GLIMPSES OF THE ADVANCEMENT OF MEDICAL SCIENCE AS DEPICTED IN THE MAHĀBHĀRATA.

JYOTIR MITRA

ABSTRACT

The Mahabharata of Vedavyasa is an encyclopaedic work, which has got some importance from the standpoint of Indian medical science also. According to it Ayurveda was a compulsory subject which was taught to everybody. Perhaps, Mahabharata is the first epic which presents the term Ayurveda. The fundamentals of Ayurveda are discussed in it very well. Circulations of blood described here reminds us the same of sushruta samhita. Three types of poisons and a number of metals and jewels have also been given in Mahabharata.

The Mahabharata of Vedavyasa is a well-renowned and encyclopaedic work. It is also one of the great epics of Sanskrit literature which is vividly glorified by its contents throughout the world. This great epic has got some importance from the standpoint of Indian Medical Science as the Greek epic entitled "Odyssey" of Homer bears in Greece and elsewhere.

This epic is divided into eighteen sections (parvans) and every parvan has been arranged in the chapters (adhyaya) which contains the verses (shlokas). The whole epic is exhaustively studied from various points of view, Viz. history, culture, philosophy, religion, geography etc., but no attention has been, so far paid by the scholars and research workers to reveal the material of this great epic from the angle of Medical Science. Consequently, the present attempt has been made to fulfil the long-awaited need.

Ayurveda

Ayurveda was a compulsory subject which was taught to everybody. In classical Sanskrit litera-
ture, the Mahabharata, perhaps is the first epic which presents the term Ayurveda, divided into eight branches and they are Shalya (surgery), Shalakya (diseases of E.N.T. including Ophthalmology), Kayachikitsa (internal medicine), Bhutavidya (Bacteriology and Psychiatry), Kaumarabhritiya (Paediatrics), Agadatantra (Toxicology), Rasayantantra (Geriatrics) and Vajikarana (Aphrodisiacs). Most probably all the above branches of Medical Science were in vogue and practiced by the specialists of the particular field as it is apparently evident from the description of the four types of physicians, i.e., Kayachikitsaka, Salyakart. Agadavid and the Atharvana physician, skilled in charms and magic's spells. Besides, we hear an episode of Kashyapa, the celebrated toxicologist, who wanted to treat Parikshit after being bitten by the serpent-king Takshaka. We are also aware of the presence of Military surgeon (shalyoddharana-kovida) attending to Bhishma. There is also reference of geriatricians (Rasayanavidah). The Lord Krishna himself was a well known paediatrician who had treated the premature Parikshita who was internally radiated by the use of divine weapons used by Ashvatthama, the son of Drona. Under this branch, we may mention the primitive description of the embryo-culture belonging to the hundred sons of Dhrtarashtra. Hence, it may be deemed that the eight branches of Ayurveda were in promising progress.

Physician

The Mahabharata uses so many terms for the physician and they are viz., Vaidya Chikitsaka.
The word 'Kavi' is also applied to denote the physician and its modified form kaviraja is still prevalent in Bengal for the Ayurvedic physicians. Alike the Ramayana of Valmiki, the term Vaidya was not confined to physicians only, but it was also used in the sense of learned people. The word "vaidya" has been used 25 times and among them, 11 references stand for physician. Similarly, the other synonymous terms like bhishak and chikitsaka have been referred to four and 11 times respectively in the Mahabharata.

**Ashvin -Twins**

These twin-physicians are eulogised by Upamanyu, a disciple of Ayoda Dhaumya, for restoring the vision of his eyes. Nakula and Sahadeva, the fourth and fifth pandavas, are considered as incarnations of Ashvin-twins. Drugs (oshadhyah) are said as the weapons of these twins. They are also present in the divine council of Brahman. Ashwins were made entitled to drink the Soma juice by the effort of sage Chyavana whom they made young to enjoy the married life successfully and happily. Nasatya and Dasra are the two features of Ashwins. Being the eighth son of Surya, they are regarded as...
Shudra. Ashwin's medical and surgical skills are also dealt with in the compendia of Charaka and Sushruta.

Cyavana

The well-known recipe named Chyavana-prasha was prescribed to him in order to regain the virility, reveals the Charaka Samhita. He was a son of sage Bhirigu in Puloma. He was married with Sukanya, a daughter of king Saryati, who begot a son named Pramit. Once, he para ysed the limb of Indra who did not intend to make entitled Ashvins to drink the Soma-juice in sacrifice (yajna). He was rejuvenated by Ashvins. Once he performed the penance in the water.

