

## Modern Sciences in Ancient Sanskrit Literature

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### Abstract

Sanskrit literature is a treasure house of tremendous knowledge in all fields including science, technology and arts. But the scientists do not know Sanskrit language and the Sanskrit scholars do not know much the modern scientific and technological advancements. If both the experts come together then value of each subject can be defined properly. However, the present paper tries to bring out the solution of this controversy. Nevertheless, Physics, Botany, Medicine and surgery and concept of Machines are there in Sanskrit literature which this paper is going to highlight.

‘Our Life style is being guided by present science and technology but before Newton and Mendeleeff Indian life style was guided by *Ayurveda*, *Yoga*, Astrology and Ten Shilpa Shastras (Engineering)’. The above statement is really provoking. The word Science is derived from the Latin word ‘Scientia’. It means a branch of knowledge involving the systematized observation and experiment with phenomena. In short, it is a systematic and formulated knowledge which is dependent on observation and experiment. On the other hand, Sanskrit, which is recognized as a language of God (*Devvani*), is the most ancient of Hindus in India. Most of the literature written in this language relates to so many unseen factors like *Atma* (Soul), *Iswar* (God) *Punarjanma* (Re-birth), *Moksha* (Liberty or the ultimate goal of human life) etc. etc. which science does not accept to some extent saying it has no concrete base or proof as Science believes in experiments whereas all the above concepts playing very important role in Sanskrit literature are just mental fictions having no practical utility for science. Bringing them together is really a very big task. Building a bridge between two subjects which bear totally opposite characters is rather difficult.

But the old Sanskrit scholars were not totally ignorant about this matter. On one hand, when Sanskrit is called as the language of God (*Devbhasha*) on the other hand it is called ‘the language of modern science’ also. Modern researchers are astonished when they find the minute observations about scientific theories of old Sanskrit pundits (experts). For ordinary people Sanskrit is just a language of performing sacrifices (*yajnya*) etc. whereas the researchers say that it is the language of modern science and technology.

Sanskrit literature is a treasure house of tremendous knowledge in all fields including science, technology and arts. But the scientists do not know Sanskrit language and the Sanskrit scholars do not know much about the modern scientific and technological advancements. If both the experts come together then value of each subject can be defined properly. However, the present paper tries to bring out the solution of this controversy. Nevertheless, Physics, Botany, Medicine and surgery and concept of Machines are there in Sanskrit literature which this paper is going to highlight.

**Physics in Sanskrit Literature:** Physics is the science dealing with the properties and interactions of matter and energy. It is said that energy is the ‘soul’ of physics. So many attempts were failed towards discovering the energy when the same concept is in Sanskrit literature since very beginning. The time of Western scientists like Aristotle, Galileo, (1590) etc. can be traced however. But the life-age of the writers of ancient Sanskrit language is still in dark. An example regarding the production of Electrical cell can be given here.

संस्थाप्य मृण्मये पात्रे ताम्रपात्रं सुसंस्कृतम्  
छादयेत्च्छिखिग्रीवेन चाद्रार्भिः काष्ठपांशुभिः।  
दस्तालोष्टोनिधातव्यः पारदाच्छादितस्ततः  
संयोगाज्जायते तेजो मित्रावरुणसंज्ञितम्।<sup>i</sup>

It means having placed a copper sheet in an earthen pot properly and covering it by Copper Sulphate along with Mercury then the electrical cell will be produced. Like this there are so many Physics related concepts which have been described in Ancient Sanskrit literature. Let’s have a glimpse on it –

**Physics related concept**

**As in Ancient Sanskrit literature**

- |   |  |
|---|--|
| 1. Matter and energy                        | तस्माद्वा एतस्मादात्मन <sup>ii</sup> .....     |
| 2. Dalton’ s theory of chemical Relation    | पिलुपाकवादः। <sup>iii</sup>                    |
| 3. The concept of motion and Laws of motion | लिलावतीसूत्र। <sup>iv</sup>                    |
| 4. Newton ’ s Laws of motion                | वेगसंस्कारः। <sup>v</sup>                      |
| 5. Gravity and Gravitational Forces         | गुरुत्वगुरुत्वाकर्षणं च। <sup>vi</sup>         |
| 6. Spectrometer                             | ध्यानप्रमापकयन्त्रम्। <sup>vii</sup> etc. etc. |

**Botany in Sanskrit Literature**

Existence of human being without Plant kingdom is unimaginable.<sup>viii</sup> Nobody can imagine a world without flora and fauna. Ancient Indians were very fond of nature. In older days the association of man with the plants and trees was so intimate that many poets and dramatists of ancient India were influenced by it. After getting references about the use of herbs for medicinal purpose it clearly indicates that the ancient Indians were having very perfect knowledge about the science of plant medicine. Ancient Sanskrit writings like *Krishishastra*, *Dharmashastra*, *Arthashastra*, *Vrikshayurveda*, *Atharvaveda* etc. show many more references about Botany. Of course, these books are not totally but partially dedicated towards it.

