

Understanding of Scientific Temper in Punjab : An Analysis of the Pioneering Contribution of Professor Ruchi Ram Sahni

Dr Surinder Kaur

ABSTRACT

The closing decade of 19th century in Punjab was a period of critical evaluation and introspection of for most of the intellectuals, who were exposed to the philosophy of European enlightenment through the British colonial expansion. The schools, colleges and universities established throughout the length and breadth of the country and produced a powerful intelligentsia; this in its turn unfolded a remarkable educational renaissance. Punjab grew more conscious of the likely impact of modern science on the individual and national life. However, in spite of the educational growth, there was little scientific research done till the end of 19th century. This is hardly surprising, since the British were always half-hearted in spreading scientific education in the country. Ruchi Ram Sahni was the first Punjabi to gain recognition as a man of science in the 19th century. The paper attempts to weave diverse strands of colonial history into a coherent and comprehensive narrative so as to situate the development of scientific temper in colonial Punjab amidst historical moorings. Primarily the paper would focus on the contribution made by Ruchi Ram Sahni, (1863-1948) in fostering the scientific spirit in colonial Punjab.

Ruchi Ram Sahni was a professor, scientist, and good commentator on science. Though he was born in Dera Ismail Khan, his entire education took place in the city of Lahore. While doing M.A. in the subjects of chemistry and physics Ruchi Ram Sahni came into contact with Professor J.C. Oman, who was accredited for establishing the science branches in Government College, Lahore. Professor Oman instigated Ruchi Ram Sahni to get out of his dilemma, when as a student of M.A. he was reluctant to join his post as a Second Assistant Reporter in the Meteorological Department of the British Government owing to his interest in the teaching assignment and research activities. Aware of the bias of colonial authorities against the appointment of Indians in teaching jobs, he advised him to join Meteorological Department and return to teaching job whenever it was accessible. J.C. Oman argued that the excellent facilities for science education at Presidency College, Calcutta, would give Ruchi Ram Sahni a chance to complete his Master's degree. Ruchi Ram Sahni followed this advise and got training as Metrologist in Calcutta University. The Pioneer (Allahabad) – an English magazine published columns criticising his selection by putting forth arguments that Indians were unfit for such exalted tasks which involved preparation of reports. His detractors were quietened when he executed his duties effectively and also forecast an approaching cyclone in the Bay of Bengal.

During his days in Calcutta, he took keen interest in the propagation of Brahma Samaj. Where he met Professor J.C. Bose, who was working in Presidency College. The Brahma intellectuals

Assistant Professor (History), Guru Gobind Singh College for Women ,Sector -26, Chandigarh

particularly J.C. Bose and P.C. Ray had largely influenced Ruchi Ram Sahni's thought process. He tried to resolve the conflict between the western scientific rationality and Indian religion. After joining Brahma Samaj, he discarded sacred thread – the cherished mark of a caste orthodox Hindu. He was fully committed to rationalism and used scientific rationality as a tool to bring about socio-cultural change in the society. His passion for teaching and research were boosted up in Calcutta where he enjoyed the opportunity of attending important science lectures arranged by 'Indian Association for the Cultivation of Science'-- a society founded by Mahendra Lal Sircar for the cultivation of science. This institute's role inspired Ruchi Ram Sahni to set up the 'Punjab Science Institute' in cooperation with J.C. Oman in 1885 in Lahore.

In the meanwhile his appointment as an Assistant Professor of chemistry and physics in Government College, Lahore, in 1887 facilitated his engagement with teaching research and above all popularisation of science activities. He successfully laid the foundation of modern scientific tradition and movement through his campaigns for popularisation of modern science. He even went to Germany to work on radioactivity. But with the outbreak of First World War (1914-1919), he had to leave Germany. Ruchi Ram Sahni was fully aware of the colonial agenda of scientific development and needs as well as aspirations of Indians. He launched his mission for the transfer of scientific knowledge and grafting of technologies. It was difficult for any Indians to get state patronage or funding for any project concerned with dissemination of scientific awareness. Racial discrimination in government service had also been coming in the way of progress of Indians in government services. It also had been one of the main reasons for the absence of Indians in the echelons of professional hierarchy in government services.

