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Acharya Jagadish Chandra Bose's Contribution to the Field of Education and Science

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***Abstract*: Every Creature must have his own philosophy behind his every creation. It will be very easy to say that every man has his own philosophy which influences him to do various works in society. Acharya Jagadish Chandra Bose is the first Indian during the British rule to achieve international reputation in experimental science. Acharya Jagadish Chandra Bose was a unique personality in the field of Education, Philosophy and natural sciences not only in India but also in the world. He was not only an Indian but also an international. The cultural upheaval of the 19th century or the renaissance spirit personified in him. Acharya Jagadish Chandra Bose rose on his life's ambition to make progress the cause of physics in the educational world of India. His thrust to devote himself to research is also getting a chance of fulfilment. He had enriched Indian science as well as his subject physics and laid an ever memorable contribution.**

***Keywords*: Experimental Science, Philosophy, Fulfilment, Education, India.**

1. Introduction

1) Short life history of acharya jagadish chandra bose

Nineteenth Century Bengal was very fortunate to see the birth of some illustrious sons. Acharya Jagadish Chandra Bose, popularly' known as Sir J.C.Bose, is one of them. He is the first Indian during the British rule to achieve international reputation in experimental science. Jagadish Chandra was born on the 30th November, 1858 at Rarikhal, Bikrampur in Bikrampuir in Bangladesh. His father Bhagawan Chandra Bose was one of the earliest products of English education, and was recruited directly to the Govt. Service as Deputy Magistrate. His mother's name was Bama Sundari Bose. Jagadish Chandra was second child of his parents. But due to the death of a brother he was the only son of his parents. The rest were all girls. The names of them are given below in a tree-diagram chronologically. His boyhood days were always full of interests. He went to village pathsalas, attended Melas and Jatras. The steps taken by Bhagawan Chandra for the Education of his son were not of the usual order. Bhagawan Chandra never discouraged queries form young Jagadish Chadra. His sensitive mind broods over the entire natural. Phenomena that his young eyes encounter. The first moving river with flood lives floating by, the sporting of seeds and growth of plants, the cycle of flowers and froots on after the other, the attraction of the moth towards a light all open out before him a world of enchantment, and he is impatient to understand them and drink deep into the why thinks. When he was eleven years old, Jagadish Chandra was sent to Calcutta and put in to the St. Xavir's school to get his training in English. His life in a student's mess where he stayed with some of his older relative was dull, but he had his own recreation in keeping pets and indulging in building miniature watter ways with bridges over them. At sixteen Jagadish Chandra passed from the school to St. Xavir's college. Inspite of his inclination towards natural history he fell under the influence of a teacher, father Lafont, which determined his turning to physics. The humdrum routine of college life did not fully occupy him. So the outdoor life had great fascination for him. He went to the forest Banglo of one of their family friend. Due to heavy active sport in the nature with wild animals, he attracted by heavy fever. The fever registers quinine and all other treatments. As a result he did not do well in his B.A. Examination. Bose left for England in 1880 and joint a hospital in London. Due to persistence of fever which we now recognise as Kalazar, he was advised by his professor of anatomy to give up the study of medicine. Then he joined the christ's college Cambridge; he took his B.A. degree in science from Cambridge in 1883 and as well the B.Sc degree from London. He was then twenty five and it was necessary at that time that he should incr3ease the income of the family. Therefore he was advised to return home and find out a suitable service. After a greate official chaos he got the lectureship in Presidency College. He was soon recognised as a brilliant professor. His experiments about the different axioms' of physical science were found so wonder fully interesting that students would not be absent from his class, rather they would stick to him and follow his lectures more attentively. They learned their subjects more quickly and efficiently. Then in 1887 Jagadish Chandra married smt. Abala Devi the sister of Durgamohan Das of Bikrampur, a friend of Bhagawan Chandra. Abala Devi was then a student of third year class at the Medical College, Madras. Abala Devi's knowledge was of a standard which enabled her to understand and appreciate Jagadish Chandra's scientific research and aspirations. Naturally this marriage was a very happy combination. They began a life of scientific enquiries of Jagadish Chandra. He continued to word in Laboratory after his routine college work. Jagadish Chandra did not take up to

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research in physics seriously till he completed the thirty fifth year of age on November 30, 1894. In the meantime he was engaged heart and soul in making.

