Vrindakunda indicating his family and as Vrindakantha, out of reverence for his scholarship. His offerings of obeisances to Siva, Ganesa, the great sage Dhanwanthari prove that he belonged to the Hindu Brahmana family devoted to the worship of Siva. Apart from Siddhayoga no other book of Vrinda is available now.

The treatise: In the treatise, the author says that Siddhayoga has been composed with great effort by collecting from different treatise those medicinal formulae, which offer many treatments that are found to be efficacious and are hence popular.

The text is composed in the form of poetry. The total number of verses is 3700. Majority of verses are devoted to the description of medicinal formulae in 82 chapters. Among the chapters the first 68 are devoted to different diseases, the next two (69 and 70) for rejuvenation. The next nine chapters (71-79) one each for describing therapies such as Oleation (snehana), Sudation (svedana), Emesis (vamana), Purgation (virechana), Oil enema (snehavasti), Decoction enema (Niruhavasti), Smoking (Dhumapana), Nasal medication (Nasya) and Mouth gargling (Kavalagandusa). Chapter 80 describes the auspicious and inauspicious omens, dreams and fatal signs. Chapter 81 mentions briefly the qualities and function of doshas, dhatus, unwholesome foods and activities, seasonal regimens and rules of health. The last chapter mentions the qualities of therapeutics, weights and measures and other miscellaneous subjects.

In addition to the medicinal formula, different kinds of therapies needed in specific diseases are also indicated. Application of caustic alkalies (Ksharakarma), Agnikarma, Sastra karma, Blood letting (Raktamokshana), wearing of precious stones (manidharana), chanting of sacred hymns (manthrajapa) have been included as part of treatment.

Another significant feature is that all the medicinal formulae belong to the category of Sasyoushadas and none to the category of Rasoushadas. Mercury (Rasa) though mentioned, its use is limited for external application only.

### **Short notes on**

P.V.Sharma

He was born in 1920 in Bihar in a family of reputed vaidyas. His father Ramavatar Misra an eminent Ayurvedist was the founder of Bihar Provincial Ayurveda Samaj and Bihar Ayurveopakarini Mahasaba. P.V.Sarma took his A.M.S degree in Sanskrit and Hindi from the same University. After a short spell of practise he started his academic career in 1946 as Principal of the Ayurveda college Bihar. In 1953 was the head of Dept. of Dravyaguna in B.H.U. and in 1956, he was transferred to Ayurveda college Patna as Principal. In 1960 became the Deputy Director of Indian medicine in Bihar.

His scholarship in Ayurveda is of very high order. He has written books on Davyaguna vignana and sarera vignana

Humour sidhanta

Raktham, Kapham, Peeha Pitham, Krishnapitham together in the body in a state of equilibrium maintains health. Any changes in the above equilibrium may lead to diseases. This principle was accepted and adopted by all in Grece. Hipocrates mentioned about the curative factors and preventive aspects of Malaria, Common Cold, Pneumonia etc. which were common in Grece at that time. According to him an efficient doctor can predict the change in the body from the early symptom of a diseases.

### **Uduppa commtee**

This committee was formed by the India Government under the chairmanship of Dr. K.N Uduppa. They were asked to submit the reports about the condition of Ayurvedic research centers and about the grants that should be sanctioned for the centers etc. They submitted the following suggestions.

1. Integrated course is necessary for the betterment of Ayurveda, but these institutions where Ayurveda alone is taught can continue the same way.
2. All ayurvedic institutions should be brought under the universities..
3. Post graduate centers should be started at Benares, Pune and Trivandrum for the benefit of Ayurveda college teachers.
4. Ayurvedic sections should be opened at all medical colleges.
5. Research Centers should be opened with qualified Ayurvedic and Allopathi graduates for research purpose.
6. A pharmacy course of Ayurveda should be started.
7. The salary of Ayurveda College teachers should be made equal with that of Allopathy.

#### Shivadasasen

Son of Ananthasenan, hailed from a famous Vaidya family of Bengal. Ananthasena was the famous physician to Barabakshah king of Gouda. His chief works are

- a) Tatwapradeepika vyakhyanan on charakasamhita.
- b) Tatwabodha vyakhya on Ashtanga Hridaya
- c) Teeka on chikitsa sara sangraha and Dravyaguna samgraha both of Chakrapanidatta

Unfortunately his commentary on charakasamhita is available only in fragments scattered here and there and that of Ashtanga Hridaya being not available at all. The other 2 commentaries are available full.

#### Kaviraj Harana Chandra Chakravati

Son of Ananda chandra, studied Sanskrit literature for a long time and became a disciple of kaviraj Ganghadhara Roy, who wrote jalpakalpatharu, a charaka commentary to learn Ayurveda. Soon he acquired great fame, both as physician

and also as a surgeon. He performed different types of operations described in Susruta samhita and he became an expert in ophthalmic surgery. He wrote a Sanskrit commentary on susruta samhita by name "susrutartha sandeepana" , it is the latest Sanskrit sommentary on this treatise.

**K.Ragavan Thirumulpad**

He is the son of D.Narayanalyer,Srambikal madhom,born on 20thJune 1920 at chingoli,Allapuza.A rare Vaidya who combined the best of tradition and modernity ,theory and practice .He contributed significantly to the Ayurvedic literaturethrough orginal Books, commentaries and translation

**Yadavji Trivikramji Acharya**

He was born in 1881 at Porbandar in Gujarat. After his early education in Sanskrit, he along with his father migrated to Bombay. His father gave him early lessons in Ayurveda and then made over to Gowrishankara Vaidya, the famous Ayurvedic scholar of Rajastan. He became popular as a successful Ayurvedic physician and earned fame.

He felt the need for authentic editions of all the ancient works, printed neatly and sold cheap. With this idea he founded the 'Ayurveda Granthamala Trust' and began collecting all available books both manuscript and printed, scrutinized them added bibliographical references wrote introductions and published them in beautiful print through this trust. The number of books he published in this way are more than twenty five.