Dhanvantari

According to mythological tradition, Dhanvantari has been regarded as an expounder deity of Ayurveda. The Lord Dhanvantari, after churning the ocean by Gods and devils, appeared possessing the pitcher (kamandalu) containing the nectar.

Divodasa

The original expounder of the Sushruta Samhita is Divodasa Dhanvantari, a king of Kashi. He, with his son Pratardana, is mentioned in the Mahabharata. Masha, the daughter of king Yayati, was his wife.

Sushruta

One of the illustrious students of Kashiraja Divodasa Dhanvantari was Sushruta who is regarded as a son of sage Vishvamitra men-
tioned in the Mahabharata and Sushruta Samhita.

**Fundamentals of Ayurveda:**

**Pancha-Mahabhuta**

The fundamentals of Ayurveda are entirely and solely based on the theory of Pancha-mahabhuta, viz Akasha, Vayu, Agni, Jala and Prithvi. Ayurveda claims that the whole universe is constituted by these components and hence the diseases and drugs are also Panchabhautika. The Mahabharata discusses the above theory in detail with their specific properties (gunas). In one context, the four bhutas except Akasha, are prayed to provide the vitality to the universe. Sometimes, the term Dhatu is also used to explain the bhutas.

**Doshas**

Vata, Pitta and Shleshman or Kapha are the basic factors responsible to maintain the body in proper way. These are also called 'dhatus', when they are in equilibrium and when it is disturbed by the external environment including food etc., become doshas. Besides the properties and functions, the kriyakalas in the form of accumulation (sanchaya), vitiation (prakopa) etc., were also known at that time. Agni is identical with Pitta and it is agreed in the Vatakakaliya chapter of Charaka. Agni, classified in the three groups viz., vaidyuta (electrical), jathara (enzymatic) and aindhana (of fuel) is also mentioned. Similarly, Vayu has eight kinds, e.g., Pravaha, Avaha, Udana, Samvaha, Vivaha, and Paravaha.

**Anatomy & Physiology**

The concept of seven dhatu...
(rasa, rakta, mamsa, medas, asthi, majja and shukra) was known\textsuperscript{47}. The term Ojas has been used in the sense of strength\textsuperscript{48} throughout the epic. Upadhatu like Snayu (ligament), Vasa (fat), nadi (nerve) etc. are also mentioned. The process of metabolism resembles that of the Charaka Samhita\textsuperscript{50} Circulation\textsuperscript{51} of the blood from the heart (nabhi) through the ten arteries (nadies) reminds us the same of Sushruta Samhita\textsuperscript{52} Apana and Vyana Vayu with Jatharagni\textsuperscript{53} have been located describing the Pakvashaya and Amashaya\textsuperscript{54} with proper functions of these Vayus.

**Mind (Manas)**

With the five cognative organs (indriyas), Manas\textsuperscript{56} has been functionally defined\textsuperscript{57}, Its properties (gunas) are Satwa, Rajas and Tamas\textsuperscript{58}.

**Life**

Atman (soul) is a seat of conscious ness of the body\textsuperscript{59} and it generally lasts upto hundreds years\textsuperscript{60}. This is the life-span of Kaliyuga. Separation from life is called death and it may be caused either by the diseases or accidents\textsuperscript{61}. In the Kaliyuga, the life-span of the female and male will be ten and sixteen years respectively from the fertility point of view\textsuperscript{62}.

**Hygiene**

The equilibrium in psycho-somatic gunas is health\textsuperscript{63} and it is one of the

