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Chemistry Museum: An Inevitable Phenomenon In Education

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Abstract: Chemistry is the science concerned with the matter, properties for welfare of human beings. Science museums play vital role to understand the subject, scientists and researchers getting innovative ideas and to search for unsolved problems. Museums have been developing the different techniques in chemistry for preserving the invaluable things, equipments and quantified information. Museums inculcate the habit of revolutionary thinking for wellbeing of humankind. The importance of chemistry at the museums has concentrated on the utility of chemistry. Science and technology museums have great role in building of the subject successfully. Every country requires chemistry museum.

Keyword: Chemistry museum, magical chemistry, Public education.

INTRODUCTION

The museum of science embraces activities in an extraordinary variety of scientific and other useful fields. It plays a vital role for public education and creates a new way of thinking of students or common public. The science museums sensed these trends quickly and caught the interest of everyone. The student become scientists, searching new idea for new materials by utilizing their skills, fighting the war against AIDS, anthrax, swine flue, hepatitis, TB, cancer etc.by preventing, testing, make vaccines, synthesis of drugs, use of drug therapies and methods to try to block the viruses, bacteria at different stages. Chemistry museum suppose to touch environment with different disciplines. Everyone shares the responsibilities of our environment.

It is difficult today to witness the primitive mythological and valuable things. Hence to study them is very difficult. But we can very much witness these things in museums. In a broad sense museum means the collection of primitive valuable and rare things. Chemistry museums have collected distinctive chemical samples of historical significance.

The machineries that provide us comfort had not come into existence abruptly or by chance. On the contrary the machineries had been found out systematically by pains taking efforts of many scientists. The study of science helped them to invent such machineries, scientific instruments, apparatus and other useful objects .Long ago, man had found out spark. Since then his scientific development has begun. [1] It has been continuing up to now.

HISTORICAL BACKGROUND:

A Science museum has been originated in the south Kensington museum, which was founded in 1857 [3].Chemistry was a very minor part in science museums displays. Chemistry had been recognized in primitive India as 'magical chemistry' among the past scientists 'Nagarjun' was a celebrated personality. He was supposed to be the father of chemistry. His 'Siddhanagarjun'was the epoch making treaty in chemistry, this treaty provides a lot of information about various chemicals and chemical reactions. For instance mingling of various metals, their metallurgical methods of extraction as well as analyses of metals .The famous iron bar of Delhi (Ashok stambha) in India and also the valuable historical statues, monuments of mixed metal (alloy) are the most important examples.

Eighteenth-century chemistry often has been studied as a science of atoms, corpuscles and Newtonian forces. Chemically processed substances and natural raw materials played a central role in eighteenth-century chemistry because of multifarious ways of inquiry. Historical studies of materials allow a new grasp of issues traditionally highlighted as characteristic of the science of chemistry—composition, affinities nineteenth century, chemistry was a culture that established specific sites for experimentation and manufacture. In the eighteenth century the term “laboratory” referred almost exclusively to distinct rooms where chemical operations (from the point of view of the historical actors) were performed.“Laboratory” is designated as manual work, points to the similarity of these places with workshops. In the eighteenth century “laboratories” were both rooms for experimenting at academic institutions and for chemical manufacturing and controlling in the apothecary trade, assayer's shops, and distilleries.

Our forefathers very well knew the various chemical reactions, making useful products such as colors, soaps, detergents, glasses, inflammable substances, retrieving iron and lethargic medicines, distillation, evaporation processes. The primitive Indians have achieved very important development in chemistry that resulted in business prosperity. This development should be uplifted whole heartedly.

At the very beginning, the learning of chemistry had been developed in abroad. But chemistry collections were very small in 1880, later on it had been classified and researchers were running behind magical properties of matter and Arab world was not an exception to do this. They

built chemical laboratories for the experimental study. They had done number of experiments and discovered various processes like evaporation, vapour system, crystallization, liquification, new synthetic methods and purification. Besides, they also invented innovative scientific instruments and equipments that proved to be very useful. What is a chemical museum after all? It is nothing but the well equipped laboratory with each and every experiment.Jabir-Ebj-Hayyan had been working at Haroon-Al-Rashid the "Khalif". Jabir played a yeoman's role in the field of chemistry. He made lead carbonate. He had separated Arsenic and Antimony elements from their sulphide ores. Our student community would be benefitted, if they were provided with the practical knowledge of separation and purification of metals (metallurgical operations), painting of cloths and leather, making plastic, soft drinks, perfums and drugs.

BENEFITS FROM MUSEUM:

The world has been hugely benefitted from the discoveries of scientists in curing dangerous diseases, industrial safety, making herbicides, fungicides, and pesticides for the development of farming. Even today scientists and researchers try to search for unsolved problems. The chemistry museums would certainly help to achieve the peak of publicity. To acquire this goal research work should not be limited to a single country but should be extended up to the root levels. So that man can reach at his/her destination. That means to welfare of human being and security for all. Many countries have been increasing their developments in science and technology. They have been developing the different techniques in chemistry for preserving the invaluable things and information. Every country requires a chemistry museum. The whole world benefitted from this and the next generation would be interested and stimulate for further research.