His hard work brought him honour and fame. He was elected president of Ayurveda Mahamandala twice and appointed as adviser by many State Governments. In appreciation of his meritorious work, Government of India appointed him as the first principal of the Postgraduate Training Center in Ayurveda in Jamnagar in 1956. But he expired with in a month of his appointment

### **Ayurveda in Atharvavedas**

In Caraka Samhita, Atreya clarifies that Ayurveda has eight Angas or branches came as the Upaveda of Atharvaveda. In Atharvaveda mantra, Bali, homa and Shantikarma are explained. It is understood from such refernces that Ayurveda has evolved from Atharvaveda. But it has its own scientific basis and now it doesnot depends much on mantras etc. Since Ayurveda has relation to Vedas, it can also be considered as fifth veda. Compared to Rigveda, Atharvaveda had an elaborte discription on medicine. We can see reference about internal organs, diseases and treatments. The use of instruments like salaka (Cathetar) in diseases of urinary track obstruction and methods to open abcess also given. We can see descriptions about 360 Asthi's and one lakh Sira Dhamani. Methods for prevention of different types of krimis and their entry in the body also given.

Jalasanam (Hydrotherapy ) and Atapa Snanam (Sun Therapy) is explained for different diseases. In Koushika Sootram of Atharvaveda mainly advises mantras and its remedial measures/ Medicine and water are potencified by spelling mantras over them and were advised for the treatment of various diseases.

Some of the medicines advised in Kousika Sootram is given below

Thailapanam - Drinking of gingely oil in Dhanurvatham

Madhupanam - Drinking of honey is Slaishmika roga

Use of Pippali in heart diseases.

Leaching for removal of vitiated blood

Rice prepared from turmeric powder in Jaundice and treatment of skin diseases.

References about Sarira Shastra

Description about nadi and Dhamani

Explanation of body parts or Sarira anga or Sarira avayavas.

Description about Kesa, Asti, Snayu, Mamsam, Majja, Sandi, Ooru, Padam, Siras, Parswam, Jihva, Greeva, Twak.

Various types of Jwara and use of Manduka in its treatment or cikitsa.

Gandamala and its various divisions.

Vitiating of Kalpha at the sight of Hridaya, Sandhi and Asthi.

In Vedas, we cannot see much references about salya thantram yet in Atharvaveda Garbhasya bedanam, Apachibedanam etc, are explained. To stop bleeding from a wound, Atharvaveda advises to tie a knot on the artery. Treatment for different eye diseases are explained. In agada Tanta poisons are classified into two :

Stavaravish and Jangamavish.

Conducting normal labour, draining pus from an abscess by using shalaka is described. Importance of fresh air and its medical value is explained.

In Aushada Vishya, usage of drugs like Syama etc in Kilasam and Palitham about Prasniparni's body nourishing action is explained. Medicinal properties of Harinasrangam in diseases like Kshayam, Apasmaram, Kushtam, etc. are given. About the action of the drug Rohini in the re-union of fracture and healing of wounds. Action of Guggulu dhoopanam in Yaksmaroga is given. Medicinal properties of Brahmmi, Pippali, Somalata etc are described in various parts of Veda.

Charaka samhita

Charaka samhita is one of the most important books among samhitas. It gives importance to Kayachikitsa. Charakasamhita is actually a redaction of Agnivesha Samhita by Charaka. After many centuries Dridabala who was a physician in Kashmir, redacted and completed Charaka samhita. So far the available Charaka samhita we cannot assure a single authorship. All the 3 acharyas Agnivesan, Charakan and Dridabala have participated equally in the creation of Charakasamhita. As the redactors have quoted their own opinion and views, Charaka samhita is not available in its root form today.

Charakasamhita came to be known as a samhita only in the period of

Guptas. Most of the chapters of this book are written as Atreya giving answers and taking decisions after hearing questions and opinions of other rishis.

Charakasamhita now available has 8 sthanas. They are suthrastanam, Nidanastanam, Vimanastanam, Sareerastanam, Indriyastanam, Kalpastanam, Sidhistanam and chikitsa stanam. Among these 17 chapters of chikitsastanam, Sidhistanam and kalpastanam are added by Dridhabala. Among the 30 chapters of suthrastanam, the first 28 chapters are divided as chathuskas.

1. . Bsheshaja chathushkam gives details about medicines and drugs.
2. Swasthya Chathushkam explains about Swasthyam & Sadvrtham
3. Nirdesha Chathushkam explains about treatments of diseases
4. Upakalpana Chathushkam deals with Snehana, Swedana, Vamana, Virechana
5. Roga Chathushkam deals with diseases.
6. Yojana Chathushkam explains about yogana vidhi (administration and various therapies).
7. The content of Annapana Chathushkams about wholesome and unwholesome foods, incompatible foods (Virudham) i.e milk and fish, Digestion of food and metabolism.

The last two chapters of Suthrastanam deals with qualities of physician etc.

Classification of drugs on the basis of treatment is the most important thing in charakasamhita. More than 2000 medicinal preparations using different plant parts and a list of 84 (single drugs) are included in this. Drugs are classified into 51 Vargas according to their particular action in the body as Bramhanan, Langhanam, Varnyam etc.,

In charakasmhita a clear description about the relation of soul to body is



seen. Descriptions about shad Dhathupurushan, Eka Dhathu Purushan, Chathurvimshathi Dhathu are seen in charakasamhita.

Subjects related to obstetrics eg. narration of Soothikagriham, Prasavam etc and about Koumarabritya (Paediatrics) embryology etc are seen in charakasamhita.

Miracles of Aswani Kumaras in treating the patient.

According to Rigveda, Nasatya & Dasra, the twin sons of Vivaswat (son) came to be known as Aswini Kumaras. They learnt Ayurveda from Daksha Prajapathi. Vedas and ancient literature described them as very good physicians. They were known as Physicians of Devalokha and were experts in Shalya Chikitsa.