\textsuperscript{47} Ibid., 111.222.14,15.
\textsuperscript{48} Ibid., 111.270.2; V. 120.22; VI. 54.47; VIII. 2.3; X.8.82.
\textsuperscript{49} Ibid., XII.214.16; XI.3.6.
\textsuperscript{50} Ibid., XIV.19.39. of. Sut. 28.3.
\textsuperscript{51} Ibid., XII.16.19; 111. 213. 16,17.
\textsuperscript{52} Sharira., 9.5.
\textsuperscript{53} Ibid., 111.213.11,12,14.18.
\textsuperscript{54} Ibid., 111.213.15.
\textsuperscript{55} Ibid., 111.213.7.
\textsuperscript{56} Ibid., 111.2.67,68.
\textsuperscript{57} Ibid., XII. 311.16-21.
\textsuperscript{58} Ibid., XII.16.13; 111.212.4,5.
\textsuperscript{59} Ibid., 111.213.18-20.
\textsuperscript{60} Ibid., V. 37.9.
\textsuperscript{61} Ibid., XII. 28.25.
\textsuperscript{62} Ibid., 111.190.48,49.
\textsuperscript{63} Ibid., XII.16.11, 13.
six pleasures of the world. Body is regarded to be abode of the pleasure and pain. Use of all the tastes (rasas) makes man healthy but an excess of any taste is very harmful specially of the sweet. Life should be maintained in order to observe the personal and public hygiene. Diseases are usually seen arisen in the Ritusandhi (between two seasons), hence the time factor (kala) is also important. An association of the elderly people provides mental calmness. The tooth brush made of Tinduka is advised for tooth-cleanness.

Kala (Time)

The Mahabharata has laid down great emphasis on the theory of Kala. Narrating its importance Kala has been divided into many forms viz. Kshsana, lava, muhurta, ahoratra, paksha, month, season, year and four yugas. It is unavoidable factor to every body. The whole phenomena of the universe are governed by the Kala.

Surgery

According to Sushruta, Shalya (foreign body lying inside the body) is that which affects the mind and body. During the remote past, the arrows were used as missile in the war hence the main treatment was to extract the pieces of the same. That is why, the Military Surgeons were called as

64. Ibid., V.33,82,89; 36,67.
65. Ibid., XII.174.21.
66. Ibid., XII.139.80.
67. Ibid., XII.70.8-10.
68. Ibid., XII.240.6.7; 243.7.
69. Ibid., XII.69.84.
70. Ibid., 11 5. 90.
71. Ibid., VI.38.
72. Ibid., 1. 1. 247-51; III. 162-69; XII. 25. 8-12; 69, 79, 80; XII, 139, 49-53, 57.
73. Ibid., XII.25. 8-12; 227; 239.25.
74. Ibid., 11. 37. 38; XII.224.53; 231.12; 224.46.
75. Ibid., 11.46.16.
76. Sut. 7.4.
Shalyoddharana-kovida\textsuperscript{77} and Shalyakarta (Surgeon)\textsuperscript{78}. Military surgeons were called to treat wounded Bhishma\textsuperscript{79} and Yudhishthira\textsuperscript{80}.

Sometimes, the foreign bodies were expelled out by the incantation\textsuperscript{81}. In every fort, the surgeons were appointed with surgical accessories\textsuperscript{81}. Medicated oils and Ghitas were also stored\textsuperscript{83}. Resuscitative drugs (murchahara oshadhi) were also known to them. Once, Kunti was resuscitated by the sandal water\textsuperscript{84}. Analgesic medicines (Vedananivrittikara)\textsuperscript{85} were also in vogue.

The drugs named Vishalya\textsuperscript{86} has been indicated to be used to remove the fainting of Rama and Lakshmana. Every warrior possessed the scientific knowledge of vital parts (marmas)\textsuperscript{87} of the body. Stana (breast)\textsuperscript{88}, lalata (forehead)\textsuperscript{89} and hridaya (heart)\textsuperscript{90} are some examples of the same. Bhima\textsuperscript{91} was one of the great marmajnas. the term Yogya\textsuperscript{92} (practice) has the same sense of the Sushruta.

Kayachikitsa (Medicine)

Vyadhi is a synonym of disease (roga) by which the creature is distressed\textsuperscript{93}. The rogas are regarded to be the fruits of actions\textsuperscript{94}. Diseases are divided into two groups viz., Sharira (somatic)