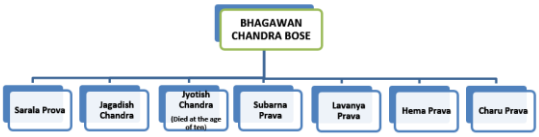

Fig. 1. Bhagawan Chandra bose

He acclaimed as a professor, equipping up his Laboratory for higher study of physics and clearing up the paternal debt. Scientific hobbies like photography and recording of voices by Edison's phonograph often brought him relief of mind. In 1894, on his birth day, he took up a resolution to devote himself to scientific research. This resolution by his continued effort and meditation brought in discoveries which revolutionised several earlier scientific concepts. After a lifelong research work on many aspects of physics and natural science Jagadish Chandra founded 'The Bose Institute' on the 30th November, 1917. It was the monument of Acharya Jagadish's glorious performance. With the financial help form Indian Govt.? And the various native states this institute began work for the upliftment of science. Jagadish Chandra faced many problems from the early beginning of his life. Most of them were due to be and Indian.The British Government did not help his enterprises properly. But the Indian people, the great Indians like Swami Vivekananda, Rabindranath Togore, Sister Nivadita, Acharya Prafulla Chandra Roy, Nilrantan Sarkar, Meghnadh Saha and Maharajas of various native stated helped him in various times.

Dr Bose was a good orator and a writer also. He got inspiration from the puranas, Upanishads and Gita. The glorious history of ancient India helped him to build up and idealistic mind. He explained his thoughts in various writings. At the end the message of his life can be explained by his own word that "If anybody ever intends to dedicate himself to a great mission, let him not expect a fruitful end. If his patience be infinite then alone he will come to understand that a day will come when his perseverance, inspire of repeated failures, will bring him success.

2. Philosophy of Acharya Jagadish Chandra Bose

Every Creature must have his own philosophy behind his every creation. It will be very easy to say that every man has his own philosophy which influences him to do various works in society. But if every human being directs himself according to his own philosophy, there will be a great chaos. So the early thinkers divided the philosophy in some broad groups. In some broad groups Idealism is one of them. From the life history of Acharay Jagadish Chandra Bose, it may clearly be noted that Jagadish Chandra Bose was on Idealistic philosopher because his thoughts were similar to Idealistic philosophy. Idealism is the influential and oldest philosophical doctrine. It is derived from Plato's metaphysical doctrine that reality consists in Ideas and those ideas or whole truths are universal, eternal and absolute in Character. These ideas are not manmade. The material universe as conceived by physical sciences is an incomplete expression of reality. For its completion the conception of a super sensual spiritual universe is a necessity. Man has two facts spiritual and material. When the emphasis is on the realisation of spiritual life, it is called idealism. An idealist does not have consideration for material values of life. To idealist 'Mid and soul' rather than the "Matter and Body" are more important. According to idealism realisation of the absolute "Spirit" should be the summon bonum of life and not the craving for material things. According to Ross, 'Human Personality is the supreme value and constitutes the noblest work of God.

The concept to idealism is based upon some basic principles. According to these, true reality or ultimate reality is mental of spiritual in nature. The material world is mortal and changing like human body, but like soul reality is eternal, immortal and unchanging. Nothing exists except the absolute mind. It is beyond everything mind is the creator of the new and the explainer of the existing phenomena. Man is essentially spiritual being and his spirituality alone distinguishes him from other animals. Ideas and purposes are the realities of man's existence. Personality is the ultimate reality so mains a free agent chose his ends. Man cannot create values. There pre existing, ultimate, eternal and unchanging. Man only discovers them through conscious efforts. The object of living and learning is to develop the natural man into the ideal man having physical, intellectual, emotional, moral and spiritual perfection. Jagadish Chandra took these ideals as his philosophy of life. Throughout his life from boyhood he carried these ideas in his mind. From his early childhood he wanted to know the reality behind every incidents of nature. This thirst of knowledge did not leave him till his death. He always wanted to express everything through the eyes of reality. He clearly expressed these ideas in his various writings. The great instance of his idealistic thoughts was revealed in his writings that "River from where have you originated? ---- From the matted hair of Lord Mahadeva. Where is the end of your life?Under the feet of great Mahadeva. The sayings aptly present Sir Jagadish Chandra Bose as a great idealistic philosopher.

