

Lecture 26

Building Scientific Institutions in Colonial India: Societies and Associations

The Aligarh Scientific Society

An attempt in the direction of democratising modern science was made by Sir Syed Ahmed Khan. The attempt was in the form of establishment of the Aligarh Scientific Society in 1864. It was not only an attempt in imparting scientific knowledge but also an effort in the direction of socio-cultural change in India.

Sir Syed started his career as a clerk with the East India Company in 1838. He qualified three years later as a sub-judge and served in the judicial department at various places. Sir Syed had a versatile personality, and his position in the judicial department left him time to be active in many fields. His career as an author (in Urdu) started at the age of 23 with religious tracts. In 1847, he brought out a noteworthy book, *Athar Assanadid* (“Monuments of the Great”), on the antiquities of Delhi. Even more important was his pamphlet, *The Causes of the Indian Revolt*. In this booklet, he ably and fearlessly laid bare the weaknesses and errors of the British administration that had led to dissatisfaction and a countrywide explosion. Widely read by British officials, it had considerable influence on British policy.

The supreme interest of Sir Syed’s life was education, in its widest sense. He began by establishing schools, at Muradabad (1858) and Ghazipur (1863). A more ambitious undertaking was the foundation of the Aligarh Scientific Society, which published translations of many educational texts and issued a bilingual journal, in Urdu and English.

The Aligarh Scientific Society was set up in 1864 within a certain context. During the nineteenth century, the Government’s education policy had a predominantly literary bias. In schools and colleges, the teaching of sciences and of technical and vocational subjects was almost neglected. The emphasis was merely on the study of literature and logic, politics and philosophy. There was a deliberate attempt to keep the Indians bound to traditions and superstitions. Fruits of technological development were a myth for the Indians. Sir Syed Ahmed Khan was acutely conscious of this move of the British. He wrote:

Up to the present time the indigenous education of the country has been (like that of Europe at no very distant period) confined to the study of language and metaphysics, which though it undoubtedly serves to increase the mental acuteness of the learner, gives rise to none of those practical results which have been the fruits of the study of positive science amongst European nations.

Besides this, the people, in general, and, the Muslims, in particular, were averse towards English education and modern European sciences. This was particularly true in the case of the North-West-Provinces, the home province of Sir Syed Ahmed Khan. In his own words, ‘This Presidency is hitherto much behind in the race of diffusing the light of knowledge among the people occupying it, when compared to the other more enlightened and prosperous presidencies of Bengal, Bombay and Madras.’ Sir Syed was convinced that “It requires to make strenuous efforts and throw strong inducements in the way of the people to regenerate them, by repelling and overcoming the many difficulties that defend the present gross ignorance of the people from the useful sciences and arts, and that retard the progress of their mental and social improvement. The declared aim of the Society was “causing the blessed morning of civilisation to dawn on the night of ignorance and darkness which for ages has retarded the advance of this country.”³⁵ The objects of the Society were:

To translate into such languages as may be in common among the people those works on arts and sciences which being in English or other European languages are not intelligible to the natives;

- To search for and publish rare and valuable Oriental works. No religious work will come under the notice of the Society. Subsequently, in 1867, two more clauses were added to this section;
- To publish, whenever the Society thinks it desirable, any newspaper, Gazette, journal, periodical or magazine which may be calculated to improve the native mind;
- To have delivered in their meetings from time to time, lectures on scientific or other useful subjects, illustrated when possible by scientific instruments.

From its objectives, it is clear that the Society was highly secular in outlook. It completely eliminated religion from its purview, which was something rare during the nineteenth century. The Society also had certain political objectives. It sought to foster and encourage the growth of an enlightened public spirit. The Society also wanted to introduce improved methods of agriculture in India so that the economic conditions of the people might improve. The activities of the Society may be classified into four parts, viz.

- Translation of Western literature into the local Indian languages;
- Practical attempts to popularise and democratise mechanised farming;
- Delivering lectures on topics of common interest;
- Highlighting the socio-political problems of the country.

The main thrust of the Society’s activities was towards the translation of various European works – relating to basic and applied sciences – into local languages and importing into them the concepts of Western learning.

The Society translated around forty European books dealing with history, political science, geography, meteorology, electricity, algebra, geometry, calculus, hydrology

and agriculture. It used to select only those books, which would be beneficial for the people in developing a sense of historical perspective, interest in science and technology, and make them capable of managing their affairs and enable them to evolve a form of government best suited to themselves. In this regard, Sir Syed wrote: “If the creation of a good vernacular literature and the introduction of European science through the medium of the vernacular are impossible, then the Society may as well cease to exist. It has no *raison d’etre*.”

