

**Mahabharata Series**

# **Architecture, Science & Technology**

**Compiled by: G H Visweswara**

## PREFACE

I have extracted these contents from my other comprehensive & unique work on Mahabharata called **Mahabharata-Spectroscope**. (See <http://www.ghvisweswara.com/mahabharata-2/mahabharata-spectroscope-a-unique-resource/>). Whereas the material in that was included in the order in which it appears in the original epic, in this compilation I have grouped them by meaningful Topics & Sub-topics thus making it much more useful to the student/scholar of this subject.

This is a brief compilation of the contents appearing in the great epic Mahabharata on the topics of **Architecture, Science and Technology**. The broader topics covered are: Architecture, Construction/Buildings, Astronomy, Botanical/flora, Medicine/Medical, Science/Technology, References to flying and Special cases. The compilation is not exhaustive in the sense that every para appearing in the great epic is not included here for the sake of limiting the size of this document. But still most of the key or representative passages have been compiled here. The contents are from Mahabharata excluding the Bhagavad Gita.

I hope the readers will find the document of some use in their study on these topics.

Please see <http://www.ghvisweswara.com/mahabharata-2> for my other topic based compilations based on Mahabharata.

**G H Visweswara**

[gh.visweswara@gmail.com](mailto:gh.visweswara@gmail.com)

[www.ghvisweswara.com](http://www.ghvisweswara.com)

**June 2017**

## Table of Contents

Architecture, Science & Technology .....	4
Architecture/Construction .....	4
Towns/Cities .....	4
Large buildings/Assembly Halls .....	5
Gardens/Play parks .....	6
Army camps .....	6
Others .....	7
Astronomy.....	7
Astronomy (General).....	7
Sizes of <i>grahas</i> (planets) .....	8
Event days according to Hindu Almanac.....	9
Planetary positions just before Mahabharatha war began.....	10
Botanical/Flora.....	12
Medicine/Medical .....	12
Conception to birth.....	12
Preserving Gandhari's ball of flesh from womb .....	13
Doctors.....	13
Diseases/Symptoms .....	13
Diet/Food control.....	14
Poisons/Toxins.....	14
Physical & mental disease .....	14
Treatments.....	15
Veterinary.....	16
Wonder Medicines .....	16
On death .....	17
Others .....	18
Science/Technology .....	18
Yantra (Mechanical contrivance) .....	18
Mechanised Boat.....	18
Matsya yantra .....	18
Chakshushi vidya.....	19
Mathematics.....	19
Weapons of war .....	19
Weapon system.....	19
Materials used .....	20
Chariots .....	21
Elements of Nature .....	21
Pancha-bhutas .....	21
Agni (Fire).....	22

Shabda (Sound) .....	22
Vayu .....	22
Special flags.....	23
Optical flag? .....	23
Mechanical Flag? .....	23
Undersea township/travel .....	23
Towns in the sky .....	24
Life forms/Life sciences .....	24
Universe .....	25
Creation of Universe.....	25
Dissolution of Universe.....	25
Earth.....	26
Wealth of earth .....	26
Earth's end?! .....	27
Measures of time .....	27
Mines & minerals .....	28
References to Flying.....	28
References to <i>Vimana</i> .....	28
Techniques of flying .....	31
Special Cases.....	32
Special powers to Sanjaya to report on war .....	32
Gender change of Shikhandini .....	32
Getting back virginity.....	32
Karna's conception & birth .....	33
Others .....	33

# Architecture, Science & Technology

## Architecture/Construction

### Towns/Cities

- **About Jarasandha's capital:** Sri Krishna: See, Partha! How beautiful this city is! It is densely filled with cows & people. There is no dearth of water or food here. All the buildings are constructed in rows and look so pleasing. .. As Krishna, Bhima & Arjuna were walking through the capital of Jarasandha's kingdom they noticed many shops on the main street. Each shop was attractive. The shops were filled with utility items. There were shops for a large variety of flowers and snacks. **(Sabha; Sabhakriya; 21)**
- Description of *Mithila-nagari* (City of Mithila) ruled by Janaka: Kaushika entered Mithila which was packed with *dharma-shalas* (charitable asylum/guest house), had beautiful main doors and was dense with big buildings. There were many palaces of seven floors; the roads were straight & had variety of shops on both sides. **(Vana; Markandeya Samaasya; 207)**
- Yudhishtira questioned Bhishma: Grandfather! In which type of city should the king live? Should he live in an already built and existing city or should he build a new one and live there?

### Building town and forts

Bhishma said: (Shl 4) Towns should be built incorporating six types of forts where all kinds of resources are available and where a large area is available. (Shl 5) The six forts are: *dhanva-durga* (surrounded in all directions by a few miles of desert), *mahi-durga* (surrounded by man-made forts), *giri-durga* (surrounded by mountains), *manushya-durga* (surrounded by soldiers for protection), *jala-durga* (surrounded by water) and *vana-durga* (surrounded by forest).

(Shl 6-10) A king should occupy along with his ministers that city which incorporates one or more of these types of forts, which has plentiful grains and weapons, has strong outer walls and moats, has several elephants and horses, in which scholars and architects/sculptors reside, in which all essential commodities are available in plenty, in which the treasury is always full, is filled with people who follow dharma, which looks attractive by virtue of squares and rows of shops, in which there is a court founded on dharma, which is calm, which has an environment of no fear, which has plenty of light and where music flows all the time, in which each house is well designed, where brave and rich live, which is resounding with the chant of *Veda-mantras* and where festive social events and worship of gods occurs constantly.

(Shl 11) The king should strengthen treasury, army, friend-power, and judiciary in that city. He should remove all defects & deficiencies in city & villages. (Shl 12) He should with a conscious effort increase the store-houses for grains and weapons. He should also encourage workshops which make machinery and weaponry. (Shl 13, 14) The following items should be well stocked: Firewood, gold, silver and other metals, chaff of grains, coal, timber, horns and bones of animals, bamboo, fat, oils, honey, medicines, jute, grains, weapons, arrows, animal skins, sticks, and two kinds of dry grass used for making ropes. (Shl 15) **The king should prevent destruction of lakes, wells, big water-bodies, and trees which ooze milk like liquids. (Shanti; Rajadharmanushasana; 86)**

- Description of the town Meruvraja of *rakshasa* Virupaksha: ..That town had many *yantras* (machines) meant for defending the town. **(Shanti parva; Aapadharma; 170)**
- **Town of Mithila:** Thus travelling Shuka soon reached Videha kingdom. Shuka continued to walk past many villages fertile with grains & having innumerable cattle. He saw many lakes with lotuses and several birds. Then he came to a very attractive and well stocked garden/planted forest near Mithila. **Shuka went past that area which was filled with elephants, horses, chariots and men & women, as if he had not noticed them.** He was only carrying the load of subjects to be learnt and was thinking about the hidden meanings of many things. Shuka reached the main gates of Mithila town and entered it without any doubts. But the guards there stopped him with harsh words for entering without their permission. ...

Soon a minister of king came and bowed to him and sent him respectfully to the third enclosure of the palace. In that enclosure there was a beautiful and large garden meant for young & beautiful women. That garden was like the famed Chaitraratha garden of Kubera. There were separate pools for playing in water. There were many trees filled with flowers. **(Shanti parva; Mokshadharma; 325)**

### Large buildings/Assembly Halls

- In Draupadi's *swayamvara* hall the seating arrangement was in the shape of 'seacat'. Its head was in the Northeast direction. This direction is also known as 'Undefeatable direction'. Therefore princes who desired victory chose seats in this location. **(Adi; Swayamvara; 185)**
- Maya built an exquisite hall (For Rajasuya yaga): Maya started to build an exquisite assembly hall (*sabha-bhavana*) for Yudhishtira. He measured land of about 10,000 *mola* (*mola* (Kannada) is about 18 inches) to build a beautiful & grand hall which would maintain balanced hot & cold environment (*samasheetoshna*: Air-conditioned) at all times. **(Sabha; Sabhakriya; 1)**
  - Size & description of hall built by Maya: The hall that Maya built was about 10000 square *molas* (15000 square feet). That hall was large, quite tall, attractive, built out of best of materials, had gem studded *praakas* (enclosure, boundary wall, gem-studded *thorana* (festooned decoration over doorways; arched doorway), had many drawings/paintings and was built with huge expenditure. That hall was carried by 8000 *rakshasas* called '*kinkara*' who were brave, fearsome, big-bodied, had eyes like glowing coals and were capable of moving in the sky. They were also the protectors of the building. In that building Maya had also created an exquisite lake. That lake had lotus flowers in it. The leaves were made of blue diamonds. The creepers were made of brilliant gems. All the lotuses were of gold. There were many varieties of birds in that lake. There were gold coloured fish and many tortoises. There was absolutely no muck at the bottom of the lake. The water was very clear. Around the lake there were steps made of crystal. Many kings would fall into it thinking it was land. You can therefore imagine how skilfully it was made....Maya built such a unique building in fourteen months and handed it over to Dharmaraja. **(Sabha; Sabhakriya; 3)**

Duryodhana rushed to the nearest door. But what he thought as door was not a door but a wall which looked just like a door and was made of several precious stones....Duryodhana saw many similar carvings and was confused. He was caught in the web of Maya's intricate & astounding sculpture. **(Dyuta; 47)**

- (Hall built for Rajasuya yaga) Duryodhana came to the crystal based area at the centre of the hall. Thinking that the squarish area was a pool, he tied up his *dhotra*. When he stepped in there, he only saw the reflection of his perplexed face in the mirror like shining stone and not any water. He was not pleased with such amazing architecture. He felt very aggrieved at his own ignorance and the grandeur of Pandavas. As he was proceeding further with a unhappy mind, he again saw a pool like place. How could he guess that this place contains water when he had been fooled a few moments back? Assuming that this was also a gem studded area, he stepped without tying up his *dhotra* he fell into that pool having real lotus flowers. His dress became wet. **(Sabha; Dyuta; 47)**
- **Narada's detailed description to Yudhishtira of Bhavanas** (big building) belonging to—Indra, Kubera, Varuna & Brahma **(Sabha; Sabhakriya; 7-11)**
  - **Indra's bhavana:** Indra's *sabha* has pleasant glow. . It was built by Vishwakarma. That great hall is 150 *yojanas* long, 100 *yojanas* wide and 5 *yojanas* tall. That wondrous hall has the ability to go wherever desired. .. That hall has several rooms. They have gem-studded seats. It is decorated with *deva-vrksha* (divine trees). At the centre, it has a high, beautiful and golden throne. .. It is called '*Pushkara-malini*'. I have seen it. **(Sabha; lokapala-sabhakhyana; 7)**
  - **Yama's assembly hall:** Now I will describe the beauty of Yama's hall built by Vishwakarma. The circumference/perimeter of that shining hall is more than 100 *yojanas*. It can take any shape it desires. Moreover that hall has controlled environment. Those sitting there feel neither too cold nor too hot. It has a very pleasing condition. .. That huge hall can go

wherever Yamaraja wishes. Vishwakarma built that hall after many years of *tapas*. The hall is self-illuminated. **(Sabha; lokapala-sabhakhyana; 8)**

- **Varuna's hall:** Varuna's hall is also known as Pushkaramalini. Its length, width & height are similar to that of Yama's hall. **Another speciality of that hall is that Vishwakarma has built it under water.** Around that hall there are several divine trees made of gems and having many flowers & fruits. There are creepers of blue, yellow, black, white and red colours. In those creepers birds of several species are living. Its environment is also controlled and is very pleasant. **(Sabha; lokapala-sabhakhyana; 9)**
- **Kubera's bhavana:** That very bright & resplendent hall is 100 yojanas long and 70 yojanas wide. That hall has been built by Kubera with the power of his *tapas*. That hall which equals Kailasa in its pleasant glow makes the Moon's brilliance dull. That hall is carried (held up) by Guhyakas. To the onlookers, that hall appears to be suspended in the sky without any supports. .. I have seen such charming hall which can move in the sky. **(Sabha; lokapala-sabhakhyana; 10)**
- **Pitamaha (Brahma's) bhavana:** It is impossible for anyone to say with certainty how it looks. Every moment it changes in different ways. It is not possible to tell its length, width or height. I have never seen such divine hall anywhere ever. There is neither chillness nor heat there. Hunger, thirst and exhaustion vanish there. That hall does not have pillars. It knows no destruction. It is at the hind (back) part of heaven. **(Sabha; lokapala-sabhakhyana; 11)**
- **Dhritarashtra's dyuta bhavana:** Dhritarashtra summoned his servants & ordered, 'Immediately call experts who know *vastushilpa* (architecture of buildings). Let them soon construct a beautiful and large hall having 100 doors, thousands of pillars. Bring skilled carpenters. Let high quality gems be embedded in the walls. Inform me as soon such a hall is made ready' **(Sabha; Dyuta; 49)**
- Dhritarashtra excitedly & reverently wishes to give a grand welcome to Sri Krishna & tells Vidura of the various gifts he would give to Krishna & other arrangements (extracts): .Dushasana's palace is much better than Duryodhana.....It has beautiful halls. It is auspicious & very beautiful. The palace has the same controlled environment in all weathers (**air-conditioned**). You never feel change of weather due to seasonal changes there. **(Udyoga; Bhagavadhyana; 86)**
- Indra to *devatas*: (Shl 27) All of you should work together and build a theatre for Gandharvas & *apsaras*. It should have specified number of pillars. It should have beautiful steps to climb up. In that theatre all *apsaras* should be dancing. **(Ashwamedhika parva; Ashwamedha; 9)**

### Gardens/Play parks

- Duryodhana built **temporary structures** to attract Bhima: He built several big tents of different styles made of cotton & wool at the shores of Ganga river. These tents were filled with varieties of objects of pleasure and items of games. Flags were hoisted on all the tents. That place was named as '*Udaka-kreedana*' (water-sports or water-play)  
The walls of the tents were covered with drawings/paintings. At the centre of the tents there were artificial water-machines (*jalayantra*-fountains?). Small lakes & canals were built on all sides. On the banks of the lake there were beautiful creepers. **(Adi; Sambhava; 128)**
- About Khandavaprastha: Gardens had sparkingly clean rest houses. There were innumerable *lathagriha* (creeper-houses!); artificial mountains; several clear lakes; .. in some places wide & deep swimming pools were constructed. .. After town-planning/construction, administration etc were streamlined, Sri Krishna returned to Dwaravathi. **(Adi; Viduragamanarajyalamba; 207)**

### Army camps

- When Shalya *maharaja*'s mammoth army was travelling to join Pandavas, Duryodhana cleverly organises to give Shalya & his army wonderful facilities and treatment along the route. One of the things mentioned is water fountains of many varieties & lakes of different shapes. **(Udyoga; Senodyoga; 8)**