Some of the notable accomplishments of Aswinikumaras were the following.

1. With the medication (Rasayana Prayogam) of Aswini Kumaras, Chyavana Maharshi regained his youthfulness at a very old age.
2. In spite of being thrown into a fiery pit & immersed in water, Deergathamas continued to live. There after his body was cut into pieces. He was given rebirth by Aswini Kumaras and lived along life.
3. Visphala, wife of King Khela, who lost her leg on the Warfront was fitted with an artificial leg made out of loha.
4. Amputated body parts of Athri etc. were joined by Aswinikumaras.
5. After replacing the head of Dadeechi Maharshi with the head of horse, and learning madhuvidya (Pranavidya), Aswinikumaras enabled Dadeechi Maharshi regain normalcy.
6. Aswinikumaras gave the power of vision to Rijwasha who was blind and the power of hearing to Narshada, who was deaf.

Many incurable diseases like kshaya, Kushta, Vandhyatha etc. were treated with a great degree of success by Aswini kumaras.

Chikitsa Saratantram, Bramagnam, Aswini Samhita, Dhathu Ratnamala and Nadinidanam are some of the notable books of Aswini Kumaras.

Ayurveda in Kautilya's Arthashastra

Kautilya's Artha Sastra is a valuable document of cultural data including status of medicine and physicians. Some opine that Kautilya is the minister of Chandragupta Maurya (321-297 B.C) and place him as his contemporary while some others fix his date as 3<sup>rd</sup> century A.D.

The chikitsaka (physician) had a very important place and enjoyed high royal privilege. He received free land from the state and his salary was two thousand panas while that for astrologer was one half of this physicians. He also accompanied the military expedition duly equipped with surgical and other instruments, remedies for poisons, ornaments and dressing materials.

There was strict control on medical profession. In diseases like leprosy and insanity physicians certificate was honoured. At the same time, severe punishment was awarded in case of carelessness, suppression of facts and administration of adulterated or substituted drugs use of poison to kill enemies was common. Formulations having narcotic poison was known as 'Madana Rasayoga'. The test of poison on animals and fire is described.

There was punishment for inducing abortion. In the chapter on 'secretmeans' a number of diseases are mentioned such as Kushta, Unmada, Prameha, Shosha, Vishuchika and Jwara.

The concept of 'balanced diet' by the terms 'sarvagraha' (total quantity) and parigraha, (quantity of individual items) is already in Ayurveda. The Arthashastra described it as Aryabhakta (ideal diet). 100 different varieties of plants are mentioned, cultivation of plants was also encouraged.

Among inorganic substances, metal (Dhatu) ores (rasa-dhatu) are mentioned. Musa (crucibles) were used in metallurgical processes. There was one

Lohadyaksha (Superintendent of basic metals) treating metals and their alloys other than gold and silver. Though Hingula (Cinnabar) a natural compound of mercury was in use, mercury itself is not mentioned in the Arthasastra.

Arthasastra, introduced a new unit of weight known as Dharana. It also prescribed weights, made of iron or stone obtained from Magadha or Mekhala.

In the last chapter 32 Tantrayuktis are described. An important contribution of Arthasastra is Aashumrtaka – pariksha (post mortem examination) by which the causes of health such as hanging, drowning, poisoning etc. were determined.

On the basis of parallelism between the Arthasastra and the Susruta-samhita, it can be said that the redactor of the latter has followed the former. The tantrayukti's are in the uttaratantra which are later additions and are probably based on those in the Athasastra.

#### Ayurveda in Ramayana

Ramayana written by Maharshi Valmiki is the first epic in Indian literature. This is also considered as one among the oldest epics in World literature. The story of Lord Rama is narrated in Bala, Ayodhya, Aranya, Kiskindha, Sundara and Yuddha kandas. It contains many references about Ayurveda, some of which are the following:

According to Indian literature, Oil (tailam) and Honey (madhu) were used as preservatives. As per Ramayana, the dead body of King Dasaratha was kept in Tailadroni for eight days without decay till the arrival of Bharatha.

Ramayana mentions about several medicinal trees in different contexts. They are Kutaja, Arjuna, Kadamba, Sarjaneem, Saptachadha, Asoka, Asana, Saptaparni, Kovidara etc.

In Yuddha kanda, the chapter Aushoudhi Parvathanayana describes many medicinal plants that are found in mountains. They are Mruthasanjeevani, Visalyakarani, Saavarnyakarani, Santhanakarani etc.

*“Mruthasanjeevanichaiva visalyakaranimapi*

*Saavarnykaranichaiva santhanakarani thatha*

Tha: sarva hanuman grihya kshipramaganthumarhasi” (Yuddha kanda)

Ramayana mentions about the changes that occur to the human body on death. In the war of Ramayana, when Lakshmana got hurt and became unconscious, Rama thought that he was dead. On an examination of his body, Sushena vaidya, on the strength of certain evidences proclaimed that he was alive.

*“Nahyasya vikrutham vakthram na cha syamathwamagatham*

*Supthaya cha prasannam cha muramasya nireekshyatham*

*Padmapathralouhasthou saprasannae cha lochane*

*Nedrisham drishyathe roopam gathasoonam visamyathe”*

(Yuddha kanda)

His face has not changed, it has not turned black, and it has not lost its complexion. It is still glowing, it looks lively and cheerful. His eyes are bright and clear. His hands resemble a red lotus. These are not the features of a dead person. Hence Lakshmana is alive.

It is in Ramayana that physicians were referred to as ‘Vaidya’ for the first time. Before Ramayana physicians were referred to as ‘Bhishak’ in Vedic literature.

When Rama left for the jungle, his mother Kausalya tied Visalyakarani plant on his wrist to ward off all evil forces and protect him from dangers.

