The Boyhood of Birbal Sahni
Taking to Science in 19th Century Panjab

Ashok Sahni

Introduction

The rise of a scientist to eminence is better understood when viewed in the backdrop of events unfolding during that time and this is especially true of Birbal Sahni and his father, Ruchi Ram, who was one of the first science educationists of Panjab. Schooling and education in nineteenth century Panjab was quite different from what it is today. Liberal school education as known now, did not exist. In its place were traditional educational systems that had remained unchanged for several centuries: elitist schools catered only to the ruling class to help them learn the graces and manners of their times, and the ability to manage their land holdings. For the priestly class, there were special schools to teach the scriptures. For merchants, who held sway over the economy, all that was needed to get by was the use of simple arithmetic. For the common man it was difficult to get a good education. Here, I have tried to give the reader some background of the life and times of late nineteenth century Panjab and what it was like for an ordinary family, lacking in means, to develop a love for science and a rationalistic attitude in an environment where superstition and myth reigned supreme.

In the specific context of Birbal Sahni's childhood and youth, I would like to highlight the contribution made by his father, Ruchi Ram, strong willed and largely self-educated, who succeeded in making science a profession to serve himself, his children and society. Born in 1863 in a small town, nestling under the shadows of the Salt Range, now in Pakistan, he defied most of the accepted norms and traditions of his age. By the time he was 50 years old, he had the distinction of working with some of the greatest names in physics such as E Rutherford, J J Thompson and Niels Bohr in the field of nuclear physics at the
University of Manchester where he published two papers (in 1915 and 1917), perhaps the first by an Indian in that discipline [1, 2, 3]. Later, he became a founder member of the Indian Academy of Sciences, Bangalore, along with two of his sons – Birbal was one of them!

**Life and times in 19th Century Panjab: Opening of the First Government School in 1851**

Under imperial rule, the very act of learning or having special knowledge was fraught with danger. The ruling class wished to control education and use it to their benefit, and the notion of equality or freedom for a citizen to choose science as a profession was not easily given. In keeping with the tradition of the subcontinent established through many centuries, knowledge of specific dates of rites and rituals and appropriate stellar configurations was confined to the priestly class and an unreasoned belief in the supernatural pervaded contemporary society. Religious shrines of local hindu and muslim saints and pirs, supposedly possessing magical powers of cure for various ills, dotted the landscape. Amulets and charms were supposed to guard the believer from diseases like epilepsy and natural hazards such as floods and earthquakes. For an agrarian population, largely uneducated and comprising of nearly 87% of the population living in villages (according to the 1881 census), miracle cures were to be relied upon more than rational explanations of physical, chemical and biological phenomena. A scientific approach to common problems was lacking.

In Panjab, the first government school opened in 1851 at Amritsar, and by the end of another 5 years there were only about 35 schools in the whole state! Schooling was at a premium, specially for those children living far away from the main urban centres. The first Government College was established at Lahore in 1864 where, for the first time, admissions were made on merit and not based on the patronage of an influential landlord. Birbal’s father was one of the early students in this institution. In his autobiography, *Self Revelations of an Octagenarian*, Ruchi