Before marching towards the mines of references of Ancient Sanskrit Literature let’s have a focus on Botany itself. This branch of science mainly works with four headings viz.

- 1. Morphology:** It means the study of the forms of things. It is of two kinds viz. Internal Morphology and External Morphology. Ancient Indian Botanists were very conscious about these classifications. About internal Morphology there are so many references found in ancient Sanskrit literature. Among them a description about *tulsi* in *Padmapurana* is like this :-

तुलस्यमृत जन्मासि सदा त्वं केशवप्रिये।

केशवार्थं चिनोमि त्वां वरदा भव शोभने।  
त्वं दण्डगसम्भवैर्नित्यं पूजयामि यथा हरिम्।  
तथा कुरु पवित्राङ्क कलौ मलविनाशिनी।।<sup>ix</sup>

*Bruhadaranyakopanishada* plays a very important role in this connection. It says about External Morphology:-

यथा वृक्षो वनस्पतिस्तथैव पुरुषोऽमृषा।  
तस्य लोमानि पर्णानि त्वगस्योत्पटिका बहिः।।<sup>x</sup>

2. **Taxonomy:** The science of classification especially of living and extinct organisms. The genealogical classification of various plants can be traced here . In Vishnupurana it is said that :-

व्रीहयश्च यवाश्चैव गोधूमा अणवस्तिला।  
प्रियंगवो ह्युदाराश्च कोरदूषा सचीनकाः।।  
माषा मुद्रा मसुराश्च तिष्यावाः सकुलत्थकाः।  
आढक्यश्चरणकाश्चैव शणसप्तदशाः स्मृताः।।<sup>xi</sup>

3. **Physiology:** It means the sciences of the functions of living organisms and their parts .

उज्जिहीधये स्तनवत्याभी क्रन्दत्योषधीः।  
यदा वः पृश्निमातरः पर्जन्यो रेत सावति।।<sup>xii</sup>

4. **Ecology:** The branch of biology dealing with the relations of organisms to one another and to their physical surroundings.

अश्वत्थे वो निषदनं पर्णे वो वसतिकृपा।  
गोभाज इत् किलासभ यत सनवथ पूरुषम्।।<sup>xiii</sup>

#### **Medicine and Surgery in Sanskrit literature:**

Old Sanskrit scholars were not only experts in performing sacrifices (*Karmakanda*) but were also experts in medicine, Surgery and discovering different types of surgical instruments. ‘There are several treatises of traditional medicinal systems of India. The *Samhitas* of *Bela*, *Charaka Samhita*, *Shushruta Samhita* etc. are available in English and several languages. The available books are highly scholastic and highly technical and definitely beyond the reach of common man. As a result, many people do not know the treasure of knowledge available in our tradition.’<sup>xiv</sup> After getting Prof. K. H. Krishnamurthy’s book in hand no one can think Sanskrit as a language of God rather it can be concluded that Sanskrit is the language of Modern Medical Science. Types of surgical operations, types of surgical instruments, Hospital Organizations, Pediatrics, Care of wounded, Types of operations, Surgical procedure, Plastic surgery, Medical education, Embryology (Sonography), Blood circulation etc. are there in ancient Sanskrit literature.

**Plastic surgery (सन्धानविधिक्रिया):** Ancient Sanskrit literature describes about Plastic surgery, which has a very good demand in Modern Medical Science. As