- Yudhishtira's army had several wise & knowledgeable *shilpis* (architects/sculptors) who were receiving salaries. **(Udyoga; Sainya-niryana; 151)**
- **Arrangements for Yudhishtira's army to camp:** (extracts): Yudhishtira chose a level, plain, smooth area with abundant grass, wood & water sources nearby and set up camp for his army. He avoided places close to burial grounds, temples, *ashramas* of *maharshis*, *teerthas* (sacred water bodies) & *siddha kshetras*.....Sri Keshava identified a place near the clean Hiranvati river and had a moat/well dug there. He deployed a unit of army to protect it.....Hundreds of tents were set up for all the kings. Each tent had plenty of water, firewood and variety of food items. **(Udyoga; Sainya-niryana; 152)**
- **Construction of camps with tents:** Duryodhana ordered all the kings with him: Right now make ready hundreds & thousands of tents. They should be large as needed. The enemies should not be able to gain control over our tents. They should be in such a place & be secure. There should be abundance of water & wood near the camp site. The routes through which we supply food to the tents should be secured. It should not be possible for enemies to destroy them. Construct forts/defences around our tents. The tents should be well equipped with variety of weapons. They should be decorated with flags. The routes from outside the city to the tents should be level ground. Do all these immediately. **(Udyoga; Sainya-niryana; 153)**
- Duryodhana had the tents in battlefield area constructed as if second Hastinapura. People were not finding any difference between the city & these camps. Similarly, he got constructed several secure tents for the kings to live. Five *yojanas* away from the actual battlefield several circular tents were set up such that each accommodated 100 soldiers. There was facility to supply food & water to all the people. Such facility had also been made to feed elephants & horses. **(Udyoga; Ambopakhyana; 195)**

#### Others

- **Building guest houses:** Yudhishtira's *Rajasuya yaga* preparations: Several *pandits* came to Indraprastha accepting Yudhishtira's invitation. As per his orders, several architects/sculptors built suitable/appropriate residences for all the guests. **(Sabha; Rajasuya; 33)**
- She (an old prostitute) got built a floating boat-like *ashrama* on the river. Around it there were many artificial/fake trees, flowers & creeper as well as artificial birds & deer. **(Vana; Tirthayatra; 111)**
- Karna to Duryodhana about Brahmanas: (Shl 32) They are fit for.... design of main entrances & main roads .... **(Virata; Goharana; 47)**
- Bhishma: Brahma's neeti *shastra* describes how to do agriculture and *shilpa* (architecture, sculpting). Building various parts of a chariot, methods of building houses in villages and cities. **(Shanti; Rajadharmanushasana; 59)**

## Astronomy

### Astronomy (General)

- Menaka to Devendra: Vishwamitra created *nakshatra rashis* starting from *Shravana*. **(May be he identified the zodiac starting from Shravana Nakshatra/Makara rashi?) (Adi; Sambhava; 72)**
- Indra saw: The Sun was rising and Moon was entering the Sun. It was a New Moon day (Amavasya)...it was a great sight that Sun & Moon had joined in the same place. Indra thought: there is merger of Sun & Moon's orbs. As a result there might be a great war by tonight itself. **(Vana; Markandeya samaasya; 224)**
- Mention of Rohini & Abhijit in a story form. (Shl 8-10) That Abhijit (female) wanted a higher place than Rohini but since no one can alter these, she went away for *tapas*. Brahma has created time with Dhanishta etc *nakshatras*. (Note starting star is mentioned as Dhanishta & not Ashwini). Now the place of Abhijit has to be filled. So Kritika joined the *taramandala*. These *nakshatras* shine as if having 7 heads & the *adhidevata* of these is *Agni*. **(Vana; Markandeya samaasya; 230)**



- With your glittering *karna-kundalas* you look like Moon between two Vishakha *nakshatras*. (**Vana; Kundalaharana; 302**)
- There are with us, many aged *Brahmanas*, **versed in various sciences**, of amiable behaviour, well-born, **acquainted with the cycle of the years**, engaged in the study of astrology, **capable of understanding with certainty the motions of planets and the conjunctions of stars** as also of explaining the mysteries of fate, familiar with *shakunas* indicated by birds & animals, and answering questions relating to the future based on positions of planets at the time of questioning, **acquainted with the signs of the Zodiac**, and **versed with the occurrences of every hour**, who are prophesying the great destruction of the Kurus and the Srinjayas, and the ultimate victory of the Pandavas, so that Yudhishtira, who never made an enemy, already regards his objects fulfilled as a consequence of eventual slaughter of his foes. (**Udyoga; Yanasandhi; 48**)
- Bhishma, Drona advising Duryodhana to avert war: **Comet called Digdaha** is being seen in all directions. (**Udyoga; Bhagavadyana; 138**)
- The warriors who had big bows with them were shining brightly like *grahas* (planets) in the sky. (**Udyoga; Ambopakhya; 196**)
- Sanjaya describing Arjuna's fight with Samshaptakas: "*Maharaja!* Just like planet *mangala* (Mars) becomes very inauspicious to the world **by its retrograde and fast forward movements** (*vakra and athichara*), in the same way Arjuna came back and killed many Samshaptakas by *vakra & athichara* movements. (**Karna; 19**)
- Two famous warriors were lying dead near Dharmaraja's chariot and were looking like Punarvasu *nakshatras* near *Chandra*. (**Karna; 49**)
- (Mythological story indicating movement of Moon through the *nakshatras*): Daksha brahma had many unmarried daughters. Of them, he gave 27 in marriage to Chandra. Since they had a relation with the stars for measuring time, they were all known by the names of the stars. But Rohini was the most beautiful. Therefore Bhagawan Chandra started to love her immensely. Therefore he spent all the time only with her...**The daughters repeatedly complain to father about Chandra not spending time with them. Daksha brahma many times advised Chandra to spend time with all equally, but he did not change his ways....After sufficient attempts to correct him and failing, he created the *rajyakshma* disease and made it afflict Chandra. Chandra started decaying every day. This had many consequences such as all vegetation started to die....When other *devatas* requested Daksha brahma for a remedy he said Chandra has to suffer this. He should live equally with all wives...For half a *masa* he will decay gradually and another half *masa* he will gradually regain his shine....Then Chandra corrected his ways and spent one day with each wife.**) (**Shalya; Gada; 35**)
- ..Vridha Garga lived near *Gargasrota-tirtha*. He by virtue of his immense and long term *tapas* near Saraswati-tirtha had obtained *kaal-jnana* (what will happen when), **when the movement of stars will be retrograde (*vakra-gati*)**, when major natural calamities will occur and indications of auspicious happenings. (**Shalya; Gada; 37**)
- Bhishma: Brahma's neeti *shastra* describes (Shl 44) all the paths of planets and stars (Commentary: the changes that occur due to movement of planets from one sign to another, results of stars rising and setting etc), 84 qualities or strengths of earth. (**Shanti; Rajadharmanushasana; 59**)

### Sizes of *grahas* (planets)

- Sanjaya to Dhritarashtra: Now I will tell you about the *grahas*. I will tell you about the size of *Rahu*. I have heard that *Swarbhanu* (another name for Rahu) is circular in shape. The diameter of Rahu is 12,000 *yojanas*. Its circumference is 36,000 *yojanas*. Its thickness is 6000 *yojanas* according to *pouranikas*.  
The diameter of Moon is 11,000 *yojanas*. Its circumference is 33,000 *yojanas*. Its thickness is 1900 *yojanas*. (**Actual dia is 2159 Miles or 3475 KMs**)

Surya graha is 10,000 yojanas. Circumference is 30,000 yojanas. Its thickness is 5800 yojanas (Actual dia is 864,327 Miles or 13,91,684 KMs). Dhritarashtra! This has been determined firmly as the size of Surya graha.

Because Rahu is biggest among the three, sometimes it covers Surya &/or Chandra. **(Bhishma; Bhoomi; 12)**

(The circumference to diameter ratio of three is interesting as it is equal to  $\pi \cdot D$  which is 3.1 D. Rahu is today accepted to be a mathematical point & hence this description looks uninformed. Similarly, size of Sun being smaller than Moon is more by virtue of visible orb and hence again is quite uninformed as a scientific fact. Since thickness is given as something different from diameter, it is assuming it to be a thick circle or a cylinder rather than a spherical body which is also not correct. The conversion factor of 1 yojana = 8 Miles also does not hold good)

### Event days according to Hindu Almanac

- Birth of Yudhishtira: Aashwayuja panchami, Sun in Tula *rashi*, Abhijit *muhurtha* of noon, Jyeshtha *nakshatra*.

Birth of Bhima: Shravana Krishna trayodashi, Magha *nakshatra*.

Birth of Arjuna: Phalgun masa, when Poorva-phalguni *nakshatra* was about to end and Uttara-phalguni was about to begin. Therefore he was also called Phalgun. **(Adi; Sambhava; 123)**

Karna's conception occurred (in Kunthi's womb) on *magha shuddha prathama*. **(Vana; Kundalaharana; 308)**

- Vyasa to Yudhishtira: Today is an auspicious day. **Chandra** (Moon) will enter the nourishing **Pushya nakshatra**. Today you marry Krishne. **(Adi; Svayamvara; 198)**
- Bhima-Jarasandha duel: The fight started on *Karthika shukla prathama* and went on uninterrupted till *Karthika shukla trayodashi*, that is, for thirteen days. **(Sabha; Sabhakriya; 23)**
- Pandavas left for tirthayatra on Pushya *nakshatra* day soon after full Moon of Margashira masa. **(Vana; Tirthayatra; 93)**
- Pandavas spent the night of auspicious *Karthika shukla pournima* on the banks of river Saraswathi. Next day, on *Karthika Bahula Prathama*, they started their travel to Kamyaka vana. **(Vana; Markandeya samaasya; 182)**
- (Shl 90) Start of Krita yuga is signified by Sun, Moon & Jupiter in Pushya *nakshatra* rising in the same *rashi* (zodiac sign). **(Vana; Markandeya samaasya; 190)**
- Susharma's Trigarta army started its march on Viratanagara on Krishna Saptami. Next day, Krishna Ashtami, Duryodhana's army attacked from another direction and captured a large number (a few lakhs) of Virata's cattle. ... That being the night of Krishna Saptami, after 14 *ghalige* (1 *ghalige* = 24 minutes; 5.6 hours later) (from Sunset) Moon appeared. **(Virata; Goharana; 30)**
- Bhishma: *kala, kaashta, muhurtha, dina, ardhamasa, masa, nakshatra, graha, ritu and samvatsara*—the wheel of time constituted with these keeps rotating. Due to the variations in *paksha & masa*, and due to variations in movement of Sun & Moon, two *masas* will be extra every five years. During the 13 years of Pandava's *vanavasa & ajnathavasa*, 5 months & 12 days have come extra. **(Virata; Goharana; 52)**
- Sri Krishna left for Hastinavati on: End of *sharatkala* & beginning of *himantaritu*, Karthikamasa, Revati *nakshatra*, Maitri Muhurta (Some have tried to treat maitri as 8<sup>th</sup> *nakshatra* counted from Krishna's janma *nakshatra*. But counting from Rohini, Revati will be the 24. This will result in remainder of 6 which is Sadhaka tara. But if Arjuna's *janma nakshatra* of Pubba is taken, Revati will be 17<sup>th</sup> which gives remainder 8 or *maitri tara*. Hence commentators have treated *maitri* as *muhurtha* & not *tara*. Or one has to consider Arjuna's *janma tara* for reckoning). (*Maitre muhurthe, Koumude mase, Revatyam, shradanne himagame*). **(Udyoga; Bhagavadyana; 83)**
- Sri Krishna to Karna: Karna! Go immediately and inform Drona, Bhishma & Kripa the following:

"Now it is *saumya maasa*. In this season grass for cattle, food items and firewood can be collected & stored comfortably. All plants are full of fruits & are plentiful. There is no problem of insects. Ground is devoid of mush. Water is tasty. Being *shshira ritu* (winter season) there is not much sun. It is not very cold either. The climate is very comfortable.

On exactly eighth day from today it will be *Amavasya* (New Moon). It is said that it is the day of *shakra god* (Indra). Let the war begin on that day of *Amavasya*. (**Udyoga; Bhagavadyana; 142**)

- Balarama: "Madhava! It is 42 days today since I left for my *tirtha-yatra*. I left on the day of Pushya *nakshatra* and have returned on the day of Sharavana *nakshatra*. (Commentary: Counting one day per star Pushya to Pushya is 28 plus 14 for Pushya to Sharvana=42 days) (**Shalya; Gada; 34**)
- The *Ashwamedha* horse followed and protected by Arjuna reach outskirts of Hastinapura on *magha shuddha Dwadashi* day with *Pushya nakshatra*. Yudhishtira tells Bhimasena: This is *poornima of magha masa*. Now, only one *masa* (*Phalguna*) is remaining. Therefore go and locate the right place for the *yaaga* and make required preparations. (**Ashwamedhika parva; Anugita; 85**)
- Vaishampayana said: There were several most unnatural happenings and evil omens in their towns. Seeing all these evil omens, Sri Krishna met all Vrishni warriors on a day when *Amavasya* (New Moon) combined on *chaturdashi* (fourteenth lunar day) and said: Oh warriors! Today *Chaturdashi* itself is *Amavasya*. It is also solar eclipse due to *Rahu*. This same combination had occurred at the time of Mahabharata war. Now it has returned to indicate our destruction. When calculating this, he realised that 36<sup>th</sup> years since end of war had come. .. (**Mausala Parva; Mausala; 2**)

#### Planetary positions just before Mahabharatha war began

- There are several shlokas which have given astronomical positions of planets & *nakshatras*. (But to me the whole thing is quite confusing due to several incompatibilities. I have noted the incompatibilities that I find in red). The stated placements have been grouped planet wise and given here.

**Sun:** No explicit mention. While interpreting Shloka 31, the commentators have said that both Sun & Moon along with Rahu are in Swathi *nakshatra*.

**Moon:** No explicit mention. While interpreting Shloka 31, the commentators have said that both Sun & Moon along with Rahu are in Swathi *nakshatra*.

(This is not compatible with the statement that Venus was in Pisces/Meena. This is because Sun and Venus are never separated by more than one sign)

Since *thithi* is mentioned as *Amavasya*, Sun & Moon being together checks out.

**Mars:** (Shl 14) Is retrograde in Makha *nakshatra* (Leo/Simha sign). (Shl 18) Is retrograde and is 'occupying' (or perhaps influencing) the Shravana *nakshatra* where Jupiter is placed and the sign of Jupiter (Capricorn/Makara).

(Two incompatible placements. If in Makha and retro, it can be considered to be aspecting & not occupying Capricorn & hence Sharvana & Jupiter from its retro position in Cancer)

Due to this retro movement of Mars the earth is very green and is covered with all kinds of plants. The wheat plants have five *thene* (ears/kernel?). The paddy plants have 100 *thene* (panicle?).

**Mercury:** No mention at all. See the note in red for Venus.

**Jupiter:** (Shl 14) is in Shravana *nakshatra* (Makara/Capricorn). Later on Page 22, a few Shlokas after 22, it is said that though Jupiter should be in one sign for a *samvatsara*, it is approaching Vishakha *nakshatra* in retrograde motion.

**Venus:** (Shl 15) In Poorva proshta pada *nakshatra*; has turned towards Uttara proshta pada *nakshatra* and has joined another planet (unknown name?) and is 'influencing' that *nakshatra*.

(In Udyoga; Bhagavadyana, Adhyaya 114, pages 5677, Shl 3-4 it has been explained that these two mean Poorva-bhadrapada & Uttara-bhadrapada which are in Pisces/Meena sign. As a planet

moves it has to cross Poorva & then go to Uttara. Since Venus & Mercury are generally close to Sun & each other, the other planet here could be Mercury)

**Saturn:** (Shl 14) is tormenting *Bhaga nakshatra* i.e., Uttara *nakshatra* (Leo or Virgo). Later on Page 22, a few Shlokas after 22, it is said that though Saturn should be in one sign for a *samvatsara*, it is approaching Vishakha *nakshatra* in retrograde motion.

