

Swami Vivekananda and His Scientific Consciousness

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Abstract:

Being a multifaceted talent Swami Vivekananda stepped his feet on Science and scientific technology matters. He was such a pioneer who thought and raised His voice for science and technology knowledge among students. He proclaimed that without scientific knowledge and advancement a nation can't proceed forward. This thinking came from a Ramta yogi and it was for the first time that the society heard that type of words from a monk.

1. Introduction:

The name Swami Vivekananda carries an immense power and personality, personality of knowledge, wisdom, logic, purity, truthfulness that it would be a gigantic task for a person in the world to define him appropriately. As a 'Monk' he is very known to all. 'Swami', this word makes us think of a yogi, an ultimate religious person fully devoted in spirituality. But Swami Vivekananda was first ever 'Monk' in this universe who changed and modified the concept of Sannyasin. To him, a monk is not a person who would perform religious activities only and would seek salvation for himself. In his thirty-nine years of lifespan he had taught us showing his own life how to live and how to let live. His whole lifespan is a big library where we can find books of every subject viz. Religion, Spirituality, Philosophy, Culture, Psychology and Science. His thinking and preaching has taught us immense. Swami Vivekananda was a trailblazer, a pioneer himself. His thinking of science and keen interest to implement the scientific thought in the society make everyone amazed. What the Christian Churches did with the scientists the world knows that. Even no other religions have talked about usefulness and necessity of science. But it was Swami Vivekananda, being a scientific Rishi, first understood the importance and relevance of Science and Technology to make the society a developed one. He was an apostle of concrete idealism, and logic. He did never support superstition and unscientific ideas. Throughout his life he had granted things with logic after a thorough scrutiny. In this article we will discuss about Swami Vivekananda's intuition in science and his consciousness on scientific matter.

2. Science in true sense:

What is science? The word 'Science' has derived from the latin word Scientia which means knowledge in the broadest sense and it includes any types of systematic knowledge or perspective practice which is amenable for making predictions. According to English Dictionary Science is a systematised knowledge. According to Britannia World Language Dictionary it is knowledge of facts, phenomena, laws and proximate cause gained and verified by observation, experiment and correct thinking. So, the fact is a scientist or a science consciousness person should be practical, he should not believe in abstract things or in superstitions. He should reach to the deep of a matter to understand it and should not believe in others' words till he comes to the conclusion with his own observation and hearing.

3. Science and Vivekananda:

Swami Vivekananda emphasized that the whole of this universe is present in the cosmic fine universe. He said, "Certainly it is true that man cannot be simply an evolution. Every evolution presupposes an involution. This involution and evolution is on throughout the whole of nature."

Now, what are linkages between Swami Vivekananda and Science? It's really absurd to hear for the first time that a sadhu or a Swami had direct or indirect connection with science. But as we know Swami Vivekananda himself was a mystery, a true example of Omni-science that ever subjective knowledge was known to him. Sister Nivedita once said, "He (Naren) lived in a world of ideals, where history, and philosophy, poetry and all the sciences, are recognized as phases of reality. He possessed a prophetic vision of learning, wherein thought was seen as subservient to the real purpose of life, ideas and ideals being the fuel which the soul burned in its supreme effort to go beyond intellect, beyond thought" (1).

There are four essential elements of a scientific method those are iterations, recurrence, interleaving or orderings like- characterisations; hypotheses; predictions; and experiments. Thus it is said repeatedly that scientific method is not a recipe; it requires intelligence, imagination, and creativity.

If we look into Swamiji's life, we can see that truthfulness, logic, experiment, thorough observation were his life's assistants. He, since his childhood did never support illogical things or sayings, superstitions. He had always stood with the logic and never agreed to accept anything without practical observation, knowledge. When every child was panic-stricken after hearing a demon's presence on the bell tree little Naren sat on that tree to see if there is really a demon. We see that it was little Bile who sat for hours in the banana grove to see Lord Mahabir to come there and bless him as somebody told that story to him. On another side it was the strongest side of Swamiji when he examined by using hukkahs

kept for smaller race people to observe if his religion is violated and he strongly showed us at that very little age that none should accept anything without logic and proof. These are the qualities that science consciousness demand.