विश्लेषितायास्त्वथ नासिकाया वक्ष्यामि सन्धानविधिं यथावत्।

नामाप्रमाणं पृथिवीरुहाणम् पत्रं गृहित्वावलम्बि तस्य॥

तेन प्रमाणेन हि गण्डपार्श्वदुत्कृत्य बद्धं त्वथं नासिकाग्रम्।

विलिख्य चाशुप्रतिसन्धधीत तत् साधुबन्धैर्भिषगप्रमत्तः॥

सुसंहितं सम्यगतो यथावत् नाडीद्वयेनाभिसमीक्ष्य बद्ध्वा।

प्रोनस्य चैनैमवचूर्णयेत्तु पतङ्गयष्टीमधुकाञ्चनैश्च॥<sup>xv</sup>

“I shall tell you exactly the method of joining of a nose that has been cut off. Take from a tree, a leaf of the same size as that of a nose concerned. Place it on the patient’s cheek in such a way that it stays supported (*avalambi*) while you trace (*ullikya*) the portion of a nose (to be re-grown) precisely on it. Remove (now) a portion of skin as per this tracing from the cheek (nearby) by slicing (*utkriya*) and so in such a way, that a (small) part of it remains (still) attached (*nibadhata*) to the cheek (otherwise there will be tissue rejection or even very slow healing). Place this deflected portion of the skin on the injured nose and then shape it quickly on any pattern that is suitable (*sadhu*) to the case concerned, with all possible care (*apramittah*). Then raise up by inserting two sticks of castor plant (a disinfectant and a healer) and see that the final form of the nose would thus (i.e. by your rising) look shapely and natural (*samyog*) and also help in breathing till the healing is completed. Otherwise, the alae will collapse. The tie and dress by the healing power of *patanga* and the *anjana* (colyrium) of *yasti* and *madhuka*.”<sup>xvi</sup>

#### **Machines in Sanskrit Literature:**

The study or use of the mechanical arts and applied sciences is called technology. It needs a mechanical attitude in performing the action. According to P. P. Holay. In the development of mankind we can consider wheel was used in carts, for making potteries, in flour mills, in churning butter to get butter and Ghee, in taking out water from a well and in cloth weaving. Another form of simple machines is the use of principles of lever in pan balances. Such references occur in RK- Veda and in *Yajurveda*. In other words, it can be said that technology states from Rk-Vedic time. Here we see references of some machines occurring in ancient Sanskrit literature.

#### **Modern Machines**

Steam Engine

Telescope

Water Wheel

Artificial Gems

Production of Electrical cells

Wooden Aircraft

Mechanical Door Keeper

Mechanical Soldier

(i.e. concept of ROBOT )

#### **Name of the book in Sanskrit**

पुष्पकरथः<sup>xvii</sup>

दूरदर्शनयन्त्रम्<sup>xviii</sup>

जलचक्रम्<sup>xix</sup>

कृतकबजविचारः<sup>xx</sup>

अगस्त्यसंहिता।

समराङ्गणसूत्रधारः। (११५०)

समराङ्गणसूत्रधारः। (११५०)

समराङ्गणसूत्रधारः। (११५०)

After the chronological study of the above issues it can be concluded that ancient Sanskrit literature has a great potential. It covers the total lifestyle of the human being starting from worshipping, sacrificing etc. to preparing machines, medicines, plastic surgery and ROBOT. Therefore, Sanskrit is not only the language of God but the language of Modern Technology also.

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### References:

- i अगस्त्यसंहिता (2000 BC)
- ii तैत्तरीयोपनिषद, ब्रह्मवल्ली, प्रथमोनुवाक।
- iii वैशेषिकसूत्र, प्रशस्तपादभाष्यम्।
- iv भास्कराचार्यः।
- v वैशेषिकसूत्र, प्रशस्तपादभाष्यम्।
- vi भूगोलाध्यायः, सूर्यसिद्धान्तः।
- vii अंशुबोधिनी, महर्षि भारद्वाज।
- viii Botany in Samskrita Literature, p-76
- ix पद्मपुराणे, उत्तरार्धे।
- x बृहदारण्यकोपनिषदः।
- xi विष्णुपुराणः।
- xii अथर्ववेदः।
- xiii ऋग्वेदः।
- xiv Machines in Sanskrit Literature
- xv शुश्रुतसंहिता १६, २७-३०।
- xvi Medicine and Surgery in Ancient India, p-7
- xvii शिल्पसंहिता।
- xviii शिल्पसंहिता।
- xix सूर्यसिद्धान्तः।
- xx शिल्पसंहिता।

### Referred Books :

1. P. P. Holay, Machines in Sanskrit Literature, 2000, Sanskrit Bharati, New Delhi
2. Dr. N. G. Dongre , The Physics, 2000, Sanskrit Bharati, New Delhi
3. Dr. Anupama Deopujari, Botany in Samskrita Literature, 2001, Sanskrit Bharati, New Delhi
4. Dr. Anupama Deopujari, Botany in Samskrita Literature, 2001, Sanskrit Bharati, New Delhi
5. Dr. Anupama Deopujari, Botany in Samskrita Literature, 2001, Sanskrit Bharati, New Delhi
6. K. H. Krishnamurthy, Medicine and Surgery in Ancient India, 2000, Yuga Gayatri, Basaveshwara Nagar, Bangalore
7. K. H. Krishnamurthy, Medicine and Surgery in Ancient India, 2000, Yuga Gayatri, Basaveshwara Nagar, Bangalore
8. P. P. Holay, Machines in Sanskrit Literature, 2000, Sanskrit Bharati, New Delhi