Transcript of Valedictory Address by Prof. R.P. Bambah of the Seminar, 'The Making of Modern Punjab: Education, Science and Social Change in Punjab c.1850-c. 2000', October 24 – 26, 2013, o*n the occasion of release of Stamp on Prof. Ruchi Ram Sahni to commemorate his 150th Birth Year.*

Vice Chancellor Prof Arun Kumar Grover, honourable Vice Chancellors of our sister Universities and my younger friends sitting opposite. Many of you are already distinguished. Others, I hope, will become so in due course. Even Yash Pal is younger than me. I first met Yash Pal in 1947. My father had built a house in a colony called Ishwar Nagar in Mogalpura, a suburb of Lahore. We lived there from 1940 to 1943 and then again from 1945 to 1947. In February 1947, I got a job in a leave vacancy in Delhi University's, Physics Department. When I came home in the summer vacation, I learnt that a new family had moved in our locality, who had a very bright young boy studying in the Physics Honours School. The colony at that time was apprehensive of a mob attack. We, therefore, formed groups to keep vigil. Yash Pal and I found ourselves in the same group a couple of times. At that time, survival was the only objective and we had no time to interact intellectually. But Yash Pal did show his practical innovation. He fetched an ammonia jar from the University Laboratory. We tried, I think unsuccessfully, to fill fused bulbs with ammonia to use if a mob attack came. I soon returned to Delhi and lost contact with him. It was when we met later after a number of years that I learnt how versatile and deep thinker he is in a casual conversation. I learnt that he had taken a year off after his intermediate examination to introspect to study books from a vide range and decide what action in future will give him a meaningful life. That he developed into a Scientific Philosopher and a practical visionary is no accident.

Mr. Vice Chancellor, you have provided us with three exciting days of celebration of Ruchi Ram Sahni's life, 2nd Foundation Day Lecture and the Seminar on Science Education and Social Change. I must thank you and your colleagues for the excellent programme and arrangements.

As I said at an earlier occasion, I am perhaps the only person here, other than the family members, who has actually seen Prof. Sahni in person. In 1945 or 1946, there was a lecture by C.V. Raman in the S.P.S.K. Hall at Lahore. Some of us went there. There we saw

a venerable gentleman in turban and pajamahs, with a walking stick, sitting in the front row. We leant that he was the famous Ruchi Ram, pioneer of Science Education. We were too awe struck to talk to him. However, we did not know much about his contribution. Prof. Grover, with your personal zeal and love of Science and Panjab, you, together with some of your collaborators, have now made available a good deal of information about this pioneer of Science Education in Punjab. The Rs.5 postage stamp is an appropriate tribute to him.

Mr. Vice-Chancellor, by the choice of speakers of the first two Foundation Day lectures of the University, you have set a benchmark. That will ensure that in future also, our students and other members of the University will get an access to the ideas of first rate minds. Romila Thapar, an illustrious alumna of the University, is an iconic figure in the realm of scholarship. Gurdial Singh and Amrita Pritam are the two literary giants of Punjab, who have received Jnanpith Award of Sahitya Academy, the highest honour the country gives to a person of literature. We in the University take pride in the fact that we honoured ourselves by giving, in the same P.U. convocation, Honoris Causa to three Panjabi greats, Amrita Pritam, Yash Pal and Abdus Salam.

One of the objectives of our Seminar was an exchange of ideas about future course of action to be adopted for Higher Education. This has become very imperative and needs very serious consideration.

Traditionally, the Universities' function was to advance and disseminate knowledge for its own sake, independent of any ideology or consideration of applications, the so called ivory tower approach. Advances in knowledge have, however, had great impact on development and even the nature of Society. This impact has been often good, but sometimes really bad, when for example it was used as a tool by unscrupulous elements like the Nazis. However, the use of knowledge was not a motivation for the true scholars. They were motivated by curiosity and their thirst to know more and more. Newtons & Gausses, Darwins and Hilberts, Einsteins and SN Boses pursued knowledge for its own sake. However, their work brought about revolutions that touched the lives of everyone. Even lesser mortals have done work which has resulted in beneficial effects. As Dipankar Gupta has recently pointed out, the low paid University Scholars do hard fundamental work and often big corporations exploit their ideas to make magnum profits.

