

# Vedas-Source of Math, Physics, and Chemistry

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The Sanskrit word *veda* means knowledge or wisdom and is derived from the root word *vid* which means "to know". **The Vedas deal with both the spiritual, as well as secular aspects of knowledge**, and include such topics as God, His attributes, the attributes of the soul, the relationships of human beings to one another and to the community, society and other living things, how to live virtuously, prosper and enjoy the things of the world. Therefore, knowledge of the physical nature of the universe is also discussed. **While the main focus of the Vedas is on how to know and attain God realization, as well as find peace, harmony, happiness and prosperity in life, yet in a seed/germ/nascent form many types of secular knowledge is included.** Some of the nascent knowledge in the Vedas was later expanded in supplemental Vedic treatises such as Jyotisha Upang (Astronomy), Ayurveda etc.

**Regarding mathematics most of the information in the Vedas is in the seed form.** In Yajur Veda mantra 17:2, large numbers are clearly described in multiples of ten starting with one (*ekam*), ten (*dasham*), hundred (*shatam*), thousand (*sahasara*)... and goes on to a trillion (*praardh*). Atharva Veda mantras 5:15:1-11 pair 1 and 10, 2 and 20,... 10 and 100 and finally 100 and 1000. These observations suggest that the concept of 0 (zero) was known. As we know, number # 0 (zero) and the decimal usage are some of the most fundamental number concepts in mathematics' calculations. Their documented use, however, is credited to Aryabhatta in year 498 CE and not to Vedas. From India, the zero number in 800-900 CE travelled to Persia and Arab countries and then in 1300's to Europe. The concept of infinity is clearly there in Atharva Veda mantra 10:8:29 *Poornat poornamudachati*. Yajur Veda mantra 18:25 counts in multiples of 4's from 4 to 48. In Rig Veda mantras 1:164:35 and 10:130:3 the concept of circumference of a circle is present. Atharva Veda mantra 8:2:21 is often quoted in some Arya Samaj publications as a proof that the total life of the universe is 4.32 billion years, out of which the current universe is approximately 1.96 billion years old. However, Hindi translations of the Atharva Veda by two Veda Scholars (in the Arya Samaj tradition) Pandit KshemaKaranDaas Trivedi and Pandit Harisharan Sidhantalankar give different meaning to the same mantra. According to modern science the age of the present universe is approximately 13.7 billion years.

**Regarding physics most of the information in the Vedas is either in the seed or coded form.** According to modern science, what existed before the big bang is still an open question. Various theories include the following: perhaps nothing or a very dense black hole which previously sucked/swallowed every type of matter including light, suddenly turns into a white hole and reverses the process into outward expansion; perhaps another universe; perhaps multiple universes exist in bubble form from which sprout new universes, each with different sets of physical laws. **The Naasdiya Sookta Rig Veda 10:129:1-7 and Aghmarshan Mantras of Vedic Sandhya Rig Veda 10:190:1-3 describe the origins of the universe.** The usual translation of these mantras by Arya Samaj scholars is that the universe arose from water or an ocean in the form of clouds. I personally think this is a wrong interpretation. The words of Rig Veda mantra 10:129:1 and 3, such as *gahnam gabhiram ambah* can also be translated that **before creation prakriti/vikrati existed as a very dense liquid/fluid; tamsa goorham tamah covered with deep darkness** (there was no light at that time) which was *tapsah mahina* which was activated/heated by Dhata/God to become manifest prakriti. Raja Ram Mohan Roy a

PhD in physics in Toronto Canada, in 1999 wrote a book titled *Vedic Physics: Scientific Origin of Hinduism*. The gist of his book is that Vedas contain in a coded/symbolic language the fundamentals of particle physics and fundamental forces of the universe, like gravitation etc. Dr. Roy is follower of Vedanta **monism** in Adi Shankracharya Ji's tradition and his views in some respects are fundamentally different from those of **traitvad** as followed by Vedic scholars in Arya Samaj based on the teachings of Maharshi Swami Dayanand Saraswati Ji and their own understanding of the Vedas. Atharva Veda mantra 10: 8: 25 *Bālād ekamaṇṭyaskam ut ekam neva drshyate* states that in the universe only three things are eternal: **God, the Soul and Prakriti**. Moreover, in a symbolic manner the mantra states that Prakriti is very minute, much smaller than the tip of a hair, and the soul is invisible i.e. is not detectable by physical means. According to Sankhya Darshan, *prakriti* at its most primal level is composed of three types of extremely minute subatomic particles (called *mool tatwa*) with the following innate properties: *satwa* (full of energy but calm), *rajas* (full of energy but agitated) and *tamas* (inert, dull, no energy). Whether these three properties in modern scientific terminology may be translated to mean positive, negative, or neutral respectively must remain conjectural for the present. The other characteristics of these subatomic particles are that they are innately indestructible, and even though they are extremely minute, they still have shape, form and dimensions. Whether their size and form is at Bosons (gluons, photons etc.) or Fermions (quarks, leptons etc. and their antimatter partners) level or some other level (e.g. dark matter) is hard to be sure and at present must remain conjectural. Swami Dayanand Saraswati Ji in his book Rigvedadibhasyabhoomica discusses topics such as cosmology, the revolution of stars, earth etc, gravitation and attraction, the building of ships and aircraft.

**Regarding chemistry most of the information in the Vedas like in physics is either in the seed or coded form.** For example, in the Vedas and Vedic scriptures a lot of importance has been given to Agni i.e. energy/fire and on its utilization in a number of ways. This includes use of fire to do *agnihotra/havan* which is a scientific physical-chemical process where a *havankund* is utilized to burn a fire of special woods, ghee, herbs and incense at a high temperature to purify the environment. This produces special fragrant gasses, which in Vedic scriptures are called *bheshaj* i.e. penetrating gasses which can rise high and permeate high in the atmosphere to cleanse the air and water vapors as an anti-pollutant. Subsequently, the rains that fall are made of good clean water instead of polluted rain contaminated with chemicals. Thus, the whole eco system has less pollution. Acharya Vaidyanath Shastri an Arya Samaj scholar in 1990 wrote a book called *Science in Vedas* in which he has a chapter on chemistry in the Vedas. In the chapter, he translates several mantras and states that some of the words of the mantras mean hydrogen and oxygen combine to form water. However, my review of translation of the same mantras by Swami Dayanand Saraswati Ji and other Arya Samaj scholars is quite different.

In summary, in the Vedas in a seed/germ/nascent form many types of secular knowledge are present including mathematics, physics and chemistry. **Some of the scientific knowledge can be easily deciphered and understood, however, rest would require persons with knowledge both of Vedic Sanskrit as well as modern scientific knowledge to properly interpret it.** Moreover, caution should be exercised in wrongly interpreting given information in a mantra to support one's point of view. Ultimately, truth always prevails, not untruth or lies (*Satyam eva jayate na anritam*).