3. Educational Philosophy of Acharya Jagadish Chandra Bose

Archrya Jagadish Chandra Bose was a unique personality in the field of Education, philosophy and natural sciences not only in India but also in the world. He was not only an Indian but also an international. The cultural upheaval of the 19th century or the renaissance spirit personified in him. His conception of life and the world constitutes the very basis of his philosophy of life. Jagadish Chandra Bose was a basically Scientist and every scientist has his own unique personality and philosophy of life. Educational philosophy of Acharya Jagadish Chandra Bose has some certain points. These are as follows:-

1) Aims of education

Jagadish Chandra Bose was a Idealistic philosopher. The idealist thinkers have opined that spiritual development of an individual should be the supreme aim of education. According

to him the aims of education should be

i. True reality or ultimate reality is mental or spiritual in nature. The material world is nothing but an outward manifestation of ultimate reality.
ii. Man is a free agent; free to choose of his ends and means to realize them.
iii. Ideas and purposes are the realities of existence.
iv. Personality-being the union of ideas and purposes is the ultimate reality.
v. Man is essentially a spiritual being and his spirituality alone distinguishes him from animal. His spirit alone enables him to control his environment.
vi. The intangible values are the ultimate and eternal realities.
vii. The object of living and learning was developing the natural man into the ideal man having physical, intellectual, emotional, moral and spiritual perfection.

Idealism believes that man has two natures—original and spiritual. The aim of education was convert the original nature into spiritual nature. Acharya Jagadish Bose's concept of education is based on his general philosophy of life. He interpreted education and the development of an individual from the idealistic point of view. His idealistic educational philosophy was reflected through his thoughts, writings, activities and his own life. He conceived a genuine interest in idealistic philosophical education and delivered much serious thoughts to the subjects he dealt. Idealism was his life's ideal and for him the only agency to solve all problems was ideal thoughts. Certainly it should say about him that he acquired systematic ideal philosophy of education which he expressed thoroughly through his works, speeches and writings. He wanted earnestly to give full dignity to our mother language than any language national or international. Judged by any standpoint, the quality of his message, the way of presenting his work, the impact he has made on the world --- he is a great philosopher education not only of our age but also for all ages. The present investigations are a firm to attempt to analyse his idealistic thought and views on educational philosophy.

4. Scientific Achivement of Acharya Jagadish Chandra Bose

Acharya Jagadish Chandra Bose rose on his life's ambition to make progress the cause of physics in the educational world of India. His thrust to devote himself to research is also getting a chance of fulfilment. He had enriched Indian science as well as his subject physics and laid a ever memorable contribution. During his whole life he invented so many new aspects of physics and presented us curiously. On the completion of his thirty fifth year of age on November 30, 1894 Bose resolved to devote himself to the pursuit of new knowledge.

His life of active scientific researches extended from 1895 till 1932, this period of 37 years can be divide as follows:-

i. Investigations with short electromagnetic waves from 1895-1899.
ii. Investigations on the similarity of electric responses in the living and the non-living substances 1899-1902.
iii. Comparative physiological investigations on plant and animal tissues 1903-1932.

Our present age of radio, radar and television in which electromagnetic waves of different wave lengths ranging from 400 mats to cms. wave lengths are used – all are familiar with the word electromagnetic waves investigated by Sir Acharya Jagadish Chandra Bose.Acharya Jagadish Chandra Bose communicated in May 1895, his first patter to the Asiatic society of Bengal. Its title was "on the polarisation of electric waves by double refraction."

Acharya Jagadish Chandra Bose in 1894-1895 demonstrated the ability of his electric waves to travel from the lecture room and through an intervening room. In 1897 Bose as he was sent to Europe by Government of Bengal, gave a valuable lecture – demonstration of his apparatus before the Royal Institution of London. In 1901, one of the large manufacturers of wireless apparatus proposed to Bose to sign a remunerative agreement but Bose refused. As has been remarked before had essentially the biologist's outlook on nature. In his electric wave detection apparatus he could find a lot of visual system of animal. Taking as sign of livingness electric response to stimulation, Bose could show that both in living as well as in nonliving substances

5. Conclusion

This paper presented an overview of Acharya Jagadish Chandra Bose's Contribution to the Field of Education and Science.

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