(This is also incompatible.

- According to some books on Astrology the Deity of Poorva phalguni *nakshatra* is Bhaga and Uttara phalguni is Aryaman. If Saturn is taken to be in Poorva phalguni, it will be in Leo/Simha. This will result in Mars-Saturn conjunction which could indicate bad events like wars etc. Saturn if in Leo will also have its 10<sup>th</sup> aspect through which it can aspect Taurus where Rohini *nakshatra* is placed)
- Saturn if in Virgo, can approach Vishakha in forward motion. It can approach Vishakha in retro only if it is in Scorpio sign or Sagittarius sign.
- Also Saturn is in a sign for about 2.5 years. Possibly it means conjunction of Jupiter & Saturn was expected for a *samvatsara* but is not happening)

**Rahu:** (Shl 11) Is approaching Sun

**White Planet (Shwetha graha):** (Shl 12) It has crossed Chitta *nakshatra* and gone to Swathi *nakshatra* (In Tula/Libra). (Shl 16) Like fire covered with smoke & shining brightly, it has occupied Jyeshtha *nakshatra*.

(The *nakshatras* in Tula/Libra to Vrishchika/Scorpio are: Chitta, Swathi, Vishakha, Anuradha, Jyeshtha. Hence the two statements are incompatible. Some have interpreted this as Kethu but there is no basis for this and it results in another incompatibility of placing both Rahu & Kethu together which are always 180 Degrees apart)

**Purusha graha:** (Shl 17) This graha is between Chitta & Swathi and is tormenting Rohini *nakshatra* as well as Sun & Moon. It is shining fiercely and is moving with Dhruva *nakshatra* (Pole star) to its left (anti-clockwise)

(Purusha = male. In astrology, Sun, Jupiter & Mars are considered as male planets)

**Others:** (Shl 13) A fearsome planet called 'Dhooma-kethu' (normally this word means a comet) has occupied Pushya *nakshatra* (Cancer/Kataka).

(Shl 28) In this paksha, the Sun & Moon came together on the thirteenth day itself—that is *Amavasya* (New Moon day). (Shl 32?) I have seen a *paksha* with fourteen days. I have seen also with 15 days. Very rarely there can be thirteen days in a *paksha*. But I have neither seen nor heard of *amavasya* coming thirteen days after *poornima*. Only in this month in thirteen days both Sun & Moon are eclipsed by Rahu.

(Shl 30) Kritika *nakshatra* is being tormented by very hot rays and powerful storms are blowing under the refuge of *dhoomakethu*.

(Shl 31) If the 27 *nakshatras* are divided into three parts, each part will have nine *nakshatras*. If the main *nakshatras* in each of these parts have an affliction with malefic planets, it indicates great fear/danger. (Commentary: In the first group—**Krittika to Ashlesha**-- Krittika, Rohini & Pushya are afflicted. In the second—**Makha to Jyeshtha**-- Makha and Swathi are afflicted by malefic planets. In the third—**Moola to Revathi**—only Jupiter & Venus are placed [**which are not malefics**] and Saturn is in Uttara [**which is not in third group**] (**Bhishma; Jambookhanda-vinirmana; 3**)

Related references available: (i) Sri Krishna left for Hastinavati in Karthikamasa, Revati *nakshatra* (ii) Sri Krishna to Karna: Karna! Go immediately and inform Drona, Bhishma & Kripa the following: On exactly eighth day from today it will be *Amavasya* (New Moon). It is said that it is the day of *shakra god* (Indra). Let the war begin on that day of *Amavasya* (iii) Sri Krishna narrating to Pandavas the happenings at Dhritarashtra's assembly informs this: Duryodhana, addressing all the kings who had followed him out of the assembly, ordered repeatedly, 'Proceed to Kurukshetra right now. Today being Pushya *nakshatra* it is very auspicious day'. Then all the kings with their armies proceeded to Kurukshetra. (iv) Karna to Sri Krishna: The powerful

*shanaishchara* (Saturn) is troubling *Rohini nakshatra* which is related with *prajapathi* or *Uttarabhadrapada nakshatra* which is *prajapathi* (ruler of citizens)

(Time Moon takes to traverse Revathi to Pushya could be about 8-10 days. This would mean Sri Krishna arrived at Hastinapura, finished the meeting and met Karna also in this period. Since Duryodhana orders his commanders as soon as negotiations break down, all these have happened in this period. Pushya to Swathi could be 7-8 days for the Moon to transit)

## Botanical/Flora

- Description of Khandavaprastha by Vaishampayana: There were many parks/gardens around the city for the pleasure of princes. These had the following trees/plants/shrubs/creepers: *Amra*, *Amrataka*, *Neepe*, *Ashoka*, *Champaka*, *Punnaga*, *Naga*, *Lakucha*, *Panasa*, *Shala*, *Tala*, *Tamala*, *Vakula*, *Ketaka*, *Prachinamalaka*, *Lodhra*, *Ankola*, *Jambu*, *Patala*, *Kubjaka*, *Atimuktaka*, *Karavira*, *Parijata*. (**Adi; Viduragamanarajyalamba; 207**)
- List of trees in the forest where Damayanthi was lost: *Shala*, *Bamboo*, *Dhava*, *Ashwattha*, *Tinduka*, *Inguda*, *Kimshuka*, *Arjuna*, *Arishta*, *Neem*, *Shalmali*, *Jambu*, *Mango*, *Lodhra*, *Khadira*, *Sala*, *Vetra*, *Padmaka*, *Spandana*, *Amalaka*, *Plaksha*, *Kadamba*, *Udumbara*, *Badari*, *Bilva*, *Ala*, *Priyala*, *tala*, *Kharjura*, *Haritaka* and *Bibhitaka* etc. (**Vana; Nalopakhyana; 64**)
- As Bhima was walking at the base of Gandhamadana mountain, he saw beautiful banana plantation which stretched to several *yojanas*. (**Vana; Tirthayatra; 146**)
- Trees that Pandavas saw in the forest in Gandhamadana mountain: Mango, Coconut, Jackfruit, Tinduka, Munjataka, Madala, Anjura, Pomegranate, Kharjura, Grapes, Tamarind, Lemon, Neem, Bilva, Kapittha, Jambu, Kashmari, Paravata, Badari, Plaksha, Udumbara, Ala, Ashwattha, Kshiraka, Bhallataka, Amalaka, Haritaka, Bibhitaka, Inguda, Karamarda etc.

Creepers/plants in water: Kumuda, Pundarika, Kokanada, Utsala, Kahlara & Kamala (Lotus)

Flower plants they saw: Champaka, Ashoka, Punnaga, Kedage, Vakula, Saptavarna, Karnikara, Patala, Kutaja, Mandara, Indivara, Parijata, Kovidara, Deva, Daru, Shala, Tala, Tamala, Pippala, Hinguka, Shalmali, Kimshuka, Shimshupa, Sarala, Kuravaka etc.

Yudhishtira to Bhima: In this forest there are no plants having thorns. (**Vana; Yakshayuddha; 168**)

- Trees in Dwaitha vana on the banks of river Saraswati: Plaksha, Aksha, Rauhitaka, Vetasa, Badari, Khadira, Shirisha, Bilva, Inguda, Karira, Pilu, Shami etc. (**Vana; Ajagara; 177**)
- Names of 15 trees that grew near Sapta-saraswata-thirta: Badara, Inguda, Kashmarya, Plaksha, Ashwattha, Vibhitaka, Bilva, Kankola, Palasha, Karira, Pilu, karusha, Amra, Atimukta, Parijata etc. ....Nearby there were many banana plantations.. (**Shalya; Gada; 37**)
- List of 28 trees in Upamanyu's *ashrama* on Himalayas (Only names not seen above are listed): Dhava, Kakubha, Vatsanabha, Madhuka. (**Anushasana; Daandharma; 14**)

## Medicine/Medical

### Conception to birth

- Vidura: (Shl 2, 3) *Maharaja!* From the time of union of sperm and egg the action of developing life starts. After one night of the union of these, the foetus gets the name *kalila* (*jeeva* resides in *kalila*). After five nights it is called *budbuda*. Continuing to develop like this by the time five months elapse it takes the shape of a *pinda* (a lump). *Chaitanya* (consciousness, Universal soul) resides in that *pinda*. After five months all the organs start developing and eventually the child becomes fully developed. (Shl 4, 5, 6) At that time it will have flesh and blood and lives in the middle of impurities (*amedhya*) in the womb. As the time for delivery nears due to the forces of air the baby makes its head down and legs up. As it comes through the vagina it suffers many difficulties and finally emerges out freed from it, but faces several difficulties in this world. (**Stree; Jalapradanika; 4**)



### Preserving Gandhari's ball of flesh from womb

- Gandhari decided to abort the foetus & by applying force/hitting on the abdomen, aborted it. Even though two years had elapsed the foetus was hard as a ball of metal & was merely a ball of flesh and had no shape of a human being... *Maharshi* Vyasa asked for 100 pots with tight covers and filled with ghee to be brought immediately. He asked her to immediately bring cold water & sprinkle on the foetus. When it was sprinkled, the foetus broke into 100 pieces. Each piece was of the size of the *phalange* of the thumb. When each piece was placed in the ghee-pot, 101 pots were required. The pots were preserved in a secret location. Proper arrangements were made for its protection. Vyasa said: "*Gandhari!* These pots have to be protected carefully. The covers should be opened only after completion of two years. Till then they should not even be touched." (Adi; Sambhava; 115)

### Doctors

- Dharma Vyadha: (Shl 14, 15) Just as fowlers/hunters drive away cruel animals, **skilled doctors cure diseases** which are result of past karmas **with excellent medicines**. (Vana; Markandeya Samaasya; 209)
- Yudhishtira's army had hundreds of knowledgeable/expert *vaidyas* (doctors) who were ready with various equipment needed by them. (Udyoga; Sainya-niryana; 151)
- Bhishma: (Shl 56-60) **A king who is troubled by the enemy** should accumulate enough money. Along with it, he should also accumulate oil, fat, honey, *ghee* (clarified butter), **all kinds of medicines** .... In the same way he should accumulate ... all types of medicines, fruits, roots and **four types of doctors** who can cure effects of poisons, who tie bandages on wounds, who cure diseases & who can neutralise malevolent spells. (Shanti; Rajadharmanushasana; 69)

### Diseases/Symptoms

- Vichitravirya was not coming out of the *ranivasa* at all (palace where his queens lived). Shouldn't there be a limit to everything? Due to his excessive indulgence in pleasures of the flesh, he developed *kshayaroga* (Some variant of TB?). None of the medicines, however special, had any effect on the disease. (Adi; Sambhava; 102)
- Yuvanashwa was performing *tapas* and was following *vidhi* & *niyamas* as per *shastra* and was observing fasts regularly. As a consequence his *jataragni* (acidity) started giving him much trouble. (Vana; Tirthayatra; 126)
- Satyavan's description of symptoms just before dying: Sweat broke out in his entire body. Developed a severe headache. Had an acute pain in the heart (chest). He felt as if his head was being poked all around by sharp instruments. Could not even stand & wanted to lie down immediately. (Heart attack?) (Vana; Pativratamahatmya; 297)
- Karna to Sri Krishna describing the various negative omens he is seeing: Horses & elephants are eating very little food. Humans are also eating much less (Loss of appetite). But the excreta produced by all these are of large quantity. This is happening to all soldiers of Duryodhana. Experts in the *shastra* of omens say that this is a sign of defeat. (Symptoms of anxiety & fear?!) (Udyoga; Bhagavadgita; 143)
- Vyasa to his son Shuka: (Shl 6) The fool who is always sitting on this tree out of greed for its fruits will be destroyed due to his own greed **just as a person is destroyed by a poisonous tumour in his own body**. (Did they have cancerous tumours in those days?!) (Shanti parva; Mokshadharma; 254)
- (Shl 5, 6) Even though the *chetana* is free of dualities, he takes birth in different forms and experiences dualities like happiness & grief due to the power of *gunas*. He suffers many diseases like headache, eye pain, toothache, stiff neck, *jalodara* (dropsy), *trisha-roga* (always feeling thirsty), fever, tumour, vomiting & loose motion, white patches on the skin, leprosy, *agnidaaha*, white or black scabs, epilepsy etc. (Shanti parva; Mokshadharma; 303)

## Diet/Food control

- Just as someone who is already sick violates the prescribed diet (*pathya*) will never be cured, continuing to indulge in bad karmas makes his future states of birth worse. (**Ayurvedic system of pathya prevalent at that time**). (**Vana; Markandeya Samaasya; 209**)
- Poojani the sparrow: (Shl 56) Why do doctors wish to treat the sick? They could have kept quiet saying that diseases have come according to 'time'. There was no need for doctors. If everything is brought about by time, what is the use of medicines?  
(Shl 80) Whether bitter or pungent or tasty or sweet, one who eats healthy and limited food at right times daily will be eating food equivalent to *amrit*. (Shl 81) One who, without thinking of the consequences eats bad food without following any regular timing, will be destroyed soon. His bad food habits will end his life. (**Shanti parva; Aapadharma; 139**)
- (Shl 133) ....But just as medicines are not given to one who does not adhere to stipulated diet,... (**Shanti parva; Mokshadharma; 320**)
- In Agasthya's *yajna* there were some who ate only roots and fruits. There were *ashmakuttas* who pounded their grains with stones and ate it. **There were marichapas who lived only by drinking Sun rays.** There were *pariprishtikas* who ate only after someone asked them if they wanted food and whatever was given to them. There were *vyghasirikas* who ate only food left over after offering in *yajna*. (**Ashwamedhika parva; Anugita; 92**)

## Poisons/Toxins

- Countering effect of poison (Context: Bhima had been poisoned by Duryodhana & thrown in water where several snakes bite him) (Shl 57) The bite of several snakes neutralised the poison already present in his body. The poison due to chemicals (*sthavara visha*) was destroyed by the animal poison (*jangama visha*). (**Adi; Sambhava; 128**) ([See http://ngm.nationalgeographic.com/2013/02/125-venom/holland-text](http://ngm.nationalgeographic.com/2013/02/125-venom/holland-text))
- (Shl 10-16+) Draupadi speaks strongly against using '*vasheekarana*' (Overcoming/gaining controls over others by charms, incantations & medicines) medicines etc to gain control over husbands: (**Shows that quacks & spurious medicines existed even then for fooling the gullible**). (Shl 12) As soon as husband comes to know that the wife is deploying *mantra*-medicines-herbs/roots to make him her slave he will be scared of her just as of a serpent in the house. It is my clear opinion that: (Shl 13) A husband can never be won over by using *mantras*. (Shl 14) Enemies generally use poisonous things to make their opponents sick or to destroy them secretly or to corrupt their thinking. Women sometimes give such terrible poison sent by enemies to their husbands to bring them under control. (Shl 15) Even if the husband touches such poisonous medicines he will become sick. Sometimes he may even die. I have also heard that such medicines/roots cause various diseases over a period of time. (Shl 16) Dropsy/water belly, Leprosy, premature ageing, impotency, stiffness, blindness and deafness are some of the serious diseases that may develop over a period of time. Even if the husband is under control, what is the use if he is suffering from such diseases? Therefore a wise woman should never try such acts. She should not hurt her husband for any reason. (**Vana; Markandeya Samaasya; 233**)
- (Shl 17) ... He should give bribes to the officers of enemy's army and encourage them to join his army. **Or by use of medicines he should spoil their minds.** (**Shanti parva; Rajadharmanushasana; 103**)

## Physical & mental disease

- Bhimaraja decided that his daughter must be suffering from **mental disease** as she had no physical ailments. He also inferred that her not having got married might be the reason for her mental state. (**Vana; Nalopakhyaana; 54**)
- Bhima to Yudhishtira: (Shl 8) **There are two types of diseases seen in human being: physical and mental. But these are inter-dependent.** (Shl 9) **First a physical disease is born and from it the mental ailment comes. There is no doubt in this. First mental ailment is born and from it physical disease can also come. This is also certain.** (Shl 10) One who grieves recollecting the past (finished) physical and mental diseases, gets new grief from old grief. (Shl

11) *Sheeta* (cold), *Ushna* (heat) and *vayu* (wind) are three qualities of the body (*kapha*, *pitta*, *vata* respectively in Ayurveda). Everyone is constituted of these three qualities. **Equilibrium of these three qualities is said to be the characteristic of physical health.** (Shl 12) If any one of these factors becomes aggravated, the remedy is said to be: with the material which causes *ushna* treat *sheeta*; with the material which causes *sheeta* treat *ushna* and the three will regain their balance. (There is no mention of *Vayu*!).