\textsuperscript{77} MBH, VI. 120.55.  
\textsuperscript{78} Ibid., V.38.4.  
\textsuperscript{79} Ibid., VI. 120. 55-60.  
\textsuperscript{80} Ibid., VIII. 89. 70, 71.  
\textsuperscript{81} Ibid.  
\textsuperscript{82} Ibid., XII. 69.56, 57, 59; 86.13, 14.  
\textsuperscript{83} Ibid.  
\textsuperscript{84} Ibid., 1.131.25.  
\textsuperscript{85} Ibid., 11.23.4.  
\textsuperscript{86} Ibid., 111.289.6.  
\textsuperscript{87} Ibid., 11.77.17; VII. 146,32.  
\textsuperscript{88} Ibid., VII. 92.34.  
\textsuperscript{89} Ibid., IV. 61.38,40,42.  
\textsuperscript{90} Ibid., IV.21.7.  
\textsuperscript{91} Ibid., VIII. 51.46.cf. Sushruta, 1.9th chapter.  
\textsuperscript{92} Ibid., VII. 54.45.  
\textsuperscript{93} Ibid., 111.209,14.  
\textsuperscript{94} Ibid., XII. 16.8; 104.6; 111.261.17,18.
and manasa (psychic)\textsuperscript{95} and both are interdependent to each other\textsuperscript{96}. Gada\textsuperscript{97} is also mentioned as one of the synonyms of Disease Aadi\textsuperscript{98} is mentioned as a mental disease synonym.

Nowhere the word 'Jvara' has been mentioned in vedic literature except the Paippalada School of the Atharvaveda. The Mahabharata has abundantly used the word in the sense of pained worries\textsuperscript{99}. Besides the term 'Jvara' is also used as a fever\textsuperscript{100}.

The description of the origin of the 'Jvara' in mythological episode reminds us the same spot of the Charaka Samhita\textsuperscript{101}. Sexual appetite is also a disease which ends the life\textsuperscript{102}. Several diseases cannot be cured by the best medicines and incantations\textsuperscript{103}. The patient does not like the medicine when he is on the death bed\textsuperscript{104}, wife is regarded best medicine for the diseased person\textsuperscript{105}.

Diseases are the incarnations of the past sins\textsuperscript{106} Medicine and rituals can not save the patients\textsuperscript{107} suffering from senility.

\textsuperscript{95} Ibid., xii.16.9
\textsuperscript{96} Ibid., 11.78.21.
\textsuperscript{97} Ibid., 1.64.12.
\textsuperscript{98} Ibid..
\textsuperscript{99} Ibid., 1.42.35.39; 53.17; 54.26; 131.60; 156.21; 172.2; 11.7.10; 49.27; 111.36.27; 47.29; 72.43; 76.53; 103.6; 244.14; 289.8; V.122.1; VII.73.19; 83.28; VIII.24.4; XII.284.190; 140.13; XIII.63.43.85.14.
\textsuperscript{100} Ibid., XII.282.2.3,7,34.
\textsuperscript{101} Ci. 3.15. cf.XII.283rd Chapt.
\textsuperscript{102} Ibid., 1.85.14.
\textsuperscript{103} VIII.49.8.
\textsuperscript{104} Ibid., II. 62.2; III. 37.2; VI. 65.26; IX. 5.5.
\textsuperscript{105} Ibid., III. 61.29.30
\textsuperscript{106} Ibid., XII. 262.49.
\textsuperscript{107} Ibid., XII. 28.35.
Medical Science in the Mahabharata - Jyotir Mitra

Various diseases

We come across the following diseases in the Mahabharata:

1. Agnidagdha (Burn)  : MBH., XII.303.6.
2. Akshiroga (Eye diseases) : Ibid., XII. 303.5.
3. Apasmara (Epilepsy)  : Ibid., 303.6: XIII. 23.13
4. Dantashula (Otalgia) : Ibid., XII/.303.5.
5. Galaganda (Scrofua)  : Ibid., XII.303. 6.
7. Grahani (Sprue)      : Ibid., III. 209.16.
8. Jalodara (Ascitis)   : Ibid., II, 233.16; XIII. 303.6.9
12. Palita (Whiteness of hair) : Ibid., III. 233.16.
15. Shirah shula (Headache)  : Ibid., III. 297.5.
16. Shirsha roga (Head-disease) : Ibid., V. 36.68.
17. Shvitra (Leucoderma) : Ibid., XIII. 10.18; 23.13.
18. Unmada (Insanity)   : Ibid., III. 150.44.
19. Urustambha (Paraplegia) : Ibid., V. 75.18; XII. 281,10; X, 8.82.

Arista

Unfavourable signs indicating to death are mentioned here.\textsuperscript{108}

Omens & Dreams

The Mahabharata refers to various portents, omens\textsuperscript{109} and

\textsuperscript{108} Ibid., XII.317. 8-21; XVI.3. 1-47.