Ramayana describes about Salyachikitsa in Bala kanda. When Indra lost his potency, Aswinikumaras replaced his genitals with that of a mesha (sheep)

There are references about the Paana bhumi of Ravana in Ramayana. A wide variety of asavas like Pushpasava, Balasava, Madhvikasava etc. are discussed in detail.

All the instances mentioned above in Ramayana amply prove the dependence and usage of Ayurvedic medicine, for treatment and prevention of diseases during the period of Rama.

Contents of Susruta samhitaThe present susruta samhita consist of 6 sthanas and 186 chapters but it was obvious that the original samhita consisted only of 5 books and 120 chapters. While the 5 sthanas deal almost extensively with surgery, the last sthana is assigned to deal briefly with the other 6 branches of Ayurveda (Salakyatantra, Kaumaratantra, Kayatantra, Bhutatantra, Rasayana and Vajikarana) leaving out toxicology Agadatantra.

Sutrasthana (46 chapters) deals with preliminary matters concerning medical study. It provides the frame work of surgery as the focal theme of work. Surgical instruments are described and instruments regarding operations are given. Diseases are classified and prognostic details are mentioned. Drugs are classified and their curative merits (emetics, purgative) etc. is specified.

Nidanasthana (40 Chapters) - The causes and symptoms of various diseases are described. Diseases of the nervous system, hemorrhoids, calculus in bladder, fistula in-anus abdominal tumours, enlargement of glands & diseases of mouth etc are explained.

Sarirasthana (10) chapters is mainly devoted to anatomy and physiology. Vital parts of the body (Marmasthana) the vascular system, Vine section, Management of pregnancy and handling of children have been explained.

Chikitsa sthana 40 chapters is an elaborate account of therapeutics in various diseases. Ulcers, wounds, haemerhoids and fracture are dealt with Preventive medicine is considered next followed by prescriptions of standard formulae. Rejuvenation and virilification are also dealt with here.

Kalpasthanas (8 chapters) deals with vegetables, animal and mineral poisons. It opens with possible food poisons and goes on to deal with snake bites, bites of

other animal like rats, dogs etc. Treatment and drugs are also described.

Uttarasthana, that is voluminous (66 chapters) is now regarded as 6<sup>th</sup> sthana. In the first division (26 chapters) pertaining to salakya, 19 chapters deal with diseases of the eye and their treatment. The next 2 chapters are devoted to the disease of the ears. The next three, to the diseases of the nose and the last two to the diseases of the head.

Twelve chapters about pediatrics, 21 chapters related with general therapeutics, three chapters deal with insanity and epilepsy with reference to supernatural aetiology and the final division of the section with four chapters is general in nature dealing with the six tastes, principles of hygiene, medical terminology and the abnormal operations of the dosas.

The Susrutasamhita is remarkable in many respects. As many as 76 kinds of eye diseases are described of which 51 are regarded as cases for ophthalmic surgery. The work describes 101 blunt instruments (yantras) and 20 sharp instruments (sasthram) suitable for surgery. As many as 300 surgical operations are considered here. The amputation of limbs, setting of fractures, treatment of splenic enlargement, removal of fistulas and hemorrhoids, reduction of hernia, and obstetric manipulation are some of the surgical problems that have been attended to. The work describes 12 kinds of leeches 16 of which are poisonous for purposes of blood letting.

### **Short notes on (3 marks each)**

Kalyanakaraka

Kalyanakaraka contains 26 chapters of which the first 7 chapters deal with topics of Sutrastana, 8 to 18 chapters with lakshana and chikitsa of rogas, 19 to 25<sup>th</sup> with topics of sareera, kalpa, Agada, Rasayanatantra and the last dealing with Arishta lakshana. Classification of diseases in accordance with Tridosha are also mentioned. Kalyanakaraka is considered as one of the authoritative works on medicine among Jain literature.

### Madhava nidanam

The books Madhavanidanam, Sharngadhara samhita and Bhavaprakasam are known as Laghuthrayis. Madhavanidana is written by Madhavacharya or Madhavakaran. It is a book which gives importance to the cause of the disease or roganidanam. It is said that Madhavanidanam is the best book dealing with Roganidanam. It is otherwise known as "Ruvinishayam". The book contain Nidanam, Lakshana, Samprathi of all the diseases. It also contain the prognosis of a disease and upadrava Vyadhi. Even though Madhavanidanam depends on Bhrihathrayi in many aspects, it gives special importance to the order of disease, their classification and description. While susruthan describes small pox among Kshudrarogas, Madhavacharya describes it separately as one chapter. Vrindan, Vangasenana and some other acharyas have followed Madhavanidanam to write their books.

### Divodasa Dhanwanthari

Divodasa Dhanwantari was the king of Kasi belonging to Chandravamsa. He was a great scholar of his time and was well versed in all branches of knowledge. He led the life of an ascetic in the midst of all royal splendour. He was proficient in Ayurveda and described himself as the incarnation of Adideva Dhanwantari, the celestial physician.

Divodasa created the city of Varanasi as per the instructions of Indra. According to Mahabharata, Divodasa was the son of Bhimsena and Yayathikanya Madhavi. After being defeated by his archrival Haiheya rajakumar in a battle, he fled Varanasi and joined the ashram of Bharadwaja. There he got a son by performing puthreshtiyajna, whom he named Prathardana.

According to Susruthasamhitha, Divodasa Dhanwntari studied Ayurveda from Indra and taught it to his disciples, Sushrutha, Oupadenava, Vaitarana, Ourabra, Paushkalavatha, Karavirya, Gopurarakshitha. All the disciples wrote samhithas, among them Susruthasamhitha became more popular. The period of Dhanwantari is between 1000-1400B.C. According to Harivamshapurana, Divodasa Dhanwantari obtained scientific and practical knowledge from Bharadwaja.