(Shl 16) There are three mental qualities called *sattva*, *rajas* and *tamas*. If these three are in equilibrium it is said to be the characteristic of mental health. (Shl 14) If any of these factor related to mind gets aggravated, the remedy is said to be: if grief which is based on *rajo-guna* increases, it can be neutralised by joy based on *sattva-guna*. If joy based on *sattva-guna* increases, then sadness rooted in *rajo-guna* will balance it. (Shl 15) It is for this reason that someone who is very happy likes to recollect his difficult and sad days. Similarly, one who is very sad likes to recollect the happy days he experienced.

But you are not recollecting sad days when sad; or happy days when happy; or happy days when sad; or sad days when happy. The reason for this could be that *daiva* is very strong or it is your nature to grieve at all times. That is why you are grieving at this time when you have to be happy. It is appropriate for you to recollect all the grief and difficulty we experienced to balance the joy at this time. But you are not doing so.

..The same kind of war you fought with Bhishma and Drona, you now have to fight within yourself. There is no use of arrows or relatives and friends in this fight. **You have to fight within your mind alone. In case you do not win this war and give up your body (suicide), you will again have to don another body and continue the war with your enemies.** Therefore right now you have to forget your 'gross body' (*sthoola-sharira*) and achieve integrality of mind. Therefore get ready for the fight in your mind. **Fight in your mind with logical thinking that analyses everything.** If you do not defeat your mind in this fight, we cannot say what kind of state you will reach. If you win over this mind of yours which is suffering from excessive grief, you will achieve fulfilment. (Shanti; Rajadharmanushasana; 16)

- Vasudeva said: (Shl 1) Yudhishtira! **Disease is of two types: physical & mental. Both these are born by mutual co-operation.** (Shl 2) That which is born in the body is called physical illness and one in the mind is called mental illness. (Shl 3) *Shita*, *ushna* & *vayu* are the qualities of the body (cold, heat & wind: *kapha*, *pitta*, *vata* in Ayurveda). **It is said that these three remaining in equilibrium is the characteristic of good health** (*Shita* is acted upon by *ushna*. *Ushna* by *shita*. By this mutual action the body maintains equilibrium of temperature and hence health).

(Shl 4) ***Sattva*, *rajas* & *tamas* are said to be qualities of *atma* (*atma-guna*). If these three are in equilibrium, it is said to be the characteristic of mental health.** (Shl 5, 6) *Maharshis* have advised that if any one of these *gunas* becomes more it should be balanced with another. Grief, which is a form of *tamoguna*, is balanced (cured) by joy, which is form of *rajoguna*. Similarly, joy gets neutralised by grief. One who is sad tries to remember happy moments. Similarly, one who is happy tends to remember his past griefs. (Shl 7) But you, while being sad, are not trying to remember past happiness to counter it. You are not also remembering grief to balance happiness. **Yours is nothing but illusion of grief or may be that your nature is like this. You are being agonised by your nature.** (Ashwamedhika parva; Ashwamedha; 12)

- ...Badly injured Yudhishtira returned to his camp (in the midst of battle) and lied down on his bed. Even though the doctors removed all the arrows stuck in his body, his *mano-vedana* (mental agony) did not go... (Karna; 63)

## Treatments

- Upamanyu's *sthothra* to Ashvini *Devas*: (Shl 58) Because you are children of Sun, you are successful doctors who by his power are able to cure leprosy (*Krishna-kushta roga*). (Sun bath therapy?) (Adi; Poushya; 3)
- Upamanyu's *sthothra* to Ashvini *Devas*: (Shl 63) Because the water which is so beneficial to humans has the power of Moon in it, you treat with water. (Water therapy?) (Adi; Poushya; 3)



- (Shl 46) Whichever old man Shanthanu touched with his both hands was experiencing indescribably pleasant touch-feel. By this touch, old age would vanish and he would regain his youth. Therefore he was called 'Shanthanu'. (**Touch healing?**) (**Adi; Sambhava; 95**)
- Sahadeva: By studying the facial features, I can identify such bulls by smelling whose urine barren women can beget children. (**Aroma therapy; smelling or inhaling the aroma deeply can trigger some neurons in the brain; could this cause some change in relevant parts of brain unblocking/altering some condition?!**) (**Virata; Pandavapravesha; 3**)
- The soldiers plucked out the pieces of arrows that were stuck in their bodies. They bathed in water mixed with various medicinal plants. (**Bhishma; Bhishmavadha; 86**)
- When Ashwatthama was hurting both Sri Krishna and Arjuna with his amazing archery, Sri Krishna said to Arjuna: "Arjuna! Why are you being careless! Kill this warrior right now. If you ignore him he will commit many more offences. **Just as a disease if not treated in a timely manner will increase in intensity**, if you ignore him he will cause many serious problems to us in future."  
..Just as diseases in the body **can be cured** by *mantra-oushadha-chikitsa* (incantations, medicines & treatment) and *daivayoga* (God's grace).. (**Karna; 17**)
- Sanjaya: Arjuna who was coming forth aggressively to kill Jayadratha was stopped by all great warriors together just as **good treatment prevents further progress of disease in the body**. (**Drona; Jayadrathavadha; 91**)
- Bhishma: Brahma's *neeti-shastra* had (Shl 71) **72 types of treatments to the body as per medical *shastra***. (**Shanti; Rajadharmanushasana; 59**)

### Veterinary

- Karna to Duryodhana about Brahmanas: They are fit for....., treating/curing donkeys, camels & goats,.. (**Virata; Goharana; 47**)

### Wonder Medicines

- Fight between Bhima & Jarasandha is declared: As soon the news that the king (Jarasandha) was ready for the fight became known, one of the *purohita* brought *gorochana*, garland of flowers and special medicines which would give renewed energy and would instantly relieve body pain. (**Sabha; Sabhakriya; 23**)
- Bhishma gave a medicine called '*Vishalya-karani*' to Duryodhana. Due to its effect, the arrows (arrow heads) which were stuck inside his body came out easily and the pain due to the arrows also vanished. Due to the wonderful effect of that medicine Duryodhana became '*vishalya*' (was rid of the sharp arrow heads). (**Bhishma; Bhishmavadha; 81**)

(GHV: Wouldn't it be nice to have such a medicine which can help extract embedded metal fragments from bomb blasts or bullets without surgery.

In the detailed description of war, every day several warriors including the great commanders like Bhishma, Drona, Ashwatthama etc as well as Sri Krishna are injured by the arrows and suffer bleeding from multiple wounds. But next day they are all back in the battlefield with renewed vigour. Clearly there must have been some wonder medicine to stop & heal these bleeding wounds and to prevent them from getting infected.

There is a statement in the beginning of *Adhyaya* 80 that at the start of 7<sup>th</sup> day's war Duryodhana was still bleeding from his wounds inflicted by Bhima's arrows previous day)

- Then, Yudhishtira who was rendered painless and free of all arrow heads/pieces in his body by the treatment of doctors and friends using *mantras* and *oushadhis* (medicines), came swiftly to the battlefield. (**Karna; 89**)

- (Shl 24) In case the king does not get influenced by this, then also you need not lose hope. Through your close helpers use the proven medicine called *sarvashatru-vinashaka* and kill all the elephants, horses and foot soldiers of the enemy. **(Shanti parva; Rajadharmanushasana; 105)**

### On death

- Janamejaya! Vasudeva said: (Shl 1) Arjuna! After *Siddha purusha* said this, Kaashyapa who was great among *dharmatmas* prostrated to him and asked some very tough questions relating to dharma. The wise *Siddha purusha* answered them.

Kaashyapa's questions were as follows: (Shl 2) *Mahatma*! How does this body fall off? How does the *jeeva* which was inside that body obtain another body? How does this *jeeva* become liberated from this grief filled *samsara*? (Shl 3) How does *jeeva* leave the basic nature (*mool prakriti*) and the body formed out of it? How does *jeeva* liberated from one body get another body? (Shl 4) How does human being experience his good and bad karmas? Where will the karmas be when *jeeva* relinquishes the body?

(Shl 5) Varshneya! Thus having been questioned by Kaashyapa, the *Siddha purusha* started to answer the questions. I will tell you the same. Listen. (Shl 6, 7) Kaashyapa! **Whatever auspicious karmas man does in this world for gaining long life and fame will result in obtaining another body.** After getting another body, such auspicious karmas yield their fruits and decay. Then his longevity also starts declining. In such state, he does many unbecoming deeds. **When the time of destruction approaches, his intelligence also undergoes change (becomes illogical/develops self destructive tendencies)** (*buddhir vyavartate chasya vinashe pratyupasthite*). (Shl 8) Even though he knows his essence, strength and time context, not having restraint/control on mind, he consumes food beyond limits that is against his nature. (Shl 9) One without restraint on mind consumes all foods harmful to his body. Sometimes he eats too much and sometimes eats nothing. (Shl 10) Sometimes he eats defective food & drink. Sometimes he eats things which are opposed to each other. Some times he eats heavy items (difficult to digest) excessively. Sometimes he eats before the previous meal has been digested.

(Shl 11) He exercises beyond limits. He enjoys excessive sexual pleasures. Due to the greed of wanting to work continuously, he withholds certain natural urges (like urinating, defecating etc). (Shl 12) He eats very juicy food. He sleeps in daytime. He eats at all odd times food that is not properly cooked and aggravates the defects in the body (like *vata*, *pitta* etc: wind, bile etc as in Ayurveda). (Shl 13) By eating bad and wrong food he aggravates the defects/problems and becomes a victim of diseases leading to death. Or by adopting methods such as hanging, drowning etc that are not approved in *shastras* he commits suicide.

(Shl 14) Due to many such reasons the body donned of *jeeva* is destroyed. Understand well this, which has been said to be the life of *jeeva*. (Shl 15) **Prompted by intense *vayu* (*vaata*), the *pitta* (bile, bilious liquid) gets aggravated. Such aggravated *pitta* spreads throughout the body and obstructs the functioning of the body and its actions. (Shl 15) **This *pitta* which has a strong role to play, when aggravated, damages the sensitive/critical organs. Understand this correctly.** (Shl 17, 18) Great *dvija*! Once the sensitive/critical organs are seriously damaged by the aggravated *pitta* the agonised *jeeva* gives up the body completely. **Understand well that *jeeva* will be suffering due to pain/agony at the time of death.** In this manner all beings in this *loka* at all times will be agitated due to the grief of birth and death. (Shl 19, 20) It is seen that all *jeevas* experience the same kind of agony when leaving this body, when entering the womb and when coming out of womb. At the time of death pain, like breaking of joints, will be experienced. At the time of birth it is troubled by the water in the womb.**

(Shl 21, 22) Triggered by **another type of intense *vayu*** and aggravated by phlegm (*shaitya*: cold) the *prana-vayu* (vital air) obstructs the 'being together' of *pancha-bhutas*. Later that same *prana-vayu* with great difficulty leaves the body and goes away in an upward movement. (Shl 23) Once the *jeeva* relinquishes the body, the body will not have breathing. Then the body loses heat, breathing, lustre and sentience (*chetana*). **Thus, the body given up by the *jeevatma*, is called as dead body by people.** (Shl 25) *Jeeva* who dons a body experiences the objects of senses through the *indriyas*. **But he does not know about the *prana* which gets satisfied by the food consumed through the same *indriyas*.** That which performs karmas living in such body is the eternal *jeeva*.

(Shl 26) **Consider certain junction points where organs have joined as sensitive/critical points for those organs. This characteristic of junction points can be found in *shastras*.**

(Shl 27) Once these junctions are separated (or damaged), *vayu* starts rising up, enters the heart and soon stops the functioning of the very essences (*sattvam chaashu runaddhi vai*). (Shl 28) When the time of death is imminent, even though the body is associated with sentience (*chetana*) that sentience will not know anything because, the cognisance of the sentience will be covered by *tamas* (*tamasa samvrita jnana*). The sensitive places will have been closed. The *jeeva* which comes out of the body in such state will have no support and gains movement through *vayu*. (Shl 29) Then *jeevatma* will be exhaling forcibly and loudly and will be coming out of the body. That really shakes the body which has no sentience. (Shl 30) Once the *jeeva* is separated from the body, it will be enveloped in its own karmas. It will be enveloped with auspicious karmas and/or inauspicious karmas. (Shl 31) **A brahmana who has studied the doctrines in Vedas & shastras properly can, by observing the signs at the time of death know who is punyatma jeeva & who is papatma jeeva.** (Shl 32, 33) **Just as a man can see where the fireflies goes & sits in darkness, similarly siddhas who have jnana drishti can with their divine vision see a jeeva coming out of a body, taking birth and entering the womb.** (Ashwamedhika parva; Anugita; 17)

### Others

- Just as the body is attacked by *vatha-pittha-kapha*, the three sons of Dhritarashtra attacked Abhimanyu. (Analogy from Ayurveda) (Bhishma; Bhishmavadha; 84)
- Just as an acute disease (in advanced stages) does not get subdued by *mantra-oushadhi-chikitsa*... (Karna; 49)
- (Shl 29) Just as hunters inflict violence on small animals, variety of diseases batter human being. There is no doubt that at those times human beings will not be left with enough strength to even sit or stand. (Shl 30) **Human beings afflicted with diseases spend a lot of money to cure it. Even doctors make a lot of effort to cure the problems (More true today). Even then they will not be able to find a remedy.** (Shl 31) There is another mystery here. Even doctors who have collected a variety of medicines, are very skilled in treating diseases are also troubled or tortured by diseases. (Shl 32) **Even though such doctors drink variety of potions etc., we see that they are also broken by old age just as elephants uproot huge trees.** (Shl 33) **In this world who treats animals, birds, wild animals & the very poor? Generally, these do not fall sick at all.** (Shl 34) Just as carnivorous animals attack and snatch away other animals, diseases attack and take under their control kings who have great *tejas*, are fiercely valorous and are impossible to fight. (Shanti parva; Mokshadharma; 331)

## Science/Technology

### Yantra (Mechanical contrivance)

#### Mechanised Boat

- (Shl 5) Then Vidura, for the purpose of their escape, prepared a strong boat which was capable of withstanding tornados and waves, fitted with a *yantra* (*navam yantrayuktam*; a machine; mechanical contrivance) and a flag. (Adi; Jatugriha; 141)
- A man who was in the dress of a boatman came to Pandavas and said: "...Vidura has sent me with a boat fitted with *yantra* to take you across the river. "He took them to the boat & explained the construction of the boat to them. That *yantra-nauka* had been built by very skilled boat makers and had special features to withstand wind & waves. It was also capable of sailing with the speed of wind & mind....before he finished talking the boat was already moving at the speed of wind (*vayuvega*) and reached the other shore. (Adi; Sambhava; 149)

#### Matsya yantra

- *Matsya yantra*: Drupada (For Draupadi's *swayamvara*) built a rotating machine high above (tall structure) and placed the target above that rotating machine....