ROLE OF CHEMISTRY MUSEUMS:

The role of museums of chemistry should not be different from that of other scientific museums, thus reflecting the development of museums through the centuries (8). One of the immediate challenges of the museums is to change this image to get more in touch with the society (9), and to show (rather than obscuring) the role and impact of chemistry in everyday life, in both negative and positive sides (10).

The study of chemistry learning with museums would play a significant role. It should provide practical knowledge. Besides it would give tremendous pleasure. It would also give an opportunity to peep into the past and to relate different incidents, ideas, principles to the human life. It requires three dimensional presentations including documents, photographs and entire research with general chemical division [2].The display of samples and instruments, chemistry of everyday life, engineering and industrial processes showed that chemistry was capable of making various old and new products. The arrangement requires skills [4].Educational institutes can provide the invaluable chemistry knowledge to the vast number of students' community by building up of chemistry museums. Teachers are always ideologues and ready to do the all rounded development of their pupils. They are very well known that pupils couldn't get the knowledge of scientific principles by merely reading the books. On the other hand, observation proves very crucial role in the topic of study and designing new experiments.

The chemistry museums had consistently highlighted the contribution of chemistry to medicine and physiology, energy content and also food. For example, the visit of radio station gives the exact ideas and knowledge of sounds and broadcasting. While the museum of astronomy (Planetorium) gives the exact knowledge about the stars moon, satellites, their exact position in the space, speed, movement and its form etc.The different types of museums such as art, science, industry, zoo and galleries gives important information to the visitors. They go home and develop their new found interest [4], it is normally expected.

STRATEGY:

Firstly, museums provide the primary information of the topic concerned. Secondly, it

makes the understanding of the close relationship between educational life, human life and his surroundings. Thirdly, it helps to get opportunity to show expertise and get success in future life.Fourthly, it helps him/her to learn and apply the scientific principles in practical life. Lastly, it instills curiosity and observation in the minds and form his/her integrate thoughts.

PLANNING FOR DEVELOPMENT:

The semi-developed countries have been attempting to achieve development by framing five year planning commission. India is one of such countries. If the above mentioned commissions, University Grants Commission (UGC) and government agencies, industrialist, nongovernmental organizations provide monetary help to built such museums, the well designed and equipped museums would come into existence in the country.

ABROAD:

In U.S., there are 150 science museums. The science museum in London is run under ministry of education. Some examples do exist of successful involvement of the university students in the museums' activities; such museums will certainly contribute significantly to increase the scientific tendency and views. The museum would certainly make citizens more responsive.

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Table 1: Selective Chemistry Museums

Sr.No.	Museum	Type of collection	Location
1.	Chemical Heritage Foundation	Scientific instruments and History of Chemistry	Philadelphia (1982)
2.	German Chemistry Museum	Objects, Collection of original chemical plants and apparatus	Merseburg (1996)
3.	Deutsches Museum	Chemical engineering projects, Typical laboratory	Munich
4.	Catalyst Science centre and Museum	Objects, archive, photographs	North west of England (1982)
5.	Chemical Museum	University collection	Leeds (1874)

VIEWS OF THE COUNTRY, CITIZENS AND VISTORS:

Scientific museums and science centers are usually deficient in chemistry, especially in comparison with physics and biology (6). It can be attributed to either the inherent difficulties in showing the principles of chemistry or the negative perception of chemistry in the general public (7).The development of a country depends upon the developing scientific views and innovative ideas of the scientists of the country for total progress. Science museums inculcate the habit of revolutionary thinking for wellbeing of humankind, museums should also entertain the visitors, by showing the amusing and spectacular aspects of science. It develops the tendency of conscious thinking. This habit helps him to think minutely. He can take proper decision with calm.Huxly and Einstein Newton had proved the importance of intellectuality by inventing different principles, laws from the minor incidences happened in their day to day life. The habit of restrain and consciousness is being cultivated in students by museums. They are very useful to raise the standard of living thoughts. Man becomes successful in overcoming nature. He has got success in bestowing sight to the blind, by using new technique and medicines; he can bestow beauty on ugly persons and invent new horizons. This results into the production of ultra modern things. The experimentality of man is infinite only man can bring forth the hidden hysteries of nature with the assistance if museums. It should have house of gallery, a library, chemical laboratory, lecture hall and conference room.

CONCLUSION:

This study inculcates the ideas for quality and scientific sustainable research, which has to promote science education. It gets more benefit to the upcoming generations.

As the educational and industrial contexts chemistry museums are important and stimulate young visitors to take interest in chemistry. Additional sources of information are available to visitors and general public. Millions visitors was visited to chemistry museums but this activity still in minority. Museum makes people aware and importance in the field of science and technology, which has important role in chemical education.

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