

DEVELOPMENT OF SCIENCE AND TECHNOLOGY AS A SIGNIFICANT THEME OF INDIAN HISTORY

HISTORY AND SCIENCE :

It is general conception of the people that the history and science are the two subjects situated in two different poles in the world of knowledge. Science means a systematic and planned study which can be proved by logic, presentation and experiments and technology denotes to the presentation of scientific knowledge in a way that could be useful in the field of production, trade and commerce and industrialization which is very useful for humanity. We are usually consider that History is a subject of arts faculty and has no relationship with science and technology. But the studies in history of science it has been observed that history has played an important role in the development of science and technology. Many philosophers, historians and scientist had made comments that history and science are two subjects which are complementarily related to each other more particularly history is helping science in its development throughout the ages. According to historian D D Kosambi has made an important comment about the Development of science: "Science is the searches for causes and their effects....science is cumulative, science is the history of science, every scientific discovery of importance is absorbed in the body of history of human knowledge.

KNOWLEDGE BECOMES SCIENCE WHEN IT IS HISTORICALLY ESTABLISHED:

Therefore History always maintains a relationship with the development of productive tools which we can call as science and technology. From this angle, the aim and objectives of history and science are similar. Both History and Science try to establish truth on the basis of logic and proofs. Actually history takes the responsibility of making knowledge as science. Knowledge becomes science when it is historically established as scientific knowledge. Therefore history always plays the most important role of the development of science.

Scientists know that the quality of matter is infinite and inexhaustible. Therefore scientists are continuously searching for universal truth. They keep on making better and better approximations of truth. The History is also always searching for truth like science. Therefore the process of searching for a truth itself is science and also history. As such there is no difference in History and Science.

Misconceptions about Science:

There are many misconceptions regarding science and technology amongst us. Many of us believe that Science and Technology is the contribution of the west. But History says that East has contributed immensely in the development of Science and Technology. Ancient societies of India, Egypt, Arab, China and many other countries have contributed immensely towards the development of Science and Technology.

HISTORY INFORMS THE DEVELOPMENT OF SCIENCE:

In the latter half of the 18th century, the age of mechanization ushered in our country as a result of new scientific invention. But it does not mean at all that earlier people of our country were not all interested in science and technology.

Historian said that ancient India contributes more in the development of modern metallurgy. There are historical records about production of high quality steel in South India about 1000 year B.C. This steel was used for production of swords. Again some of the Historians said that the iron metallurgy of Khasis of Meghalaya of NE India is one of the oldest metallurgical knowledge of human kind. This metallurgical knowledge of the Khasis is around 2500 years old. But this community of NE India is even not known to

many Indians today.

From the beginning of ancient period time specimen of huge building and different type of images which proved the development of science and technology of these specimens of art. We also note development of engineering during the reign of emperor Ashoka. The pillar, stupas and caves of Mauryan period also highlight the achievement in the field of engineering. The caves made by cutting rocks also testify the fact that the stone cutters were skilled in their work and it could only be possible because of development science and technology. The art of polishing was also at its climax. The caves of Nagarjuna and Barabar glittered like glass because of polish in the interior. Smith has praised this art of polishing very much and described such type of polish as this beyond the reach of modern science and technology.

We see a tremendous progress in the field of various branches of science during the Gupta period. Mathematics, astronomy and medical science flourished greatly. The decimal fraction and the principle of cypher origination during this age. Aryabhata, Varahamitra and Brahmagupta were famous scientists of the Gupta age.

Aryabhata was the most prominent astronomer and mathematician. He wrote a most authentic book entitled Aryabhatiyam. In this book he has efficiently dealt Geometry, algebra, arithmetic, astronomy etc. He has also established the theory that the earth is round and it rotates on its axis. Owing to his scientific discoveries he is regarded by the scholars in great esteem.

The significant scholars of Ayurveda like Charak, Brahmaputra and Dhanvantri, whose achievements and theories of medical sciences are not recognized in India but also in the world. Thus it is evident that science and technology was in progress and the scholars and scientists of the ancient period were expert in their work. Scientific advancement of India also influence the Indian think in traditions whose well known characteristic were logic and belief in science, humanism and faith in the capacity of development of man. Now people began to believe only on those things which could be proved by logic and science. Similarly with the progress of science people began to believe the societies should also be changed with the passage of time. Therefore it is very important to study history to know the causes of progressive development of any society.

After the establishment of British rule in India, their first necessity was of modernization because they were well acquainted that their interest will not be fulfilled without it. At the same time they knew that too much progress of science would be great danger to their own existence.

Technology generally means ability of the use of scientific inventions and achievements in the interest of mankind. Technological development is the basic of the prosperity of a country and it is also the foundation of industrial development.

Actually first half of 20th century proved very beneficial for the scientific and technological development of India. Because of establishment of various types of industries such as rice, flour, cloth sugar, iron and steel, cement, glass and match etc. added to the development of science and technology which led the country to advancement.

Lack of capital was the greatest hurdle in the development of science and technology. No instruments or machinery as available in our country for the formation of heavy industry. The engineering industry was also working here small scale. In 1913 first of all production of steel could be made. The condition of India was also not satisfactory from the point of view of electricity, so people had to face a number of difficulties in running these factories and trade in India.

During British rule the progress of science and technology continued to be slow as the policy of the English was of complete economic exploitation of India. In 1951 India was under developed from the point of view of scientific and technological education. As

a result the trade and industry was undeveloped.

After post -independence period there emerged speed in the rise of science and technology's. As a result modern industries developed in India and production of aeroplanes , ships, railway engines and motor cars was started. As a result of this industrialization, rise of capitalism and labourers emerged in the country which affected the economic structure of the country.

As a result of industrial, scientific and technical development in the country, means of transport and communication were also improved tremendously. Now, land, water routes are important sources carry goods from one places to another places.

Beginning of Railway system also contributed much to the development of country and the English government granted permission for the first Railway line in 1845 A.D. Later on this process continued.

CONCLUSION:

In conclusion, we can say that now India can be compared with any country of the world in the field of science and technology. She has a top most place among the developing countries of the world. The day does not seem to be far when India will be counted among the developed countries of the world because of her progress in science and technology. □

References :

1. "Concepts and Methods of Historiography" - Dr. K.L. Khurana and Smt. Sadhana Gupta.
2. History : Its Theory and Method- Sheik Ali.