\textsuperscript{109} Ibid., 1.30. 31-38.
dreams\textsuperscript{110} both auspicious\textsuperscript{111} and unauspicious\textsuperscript{112}.

**Paediatrics**

According to Sushruta, until sixteen years the boy should be called as a Bala, but the Mahabharata confines it to twelve years old\textsuperscript{113}. This epic describes the Balagrah\textsuperscript{as Shakuni, Putana, Sltaputana\textsuperscript{114} Revati and Mukhamandika in details and has added the episode\textsuperscript{115} regarding Skanda, a responsible deity for the same.

**Psychiatry (Bhutavidya)**

Daivavyapasraya treatment was in vogue at that time\textsuperscript{116}, Kashyapa\textsuperscript{117}, the celebrated Toxicologist, was well versed in the magic spell also. Some cases were treated with the incantations. Alike the Samhitas of Charaka and Sushruta, the Apasmaragrahas\textsuperscript{118} like Deva, Pitru, Siddha, Rakshasa, Gandharva, Paishacha and Yaksha were also known to those people.

**Geriatric (Rasayana)**

This science was also prevalent in practice\textsuperscript{119}. Chyavana and Yayati\textsuperscript{120} had been rejuvenated. Rasayna aims to avoid the senility and provides the longevity.

**Obstetric and Emryology**

When Draupadi was molested by Dushasana she was having the menstruation and clad in one garment\textsuperscript{121}. Menstrual period of the three days is called Ritu hence the ladies are named in that period as Ritumati and Ritudana\textsuperscript{122} is a meeting of couple on the fourth day.

\textsuperscript{110} Ibid., 11.23.3; 26.13-16.
\textsuperscript{111} Ibid., II.26.13-16; V. 143.16-141; VI. 3.64-67; VIII. 72.11-14.
\textsuperscript{112} Ibid., I.30.33-38; II. 62.3; 80. 28.30; 81.22-25; III. 280.64-72.
\textsuperscript{113} Ibid., I. 107.14.cf: Susruta. 1.35.29.
\textsuperscript{114} Ibid., III. 230.24-30.
\textsuperscript{115} Ibid., 230th chapter; IX. 46.44-51; 230.35-45.
\textsuperscript{116} Ibid., I. 42.29,30; 51.9; 56.15; III. 11.19.
\textsuperscript{117} Ibid., I. 43.21.
\textsuperscript{118} Ibid., 230.47-53..III.
\textsuperscript{119} Ibid., XII. 28.47.
\textsuperscript{120} Ibid., I. 84,2-30.
\textsuperscript{121} Ibid., II. 67. 19; 34,39; 80.81,14,15; III. 12.63.
\textsuperscript{122} Ibid., I. 82.32-34.
to beget the child. If it is avoided, the Shastrakaras name it as Bhrunahatya.

Through the dialogue of Ashtaka and Yayati, the whole embryology\textsuperscript{123} has been dealt with. Premature delivery\textsuperscript{124}, of Parikshita, fertilized ovum-culture with multiplicity\textsuperscript{125}, are also mentioned in primitive form. Garbhashaiyya seems to be signified in the sense of uterus here. It concisely explains the monthly growth of embryo\textsuperscript{126}.

**Toxicology:**

The Mahabharata is also aware of the three types of poisons and they are animate (sthavara), inanimate (jangama) and toxins (kritrima). Kalakusta was a deadly poison churned out of the ocean and drunk by the Lord Shiva\textsuperscript{127}. The same poison, belonging to the first group, mixed in food, was administered to Bhima\textsuperscript{128} by Kurubrothers to end his (Bhima's) life, but it was neutralised when he reached the Nagaloka and was bitten by the snakes\textsuperscript{129}. Gara\textsuperscript{130} may be taken as an example of the third group. Toxicology was also an important subject to be known by the kings\textsuperscript{131}. Chakshuvisa\textsuperscript{132} of the snakes is also indicated here. An arrangement was made using the agadas\textsuperscript{133} (antidotes) in order to protect the life of king Parikshita. Scorpion-bite was treated by the Atharvana hymns\textsuperscript{134} pramadvara, the wife of Chyavana's grandson, was bitten by snake before her marriage with Ruru. The signs of snake-bite are also narrated in the context\textsuperscript{135}.
was bitten by Takshaka\textsuperscript{136}. His son Janmejaya performed the snakes sacrifice in order to abolish the whole family of the snakes\textsuperscript{137}

**Family or Species of the Snakes**

Vasuki, Takshaka Airavata, Kauravya and Dhrtarashtra are said to be the chief species of the snakes. They are 15, 18, 10, 10, 10, and 36 in number respectively\textsuperscript{138}. Besides there is a list of 77 snakes in the same parvan\textsuperscript{139} but they are innumerable\textsuperscript{140} having various size and shapes \textsuperscript{141}.

