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प्रधानसम्पादक

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असिस्टेन्ट प्रोफेसर, श्री बैकुंठनाथ पवहारी संस्कृत महाविद्यालय
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सह सम्पादक

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प्रकाशक

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Influence of Sanskrit on Chemistry Field

Nitin Kumar Verma* & Neera Raghav**

Abstract : Chemistry discipline is achieving the place of central science in present century. It has been always presenting solution to all problems originating from human greed time to time. But it had not originated in recent decades only. Roots of this discipline are found deep in history but with different names. In India, several fields like Alchemy, Rasashastra, Ayurveda, Atharvaveda etc. deals mainly with chemistry principles. Earlier nomadic nature of human & his hunting activities results in tiredness as well as injury to him. As per "Theory of Evolution", in order to sustain his identity human thinks about ways to rejuvenate & resurrect himself. These innovative thoughts lead to development of Indian Alchemy, called Rasashastra. Several experimentalists of Rasashastra like Nagarjuna, Charaka etc. transformed their experiences in form of Sanskrit literatures which inspired upcoming generations. With expansion of Islamic culture in medieval period, evolvement of chemistry field declines based on Sanskrit sources but continue to evolve in other languages.

Keywords: Rasashastra, Ayurveda, Alchemy, Evolution, Sanskrit Literatures

Introduction : Chemistry, as we know today, is disciplinary science dealing with properties of matter at atomic level. Like evolution of human, this subject has also been evolved from several stages depending upon human consciousness and his need. From surge to resurrect itself to the mission of universe, it had grown at considerable rate. Currently it is deemed to have solution for the all problems created by human need and greed.

Languages are always useful part of society development. They have been a powerful tool to spread knowledge among the masses. Out of several languages spoken throughout this world, Sanskrit is one of ancient and great language. Earlier it has played crucial role to aware people as well as their upcoming generations.

The present paper is an attempt to throw light on the role played by Sanskrit in developing Chemical Science as a basic Science.

Ancient Period : From the beginning of life on the earth, several species evolve their capabilities in order to self sustain. Human, being only species to use its consciousness, starts to ease their life with innovations. From innovation of Fire to Universe missions, human has utilized its power of consciousness.

In ancient times of India, when human were nomadic and hunts the other animals for sustaining himself, the injuries and death results in generation of thoughts resurrection and rejuvenation. In order to collect foods & cure his injuries, he needed an energizer which can not only rejuvenate him as well as cure his illnesses¹. In search of suitable drug, which can energize him, he tried several herbs. Out of several drugs three medicinal plants comes out to be best energizers, as distinct from intoxicants, narcotics and hallucinogens. They are: *Erythroxylone Coca* (used by Incas working in mines of Peru and Bolivia), *Catha Edulis* (the Khat of Arab Laborers in Yemen), and *Ephedra* (species of Aryans in India)².

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When Aryans invaded the Indian subcontinent, they found *ephedra* (which is not only energizer but also euphoriant and anti-somnolent) only in mountainous regions from Chitral to Quetta but not in plains. So in order to replace it with suitable substituent, one needs to acquire knowledge of its Active Principle. The primitive thinker has two conception of Active Principle: first conception of "like makes like", while second one takes us to conception of Soul. Therefore Pomegranate and Cinnabar-Gold were looked upon as the agency of longevity-cum-resurrection in Babylon civilization and Asia respectively. Both having redness depicts more soul content. Soul was believed to be responsible agency for growth and reproduction attribute. Gold being tarnish proof depicts longevity attribute.

For preparing Cinnabar-Gold, Mercury and Sulphur in ratio of approx.1:2 were sublimed along with some quantity of Gold. Sublimate was powdered and used as drug of longevity. Cinnabar provides rejuvenation and Gold provides immortality [3].

In Sanskrit Soma-Rasa, juice of *Ephedra*, is Elixir of Life. *Ephedra* started its journey as an energizer to drug of rejuvenation, to agency of immortality and resurrection and finally stopped as God Soma. Charaka, the master of India Medicines, distributes medicines in two categories: one which is used as drug to rejuvenate and second which is used just to cure diseases. Indian Alchemy mainly deals with first category of drugs. The Chemistry behind impact of these herbal drugs on human is the intake of Ephedrine, chemical found in *Ephedra*.

Rasashastra, a branch of Ayurvedic system of medicine, deals with the pharmaceutical procedures of drugs of metallic, mineral and poisonous origin. Several pharmaceutical techniques including Shodhana (purification process), Jarana (incineration) and Marana (calcination) are used to process drugs. Some specific groups of drugs of herbal origin viz. Marak gana (group of calcifying herbs), Dugdha varga (group of latex bearing plants), etc. are used for these procedures which primly include medicinal plants [4]. Thus we may say that Sanskrit textbooks are great sources which tell us about role of chemistry in ancient times.

Medieval Period : India had a long tradition of flourishing of Science, traceable from Vedas to end of 12th century A.D. stagnation [5]. The rise and expansion of Islamic Civilization result in massive inflow of scientific theories in India. Arabic Science was the one of most advanced for a period of about 6 centuries (8th century A.D. to 14th century A.D.). Arab grabs the opportunity of falling of Roman Empire and had access to Greek Scientific Heritage. The great works of Greece and other cultures were translated into Arabic. They also borrowed Hindu Numeral system.

This inflow of Arabic culture diminished the use of Sanskrit culture however yet there was work done in Chemistry field based on Sanskrit Sources. Several prominent writers like Vijya Jayant Deshpande, D.P. Chottopadhyaya and Mira Roy have made use of Sanskrit sources for their work.

Conclusion : Chemistry is the branch of science which always resolves several problems created by human greed. It has evolved not from last few decades. Rather it has originated from centuries back and is continuously evolving itself. After many centuries it has transformed itself into present shape after passing through several stages. Language has played crucial role to evolution of this field. As Sanskrit was the most prominent

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language of that time, therefore it helped in structuring this field through several literature textbooks like Vedas, Rasashastra, Ayurveda etc. and works of several scholars and sages like Nagarjuna, Charaka, Patanjali etc. Now with passage of time, several languages emerged and use of Sanskrit language as a medium declined. Therefore chemistry work starts in coding several other languages too. Hence influence of Sanskrit on chemistry also declines. Yet Sanskrit sources show advanced chemistry of that time and seems as pole star directing young generation the way.

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