The Aligarh Scientific Society had a library and a reading room of its own. The books were mainly donated to the Society by different Indian as well as foreign gentlemen. Sir Syed himself donated a large number of books to the library. The Society subscribed to forty-four journals and magazines in 1866. Of those, 18 were in English and rest in Urdu, Persian, Arabic and Sanskrit. It exchanged its publication with similar societies like the Society for the Diffusion of Useful Knowledge founded by Pandit Harsokh Rai at Lahore and the Mohammedan Library Society founded by Moulvi Abdul Lateef Khan at Calcutta. It also exchanged its journal with the publications of the Bengal Asiatic Society, Calcutta.

The Bihar Scientific Society

Similar efforts were made by Imdad Ali to democratise European science in India. He had a firm faith in the efficiency of local languages and believed:

England, France and Germany would never have attained that exalted degree of civilisation, which they now enjoy if the works of science originally imported from Rome and Greece in Latin and Greek, were not disseminated among the people by means of their own vernacular.

Imdad was not opposed to English education, but he emphasized that the Society should not bring in religion into the scope of its inquiry. He was a deputy Collector. He had started publishing pamphlets and then a regular journal attacking *Tahzib-ul-Akhlaq* and calling on Muslims to boycott Syed Ahmed’s reform movement. Imdad was of the opinion that Indian students did not acquire properly the knowledge of Western science and technology when it was taught through the medium of foreign language. Consequently, they failed to transmit adequately their newly acquired scientific knowledge to their countrymen for lack of suitable expressions in the Indian languages.

For the purpose of spreading European scientific knowledge through the Indian languages, Imdad Ali founded an association in 1868 at Muzaffarpur called the British Indian Association. Later the name was changed to the Bihar Scientific Society. The principal aim of the Society was diffusion of all kinds of knowledge throughout India. The emphasis was on bringing Western arts and sciences within the reach of even the lowest denominations of the society through translations in the local medium of Urdu, thus creating equality of opportunities to learn science in a stratified society. The Society also started a fortnightly Urdu newspaper called *Akhbar-ul-*

Akhyar, which dealt with the educational subjects and aimed at improving “the moral, intellectual and social condition of the people.” As such, the Society entrusted the translation of many books on sciences to Maulvi Zakaullah and M. A. Rahim. The subjects in which books were translated included trigonometry, materia medica, optics, animal physiology, chemistry, dyeing, geography, botany, mechanics, algebra, agriculture, zoology, arithmetic, law, hospitals, mineralogy and masonry. The Bihar Scientific Society also established five schools at different places in which Western sciences were taught through the medium of Urdu. The schools were opened at Saran, Narban, Jaitpur, Hari and Sitamarhi in the vicinity of Muzaffarpur.

Apart from this, the Society suggested to the Senate of the Calcutta University that “the standard prescribed for the University examination be adopted for the Vernacular examination and science be taught in Urdu or Hindee.” Thus, the Society made a meaningful contribution in the diffusion of modern scientific ideas, despite the step-motherly treatment of the Education department, which unjustly rejected the Society’s publications to make room for their own book.

In the nineteenth century, it was really a Herculean task to advocate the cause of education based on reason and scientific vision. In addition, such scientific institutions as the Delhi College, the Aligarh Scientific Society and the Bihar Scientific Society were not established merely to impart modern scientific education but to emphasise the need for a socio-cultural change in contemporary Indian society. For this, men like Sir Syed Ahmed Khan, Hali, Master Ram Chandra, Imdad Ali and others had to face virulent criticism and opposition from the more orthodox who included the leading “ulemas” and “moulvis” of the country.

The Indian Association for the Cultivation of Science (IACS)

In Victorian England, the Royal Institution of London served as a scientific home for a host of scientists like Davy, Faraday, John Tyndall, and Huxley and, after Faraday’s death, James Dewar. It was also a place for visiting scholars who spent short periods as workers in its laboratory. The Royal Institution of London was one of the important components of the institutional infrastructure for science in Victorian England. On the other hand, Calcutta had no such institution during the nineteenth century. Thus, even while science evoked interest in the capital of British India, there was not yet an institutional ambience that would induce Indians to practise science.