---

**Food & Drinks**

People were accustomed to take the food, vegetarian and non-vegetarian both. Cereal (anna) fruit (phala) and stem (kanda) were the chief menus of the vegetarian food. Vegetarian food was classified as edible (bhojya), chewable (bhakshya), lickable (lehya), drinkable (peya) and suckable (chushya\textsuperscript{142}) Supa\textsuperscript{143}, Odana\textsuperscript{144}, Gudharasa\textsuperscript{145}, Payasa\textsuperscript{146}, Ghratapayasa,\textsuperscript{147} Krishara,\textsuperscript{148} Rasala,\textsuperscript{149} Yavaka,\textsuperscript{150} Rasagadava,\textsuperscript{151} Modaka,\textsuperscript{152} Apupa,\textsuperscript{153} Purika,\textsuperscript{154} Shashkuli,\textsuperscript{155} Karambha,\textsuperscript{156} etc. were

\textsuperscript{136} Ibid., I.41.14;43.30;31.  
\textsuperscript{137} Ibid., I.58th chapter.  
\textsuperscript{138} Ibid., I.57th chapter cf. Sushruta, Kalp., 4.34.  
\textsuperscript{139} Ibid., I.35. 5-16. cf. Sushruta, Kalp., 4.34.  
\textsuperscript{140} Ibid., I. 35.19.  
\textsuperscript{141} Ibid., I. 52. 6-9.  
\textsuperscript{142} Ibid., I. 81. 4; 127. 34; 145. 9; 174. 11; 193. 13; 221. 19; 12.4. 103; 8.5. 6; 17; 18.5. 35. 5; III. 3. 73; 3. 82; 92. 20; IV. 2.5; XII. 164. II; 284. 44, 45.  
\textsuperscript{143} Ibid., VI. 62. 14-16; 64. 7-9.  
\textsuperscript{144} Ibid., VIII. 41. 14.  
\textsuperscript{145} Ibid., VI.62.14-16  
\textsuperscript{146} Ibid., II.4.1-3; VIII, 41.14.  
\textsuperscript{147} Ibid., V.143.33.  
\textsuperscript{148} Ibid.,  
\textsuperscript{149} Ibid., XII. 300.44.  
\textsuperscript{150} Ibid.,  
\textsuperscript{151} Ibid., VI.64. 7-9; XII. 53.18.  
\textsuperscript{152} Ibid., VI. 64. 7-9; XII 53.18.  
\textsuperscript{153} Ibid., I.3. 69-72.  
\textsuperscript{154} Ibid., VI 64. 7-9; XII. 53.18.  
\textsuperscript{155} Ibid.  
\textsuperscript{156} Ibid., VIII.43.21.
special preparations belonging to above groups. Saktu\textsuperscript{157} was also used by the Vahikas\textsuperscript{158}. Pinyaka\textsuperscript{159} and Udasvita\textsuperscript{160} are also mentioned here.

So far as the non-vegetarian food is concerned, people were also fond of taking the meat of deer\textsuperscript{161}, cow\textsuperscript{162}, goat\textsuperscript{163}, hen\textsuperscript{164}, ass and boar\textsuperscript{165}. Veshavara\textsuperscript{166} is also mentioned here.

People used to take several types of wine like madira\textsuperscript{167}, Sidhu\textsuperscript{168}, Gaudhasava\textsuperscript{169}, Madhvika\textsuperscript{170} etc.