Dhrishtadyumna: (Shl 36) This is the bow. The target is above the moving mechanism placed here at the centre. My sister will be the wife of that valorous, handsome, of great character and born in noble lineage person who will string this great bow, deploy the five arrows here in the bow and **hit the target through the hole in the rotating mechanism** (*chhidrena yantrasya*).

(Description suggests that it was perhaps a constant speed rotating mechanism turning a disc with a circular cut in it and operational for a few hours continuously). (Adi; Swayamvara; 185)

### Chakshushi vidya

- Gandharva named Angaraparna to Arjuna: (Shl 45) Power of *Chakshushi vidya*: One who knows this *vidya* can see any object in any of the three worlds by merely thinking of it and can see it in any form desired (Commentary: in small or big size, that is, with any magnification desired). (Adi; Chaitraratha; 170)

### Mathematics

- Rituparna to Bahuka: Bahuka! Observe the proficiency I have in mathematics! .. (Shl 8) Each one has expertise in different subjects. It would not be immodesty to say that I have expertise in mathematics. Bahuka! Aren't you also seeing this Vibhitaka *vrksha* (tree)? (Shl 9-11) In this tree the count of leaves and fruits which have fallen on the ground respectively exceed those in the tree by 101. In the two main branches of this tree there are 5 crore (50 million) leaves. In the two main branches in the eastern direction and its sub-branches there are a total of 2095 fruits. If you check this you will find that I am right.

Soon after hearing his words, Bahuka said: 'Oh king! Are you not showing off your expertise knowing that I will not be able to count these? But I will cut these branches, count the fruits and verify your expertise in mathematics. Once I count these, it will be clear whether what you are saying is mere guesswork or born out of knowledge of mathematics. There is will be no cause for doubt. .... ' Even though Rituparna said that it will delay their journey, Bahuka was adamant. He cut the stated branches and counted the fruits. There was not a difference of even one fruit.

Bahuka said: Your knowledge of mathematics is really amazing. .. Rituparna said to him: Bahuka! Not only mathematics, I also know *aksha vidya*. Bahuka was elated. He said to the king: 'Oh king! If you know *iaksha vidya* consisting of mathematics, teach it to me in exchange for my knowledge of *ashwa vidya* (knowledge of horses). (Vana; Nalopakhya; 72)

- Vandi: (Shl 16, last line) The number nine is the last digit in counting. (Vana; Tirthayatra; 134)

### Weapons of war

#### Weapon system

- (Description of Khandavaprastha) In that fort .. *shataghnis* (cannons; weapon capable of killing 100 people at a time) were placed at important locations. (Adi; Viduragamanarajyalamba; 207)
- Akshaya battalike** (inexhaustible quiver of arrows). (Adi; Khandavadaha; 225)
- Chakra**: (Wheel) Yajneshwara to Shri Krishna: There is another speciality in this weapon (Chakra). (Shl 27) Whenever you use this against the enemy, it will kill them and will invariably return to your hands without being damaged in the least by any of their weapons. (Adi; Khandavadaha; 225)

Yudhishtira in his *Surya-ashtothara-shata-namavali* sung in praise of Sun to obtain *akshaya-patra*: (Shl 48) The architect of *devatas*, Vishwakarma, made the great *chakra* called Sudarshana chakra of Vishnu with your *tejas* (Solar energy?). (Vana; Aranya; 3)

When Shishupala was talking in this manner, Shri Krishna remembered *Chakrayudha* which was capable of destroying the power of *asuras*. In an instant, it came and adorned the right hand of Shri Krishna. (Sabha; Dyuta; 45)

Sanjaya describes Sudarshana chakra as being the size of a *vyama* (Diameter equal to the length when both arms are spread out from the body; *maaru* in Kannada). But at times, as & when desired by Sri Krishna, it can contract or expand in size. Though it will always be very near Shri Krishna, due to his *maya* it is not visible to others. (Udyoga; Yanasandi, 68, Pg 5356, V10)

(GHV: It would be an interesting project to design a device today matching the specs of Sudarshana Chakra. In its use Shri Krishna would also direct it at a specific person in an assembly & it would cut his head & return to him as in the case of Shishupala vadha. See <http://www.wareable.com/intel/nixie-the-wrist-mounted-drone-wins-intel-make-it-wearable-grand-prize-433>)

- Then Varunadeva gave **Kaumodaki gada** (mace) to Shri Krishna. When used it would make sound like thunderbolt and completely destroyed the enemy. **(Adi; Khandavadaha; 225)**
- Description of *Khandava-dahana*: Asuras, Gandharvas, yakshas & rakshasas rushed with great roar to fight with Arjuna. They were very mighty & were angered. Some were spitting iron balls from their mouths. Some stood far away and rained stones on him using machines. They were deploying many kinds of fearsome weapons using a machine called **bhushundi** (giant slingshot) made of hide & ropes. **(Adi; Khandavadaha; 226)**
- Description of Shalva *vadha* (Killing of Shalva) by Shri Krishna: (Preparations in Dwaraka): Machines capable of throwing stones at great distance were ready. Cannons capable of raining flames on forts & main doors were kept ready. ... The land surface was made uneven by digging ditches here & there ... At several places small holes were made in the land and explosives were planted in them. .. Secret codes were decided for entry & exit to the city & only Andhakas & Vrishnis knew these codes. **(Vana; Arjunabhigamana; 15)**
- Shri Krishna (Fighting Shalva who was in the sky): Yudhishtira! I deployed arrows shaped like serpents **(Could it mean tubular structure with one end being pointed?!)**, having fine wings (vanes/fins?), capable of travelling upwards and having fiery power (energy packed) on Shalva. **(Vana; Arjunabhigamana; 22)**
- Then Kubera who resides in Kailasa and is the presiding deity of money/wealth said to Arjuna: Today I will give you an *astra* called *Antardhana*. ... Accept immediately this favourite *astra* of mine **which will put the the enemies to sleep when used**. Mahatma Shankara used this during Tripurasamhara and killed thousands of *rakshasas*. **(Vana; Kairatha; 41)**
- Graphic description of the fight between Dronacharya & Arjuna. **There is description of several types of arrows used**. The head of the arrows were made of highly sharpened stones. The tail end had feathers of different birds like Kanka, Peacock, Eagle etc. The kind of feather appears to make a difference. There is also mention that the arrows had smooth 'knots' as in 'nodes/knots in a bamboo'. The skill, speed & rapidity of releasing innumerable arrows one after another after picking from the quiver appear impossible by humans. The arrows were capable of killing/severely maiming elephants, horses, breaking the chariots etc. Also, archers were using leather hand gloves. **(Virata; Goharana; 58)**  
(The technology of arrows is not extraordinary in terms of material used. Elsewhere it is mentioned that some arrows had sharp heads made of steel. If great archers had such arrows, how did they get thousands of feathers of different birds? Were the birds killed for this purpose?! Was the power to kill/maim/break achieved purely due the velocity acquired by the arrow?! At what distance, what size bow?! Also see <http://en.wikipedia.org/wiki/Fletching> and <http://www.trueflightfeathers.com/facts.htm>)
- Arrows which had golden wings (fins), which were sharpened on hard stone and which were dipped in oil were shot by Bhishma which hit Bhima with much force. **(Bhishma; Bhishmavadha; 72)**
- Sanjaya: Dhrishtadyumna released the *Pramohanastra*. .. Due to this your children lost their thinking abilities and strength and became unconscious. ....Drona used *Prajnastra* and neutralised its effect. Due to this your children who were lying as of dead, woke up again. **(Bhishma; Bhishmavadha; 77)**

#### Materials used

- Arjuna: Then Indra also tied a *shinjini* (bow-string) to my Gandiva bow which would not tear however much I pull (stretch) it. **(Vana; Nivathakavacha yuddha; 168)**
- Soldiers normally wore *kavacha* (body armour) made of copper, silver or iron. **(Virata; Goharana; 62)**



- Chekithana twirled & rotated his *gada* and threw it with force at Kripacharya. Using several arrows Kripa stopped that *gada* which was made of ***pacche stone*** (green coloured precious stones). **(Bhishma; Bhishmavadha; 84)**
- In many places it is mentioned that the shield used during sword fight etc was made of ox skin/hide. **(Bhishma; Bhishmavadha)**
- Bhishma: (Shl 7) For the protection of elephants the king should get their armours made of the skin of ox and pythons (*ajagara*: a large serpent, Boa etc). **(Shanti parva; Rajadharmanushasana; 100)**

### Chariots

- Sanjaya describes the horses of Arjuna's chariot: It has white, fast as the wind, best pedigree & divine horses. They have been given by Chitraratha. Their speed neither reduces nor do they get obstructed whether on earth or sky or *swarga*. They can move with equal ease on earth, sky or *swarga*. One hundred horses are tied to that chariot. Not one horse reduces at any time. If any horse were to die due to attack by an enemy's weapon, automatically another horse takes its place. Because of a boon that chariot has, there will never be a reduction in the 100 horses tied to it. **(Udyoga; Yanasandhi; 56)**

Later in Adhyaya 57 Dhrishtadyumna tells Sanjaya as a message to Kauravas: Arjuna's divine chariot is protected by the *devatas*. No human can win over it. Therefore do not decide to fight him.

Dhritarashtra to Duryodhana: The design of Arjuna's chariot's flag is a wonder. It is spread about one *yojana* and just as the smoke goes up to the sky can go without anything obstructing it. When that chariot starts people in the area hear a sound like that of thunder. During a war it makes sound like thunderbolt & creates fear in the hearts of the enemy. **(Udyoga; Yanasandhi; 60)**

(Could this be a layman's description of a very sophisticated technology (UFO like machine) including redundant engines which automatically take over etc given by say extra-terrestrials??!)

### **Elements of Nature**

#### Pancha-bhutas

- Dharma vyadha: describes the *pancha bhutas*: (Shl 3-8) *Bhumi* (Earth), *Jala* (Water), *Agni* (Fire), *Vayu* (Air) & *Akasha* (Space) in that order; each exhibits not only its own qualities but also that of the elements following it in that order. The qualities in that order are *Gandha* (smell), *Rasa* (taste), *Roopa* (form), *Sparsha* (Touch) and *Shabda* (sound). Earth has all five, Water has last four, *Agni* the last three, *Vayu* has last two & *Akasha* has only the last quality. This combination of element & its qualities totalling to 15 (5+4+3+2+1) exists in *Panchabhutas* **which form the basis for all Lokas** (worlds).

(Shl 9, 10) These exist harmoniously & integrally with each other. When disharmony develops among these, then the *jeeva* prompted by *time (kaal)* (in the fullness of time) leaves one body & occupies another. It arises & perishes in due order. All the mobile & immobile things in this world are composed of these five elements. **(Vana; Markandeya Samaasya; 211)**

- Sanjaya: (Shl 3) *Maharaja!* All the things in the world in essence are made of the *pancha-bhutas*. This is the reason that *panditas* view everything in the world with equality. They do not differentiate one from the other.  
(Shl 4) *Akash* (Space), *Vayu* (Air), *Agni* (fire), *Apah* (water) and *Bhumi* (earth), are the *pancha-mahabhutas*. These have sequentially higher attributes. Therefore earth has highest significance. (Commentary: *Vayu* is born from *akasha*. Therefore if *akasha* has one attribute, *vayu* has two. *Agni* is derived from *Vayu* and so it has three attributes. Water is born from *agni* and has four attributes. Earth is born from water and hence has five attributes).

(Shl 5) Earth has five attributes viz., *Shabda* (sound), *Sparsha* (touch), *roopa* (form), *rasa* (taste), and *gandha* (smell). (Shl 6) Water has four attributes (five minus smell). *Agni* has *shabda*, *sparsha*, *roopa*. *Vayu* has *shabda*, *sparsha*. *Akasha* has only *shabda*.

(Shl 7) All the *lokas* incorporate these five *maha-bhutas*. (Shl 8) As long as these five are in equal proportions, they do not join together. (Shl 9) When the proportions becomes unequal, then they join together. At that time the living beings (animals) which have bodies enter the respective bodies. It cannot happen any other way. (Many commentaries for shloka 7 & 8 are available. These are actually philosophical in nature. The book contains one of them which is quite interesting, but is not translated here)

(Shl 10) These *pancha-bhutas* are destructed in the reverse order starting from earth element. Again they take birth from *Akash* etc elements. The power & form of these are *aparimeya* (not limited, not finite). Their form is related to the God himself. (Shl 11) **In different *lokas* the elements of *pancha-bhutas* are found.** Their proportion is only guessed by men. (Bhishma; Jambookhandavivirmana; 5)

### Agni (Fire)

- Drona praying to Agni: (Shl 15) You exist in the stomach of animals in a *sookshma roopa* (subtle form) and help digest the food eaten by them. Therefore the whole world depends on you.

(Shl 16) Through your rays you with your *tejas* (power) as Surya (Sun), suck the water on earth and all the *rasas* and again at the right time pour it back as rain & cause gladness to the world.