## Bhavamisran

Author of Bhavaprakasam. His father is Ladkana misran According to Dr. Julius Jolly, Bavanisran was a famous physician in Banaras. Some opines that his native place is varanasi or Kanyakubja. The botanical names of plants and medicines which are described in the book are coming close to the existing, Bihari names, So his native place is considered to be bihar. No reference s about his life time is explained in Bhavaprakasham. So his period is calculated from the following facts. 1. The contents of Bhavaprakasham is given in the same order of sarangadhara samhita.

Nighantu part of Bhavaprakashan depends on Madanapala Nigandu of A.D 1347. Ahiphenā, Banga, Parsikayavani are the drugs which give evidence for this. From this it is obvious that Bhavamisram lived after 13<sup>th</sup> century.

Syphilis(veneral disease) came to India after the arrival of Portuguese men.

The medicine prescribed for syphilis i.e chopachini Dweepantharavacha was imported to India at about 1535 A.D according to Dr. J.Jolly.

The book Vaidyajeevanam by Lolimbaraja was thought to be written in between 1608 to 1633 A.D gives narrations from Bhavaprakasha. Hand written copy of Bhavaprakasha kept in Tubinjan library in west Germany is calculated to belong to the period of A.D 1558 to 1559 from these evidences we assume that the period of Bhavamishran is in between A.D 1556 to A.D 1605 during the period of Akbar.

P.V. Sharma also says that Bhavamishran lived in the period of Mughal kings.

Dr. Henry R. Zimmer in his book 'Hindu Medicine' says that Bhavamisram lived in a period very near to A.D 1550.

Dr. A.R.F Hoernle's opinion is also same which confirms Bhavamishran



lived in 16<sup>th</sup> Century. Bhavaprakashan was written before Rajnighendu which was formed in 17<sup>th</sup> century.

Atreya parampara -m According to Charaka Samhita.

Bharadwaja learned Ayurveda from Indra. He also mentioned the story how Bharadwaja learned Ayurveda from Indra. At the end of Krita Yugas, people were effected with various types of diseases because of changes in lifestyle, improper food, air and water pollution. Out of these conditions, Maharsis like Kasyapa, Athreya etc. gathered together at the Himalayan valley to discuss about the diseases. Maharsis participated were Angeeras, Jamadagni, Vasishtan, Kasyapan, Athreyan, Gauthaman, Vamadevan, Markandeyan, Agastian, Sankyan, Naradan, Bharadwajan, Bhikshurathreyan, Vishwamithran, Chyavanana, Abijith. They discussed many things to solve the problems affecting Ayus. At last, they decided one of them would have to learn Ayurveda from Indra. Bharadwaja himself came forward and he was sent to learn Ayurveda, from Indra. From Bharadwaja, Atreya got the knowledge of Ayurveda who in turn passed his knowledge to his disciples, Agnivesa, Bhela Jatukarna, Parasara, Harita, Ksarapani. Each of them made their own samhitas. They gave importance to Kayachikitsa later this chikitsa Shakha was famous as 'Athreya Sampradaya' or 'Kayachikita Shaka'

Bower manuscript

This invaluable piece of medical literature of India has an interesting story of its own. Two turks, residents of Kuchar, in eastern Turkistan thinking that a big treasure was hidden underground beneath the stupa dug it out in February 1890. Instead of a treasure, they found an old manuscript written on birch bark. The Turks took the manuscript to Major General H, Bower, who sensed its high value and bought it from them. . In the absence of the name of the author for the work, it has come to be known as 'Bower manuscript'. The entire manuscript is not a single unit, but is a collection of seven separate manuscripts. The first part of the manuscript opens with Lasuma kalpa, then followed by rasayana vajikarana, anjana etc. The second part is called Navanithaka is a book of prescriptions almost the whole range of

internal medicines. The third part is similar to part 2<sup>nd</sup>. The fourth and fifth part deal with the art of fortune telling. The last two parts are full of charms and invocations intended to cure a snakebite and as a protection against many evils.

#### Bhela samhita

Bhela was one among the disciples of punarvasu Athreya who composed Bhela samhitha . Vagbata and Kasyapa have made references about Bhela in their Books. Bhela samhitha is not available in its complete form presently. There has been 3 publications of Bhela samhitha The Book was first published in 1921 by the University of Calcutta based on Telugu scripts Bhela samhitha found in the royal library of Tanjore.

The text of Bhela samhitha , like Charaka samhitha is divided in to many chapters. But in the beginin and towards the end certain chapters are found missing. There are 8divisions and 120 chapters in Bhela samhitha. Out of these only 106 chapters are found in the presentavailable .With regard to certain matters, striking similarities were found inBhela samhitha and charaka samhitha.Since the language used and subjects analysed in caraka samhitha are found much beter and more meaningful ,it enjoys wider ppopularity than Bhela samhitha. Bhela samhitha deals more prominently in Kaya chikitsa but there are references about Salya chikitsa also Afew scholars opine Bheka samhitha and Bhaluki tantra are the same. This is doubtful because Bhaluki Tantra deals with Salya chikitsa and Bhela samhitha deals mainly with Kaya chikitsa.

#### Dridabala

Dridabala son of Kapilakala was born at Pancanadapura. He was a devotee of Shiva and by his grace completed the charakasamhitha which was then incomplete by its one-third portion. Drdhabala added to it 17 chapters of chikitsa sthana along with entire Kalpa & Siddhi sthanas.

#### Date of Drdhabala

Drdhabala's father Kapilabala has been quoted in the Ashtanga samgraha

of Vagbhata which is the work of 6<sup>th</sup> century A.D. As by that time he was quite renowned, he must have lived one or two centuries earlier.

Drdhabala's contribution

It is difficult to analyse the actual contribution of Drdhabala and the extent of his redaction, in the present Charaka Samhita Drdhabala completed the text by reconstructing the one-third portion which has lost and not available then. Apart from reconstructing the lost portion on the basis of other available texts, he probably retouched the entire text and made additions and alterations here and there.