The reputation and character of the Royal Institution of London had, however, secured the imagination of at least Dr. Mahendra Lal Sircar. Sircar was born in the same year (1835) in which Rammohun died. He was patently a legatee of the new learning. He studied at Hindu College. Later, he entered Calcutta Medical College in 1855, which had established a formidable course of studies in the sciences. Sircar truly became the torch-bearer of the spread of scientific education after the demise of Rammohun.

Sircar was, thus, a product of the College that had borne witness to the event of learning science education. He obtained, first, a licentiate in medicine and surgery in 1860 and then, in 1863, the degree of doctor of medicine, a rare achievement for an Indian at the time. In 1869, Sircar began broaching the project of a national science association to the public through pamphlets, letters to the editor of the *Hindu Patriot* and public addresses. In 1876, he founded the Indian Association for the Cultivation of Science (IACS). The IACS, Sircar's brainchild, enjoyed the State patronage, private donations and his own life's savings. It was financed from public subscriptions, and had the support of Sir Richard Temple, the Lieutenant-Governor of Bengal. The IACS had an eventful life as well. During that period, the Indian League had already been founded. It opposed its preference for general science and advocated applied science for the economic development of the country and job generation. But, the IACS survived despite such hostilities of the Indian League. In the August 1869 issue of the *Calcutta Journal of Medicine*, Sircar wrote an article entitled, "On the Desirability of a National Institution for the Cultivation of Science by the Natives of India". He wrote:

We want an institution, which will combine the character, the scope and objects of the Royal Institute of London and of the British Association for the Advancement of Science. We want an institution, which shall be for the instruction of the masses... And we wish that the institution be entirely under native management and control.

Sircar felt that the underdevelopment of India was due to its backwardness in science. India had the potential to master modern science. The Indians had shown themselves to master science in the past. This could be achieved through self-help. He desired that Indians should cultivate science not only for economic betterment but also for their regeneration. Of course, after persistent efforts, he succeeded in establishing the IACS in 1876. Later, the IACS evolved into a world-famous research institute. It had a lecture hall by 1884 and a laboratory was constituted in 1891 with donations from the Maharaja of Vizianagaram. It organised a series of lectures by Prafulla Chandra Ray, Jagadis Chandra Bose, Asutosh Mookerjee, Pramatha Nath Bose, Father Lafont and many other distinguished scientists. It is best known for its sponsorship of the work of C. V. Raman, a physicist, who was later awarded the Nobel Prize for the discovery named after him, the Raman Effect.

A critical overview of the activities of all these scientific institutions shows that both the Aligarh Scientific Society and the Bihar Scientific Society were short-lived. Only Sircar's IACS could manage to survive. This shows how a man of unusual drive and determination Sircar was! The IACS grew from strength to strength, and celebrated its centenary in 1976. As the national institute of science, it remains a monument to the memory of Sircar, who died in 1904. The Association, as visualised by him, was an institution for the masses with full audience participation, where any lover of science could come and work the way it was felt necessary by the scientist. Being a national association created entirely by private donation, the IACS had no government control. But, it met with some resistance. The Hindu orthodoxy thought that the IACS was attacking the traditional Hindu teachings. A large section of the public also felt that

this kind of pursuit of abstract science had no meaning for a poor country like India. The cry of the day was Utilitarian Science, but Sircar's answer was: without scientists how can one have science?

Concluding Remarks

As we have discussed, the historical survey indicates that democratisation of scientific knowledge in terms of access to modern scientific knowledge, creation of equality of opportunities to do science, etc. in the colonial period began to occur not because of the colonial government but in spite of the colonial government. Intelligentsia, drawn from different religious groups, realised the significance of modern science for material and cultural transformation of India, and attempted to democratise science in their own way by establishing scientific institutions and using the local or vernacular language as the medium of democratisation.

Here, I would like to see the building of such scientific institutions by the cultural elite during the colonial period as a part of the process of democratising scientific knowledge rather than popularising science. In post-colonial India, the whole responsibility of democratising science was, by default, taken over by the State. It is due to the fact that the scientific institutions and societies have partly relegated this inescapable task, which they had carried out with enthusiasm and pride during the colonial period as a part of the nationalist struggle against imperialism. Democratisation of science in India is an unfinished task even now. As such, modern science is being critiqued from the point of view of environment (genetic engineering research) and human rights. The process of democratisation ought to address these questions. Democratisation may be institutionalised in the process of science policy making that should be a broad-based, democratic, transparent and participatory process, as there is a Chinese saying: *'Tell me and I'll forget; show me and I may remember; involve me and I'll understand'*.