(Shl 17) Plants with green leaves, lakes with good water and the most auspicious seas all happen due to you only. (Adi; Mayadarshana; 232)

### Shabda (Sound)

- Arjuna sounded his *shankha* (conch-shell). The sound was so deafening & terrifying that the horses of the chariot collapsed on their knees. It was as if it would split a mountain/sound of a mountain splitting. (Is this possible with a conch-shell?). (Virata; Goharana; 46)

### Vayu

#### **Seven vayus & Climate changes**

- Vyasa to his Shuka: (Shl 35) *Vayu* causes separate movements in living beings from all sides. *Vayu* is the main reason for the movement of living beings. **Because it makes the living beings (*prani*) live (gives them life), it is called *Prana*.**
  - (Shl 36) That which makes the group of clouds generated from smoke & heat to go from here to there is the first *vayu* called ***Pravaha*** which travels in the first path.
  - (Shl 37) That *vayu* which has great brilliance/flash, makes loud sounds and blows in the sky and has relation with *vidyut* (electricity, lightening) is called ***Aavaha***.
  - (Shl 38, 39, 40) That which causes the rising of stars, Sun & Moon, that which scholars call ***udaan*** when it acts in the body of living beings, that which bears water from the four seas and carries it up to the clouds and gives it to the cloud and hands over to *parjanya*, the great *vayu* with such movement is called ***Udvaha***.
  - (Shl 41, 42, 43) That *vayu* which brings together clouds that are separate, that *vayu* due to whose promptings they start to pour rain, and that same *vayu* due to which dense clouds are scattered, the *vayu* under whose influence the clouds again come together in the form of water and become seas which roar, the *vayu* which in order to save living beings again takes the water in seas to the skies and becomes cloud, **which takes the *vimanas* of *devatas* to the skies**, which destroys the peaks of mountains, that *vayu* is the fourth one called ***Sanvaha***.
  - (Shl 44) Clouds accompanied by winds which can shake mountains, blow with terrifying speed, which can pierce mountains with their floods, become ***Balaahaka*** clouds.
  - (Shl 45) That *vayu* whose movements cause terrifying calamities, and makes the clouds in the sky move, that *vayu* with great speeds is the fifth one called ***Vivaha***.
  - (Shl 46, 47, 48) That *vayu* with whose help floods of water carry birds which move on water, that *vayu* which bears the auspicious *akash ganga*, **that *vayu* due to which the thousand rayed Sun appears dulled as if one rayed, the *vayu* due to which this earth looks bright**, the *vayu* which nourishes the divine *soma*, the great among the victorious, such sixth *vayu* is called ***Parivaha***.
  - (Shl 49-52) That *vayu* which at the final moment takes out the life of all living beings, the *vayu* to which in that path both *mrityu* & *vaivasvata* will be followers, **the *vayu* which is capable of**

giving immortality (*amritatva*) to those *sadhaks* who are dedicated to *adhyatma chintana*, and who feel blissful in *dhyana* and are seeing the *brahma-vastu* clearly through their *buddhi*, depending on whom the 10,000 sons of Daksha Prajapati reached the ends of directions, the *vayu* touched by which the being which is dissolving goes away from here but does not return (the *vayu* due to whose grace beings attain *moksha*), such impossible to transgress seventh *vayu* is called **Paraavaha**.

(Shl 53) In this manner all these seven *maarutas* are wonderful sons of Diti. **These *vayus* which travel everywhere, and bear everything are constantly blowing.** (Shanti parva; Mokshadharma; 328)

### Special flags

#### Optical flag?

- Vaishampayana: Janamejaya! (Describing the Chariot called 'Sodaryavan' belonging to Jarasandha) The flag on the chariot was made by *devatas*. The flag was seen on the chariot but where it was fixed to the chariot could not be seen. The flag which had the glow of a rainbow could be seen from one *yojana* distance (Said to be equal to 8 miles!).

Janamejaya! How shall I describe the peculiarity of that flag? That flag which was seen at a height was not being obstructed by or getting stuck in any tree. It could not be pierced by any weapons. Moreover it could be seen by all the opponents. (**Sabha; Sabhakriya; 24**)

Again in (**Udyoga; Bhagavadyana, 142**), Sri Krishna tells Karna the same thing about Arjuna's flag.

- Sanjaya describes the flag of Arjuna's chariot: It is spread in all directions for one *yojana*. Vishwakarma has created it such that: even if many trees come in its path, it does not get obstructed. It does not get stuck in their branches. The flag shines on his chariot just as rainbow shines in the sky. Rainbow does not have any single colour. Similarly it is not possible to define a specific shape of the flag. The flag designed by Vishwakarma has many shapes; it has many colours. We cannot say that flag is of any specific colour. Vishwakarma has built it just like a huge flame which goes skywards & spreads in all directions with many hues. Just as a huge flame has no weight, even though the flag is spread across one *yojana* it has no weight. Just as flame, it goes with the chariot wherever it goes without facing any obstacles. (**Udyoga; Yanasandhi; 56**)
- Dhritarashtra to Duryodhana: The design of Arjuna's chariot's flag is a wonder. It is spread about one *yojana* and just like smoke goes up to the sky and can go without anything obstructing it. (**Udyoga; Yanasandhi; 60**)

#### Mechanical Flag?

- Sanjaya to Dhritarashtra: I saw the *dhwaja* (flag) of Yudhishtira which had the symbol of Moon associated with planets. In that flag there were two large & special *mridangas* (percussion instrument) called *Nanda* & *Upananda*. They were played by *yantra* (machine) and produced melodious sounds. (**Drona; Samshaptakavadha; 23**)

### Undersea township/travel

- Indra: Arjuna! There is nothing impossible for you in all the three worlds. You are such a valorous man. My enemies called *Nivata-kavachas* are hiding in the inaccessible depth of seas. Their number is 3 crores (30 million). All of them look alike. ... You have to destroy them. This is my *guru-dakshina*. (**Vana; Nivathakavacha yuddha; 168**)

(Two of the literal meanings of *nivata* are: Sheltered from winds and absence of wind; *kavacha* means body-armour. Did they have some kind of vacuum based technology to shield themselves & live underwater?!)

(See: <http://epaperbeta.timesofindia.com/Article.aspx?eid=31806&articlexml=Coming-by-2030-A-human-colony-deep-in-22112014021018>)

- Arjuna: Mathali, who was a great expert in driving the chariot took the chariot under the ocean also making a huge sound which shook the *rakshasapuri*. ... Since the chariot was moving very fast I could not realise where I was going or to where Mathali was taking me. (**Vana; Nivathakavacha yuddha; 169**)



- Mathali, see here. This is the town of Hiranyapura, famous among all towns. It is the residence of thousands of *daithyas* & *danavas* who know many *maayas*. This was first conceived by Maya in his mind and then constructed here....*Rakshasas* called Nivathakavacha also live here. (There is a description of the buildings in Hiranyapura). **(Udyoga; Bhagavadyana; 100)**  
(See <http://www.livescience.com/28567-ancient-structure-under-sea-of-galilee.html> )
- **Varuna's hall:** Varuna's hall is also known as Pushkaramalini. Its length, width & height are similar to that of Yama's hall. **Another speciality of that hall is that Vishwakarma has built it under water.** Around that hall there are several divine trees made of gems and having many flowers & fruits. There are creepers of blue, yellow, black, white and red colours. In those creepers birds of several species are living. Its environment is also controlled and is very pleasant. **(Sabha; lokapala-sabhakhyana; 9)**

### Towns in the sky

- Arjuna: Dharmaja! When I killed the Nivatakavachas and was returning to Amaravati, I saw another great township (Hiranyapura) in the sky which was bright as Sun & *agni*. .. That town had four main entrances. .. In that town rakshasa called Pauloma & Kalakanjas were living. .. With several arrows, I obstructed their path in which they were flying upwards along with their town. But when I stopped them in one direction, that town would go away in another direction. (Shl 27) Brother! Truly that town which was moving around in the sky had the ability to go wherever the rakshasas wished. It had brightness like the Sun. According to the wishes of the rakshasa once it go into earth; another time it would fly high into the skies; again it would fly randomly; another time it would submerge in water. **(Vana; Nivathakavacha yuddha; 173)**

(See: [http://au.ibtimes.com/articles/573878/20141125/nuclear-weapons-attack-explosions-aliens-life-mars.htm#.VHhg\\_5SSyyU](http://au.ibtimes.com/articles/573878/20141125/nuclear-weapons-attack-explosions-aliens-life-mars.htm#.VHhg_5SSyyU))

### Life forms/Life sciences

- Dharma vyadha: It is said that agriculture is a good profession. But does not one who is doing agriculture kill several small insects & worms when tilling the land. Is this not cruelty to them? (Shl 24) Vrihi, Yava etc are called seeds of grains. **These are also life-forms.** What do you think? (*dhanya beejani yanyahur-vrihi-adini dwijotthama, sarvanyetani jeevani tatra kim pratibhati te*) ..... (Shl 25, 26) Hunters kill animals and eat the meat. Similarly many others cut many trees and plants (medicinal plants). **Trees & creepers are also life-forms.** There are many life-forms in their fruits also. There are many life-forms in water also. (*jeeva hi bahavo brahman vrksheshu cha phaleshu cha, udake bahavashchapi tatra kim pratibhati te*) **(or should it be translated as many life-forms live on trees & plants?!).** (Shl 27) This world is filled with life-forms which have to survive on life-forms. Big fish eats small fish. Therefore, it appears to me that all the animals in the world live only by eating some life-form. (Shl 28) One living being survives on the essence of another living being. Living beings always eat other living beings. What do you feel about this matter? **(Vana; Markandeya Samaasya; 208)**
- Arjuna to Yudhishtira: (Shl 20) I have not seen anyone living entirely by non-violence. **Stronger animals live by killing & eating weaker ones.** This is the nature of this world....(Shl 22) **Man kills and eats all animals.** Observe how the times are changing. All the moving and unmoving things in this world are in the form of food for surviving. (Shl 23) **Animals should live on animals is the rule formed in nature by daiva.** Therefore a scholar should not get perplexed in this matter. (Shl 65) A *tapasvi* in forest may claim that he is living only on roots and fruits and water. He may consider that this is not killing of animals. In water also there are many small life-forms that are not visible to the naked eye. In earth and even in roots and fruits there are many extremely small life-forms. There is none who does not eat them and hence kill them. (Shl 26) Brother! **There are thousands of minute life-forms. They cannot be seen with naked eyes. We can conclude that they exist only by logic or guess.** They are so minute that if a hair of human eyelid were to fall on them, many of their organs like shoulders may get displaced totally. **(Shanti; Rajadharmanushasana; 15)**

## Universe

### Creation of Universe

- **Process & steps of creation**

Bhishma continued and said: Dharmaja! Vyasa said: (Shl 1) Shuka! **Brahma who is full of *tejas* is like the 'seed' for everything. This whole *jagat* is his. It is from that one Brahma that all movable & immovable worlds are created.** (Shl 2) As said earlier, Brahma wakes up in the morning and through *avidya* (or *Prakriti* which is *trigunatmic*) created the entire world. Before everything *mahat-tattva* appeared. **From it quickly was born *manas* which is like the soul of the gross world.** (Shl 3) That *manas* can travel far and has many kinds of movements. That *manas* which consists of prayer & doubts, enveloped the *chidatma* and created seven *manas-putras* (Mental or spiritual sons: They are Marichi, Angirasa, Atri, Pulasthya, Pulaha, Kratu & Vasishtha). (Shl 4) ***Manas* which is impelled by the desire to create again, makes variety of creations.** From it is born *akash*. Sound is the quality/attribute of *akash*. (Shl 5) From a variation of *akash*, strong & sacred *vayu* is born which can carry all kinds of *gandhas* (smells). Touch is the quality/attribute of *vayu*. (Shl 6) From an altered/variant of *vayu*, *jyoti-sattva* which shines brightly is born. Form or shape is the quality/attribute of *agni*. (Shl 7) From an altered/variant of *agni*, *jala* which has *rasa* (taste, flavour) as its quality/attribute is born. From *jala* is born *bhumi* which has *gandha* (smell) as its quality/attribute. In this manner the *pancha-maha-bhutas* are created. (Shl 8) ***Bhutas* born later have all the attributes of the preceding *bhutas* also.** As long as any of these five *bhutas* remain in any form their *gunas* will also remain with them. (Shl 9) Some, unable to understand the facts, may say that *jala* also has *gandha*. But *gandha* is a property of *prithvi* and not of *jala* or *vayu*. *Gandha* which is primarily the quality of *prithvi* mixes in *jala* or *vayu*. (Shl 10) **Thus as long as these seven things (*mahat-tattva*, *manas*, *pancha-maha-bhutas*) created by Brahma and having different powers cannot mix together, they are incapable of creating living beings.** (Shl 11) **But when those seven things mix together by the will of Ishwara, then they form different different 'forms/bodies'. Because the *jeevatma* resides in such a town called *sharira* it is called *Purusha*.**

(Shl 12) The physical body consists of the five gross *bhutas*, *ten indriyas*, and *manas*. Because it provides shelter to these the body is called *sharira* (bodily frame). **Soon after the body is born, the subtle *mahabhutas* along with the *karma* baggage of *jeevas* enter the body.** (Shl 13) Brahma, the original creator, along with all the subtle *bhutas*, enters all the bodies in order to do *tapas*. That is why *munis* call him *Prajapati*. (Shl 14, 15) It is that Brahma who creates the moving and unmoving living beings. He creates *devatas*, *rishis*, *pitrus*, human beings, variety of *lokas*, rivers & seas, directions, mountains, vegetation, *nara*, *kinnara* & *rakshasas*, animals, birds and serpents etc. It is he who creates *akash* etc which do not get destroyed, as well as the destructible animals. (Shl 16) **Whatever *karma* baggage the individual living beings had in the previous *kalpa* (an aeon), they will have the same baggage when they take birth in the next *kalpa*.** (Shl 17) **A person in his next birth will be influenced by whatever qualities like violence, non-violence, soft-nature, cruel nature, dharma, adharma, truth, lies etc that he had in the past birth and will again get interested in the same good qualities or blemishes.** (Shl 18) The differences and uniformity we see in *mahabhutas* like *akash*, *indriyarthas* like sound, in the form/shape of *devatas* are all made by Brahma himself. **It is Brahma who appoints the living beings in different *karmas*.** (Shanti parva; Mokshadharma; 232)

- Brahma said (Shl 1) *Maharshis!* Now I will tell about the beginning, middle and end of all things along with their names and characteristics and methods of grasping them. (Shl 2) Day was born first. Then night was born. *Masas* started with *Shukla paksha*. *Nakshatras* started with *Shavana nakshatra*. Seasons started with *shishira rtu*. (Ashwamedhika parva; Anugita; 44)

### Dissolution of Universe

- ***Brahma-pralaya* and *maha-pralaya* (the great dissolution)**

Bhishma continued and said. Yushishtira! Vyasa said: (Shl 1) Shuka! Now I will tell you how, after the end of Brahma's day and before the commencement of night, **the creation undergoes dissolution and how the gross world is made into a highly subtle form by Brahma and held within him.**

#### **Dissolution of each *pancha-bhuta* into its parent *bhuta***

(Shl 2) During the time of *pralaya* (dissolution) Sun in the sky and seven flames of *agni* on earth will start burning the whole world. This whole *jagat* at that time will be completely burnt by the extremely fierce heat of Sun and flames of fire. (Shl 3) At that time all the mobile and immobile living beings will first merge into the earth and become same as earth. (Shl 4) Thus when everything merges into earth, earth devoid of trees, plants, creepers, grass etc will look as bald as the shell of a tortoise. (Shl 5) At that time water takes over the earth's quality of *gandha*. The *bhumi* devoid of its defining characteristic of *gandha* gets ready to merge into *jala*. (Shl 6) Then water with massive waves and huge sound will occupy *bhumi* everywhere. Water will be flowing with the entire *vishwa* submerged in it. (Shl 7) Then *tejas* will absorb the essential quality of water that is *rasa*. Water devoid of *rasa* will merge into *tejas*. (Shl 8) When the seven flames of *agni* envelop the Sun in the midst of sky, then the entire *akash* will be pervaded by flames. (Shl 9) At this time *vayu* absorbs the essential quality of *agni* viz *tejas*. *Agni* will merge into *vayu*. *Vayu* with its enormous speed will agitate the whole *akash*. (Shl 10) Then *vayu* with an enormous sound will join *akash* from which it was born and will start blowing fiercely in all ten directions. (Shl 11) Then *akash* will swallow the essential quality of *vayu* viz *sparsh* (touch) and *vayu* will soon after merge into *akash*. After this only *akash* with the quality of sound remains. (Shl 12) In *akash* there will be no trace of *sparsh*, *roopa*, *rasa* & *gandha*. Only *akash* with its quality of *shabda* survives.