There is some controversy as to which 17 chapters go to the authorship of Drdhabala because there is difference in the order of the chapters in different editions. The Bengal edition and Bombay edition have two different orders. The Bombay tradition is supported by commentators and as such is generally accepted. According to this 13 chapters revised by Charaka are 1-8 & those on Arsa, Atisara, Visarpa, Madatyaya and Dvivraniya. (14,19,21,24,25 of Bombay edition) The 17 chapters include the chapters on Unmada, Apasmara, Ksatiksina, Sotha, Udara, Grahani, Pandu, Svasa, Kasa, Chardi, Trsna, Visa, Trimarmiya, urustambha, vatavyadhi, vatasonita and yonivyapat.

Three historical layers may be distinctly analysed in Charaka Samhita as follows :

1. Atreya Agnivesa – 1000 B.C (original composition)
2. Charaka 1<sup>st</sup> century A.D (Revision and Enlargement)
3. Drdhabala – 4<sup>th</sup> century A.D (Restoration and Redaction)

Period :Almost all the scholars are unanimous about the date (4<sup>th</sup> century A.D) of Drdhabala. This period of the Indian history is known as Gupta period which is regarded as the golden age because of the renaissance of Indian culture and development of Indian sciences.

The reference of the recitation of the Vishusahasranamam in fever

(Charaka Samhita, Chikitsastana) seems to have been introduced during this period. Bhela does not mention this culture, he has prescribed the worship of Siva. Charaka also states with the same in the preceding verse and mentions Brahma, Aswins, Indra etc in the following verse, thus it can be concluded that this verse is added by Drdhabala.

### Hippocrates

Hippocrates considered as the father of modern medicine. He was born in a place called Cos in Greece in B.C. 460 as the son of Heraclides. Heraclides was a monk in the temple at Aesculapius. Hippocrates studied medicine from his father Heraclides. Another opinion is that his teacher was Herodicus

Hippocrates left his native place in his young age itself. Unfortunately, his library was burnt and he left his native place in an ambition to enrich his knowledge. He was a famous physician even when he was very young. In B.C. 430 kings of Macedonia and Persia invited him to their countries to treat for the plague epidemic. Hippocrates passed away in his 83<sup>rd</sup> age. Plato and Aristotle has written about Hippocrates in their books.

Modern medical men claim that modern medicine has evolved from Greece but ancient Greek people, Egyptian and Arabics admit that they have collected medical knowledge from Hindus.

According to Hippocrates, Susruta has studied medicine from Greek people, but it is a very false opinion because even centuries before Hippocrates birth, Vedas have given medical knowledge to us.

Galen has an opinion that Hippocrates has written all his book before B.C. 427 and 400 B.C. The group of books which he has written within a period of B.C.450 and 350 B.C are grouped together to the name as Hippocrates Corpus. There are 70 books in this group, these books are concerned with diseases and treatment. He says that mantras and religious ceremonies have no effect on diseases.

Hippocrates said that epilepsy is not related to God. He tried to save medical knowledge from myths, blind beliefs and philosophy. Four books of Hippocrates are the most important.

1. The aphorisms (formulas)
2. The prognostics
3. The regimens in acute diseases
4. Monograph on wounds in the head.

Books of Hippocrates were more popular in Europe than Greece. Books got also popularity in Arabia, Barcelona etc. Hippocrates has written a book about relation of health to water, air and land. He has believed that disease is cured when the natural temperature of the body destroys the cause of the disease. Hippocrates oath is the oath taken by medical students before they start medical profession. It begins like " I take oath in the name of Apollo and Aesculapius". His treatments were based on the theory of four humours which was very similar to Ayurveda's tridosha theory. The four humours are blood, Phlegm (Plasma), yellow bile (Pittu) and black bile (Vata). His treatment was based not only in curing disease but also to increase the immunity power. He gave importance to regimens and fasting during treatment. He tried to prevent diseases like Malaria, Coryza (Common Cold) Pneumonia, etc. which were common among the people of those days.

Humour Theory :- Raktham, Kapham, Peeha Pitham, Krishnapitham together in the body in a state of equilibrium maintains health. Any changes in the above equilibrium may lead to diseases. This principle was accepted and adopted by all in Greece. He had also mentioned about the curative factors and preventive aspects of Malaria, Common Cold, Pneumonia etc. which were common in Greece at that time. According to him an efficient doctor can predict the change in the body from the early symptom of a disease itself.

Hippocrates method was to use minimum medicine to get back normal health. He has advised dietic and other routine regimens by which one can maintain

good health. He had advised fasting as a treatment method and it has to be done according to the individual capacity.

The treatment method of Hippocrates is very much similar to the points explained in Ayurveda. Some western pandits say the ISM (Indian System of Medicine) had developed adopted the humor principle. This cannot be accepted because thousand of years back itself Vedas mentioned about Ayurveda, Panchamahabhua Siddhanta etc. All the aspects explained in Ayurveda are dealt in Vedic Grantha or factors collected from Vedas are arranged properly n Ayurveda. So we can conclude that Indian knowledge in due course spread to other countries and the Greek might have accepted our principles.

### **Progress of Ayurveda through Research**

We can see that Ayurveda attained maximum glory at the time of samhitas. But after samhita period, its glory gradually declined. Repeated war between kings, improper Research in Ayurveda care of written articles, foreign invasion etc are some of the causes that badly affected the development of Ayurveda. Also the para sciences of Ayurveda like Tharka, Vyakarana, Sasthra, Jyothisha etc. salso faced crisis. All these made challenges for the existence of Ayurveda's first place in healing.

The wholistic approach of Ayurveda (considering body, mind etc) and helping the body in curing and not forming new diseases impressed even the people of this era. So there existed a need for research to expose the elegance of ayurvedic science to the people of new generation.