Ruchi Ram Sahni had to carry the grievous burden of colonial domination. He felt uncomfortable yet he had to perform a dual role, to serve the colonial state and pursued his intellectual work successfully i.e. the cultivation of science. His most important task was the expansion of scientific awareness amongst the people of Punjab. His major intellectual investment was to translate science in the language of common people. He favoured the use of vernaculars for expansion of science and technology. He used Punjabi as a vehicle for scientific knowledge in his popular lectures. Judging by response of his audience, including average men and elites, Ruchi Ram Sahni concluded that mother tongue was the best medium to communicate modern science. It would enable the people to adopt scientific knowledge and technologies to their environment and finally contribute to the development of alternate technologies. In his mission, he was inspired by the efforts of his contemporaries in Calcutta who had already drafted plans for an institutional umbrella for science popularisation. Ruchi Ram Sahni got the chance to study the functioning of 'Indian Association for the Cultivation of Science'. On returning home, he started working to spread western scientific knowledge throughout the Punjab by means of lectures illustrated with experiments and lanternslides as well as publication of tracts. Popular lectures on various aspects of science organised under the aegis of the 'Punjab Science Institute' created an unprecedented enthusiasm. People did not even mind paying a small fee for lectures, which were being organised in towns and villages on the occasion of festivals and fairs in open pandals. Probable this was the earliest instance in India of

common people actually paying for listening to popular science lectures. The large audience consisted entirely of shopkeepers with just a sprinkling of English - knowing clerks in the offices. Whenever Ruchi Ram Sahni found himself searching for an appropriate Punjabi word or expression for a technical term, help came from someone in the audience who provided an equivalent term from the local dialects.

This created an unwritten dictionary of technical terms in Punjabi. In pursuance of the original object of science popularisation, Ruchi Ram Sahni managed to involve several professors from local colleges in the activities of the institute especially in its lecture-programme. For example, Professor Oman delivered several lectures on various aspects of 'Electricity' and 'Magnetism'. Dr. C.C. Caleb, who was one of the faculty members of Medical College, Lahore, gave a series of lectures on human anatomy. Ruchi Ram Sahni himself gave as many as five hundred popular lectures in various towns of Punjab and repeated these in private gatherings on personal invitation from local elites. His lectures on weather with special reference to India were based on sound and practical knowledge, which he had acquired in the course of his job as the Second Assistant Meteorological Reporter to the Government of India.

Public lectures, arranged by the 'Punjab Science Institute' aroused tremendous interest among the residents of Lahore, especially. The parents of many students became active supporters of 'Punjab Science Institute'. Ruchi Ram Sahni received invitation for lectures from the Rais of Patiala, Kapurthala, Mandi and Bahawalpur. Besides explain and illustrating the simplest facts and principles of physics and chemistry, every year about ten lectures were devoted to common subjects such as how does telegraph wire speak, pure and impure air, soap-making, electroplating and electricity in the service of man, glass-making, Punjab and its rivers. Several of these lectures created so much enthusiasm and interest in the study of science that by the end of the nineteenth century, the number of schools teaching elementary physics and chemistry in Punjab was more than, in any other province of India. Ruchi Ram Sahni also worked hard to improve the quality of science teaching in schools and colleges. He had realised quite early that no science teaching was possible without facilities for repairs of simple scientific instruments used in schools and colleges. Despite financial constraints, he set up a workshop in 1888 in his house as a part of the 'Punjab Science Institute' for manufacturing of locks and safes and scientific equipment of high precision and their repair. The workshop also trained young people enabling them to earn a decent livelihood. Ruchi Ram Sahni was very concerned with industrial development of the country. The reputation of the 'Punjab Science Institute's workshop grew to such an extent that in the 1906 Calcutta Industrial Exhibition, his workshop won a Gold Medal for scientific exhibits and Ruchi Ram Sahni started receiving invitations from all over the country to take part and put on show his scientific equipment at industrial exhibitions.

Ruchi Ram Sahni is also credited with the establishment of a flourishing Sulphuric Acid factory near Lahore. The introduction of scientific temper and culture in Punjab can well be attributed to Ruchi Ram Sahni. He showed deep interest in scientific practical agriculture. He manufactured several mounds of manures and circulated their merit by means of pamphlets or

leaflets. Three books on agriculture prepared by him titled *Kheti Ki Pehli Kitab*, *Kheti Ki Doosri Kitab* and *Kheti Ki Tisri Kitab*.

In retrospect, we can conclude that despite role-conflicts and limited resources and space as a colonial subject, Ruchi Ram Sahni was successful in laying the foundation of modern scientific tradition through his campaign for popularisation of science. The building blocks of scientific temper does not merely owe its existence to Ruchi Ram Sahni relentless pursuit for excellence but it originates during the darkest hour of colonial rule. Undoubtedly Ruchi Ram thoughts and deeds shaped the creation of modern day science and nurtured its practitioners.

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