If we look at "Sri Sri Ramakrishna Kathamrita" we can see that on 9th May, 1885 at Balaram Basu's house Swami Vivekananda told Girish Ghosh that he would not accept the words of Girish Ghosh and Shastra's' without any proof. He even went with clashes with his Master Sri Ramakrishna for accepting a taking without proofs. This is the mind of a scientist; not to belief in folk without proof and logic. And this quality of interrogation, introspection developed much with him in later years. And so, he was very much charmed with scientific thoughts and consciousness.

Swamiji studied history, logic, philosophy, geography and besides these he also studied applied mathematics and astronomy. It was written in "Kathamrita" that Swamiji used to listen lectures on Anatomy in college to have knowledge on physical and biological knowledge of human body. In his biography we can see that when gas light and soda-lemonade were imported in the then Calcutta, little Swamiji made models of that and also he made a model of Rail(2). And when he was in class IV, he had not only studied Godfrey's Astronomy but also mastered on that book(3). All these incidents prove Swami Vivekananda's inclination and deep intuition in learning science.

According to Swami Vivekananda science and religion are not different very much. They run parallel. He has propounded that like other sciences religion is also a science. There is no illogic, unethical concept in it. In his written lecture "Paper on Hinduism" delivered on 15th September, 1893 in Chicago, he had said, "Science has proved to me that physical individuality is a delusion, that really my body is one little continuously changing body in an unbroken ocean of matter..." Also, Swami Vivekananda was the first ever person who showed the prowess to state that Religion and Science will go hand in hand. He wanted to write a book "Vedanta and Vigyan". In one of his letter to Mr. E.T. Sturdy, he had written, "I am working a good deal now upon the cosmology and eschatology of the Vedanta. I clearly see their perfect unison with modern science, and the elucidation of the one will be followed by that of the other. I intend to write a book later on in the form of questions and answers"(4). In this context Swamiji had masterly explained the relationship between 'Ved' and 'science' or 'Vigyan'. In his lectures, " Reason and Religion" delivered in England he said, " Is religion to justify itself by the discoveries of reason, through which every other science justifies itself? Are the same methods of investigation, which we apply to sciences and knowledge outside to be applied to the science of Religion? In my opinion this must be so, and I am also of opinion that the sooner it is done the better. If a religion is destroyed by such

investigations, it was then all the time useless, unworthy superstition; and the sooner it goes the better. I am thoroughly convinced that its destruction would be the best thing that could happen. All that is dross will be taken off, no doubt, but the essential parts of religion will emerge triumphant out of this investigation. Not only will it be made scientific- as scientific, at least, as any of the conclusions of physics or chemistry- but will have greater strength because physics or chemistry has no internal mandate to vouch for its truth, which religion has"(5).

After reading this one can easily understand the scientific consciousness of Swami Vivekananda and how in depth knowledge of science he possessed.

When India was captured physically and administratively by the British and it's soul was continuously got demoralised by some other religions the it was Swami Vivekananda who protested all the myths and wrong perceptions of Hindu Dharma spread by other religious persons and groups. He not only rescinded those wrong and false allegations upon Hinduism but proved the supremacy of Hinduism and India with wistful lectures, scientific explanations and proofs from literature. In his lecture in Brooklyn Ethical Association in 1895 Swami Vivekananda chose his subject "India's Gift to the World". He spoke of the wondrous beauties of India "where stood the earliest cradle of ethics, arts, sciences, and literature, and the integrity of whose sons and the virtue of whose daughters have been sung by all travellers"(6).

He also said, " The same holds good with respect to sciences. India has given to antiquity the earliest scientifically physicians, and, according to Sir William Hunter, she has even contributed to modern medical science by the discovery of various chemicals and by teaching you how to reform misshapen ears and noses. Even more it has done in mathematics, for algebra, geometry, astronomy and the triumph of modern science- mixed mathematics- were all present civilization, were discovered in India, and are in reality, Sanskrit words"(7).