After the independence so many attempts were made for the research in the Ayurveda sponsored by different state governments. But all these works lack coordination. This problem was so lived with the formation of Indian Council of Medical Research, (ICMR) in 1962. Government formed an autonomous body namely 'Central Council of Research in Indian Medicine and Homeopathy (CCRIMM) in 1969. Their aims are:-

1. To promote Ayurvedic Research
2. To run Ayurvedic research centres.
3. Co-ordination of the work in research centres
4. Promote research in other medical systems like Sidha, Unani, Yoga and Homeopathy.

In 1970 the composite drug research scheme conducted by ICMR Indian council of medical research was brought under Central Council of Research in Indian Medicine and Hemeopathy (CCRIMH). Later it was divided. Among them, one was Central Council for Research in Ayurveda & Sidha. They conducted many research centres all over India. Their research is based mainly on following topics.

#### Identification of drugs (dravya nirnayam)

In olden days, plants were indentified by its name like Neelapushpi, sadaphala etc. Naturally different plants with different regional names came to be known with the same description. This made different opinions with a single plant. So in this section controversial drugs are studied and their botanical name and properties are analysed for overcoming the dispute.

#### Survey of Medicinal plants study

By this survey a detailed list of different medicinal plants available in different regions of the country are charted. Also it gives us information about the season for collection of flowers, fruits etc. They had also conducted studies about the best region for growing the medicinal plants and causes for the destruction of the extinct plants.

By means of structural and chemical studies of different Ayurveda medicines, measures to check adulteration in Ayurvedic medicine is studied by the research centers all over India.

#### Pharmacological studies

With the help of modern technology the action of different drugs in the

body are studied in this topic. Modes of action of a drug, side effects, toxicity, dosage etc. are studied by the experiments conducted in different animals.

#### Drug Standardization

Standardization of medicines are done in 3 stages.

1. Standardization of raw drugs
2. Standardization of methods of manufacturing
3. Standardization of finished products.

#### Important Journals in Ayurveda:

##### Journal of Research in Ayurveda and Siddha

This is a trimonthly journal published from Delhi by the Central Council for Research in Ayurveda and Sidha (CCRAS). It contains detailed reports of clinical studies of Ayurvedic Medicines, its pharmacological analysis, standardization techniques etc. It is also helpful in conveying the results of Research studies conducted in India and abroad. It is published in English.

##### Bulletin of History of Indian Medicine.

This is published by the department of History of Medicine, Osmania Medical College under the guidance of the Central Council for Research in Ayurveda. In this research reports about the history of Indian Medicine are mainly published. Origin of ayurveda, ancient Indian medicine, Influence of Indian medicine in other countries, study of available manuscripts, surgical procedures of olden days etc. are included in this bulletins.

##### The Journal of Ethno – Botanical Research

This is another research journal published by Central Council for Research in Ayurveda (CCRA). This is a trimonthly journal which publishes the results of various researches conducted in the field of Dravyagunavijnana.

Habitat of different medicinal plants, collection of medicinal parts,



preservation of medicinal plants, knowledge about different tribal medicines etc. is included in this. It also contain research studies about the available tribal medicines.

#### The News Letter

The research works of CCRAS are published in this monthly journal. Researches conducted in the Ayurvedic field are studied with the help of modern medical science. Details about single drugs and formulations are published in this. The aims of CCRAS that are useful to the public are also published through this.

#### Ayu

Trimonthly magazine from Gujarat University. The research works done by the Post graduate students and Ph.D students of the same university are the matter of this magazine. It is published both in Hindi and English language.

#### Nagarjun

Trimonthly magazine published from Calcutta. This magazine publishes the details about the research works conducted in Ayurvedic field.

#### National Medical Gazatte

Monthly magazine published from Gwalior in Madhyapradesh. The magazine gives importance to the details about drugs and their Virya, Vipaka, Prabhava and how it is used in different diseases. It also gives information about collection of medical plants and preservation etc.

#### Herbal cure

This is published from Hyderabad. In this research conducted in the field of Unani, Ayurveda Siddha and Yoga are the main matters.

#### Rheumatism

M.M.L center for Rheumatic diseases in New Delhi publishes this magazine. It contains research works in Vata roga and their reports.

VagbhatanAn international magazine published by National Ayurveda

Academy from Thiruvananthpuram. It contains studies on traditional medicine and details research works conducted on single drugs. It also gives importance to Siddha, Unani, Yoga and Naturopathy.

Ayurveda Chandrika

Monthly magazine from Kerala Ayurveda mandalam. It contains experiences of great physicians of Ayurveda and useful single drug remedies.

Physician

Monthly magazine in Malayalam published from Kollam by Kerala Government, Medical officers association. They in this explain many Ayurvedic topics, in a very simple way. This also publishes many research works conducted in Ayurvedic field.

### **Short notes on (3 marks each)**

Chopra committee

A committee under the presidentship of Col. Ramanath Chopra was formed in 1946. Dr. Lakshmi pathi, Dr. Balakrishna Pathak, Dr. Shah, Dr. Dwaraka Nath, Acharya Yadav were the chief members of this committee. They submitted their suggestions in 1948. Their important recommendations are given below.

1. Their first suggestion was the formation of an integrated course between Ayurveda and Modern medicines. The government should take necessary steps for the formation of the textbooks for the course.
2. A common syllabus should be followed all over the India in the above integrated system.
3. Research labs should be functioned at all colleges.
4. State governments should make committees for making the textbooks for the above course.
5. State governments should make a list of qualified medical

practitioners and an All India Register should be kept by the Central Government.

### Palakapya

This book is written by Palakapya and it has four stana.

1. Maharogastana
2. Kshudraroga stana
3. Salya stana
4. Uttara Stana

The first chapter of Palakapya is presented as the advice of Rishi Palakapyan to the king Romapada. The book says that the cause of diseases in elephants is mainly due to loss of natural habitat. Maharoga stana deals with Abyanga therapy, bathing and nourishing foods for elephants. The cause of diseases like pandu, anaha, moorcha, siroabithapam, padarogam, and special type of jwara 'pakala' is mentioned. In Kshudraroga stana there are 72 chapters and it contains explanation about diseases like vomiting, Madanajaganda roga, over exertion, improper food, different Karnaroga, 12 types of skin diseases and various types of poisons which can affect elephants. In salya stana, there are 34 chapters. Treatment for various types of Vrnas (Ulcers) management of pregnant conditions of elephant, management of fracture, treatment of moodagarba etc are explained.