### **Dissolution into manas (Braahma-pralaya)**

(Shl 13) Then ***manas* which makes the perceivable world manifest** merges into itself the quality of *shadba*. In this same manner the manifest *manas* merges into *mahat-tattva* and *mahat-tattva* into Brahma. Then only Brahma remains. This is called '*Braahma-pralaya*'.

### **Mahapralaya**

(Shl 14) At the time of *maha-pralaya* the unmanifest *manas* gobbles up the manifest *manas*. By this though the *manas* is calmed it is established in unmanifest *manas* (Chandra).

(Shl 15) Then, after a long time, *sankalpa* (resolve) takes control of the unmanifest *manas* consisting of the manifest *manas*. Then *chitta* gobbles up *sankalpa*. Such *chitta* (*buddhi*) is called ultimate *jnana*. (Shl 16) *Kaal* gobbles up the *vijnana* (*samashti buddhi*). *Shakti* gobbles up *kaal*. *Mahakaal* gobbles up *shakti*. That *mahakaal* is taken under control by Brahma who is designated by the word *vidvat*. (Shl 17) Just as the manifest *manas* merges in itself the quality of *shabda* of *akash*, in the same way the unmanifest, eternal, greatest of all *Parabrahma-vastu* merges *mahakaal* in itself. In this manner all beings find shelter in Parabrahma-Paramatma after *pralaya*. (Shl 18) Yogis with great *atma* see the Parabrahma with their vision of *jnana* and have described it in this manner so that there will be no doubt. The form of Brahmavastu is just as they have described.

(Shl 19) **In this manner the expansion of creation and dissolution keeps happening repeatedly in the unmanifest Brahma**. Brahma's day is for duration of 1000 *chaturyugas* and so is his night. This has already been mentioned earlier. (**Shanti parva; Mokshadharma; 233**)

- Kanva *Maharshi*: (Shl 4, 5) The Moon, Sun, Earth, Water, Air, Fire, Space/sky, Planets, all the stars—all these are subject to death due to some reason at some point in time. Once Moon, Sun, Planets & Stars are all destroyed, except for the three *lokas* everything is annihilated. Again everything is recreated at the time of creation. (**Udyoga; Bhagavadyana; 97**)

### **Earth**

#### **Wealth of earth**

- In response to Dhritarashtra's question as to why millions are willing to sacrifice their lives in war for 'land', Sanjaya describes the 'wealth' that land has:

Sanjaya: (Shl 10) *Maharaja*! There are two types of beings in this world: '*chara*' and '*sthavara*'. The *chara* (that which moves) or *jangama* have three kinds of birth. ***Andaja*** (born from egg—such as birds), ***Swedaja*** (born from 'sweat'—perhaps indicates unclean water—such as flies & such insects, and ***Jarayuja*** (born from womb, such as humans, animals etc).

(Shl 11) Among these *jarayujas* are the best. Among *jarayujas* human beings & animals are best. (Shl 12) Human beings and animals have different forms. According to Vedas these are of 14 types. Those humans & animals in which *yajna* is established are better than the others. (Shl 13) Among the *gramya* animals (those who live in human habitations; *grama* literally means village)

man is the best. Among the animals in forest, lion is the best. All the animals in the world live by mutual dependence.

(Shl 14) 'Sthavaras are called 'Udbhijja'. This means those which are born by emerging out (shooting out) of Earth's surface. There are five types in this: *Vrksha* (trees), *gulma* (plants without a trunk like grass etc), *latha* (creepers, which grow by depending on other trees), *Valli* (those which spread out on the ground such as ash-gourd etc), and *tvaksara* (such as bamboo, which are basically of the grass type and are not trees).

(Shl 15) The above classification results in 19 groups. *Chara* are of 14 types and *Sthavara* of 5 types. Along with these there are five *maha-bhutas*: *Prithvi* (Earth), *Jala* (water), *Vayu* (air), *Tejas* (fire) and *Akash* (space). These make it 24. **Gayatri mahamantra** also has 24 *aksharas*. That means, the highly revered *Gayatri mantra* represents the whole creation.

(Shl 17) Of the fourteen superior animals among the above said *jarayuja*, those who live in forest are seven, and in *grama* are seven. The superior animals of forest are: *simha* (lion), *vyaghra* (tiger), *varaaha* (wild boar), *mahisha* (bison), *vaarana* (elephant), *ruksha* (bear) and *vaanara* (monkey).

(Shl 18, 19) The following animals are said to be *gramya* animals: *Gau* (cow), *aja* (goat), sheep, man, *ashwathara* (mule?) and *gardabha* (donkey). (Shl 20) All animals are born on earth & die on earth. This *bhumi* (earth) is the home & refuge for all.

(Shl 21) One who has ownership of land controls all these *sthavaras* and *jangamas*. It is for this reason that these kings fight and even kill to obtain ownership of land. **(Bhishma; Jambookhandavirmana; 4)**

(It is surprising that no mention of metals & minerals has been made in the 'wealth' of earth even though they were using iron, gold, copper, silver & precious gems at that time)

- Bhishma said: (Shl 2) It is said that this earth which looks beautiful, strong, **appears in varied forms, is rich in gold etc sapta-dhatus** (gold, silver, copper, tin, mercury, lead and iron) **and is refuge to all kinds of animals is the greatest place. (Anushasana parva; Daandharma; 58)**

#### Earth's end?!

- Manu to Brihaspati: (Shl 30) Man who lives on earth has to understand that though not visible there is an end to earth (?!). (Flat earth model?!). (*prithvyam narah pashyati na-antam asyaahi antashchasya bhavita cheti siddhi*), **(Shanti parva; Mokshadharma; 206)**

#### **Measures of time**

- Vyasa to Shuka: (Shl 12) *Kaal* should be divided as follows: Fifteen *nimeshas* are one *kashta*. Thirty *kashtas* make a *kala*. Thirty *kalas* make a *muhurta*. One tenth of a *kala* is also included in this. That is thirty three *kalas* and three *kashtas* make a *muhurta*. (Shl 13) Thirty *muhurtas* make one day and one night. (0.8 hrs or 48 minutes make a *muhurta*; *kala* = approx. 23.4 secs; *kashta* = 0.78 secs; *nimesha* = 0.052 secs). *Maharshis* have said that the number of *muhurtas* in a day & night are 30 only. Thirty days & nights make a *masa*. Twelve such *masas* make a *samvatsara*. (Shl 14) Those who know measuring time say that *Dakshinayana* & *Uttarayana* together constitute one *samvatsara*. (Shl 15) In the human world, Sun god has divided the day into daytime and night. For living beings night is for sleeping and daytime is for working.

(Shl 16) **One masa of human beings is equal to one day of pitrus.** *Shukla-paksha* which is like day time is for their working and *Krishna-paksha* which is like night time is for their sleeping.

(Shl 17) **One year of human beings is one day & one night for devatas.** The division of night & day is as follows in a year. Six months of *uttarayana* is the daytime of *devatas* and six months of *dakshinayana* is their night time.

(Shl 18, 19) Based on the human world's day & time, now I will tell you **Brahma's day and night**. Similarly I will tell you about the length of *Satya*, *Treta*, *Dwapara* & *Kali yugas* separately. (Shl 20) **Measured by the time reference of devatas**, the length of *Krita yuga* is 4000 divine years. 400 divine years are the evening times (*sandhya kaal*) of *Krita yuga*. *Sandhyamsha* (evening twilight, period at the end of a *yuga*) will also be 400 divine years (total 4400). (Shl 21) Other three *yugas*, including their *sandhya* & *sandhyamsa*: the length of *Krita yuga* will reduce by one *paada* or by one thousand one hundred. (Shl 22) These four *yugas* bear the permanent & eternal *lokas*. This



Brahma in the form of *kaal* that is permanent and constituted of *yugas* is known to the *brahma-vids*.

(Shl 29) In this way *devata*'s 12,000 years are said to be a *chaturyuga* by scholars (Krita 4800, Treta 3600, Dwapara 2400 and Kali 1200 = 12,000. (That would be 4.32 million human years?). If such *chaturyugas* change a thousand times it will be one day of Brahma (4.32 billion human years? It is said that the age of earth is about 4.5 billion years!). (Shl 30) Brahma's night will also be 12,000 divine years long. Bhagawan Brahma creates the world in the beginning of his day. When the great *pralaya* (dissolution) takes place in the night he merges everything in himself and goes into *yoga-nidra* and at the end of *pralaya* or end of night he wakes up. (Shl 31) Those who know the Brahma's day which extends to 1000 *chaturyugas* and his night of the same duration know *ahoratra* (or *kaal-tattva*). (Shl 32) As soon as night ends Brahma wakes up from his undecaying or inexhaustible form by *maaya*. **First he creates *mahat-tattva*. Then from it he creates the soul of perceptible world, the *manas*. (Shanti parva; Mokshadharma; 231)**

### Mines & minerals

- When Pandavas were thus travelling by flight on shoulders of rakshasas, saw mountain regions full of mines of several metals. (Vana; Tirthayatra; 145)

## References to Flying

### References to *Vimana*

(The word *Vimana* is generally used to indicate a flying machine like aeroplane/UFO. Recollect some of the UFO videos we see on Internet)

- Duryodhana felt very aggrieved seeing the assembly hall built by Maya which looked like a *vimana* (*vimana sadrsha*). (Adi; Anukramanika; 1)
- Upamanyu prasing Ashvini *devatas*: (Shl 57) You are free of *rajoguna* and travel in your *Vimana* in all *lokas*. (Shl 58) Ashvini *devatas* travel in golden *vimanas* which travel like birds that fly fast. (Adi; Poushya; 3)
- Indra to Uparichara: I will gift you a *Vimana* which is fit for travel by *devatas*, is splendid and made of crystal quartz (*sphatica shila*). It will always be present (parked) in the sky. You alone of all people on this earth are worthy of travelling in it. You can travel in this *Vimana* as you please. You can travel to any *lokas* you wish to go. (Adi; Amshavatarana; 1)
- Vaishampayana: Janamejaya! Right at that time five golden *vimanas* appeared in the sky. Ashtaka who saw them, asked Yayati. 'Maharaja! In which divine chariots does man like to travel to eternal *lokas*? To whom do those five *vimanas* belong?' Yayti said: Ashtaka! Those five golden *vimanas* will take you to the eternal *lokas*. Those chariots are glowing in the sky like flames of fire. Climb into the chariot and travel upwards in the sky. When the time comes, we will, also come there.' (Adi; Sambhava; 93)
- Vaishampayana: Janamejaya! To see that wondrous *swayamvara*, not only human beings but also Rudras, ADityas, Vasus, Ashvini *devatas*, Maruttus, Sadhyas etc had come lead by Kubera & Yamadharma. They all had come in *divya* (splendid, heavenly) chariots and were sitting in the sky & observing the proceedings. ... The sky was filled with *vimanas* of *devatas* and sometimes these *vimanas* were clashing with each other. (Adi; Swayamvara; 187)
- Vaishampayana: Janamejaya! Janardana thus having been given farewell by Pandavas sat in the chariot made by *devatas* & given to him by Yudhishtira, capable of moving at the speed of mind (*manovega*) left for Dwaravathi filling all the directions with sound...In seconds the chariot vanished & reached Dwaravathi. (Sabha; Sabhakriya; 24)
- Vaishampayana: The tall towers of splendid buildings around the *yajna vedike* were posing an obstacle to the movement of *vimanas* of *devatas*. The *devatas*, who came to see the *yajna*, parked their *vimanas* on top of these buildings & observed the beauty of Indraprastha. The buildings decorated with lined up *vimanas* of *devatas* looked even more splendid. (Sabha; Rajasuya; 35)

- Shri Krishna to Yudhishtira: At that time I had gone to destroy Shalva's city like Saubha-vimana. ... After reaching Dwaraka I came to know that Saubha had climbed into his wondrous *Vimana* and flew into the sky. **(Vana; Arjunabhigamana; 14)**
  - When Vivindhya dies, the army of Shalva were shattered. Seeing this, Shalva climbed into his wondrous *Vimana* and encouraging his soldiers faced the army of and encouraging his soldiers faced the army of Yadus. **(Vana; Arjunabhigamana; 15)**
  - Even after Shalva regained consciousness, he was unable to fight with Pradyumna and went away in skyward path in his gemstudded *Vimana*. **(Vana; Arjunabhigamana; 19)**
  - I saw Shala sitting in the midst of the sea in his Saubhavamana. ... Since Shalva's gem-studded *Vimana* was in the sky at a distance of two *yojanas*, my soldiers were not able to see it. **(Vana; Arjunabhigamana; 20)**
  - Yudhishtira! Next moment Shalva's chariot vanished from sight. ... In this manner I killed *danavas* who were making sounds in all ten directions. Shalva's Saubhavamana, which was capable of moving at will, suddenly appeared before me enchantingly, having returned from Pragjithisha. **(Pragjithisha is said to be North-eastern part of India or is even said to be China. Note that the fight was going on near Dwaraka, the eastern end of India)** **(Vana; Arjunabhigamana; 20)**
  - Then I deployed my Sufarshana Chakra which is like god of death to enemies. As soon as it flew into the sky, impelled by my strength, it glowed like a second Sun. Soon it penetrated the Saubhavamana and just as a saw cuts the wood, cut it in two parts and returned to my right hand. Just like Tripuras which were split by Maheshwara's arrows, that saubhavamana fell to earth. **(Vana; Arjunabhigamana; 22)**
- Vaishampayana: Kubera, the lord of eight kinds of wealth, came & adorned the North direction in his splendid *Vimana*. .. Yamadeva, the god of end of all creations, ... came in his *Vimana* & adorned the Southern direction. **(Vana; Kairatha; 41)**
- Vaishampayana: Arjuna was awaiting the arrival of Indra's chariot. .. that chariot was coming down with its bright glow, making the clouds scatter here & there and making sound like thunder & thunder-bolts. .. That chariot had 10,000 golden horses tied to it and was capable of exceeding the speed of wind. It was impossible to judge its speed with naked eye. ... Arjuna sat in that chariot as brilliant as the Sun and started to climb up. After the earth faded away from his sight (became too distant), he saw thousands of *vimanas* on the way to *deva-loka*. There were no Sun or Moon or Agni to light up that path. ... These stars which appeared like small lamps to the observers on earth due to great distances were here self-illuminated areas. Partha saw that they were not moving to anywhere and were stationary in their places. .. After travelling a very long distance, he sighted the Indra's city of Amaravati. **(Vana; Indra-lokabhigamana; 42)**
  - There he saw thousands of *vimanas* ready to travel wherever desired. He also saw hundreds of *vimanas* travelling in all directions. **(Vana; Indra-lokabhigamana; 43)**

(It is mentioned in many passages that Indra's Divya *Vimana* as well as other *Vimanas* were making a thunderous sound. This could have been due to the sound of whatever type of engines/thrusters they were using and also possibly due to sonic boom, assuming (wildly!!) they were like UFOs we talk about today. Also as it is impossible to tie 10,000 horses linearly & navigate the chariot like a UFO. As the humans on earth did not know the technology & terms, they could have been using the terms *Divya Vimana*, *Divya Ashwa* etc. 10,000 could also be 'akshyavachaka' simply implying a large number.  
See also <http://www.mirror.co.uk/news/uk-news/were-explosions-heard-across-britain-4725416> and <http://www.inquisitr.com/1647141/aurora-project-mystery-booms-over-britain-and-u-s-linked-to-secret-spy-plane/>)
- *Lokapalas* who were travelling in the sky saw Nala, the most handsome, who was going in the direction of Vidarbha. .. Soon the *Lokapalas* stopped their *vimanas* in the sky, came down, stood near Nala and said to him. **(Vana; Nalopakhyana; 54)**
- Karthaviryarjuna had a golden *vimana* due to the blessings of Lord Dattatreya. He came in that *vimana* and attacked Indra when he was with Shachidevi. **(Vana; Tirthayatra; 115)**