Swami Vivekananda came with so many great persons and amongst them were many noted scientists like Hiram Stevens Maxim, Nikola Tesla, Sir William Tomson (afterwards Lord Kelvin), Professor Helmholtz and though not directly or physically but albert Einstein was very much moved by Swamiji's scientific mind.

During the 19th century, physicists made remarkable advancement on the laws that govern nature. The most significant among them was the contribution of Gravitational Force Theory imposed by Newton. However, this theory could not resolve the interrelatedness and inter-dependence of four major

parameters: Space, Time, Matter and Energy. Also this theory could not clear the explanatory power with regard to how the mass of a given object could be transmitted through space.

At this juncture Swami Vivekananda endowed with Vedantic knowledge on Cosmos came to west and Swamiji conceptualised that the infinite and absolute as seen through the mind frame of space and time is nothing but the finite world. According to him, " Science is nothing but the finding of unity. As soon as science would reach perfect unity, it would stop from further progress, because it would reach the goal. Thus Chemistry could not progress farther when it would discover one element out of which all other could be made. Physics would stop when it would be able to fulfil its services in discovering one energy of which all others are but manifestations, and the science of religion become perfect when it would discover Him who is the one life in a universe of death, Him who is the constant basis of an ever-changing world. One who is the only Soul of which all souls but delusive manifestations. Thus is it, through multiplicity and duality, that the ultimate unity is reached. Religion can go no farther. This is the goal of all science"(8).

4. Vivekananda's interaction with scientists and his appreciation of them:

Swami Vivekananda and noted scientist Nicola Tesla came closer to each other and after meeting with Tesla, knowing his work Vivekananda was very much excited and he wrote to E.T. Sturdy, "Mr. Tesla thinks he can demonstrate mathematically that force and matter are reducible to potential energy. I am to go and see him next week, to get this new mathematical demonstration. In that case, the Vedantic cosmology will be placed on the surest of foundations"(9). This letter is a significant document which supports Swamiji's conception and consciousness of science. Swami another said in an occasion, "Thus we have matter and force. The matter, we do not know how, disappears into force, and force into matter. Therefore, there is something which is neither force nor matter, as these two may not disappear into each other. This is what we call mind-the universal mind"(10).

The mathematical proof of the principle that Vivekananda was looking for did not come until Einstein published his paper on relativity. This indeed is a remarkable contribution by Swamiji through his intuitive scientific approach. A corollary to the Theory of Relativity is the existence of Ether. In February,1895 Vivekananda wrote an article on Ether in the New York Medical Times where he wrote - " Thus we are forced to find that the ether cannot explain space because we cannot but think of ether as in space. And therefore, if there is anything which will explain thus space, it must be something that comprehends in its infinite being the infinite space itself." In this connection it is clearly proven that long before Einstein Swami Vivekananda rejected the Ether Theory as the earlier in 1905 stated that it could

not explain science. It has been said that Einstein was deeply moved by Vivekananda and acknowledged the contribution of Vivekananda by stating that "there is one KANANDA as the western papers often referred to Vivekananda] who predicted that energy and matter are interchangeable."

In the field of biological sciences, Darwin made a significant contribution through his Evolution Theory which is better known as Darwin's Theory. This theory opened a new window in the realm of evolution and Darwin became a demigod. Swami Vivekananda had thoroughly studied this theory. He explained it with his own thinking. While Darwin established that all species of life have descended over time from a common ancestor, and proposed the scientific theory that this matching pattern of evolution which he named natural selection. At this juncture, Vivekananda did not agree with this theory and with his own profound intuitive knowledge (Vedantic knowledge) Vivekananda asserted that the whole of this universe is present in the cosmic. He said, "Certainly it is true, even on the grounds of modern research, that man cannot be simply an evolution. Every evolution presupposes an involution."(11) He also added, "This involution and evolution is going on throughout the whole of nature"(12).