In Uttara stana, there are 36 chapters Vastividhi snehapanam, nasyam anjana vidhi, diet regimens, etc ritu charya, Pathya apathyam, Jalukaprayogam, (leech therapy) This subject is also mentioned in Agnipuranam, Kaudilyas Arthyastra and in Kanmandaki's Neethisaram. The book written by Sayanan named Subhasita Sudhanidhi has 2 chapters deals with Gaja and Aswa. From Atharvavedam, some explanation about the treatment of animals is obtained worm problem in cattles and the treatment for different diseases is described in it. So it is understood that during very ancient time itself treatment for animals was well developed.

### Rasaratnasamuchayam

This is an elaborate work of 30 chapters dealing rasasastram. The author of this work is considered to be Vagbata son of simhagupta. The author of

Rasaratnasamuchaya i.e Rasavaghbhatta & Ashtanga Hridaya vagbhata are different persons. Because they lived in different periods and their style of writing is different.

The first eleven chapters gives descriptions about Rasotpathi, Sodhana maranadi processes of maharajas, uparajas, sadaranarajas, and Ratnas etc., Rasasalanirmanavidhi (the place where rasamedicines should be prepared.) is given in detail. The rest portions deals with diseases and treatment of disease like piles, Rajayakshma Hridroga, Grahani etc explains treatments regarding Rasayana Vajikarana and numerous formulations, toxicology and its medical value in various diseases. Points which shows that Vagbhata who is the author of Rasaratnasamuchayam is different from vagbhata the author of Ashtanga Hridaya and Ashtanga samgraha.

1. Ashtanga Hridaya and Ashtanaga samgraha begins in the style but this way of beginning is not seen in Rasaratnasamchaya. No references about ancient Rishis is seen in it.
2. There is no mentioning about his birth place or about his father in this graitha.
3. Vagbhata had pointed that he had written Ashtanga samgraha before Ashtanga Hridaya, but he never said about Rasaratnasamuchaya.
4. Difference in the style of writing indicates that they are two different persons.
5. 'Sreeparnyadithailayogam" is taken from Chakradatha which is written by chakrapani in A.D 11<sup>th</sup> century. This is seen quoted in Rasaratnasamuchaya. So it is assumed that the author of Rasaratnasamuchaya lived after the period of chakrapani.
6. It is seen that the author of Rasaratnasamuchaya had depended Rasendrachoodamani, Rasarnavam and Rasaprakashasudhakaram which are the works of A.D 12<sup>th</sup> century.
7. The author of Ashtanaga samgraha gave importance to the four pramanas Prathyaksha, Anumana, Upamana and Aaptopadesha.

But Rasaratnasamuchayakara gave importance to Prathyakshapramana only.

8. In Rasaratna samuchaya there is reference about somaroga. Nobody has mentioned about it before Vangasena who lived in A.D 12<sup>th</sup> century.
9. This points shows that author of Ashtanga samgraha and Ashtanga Hridaya is different from the author of Rasaratnasamuchaya, he lived in 13<sup>th</sup> century A.D and he was also known as 'Rasavagbhata'.

Gananatha Sen

Son of Viswanath Sen, he was born in 1877 at Banaras and later migrated to Calcutta. He got his M.A degree in Sanskrit from the Calcutta University in 1890. Later he studied under the famous Ayurvedic scholar Kaliprasanna Sen and qualified as a physician at the age of 20. In 1932, he founded the Viswanatha Ayurveda Mahavidyalaya at Calcutta in memory of his father, equipped it with all facilities, with the result that the institution attracted a large number of students from all parts of India and even from other eastern countries. His fame as an authority on Ayurveda made him an active member of advisory boards of Ayurveda of many provinces of India. His services had been requested by the authorities of BHU to set up an Ayurvedic college. He received the two coveted titles for meritorious Scholarships, Mahamahopadhyaya and saraswati. He was elected as president of all India Ayurveda conferences thrice.

His important work 'Pratyaksha shareeram' is written incorporating the new practical knowledge of the human body into the ancient knowledge of Ayurveda. His another work 'Siddhanthanidanam' includes many new diseases. All these books have been accepted as text books best suited for the present day. Gananath Sen remained at the pinnacle of glory for a long time and has left his memory evergreen by his books.

The Sidha system of Medicine:

Sidha vaidya is a popular medical system in South India. The main books

coming in this system comes in the Tamil language. The basics of Sidha system is very familiar to Ayurvedic medicine. This system is also very popular in countries like Srilanka, Malaysia Singapore etc where Dravidian culture exists. Lord Siva is considered as the place of origin of Sidha Vaidya. The transfer of knowledge is from Lord Siva to his wife Uma. From Uma to Muruka, from Muruka to Nandi, from Nandi to Agasthya, from Agasthya to Pulasthya and others. The acharyas of this sampradaya are called Sidhas. One who attained Sidha or 'Poornatha is called a Sidha.

The Sidha system follows the Panchakarma theory as Thatwam and Tridosha theory as Mukutram. The shadrasa concept and the veerya etc. are seen as such in Sidhavaidya. Most of the sidha drugs contain Mercury as an ingredient. Alchomy, Muppu etc. are the main methods for the preparation of Sidhas drugs. Iron, Gold, Copper, Silver etc are used in combination with Mercury. 16 Important Acharyas from Agasthyamuni are also called Yogies, since they know yoga also. Pranayama, Kalpa, Moksha etc are the parts of Sidhayoga. Some of the books of this system are Vaidyavahadam and Agasthya vaidyam.