\textbf{Metals & Jewels}

The Mahabharata is acquainted with gold with its various synonyms like Kanaka, Kanchana, Jambunada, Suvarna, Hiranya Hema, Rukma, Satakumbha, Jatarupa and Chamikara. Silver, copper, iron, bronze, tin (trapu) and lead. Among the minerals, the names of Hingula, Manahshila, Gairika and Anjana may be stated. Various jewels like Vaidurya (lapis lazuli), Mukta (pearl), Pravala (sprout), Vidruma (corals), Padmaraga (ruby) Pusparaga (topaz) and Marakata (emerald) were used for decoration purpose.

157. Ibid., XII. 300.43.
158. Ibid., XII. 167.35.
159. Ibid., I.69.29, 29; III.50.4-7.
160. Ibid., VIII. 44. 27,28.
161. Ibid.,
162. Ibid.
163. Ibid.
164. Ibid.
166. Ibid., XIII.43.57.
167. Ibid., II.68. 20, l.147.8.
168. Ibid., III.46.13; VIII. 44.29; 45. 38
169. Ibid., VIII, 44.I.
170. Ibid., 83.30; XI. 21.7.
**Medicinal Plants**

The following medicinal plants are mentioned in Mahabharata of Vedavyasa in several contexts and they can be numbered as 179:-

1. Alabu  
2. Ambuja  
3. Anjitira  
4. Aguru  
5. Ashoka  
6. Arjuna  
7. Ashvattha  
8. Amlavetasa  
9. Arani  
10. Atimuktaka  
11. Arka  
12. Ankola  
13. Ashtapadika  
14. Arimeda  
15. Atasi  
16. Arishta  
17. Amra  
18. Amrataka  
19. Amalaka  
20. Atarushaka  
21. Inguda  
22. Ikshu  
23. Ishika  
24. Indivara  
25. Utpala  
26. Ushira  
27. Udumbara  
28. Uddalaka  
29. Airanda  
30. Kokanada  
31. Kovidara  
32. Ketaka  
33. Kurubaka  
34. Kutaja  
35. Kushmanda  
36. Kunda  
37. Kusha  
38. Kubjaka  
39. Kumuda  
40. Kinjalka  
41. Kichaka Venu  
42. Kimshuka  
43. Kalamra  
44. Kaliyaka  
45. Kakayava  
46. Kalaguru  
47. Kashmari  
48. Kasa  
49. Kakubha  
50. Kapittha  
51. Karanja  
52. Kalaiya  
53. Karamarda  
54. Kalhara  
55. Karushaka  
56. Karavira  
57. Karisha  
58. Kadali  
59. Kankola  
60. Kamala  
61. Kadamba  
62. Karnikara  
63. Kharjura  
64. Khadira  
65. Kshirika  
66. Ginjanaka  
67. Guggulu  
68. Chuta  
69. Chandana  
70. Champaka  
71. Chirabilva  
72. Jivanti  
73. Jambu  
74. Japa  
75. Tunga Kaliyaka  
76. Tinduka  
77. Tila  
78. Tilaka  
79. Tala  
80. Tamala  
81. Dhanva  
82. Dhava  
83. Devadaru  
84. Dadima
85. Darbha  
86. Nipa  
87. Nivara  
88. Nilotpala  
89. Nagapushpa  
90. Narikela  
91. Nygrodha  
92. Nalini  
93. Punnaga  
94. Pundarika  
95. Pushkara  
96. Pilu  
97. Pippala  
98. Priyala  
99. Priyangu  
100. Paribhadra  
101. Paravata  
102. Patali  
103. Patala  
104. Patala  
105. Palasha  
106. Padmini  
107. Palalakaur  
108. Palandu  
109. Padma  
110. Padmaka  
111. Parijata  
112. Pankaja  
113. Panasa  
114. Plaksha  
115. Bijapura  
116. Bibhitaka  
117. Bata  
118. Bandhujiva  
119. Balvaja  
120. Bakula  
121. Badara  
122. Bhallataka  
123. Mocharasa  
124. Meshasrhgi  
125. Munjataka  
126. Masha  
127. Mahoshadhi  
128. Mahsala  
129. Madhoonka  
130. Mallika  
131. Manju  
132. Mandara  
133. Yava  
134. Rochana  
135. Rajiva  
136. Rakta chandana  
137. Rakta Ashoka  
138. Lakucha  
139. Lasuna  
140. Lodhra  
141. Vetra  
142. Venu  
143. Vetasas  
144. Vrihi  
145. Varana pushpa  
146. Varuna  
147. Vatsanabha  
148. Vamsa  
149. Sobhanjana  
150. Saivara  
151. Shlehsmataka  
152. Suka Chandana  
153. Shirisa  
154. Shimshipa  
155. Sala  
156. Shali  
157. Shalmali  
158. Shyamaka  
159. Shana  
160. shami  
161. Shari  
162. Shallaki  
163. Shatapatra  
164. Saugandhika  
165. Saptaparni  
166. Suvarchala  
167. Sindhuvara  
168. Shala  
169. Sahakara  
170. Syandana  
171. Saptaparna  
172. Sharsapa  
173. Sarja  
174. Sarala  
175. Shasthi  
176. Hinguka  
177. Harichandana  
178. Haridra  
179. Haritaki
**Numerical Abbreviations Indicating The Names of Parvans**