- Bhima to his son Ghatotkacha: This mother of yours (Draupadi) is very tired. You on the other hand have immense strength and are capable of going anywhere. You are also capable of flying in the sky. Pick up Draupadi. Put her on your shoulders.... (Ghatotkacha calls other rakshasas to come and similarly take the Pandavas & other Pandavas. It is implied that they flew in the sky with them on their shoulders). .. (Shl 9) Lomasha maharshi (who was accompanying them), who had incomparable *tejas*, flew without anyone's help by virtue of his own power. **(Vana; Tirthayatra; 145)**
- Vaishampayana: Kubera sat in the *Vimana* known as Pushpaka, which was best of best, made by Vishwakarma, was resplendent and was full of peculiarities/unique features.
  - As we were travelling in the sky, just when we were near the *ashrama* of Agasthya, my friend Manimantha, either due to foolishness or due to fate, spat on the ground without checking who was below. Unfortunately it fell on the head of the maharshi. **(Vana; Yakshayuddha; 161)**
  - Janamejaya! Kubera, having ordered Yudhishtira thus left for *Shweta-parvata*. Well adorned *yakshas* & *rakshasas* followed him in wondrous chariots in the skyward path. That group of chariots were making sound like a group of birds do when they fly together. As if dragging the clouds and swallowing the wind, Kubera's horses & chariot reached Vaishravana's town rapidly. **(Vana; Yakshayuddha; 162)**
- Pandavas were looking at the sky with amazement and without batting an eyelid. They saw that gandharvas & apsaras were coming towards them in their wondrous *vimanas* following Purandara. Purandara (Indra) came to Gandhamadana mountain in his wondrous chariot which had best of the best horses, was decorated with gold plates and was making thunderous sounds and alighted from his chariot. **(Vana; Nivathakavacha yuddha; 166)**
- Arjuna: Brother! Saying this, while he (Mathali) was taking the chariot in the sky he showed me many residences of *devas* and palaces. Then the chariot which was travelling horizontally started to climb upwards. **(Vana; Nivathakavacha yuddha; 168)**
- Arjuna: Brother! As I was travelling in that chariot towards the sea, I was being praised by many *rishis*. After travelling a very long distance, I saw the lord of rivers, one that is never expended, the king of ocean, who was roaring fiercely. Waves topped with foam were constantly rising like mountains. Just like *vimanas* which move around in the sky, thousands of splendorous boats were moving about in the ocean adorning it. **(Vana; Nivathakavacha yuddha; 169)**
- Vaishampayana: Janamejaya! Thus saying Nahusha went away to *swargaloka* in a *divya vimana* which had come especially for him. **(Vana; Ajagara; 181)**
- Vaishampayana: Indra came in his resplendent *vimana* to observe the Kripa-Arjuna fight. Many other *devatas* also came in their *vimanas* separately. They were watching from their *vimanas* which were all stationed above the battle ground. Devendra's *vimana* had the capability to go wherever it wanted. His *vimana* had one crore (=10 million) pillars (*akshayavachaka, meaning a Irage number?!*) made of gold & precious stones (*perhaps indicates being bright & glowing*). They could be seen by those standing on the ground. **(Virata; Goharana; 56)**
- Description of Sri Krishna's chariot in which he prepared to leave for Hastinapura (Extracts): As bright as powerful flames, capable of moving very fast just as a *vimana* can in the sky.....a chariot which like a *vimana* could move as per his wishes... **(Udyoga; Bhagavadyana; 83) 5460, 5461, V10 (See original)**
- Narada to Mathali: (Shl 15) The comforts & happiness you can enjoy by living in *Rasatala* (lower worlds) cannot be found even in Nagaloka, *Swargaloka* or the *Vimanas* of *Swargaloka*. **(Udyoga; Bhagavadyana; 102)**
- Ushinara spent several days with Madhavi happily visiting many beautiful places...he travelled with her in *vimanas* which travelled in the skies. **(Udyoga; Bhagavadyana; 118)**
- Yudhishtira's army camp at Kurukshetra: The tents (*shibira*) of the hundreds of kings were looking as if the *vimanas* of *devatas* were parked on the ground. **(Udyoga; Sainya-nirayana; 152)**

- Kubera, whose *vimana* was hovering above in the sky looked at the attractive house of *yaksha*....After seeing such a beautiful house, he felt like staying there for a while and descended to the earth and entered the house. **(Udyoga; Ambopakhyana; 192)**
- Sanjaya to Dhritarashtra: (Shl 8-10) *Maharaja!* First I bow to your father Vyasa *maharshi* & will start reporting the war matters to you. .... I could move in the sky (Aerial view). .... A hair-rising war took place between Pandavas & Kauravas and I will narrate it to you exactly as it happened. **(Bhishma; Bhagavadgita; 15)**
- Just as residents of *swarga* fall from *vimanas* as soon as their *punya* decays... **(Karna; 12)**
- Sri Krishna to Arjuna describing Karna's chariot: ....that chariot being pulled by white horses looks just like *vimana* which moves about in the sky....**(Karna; 86)**
- Bhishma to Yudhishtira: (Shl 4) Sudeva, who was the Commander-in-chief of Ambarish's army, was seated in a brilliantly shining, divine and great *vimana*. He was continuing to travel upwards. Seeing Sudeva flying even higher than himself king Ambarish asked Indra... **(Shanti parva; Rajadharmanushasana; 98)**
- Bali to Indra: (Shl 56, 57) Shakra! Do not think that, 'I alone have done 100 Ashwamedha *yagas*.' All the people I have mentioned (**there is a list of 41 names**) had performed 100 *yajnas* each. All were practicing dharma diligently. **All had the ability to travel in the sky.** All faced the enemies and fought. **(Shanti parva; Mokshadharma; 227)**
- Vyasa to Shuka: (Shl 59) Just as groups of *apsaras* enjoy happiness arising from *punya-phalas* with *maharshis*, in the same way *punyatmas* sit in *vimanas* and travel as they wish and enjoy the fruits of their auspicious deeds. **(Shanti parva; Mokshadharma; 321)**
- Vyasa to Shuka: (Shl 41, 42, 43) That *vayu* which brings together clouds that are separate, that *vayu* due to whose promptings they start to pour rain, and that same *vayu* due to which dense clouds are scattered, the *vayu* under whose influence the clouds again come together in the form of water and become seas which roar, the *vayu* which in order to save living beings again takes the water in seas to the skies and becomes cloud, **which takes the *vimanas* of *devatas* to the skies**, which destroys the peaks of mountains, that *vayu* is the fourth one called ***Sanvaha***. **(Shanti parva; Mokshadharma; 328)**
- Vaishampayana said: Janamejaya! After Yamadharma said this, Indra, Marudganas, Ashwini *devatas*, other *devatas* and *devarshis* made Yudhishtira sit in Indra's chariot and went away in their own *vimanas*. They were all capable of going as they wished. Yudhishtira sitting in that chariot filled the worlds with his lustre and rapidly travelled upwards. **(Mahaprasthanika parva; 3)**

### Techniques of flying

- In the story of crow and *hamsa* bird narrated by Shalya to Karna, the crow describes the various *paathas* of flying: (The commentators have given the complete *shloka* from the *shastras* in the footnote which describes all the 101 *gatis*)

(The sharpness of observation and clear named classification is surely worthy of credit)

I can fly in 101 *paathas*. I can fly each 100 *yojanas* in different *gatis*. (Note: '*dina*' is to be read as '*deena*')

(Shl 26-29) Hamsas! Listen to the *gatis* in which I can fly. *Uddina* (flying upward), *avadina* (flying downward), *pradina* (in all four directions), *dina* (normal), *nidina* (slowly), *sandina* (graceful), *tiryagdina* (sideward), *vidina* (flying in the same way that another bird is flying), *paridina* (in all ten directions), *paraadina* (backwards), *sudina* (towards *swarga*), *abhidina* (flying straight ahead), *mahadina* (very fast), *nidina* (without beating the wings), *athidina* (tremendous way of flying), *sandinadinadina* (starting with a graceful flight, then coming down with a circular movement), *sandinoddinadina* (starting with a graceful flight, then climbing up with a circular movement), *dinavidina* (starting in one way and then changing over to another), *sampatha* (flying gracefully for a while and then by beating the wings), *samudisha* (once very high and then very low),



*vyatirikta* (resolving to go to a specific point and flying)—I can fly in all these 26 *gatis*. Among these, other than *mahadina* all others have three variations. *Gata* (flying towards a target point), *agata* (reaching the target and returning to the starting point) and *pratigata* (reversing the direction). Apart from these there are another 25 *nipaathas*. I know all these 101 *gatis*. (**Karna; 41**)

## Special Cases

(Some of these, related to science/Technology are known differently and some are difficult to believe though are interesting. A selection is presented here to satisfy/tickle reader's curiosity)

### Special powers to Sanjaya to report on war

- Vyasa *maharshi* to Dhritarashtra: If you wish to see all the happenings on the battlefield I will grant you special vision (*divya-drishti*).

Dhritarashtra: *Brahmarshi satthama!* I do not wish to see the death of my own family members. It is not palatable to me. But by your grace I wish to hear about the whole proceedings in detail.

Vyasa: This Sanjaya will narrate to you everything that happens on the battlefield. There will be nothing he cannot see on the battlefield. As per your wish, he will describe to you everything.

(Shl 11) Whether something happens in public or in secret, whether in daytime or night, whatever is thought by anyone in his mind—Sanjaya will be able to see/know all this with the special powers I am granting him.

(Shl 12) Any weapons falling on him will be ineffective. He will not feel any exhaustion. Sanjaya will come out alive from this war.

(Later in Bhishma Parva, Bhagavadgita upa-parva, *Adhyaya* 13, it becomes clear that Sanjaya was on the battlefield and comes back to Dhritarashtra after 10 days upon death of Bhishma & gives the report for first 10 days. **It is not that he was seeing everything sitting next to Dhritarashtra like we watch on a TV!! If it were so, third part of the boon would make no sense**) (**Bhishma; Jambookhanda-vinirmana; 2**)

### Gender change of Shikhandini

- Yaksha Sthunaakarna to Shikhandini: I will fulfil your requirements. But I will do it with a condition. I will give my *purushatva* (maleness) to you only for a short time. You should come back here before the stipulated time. Promise me that you will do so without fail. I am capable to making anything I resolve happen. Whatever I resolve, will happen just by my doing so. Therefore it will not be difficult for me to give my 'maleness' and take your 'femaleness'. I can go wherever I want at my will. Moreover I can also move in the sky. By this grace of mine, you should only help save your parents from their trouble. It should not be used for any other purpose. Princess! I will take your 'femaleness'. You should make a vow that 'as soon as my city, relatives & parents are saved, I will come back & return your 'maleness''. Only if you promise so, I will do your work right now.

Shikhandini makes the required promise. In this way the two mutually discussed, made an agreement and exchanged their gender (**the translated text says, 'they changed their private parts mutually'!!**) (**Udyoga; Ambopakhyana; 192**)

### Getting back virginity

- Yayati's daughter Madhavi to Galava: You need not at all worry about what the king has said. I have been given a great boon by a *brahmavadi*. That boon is, 'you will remain a virgin after each child birth' (*kanyavastha*). Therefore you can give me in marriage to this king and take 200 horses. I will fulfil the king's desire (to have a great son from her) and will come again with you as a virgin (*kanya*).

Eventually Madhavi marries four different *rajarshis* and begets one son from each, the last one from Vishwamitra. They all become great persons. She returns to her father Yayati as a virgin after birth of fourth child. (**Udyoga; Bhagavadgita; 116**)

(The boon of return to *kanyavastha* (virginity) which we read in Mahabharata in a few cases appears to indicate return to original condition both physically and in some respects mentally!?)

### Karna's conception & birth

- Kunthi one day staring at rising Sun visualises him with *kundalas*. Curious to check the power of the *mantra*, she uses it with Sun in mind. The Sun god comes by his *yoga shakti*. There is a very interesting conversation between them. Having come, Sun insists that he should mate with her as she intended a child in her mind. He even threatens with dire consequences if refused. He does not accept her repeated imploring, explanations etc & insists; gives various reasons. Finally Kunthi agrees & yields. But the final *shloka* 23, Pg 4005 clarifies that Surya implanted a child by his *yoga shakti* while she had lost her consciousness unable to withstand his *tejas* & did not deflower her in the flesh. **(Vana; Kundalaharana; 306-307)**

Kunthi went through her pregnancy normally for nine months. She kept the secret admirably & it was known only to one close servant. She managed it carefully & successfully as she lived in the *antahpura*. She got a box with the help of her servant. Closed several holes it had with wax. Then she attached a material which helps float to the bottom of the box. There was provision for airflow from the top. The box was secured. Then with the help of her servant maid, in the middle of the night she let it go in the river 'Ashwaa' with tears flooding from her eyes. Her prayers & wishes while sending the child are beautiful & touching.

With great difficulty she could hide pregnancy but had no way of hiding the child. Ashwaa was a tributary of Charmanvati which was a tributary of Yamuna. After reaching Yamuna, the box reached Ganga after travelling some distance. Then the box reached the shores of a town called Champa which was ruled by 'soothas'. The box & the child remained safe through this journey. This extraordinary news spread throughout the country & Kunthi also heard it. Pg 4014 states that this town was in Anga desha. He grew up there & Kunthi came to know of it through her spies also. **(Vana; Kundalaharana; 308)**

### Others

- Narada: See here Mathali. This is Varuna's (God of water in all forms) umbrella (*Chhatra*). This has been setup in this special enclosure created for it. It always pours out cool water around it like the clouds. For those who are inside the umbrella, this water acts like a curtain. It appears to be covered in darkness. For this reason, those inside cannot see outside & vice versa. **(Udyoga; Bhagavadyana; 98)**  
(The nearest we can get to this, though off by a wide margin, is thermohaline circulation causing vertical movement of hot & cold water under sea: [http://essayweb.net/geology/quicknotes/ocean\\_currents.shtml](http://essayweb.net/geology/quicknotes/ocean_currents.shtml) )
- Lomasha: Once upon a time the Earth had collapsed (downwards) by 100 *yojanas*. Mahavishnu came in Varaha avatara & lifted the Earth on its tooth (*Kore Daade*) and placed in its correct axis/orbit. The detailed story follows. (Could Earth have moved from its orbit/axis at some time in the past & was it restored by some unknown/extra-terrestrial super-power? Extremely unlikely; See <https://www.uwgb.edu/dutchs/pseudosc/flipaxis.htm>). **(Vana; Tirthayatra; 142)**
- Nagaraja said to brahmana: (Shl 6) *Vipra shreshta!* I saw such a wondrous event in *surya mandala*. That person who was practicing *unccha vritti* attained *siddhi*, entered Surya and is going around the earth as he pleases (!). **(Shanti parva; Mokshadharma; 363)**