On the other hand an eminent Nobel laureate cell biologist Christian de Duve said, " All the known living beings that subsist, grow and reproduce on the planet- the trees and flowers, the fungi and mushrooms, the extraordinary richness of animal life, in the waters, in the air, and on land, including human beings, together with the immensely varied world of invisible bacteria and protists- all maintain and propagate themselves by the same mechanism, no doubt inherited from a common ancestral form. Life is one. The revelation is awe inspiring"(13). This is in symphony with Swamiji's proclamations and observations.

Swami Vivekananda had great influence on his Indian contemporaries. "The Positive Sciences of the Ancient Hindu", a noted book by Acharya Brajendranath Seal that focussed on history of Vedic sciences and uses of science and technology in ancient India was the fruit of Swamiji's inspiration. Doctor Mahendralal Sarkar established "Indian Association for the Cultivation of Science" which opened the scope to study science and it would not be an exaggeration to say that Swamiji's company made a deep impact on Dr. Sarkar. Sister Nivedita, the most favourite disciple of Swami Vivekananda did help to Acharya Jagadish Chandra Bose who possessed a deep reverence for Vivekananda.

In 1893, Vivekananda and the rich businessman Jamsedji Tata were voyaging from Yokohama to Vancouver on board C.P.R. steamer Empress of India and the later was deeply convinced by the words of Vivekananda and took oath to do something for his own native fellow. As a result, he established Tata Iron and Steel Company in 1907 and for scientific study and research he established Indian Institute of

Sciences in Bangalore in the year 1909. He wrote to Vivekananda, " I am of the opinion that, if such a crusade in favour of an asceticism of this kind were undertaken by a competent leader, it would greatly help asceticism, science and the good name of our common country; and I know not who would make a more fitting general of such a campaign than Vivekananda"(14).

In his biography, it has been written that while residing at Khetri, Swamiji used to teach the Maharaja Ajit Singh history, chemistry, physics, astronomy. It was Swamiji's influence that the Maharaja made a laboratory in his palace where telescope, microscope and other scientific equipment's were kept for research (15).

Actually, Vivekananda wanted a society which will survive in culture, scientific thinking and the youth will learn science because he had again and again said that without science and technology a nation cannot prosper. Vivekananda wanted his younger brother Mahendranath Dutta to study science farther. In his letter he wrote, "What the nation wants is pluck and scientific genius. So I want M- to be an electrician. Even if he fails in life still I will have the satisfaction that he strove to become great and really useful to his country...."(16).

He also wanted his co-disciples to learn science and wanted to introduce science in Ramakrishna Math and Mission. In one of his letter to Swami Brahmananda (one of the brother monk of Swami Vivekananda), he wrote, " Suddhananda writes to say that they are going on with Ruddock's Practice of Medicine or something of that sort, What nonsense do you mean by having such things taught in the class? A set of common apparatus for physics and another for chemistry, an ordinary telescope and a microscope- all these can be had for Rupees 150 to 200. Sasi Babu may give a lecture on practical chemistry once a week, and Hariprasanna on physics etc. And buy all the good scientific books that you can have in Bengali, and have them read...."(17).

In his another letter written to Suddhananda on 11th July, 1897 he also reminded him about his duty to buy scientific equipment's and continue the study of science in the Math.

This type of intuition, energy, inclination to science was rare and to the world it was a surprise that a sadhu had had this. Swamiji had a profound study on Anthropology and he in his statements and writings had proven this. Dr. Bhupendranath Dutta in his book "Swami Vivekananda: Patriot-Prophet " had written Swami Vivekananda was the first Indian to say which "nobody has as yet been able to give a clear exposition of the cause of the origin of skin-colour, contour of the head, nose etc. Amongst different races of mankind"(18).

5. Conclusion:

Swami Vivekananda wanted to preach that science is the backbone of a society to grow up. But Society depends its progress on the key elements of the society that is MAN. This means balanced development of his hand, head and heart. Head to think, heart to feel, and hand to work. This aim when purposed by individual's, with collective endeavour widely, is bound to have its effect on society- an effect emerging as gradual improvement of the tone of society. While science evolves from good models to better, religion does not have to evolve because it does not offer theories based on observed facts. So the when the real scientific knowledgeable man will increase in our society, society must me develop.

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