1. Adiparvan  
2. Sabha parvan  
3. Vana parvan  
4. Virata parvan  
5. Udyoga parvan  
6. Bhishma parvan  
7. Drona parvan  
8. Karna parvan  
9. Shalya parvan  
10. Sauptika parvan  
11. Stri parvan  
12. Shanti parvan  
13. Anushasana parvan  
14. Asvamedhika parvan  
15. Ashramavasika parvan  
16. Mausala parvan  
17. Mahaprasthanika parvan  
18. Swargarohana parvan

<table>
<thead>
<tr>
<th>Parvan</th>
<th>Abbreviation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adiparvan</td>
<td>---</td>
<td>I</td>
</tr>
<tr>
<td>Sabha parvan</td>
<td>---</td>
<td>II</td>
</tr>
<tr>
<td>Vana parvan</td>
<td>---</td>
<td>III</td>
</tr>
<tr>
<td>Virata parvan</td>
<td>---</td>
<td>IV</td>
</tr>
<tr>
<td>Udyoga parvan</td>
<td>---</td>
<td>V</td>
</tr>
<tr>
<td>Bhishma parvan</td>
<td>---</td>
<td>VI</td>
</tr>
<tr>
<td>Drona parvan</td>
<td>---</td>
<td>VII</td>
</tr>
<tr>
<td>Karna parvan</td>
<td>---</td>
<td>VIII</td>
</tr>
<tr>
<td>Shalya parvan</td>
<td>---</td>
<td>IX</td>
</tr>
<tr>
<td>Sauptika parvan</td>
<td>---</td>
<td>X</td>
</tr>
<tr>
<td>Stri parvan</td>
<td>---</td>
<td>XI</td>
</tr>
<tr>
<td>Shanti parvan</td>
<td>---</td>
<td>XII</td>
</tr>
<tr>
<td>Anushasana parvan</td>
<td>---</td>
<td>XIII</td>
</tr>
<tr>
<td>Asvamedhika parvan</td>
<td>---</td>
<td>XIV</td>
</tr>
<tr>
<td>Ashramavasika parvan</td>
<td>---</td>
<td>XV</td>
</tr>
<tr>
<td>Mausala parvan</td>
<td>---</td>
<td>XVI</td>
</tr>
<tr>
<td>Mahaprasthanika parvan</td>
<td>---</td>
<td>XVII</td>
</tr>
<tr>
<td>Swargarohana parvan</td>
<td>---</td>
<td>XVIII</td>
</tr>
</tbody>
</table>
महाभारत में आयुर्विज्ञान की प्रगति की झलक

— ज्योतिर्मित्र

आयुर्विज्ञान की दृष्टि से भी महाभारत एक अत्यंत महत्वपूर्ण ग्रन्थ है। इसके अनुसार पुराकाल में आयुर्वेद एक अनिवार्य विषय था जिसे प्रत्येक छात्र से पढ़ना पड़ता था। आयुर्वेद शब्द का प्रयोग संस्कृत—साहित्य में संभवतः पहले—पहल महाभारत में ही हुआ है। इसमें चार प्रकार के चिकित्सक बताये गये हैं। इसमें प्रसिद्ध विषवेद्य कर्त्तव की कथा भी वर्णित है। सेना के साथ साम्राज्य शल्यचिकित्सक भी रहते थे। भगवान कृष्ण कौमार भूत्य के विशेषज्ञ थे। रसायनविद्या की भी उन दिनों कमी न थी। इसमें आयुर्वेद के मौलिक सिद्धांतों का प्रतिपादन भी सम्यक रूप से हुआ है।