With the revolution in information technology and new awareness, developing societies have become acutely aware of the need to fill the gap between them and the developed societies, which often exploited them in the past. Also, with the advent of democracy and universal franchise, the deprived sections of society are no longer willing to put up with inferior living or status. There is a passionate desire and demand for inclusive growth. Since proper knowledge is necessary for upward movement, there is a great demand for education to be relevant. Also, there is pressure to provide skills for employment. There is a danger that this may take away the emphasis on knowledge for its own sake, and also education may be reduced to providing training for mechanics, hair-dressers or salesmen, rather than thinkers and philosophers. There is thus a great need for striking an appropriate balance between the desirable fundamental research and immediate needs of various sections of society. This will require a great deal of introspection, enlightened analysis and interaction between academics, decision makers, producers of wealth, providers of means of sustenance and also other sections of society. Seminars like the present one can provide forums for this interaction. Friends, I think we are all aware that knowledge has its own dynamics, it refuses to be confined to narrow limits or channels. The Macaulay prescription for creating low level man power to serve the imperial objectives also opened vistas for J.C. Bose, P.C. Ray, Ruchi Ram Sahni, C.V. Raman and others to do research and teaching of high quality. The system meant to provide babus also grew to give necessary skills to Mahatma Gandhi, Sardar Patel, Lala Lajpat Rai and other stalwarts to challenge the imperial power and eventually free the country from bondage. One may also look at the experience of other countries. At Oxford and Cambridge, established for the training of priests, Divinity studies now form a very minor part of their activities. The Land grant Universities of middle U.S.A. created to help agriculture are now no different from classical Universities. Caltech and M.I.T., starting as Institutes of Technology, are no longer different from Oxford or Cambridge, Harvard, Princeton or Chicago and Berkeley. In India also, the older IITs are slowly moving towards becoming full-fledged Universities. I am sure serious studies and enlightened interaction will take notice of all these aspects. As Dr. Yash Pal has often pointed out, a University in a special area alone is an “oxymoron”.

Friends, another major theme of the present seminar was Education and Science in Punjab from 1850 to 2000.

As we all know with great pleasure, according to the ranking done through the Times-Reuter Survey, our University has been rated number one in the country. As some one remarked recently there is often a great gap between perception and reality; and many people were surprised by this result. But it was no surprise to those of us, who, consciously or unconsciously, have been aware of the contributions by the University and the state of Punjab since the inception of the University in 1882.

Of the five Nobel prizes in Science awarded in our part of the World, two have been won by old students of Govt. College, Lahore. Another, S. Chandrasekhar, was born at Lahore, although he had all his education at Madras (now Chennai) and Cambridge.

With your permission, I will now digress to indulge in some name-dropping and vicarious pride. Har Gobind Khorana, a chemist who got Nobel for medicine, was a couple of years senior to me in Govt. College, Lahore. Since he was a student of Chemistry Honours School, I did not see much of him. But I did have the privilege, a couple of times, to sign the college Roll of Honour in the same functions as him. Later, I met him in London in 1950 with my friend Nitya Nand, a chemist (Nitya Later become Director of the Central Drug Research Institute and is a very respected Doyen of Drug Research in the country. Har Gobind Khorana, after doctoral and post-doctoral work with some of the best chemists in the world, came back to India. After failing to get a suitable job in the country, he had returned to work in England. He was quite disappointed. In the course of our conversation he remarked “mein te apni chapplan ghisa ke aa gya haan, tusi vee ja ke tamasha dekho.” Luckily, Nityanand and I had somewhat different experiences. Nitya, on return to India, went to Lucknow to see the newly created Central Drug Research Institute. Someone from the Institute took him to the Director *(Mellanlay, I Think),* who was easily accessible to his colleagues. The Director talked to Nityanand for sometime and discussed some chemistry with him. Within an hour, he offered him a lecturer level position in the Institute. Nitya, after consultation with his family at Delhi, accepted the same. After a few weeks, a senior position became available and the Director wanted to appoint Nitya to it. However, Nityanand insisted that the post be given to an older person in the Institute who was senior to him. After some time Nitya was also promoted and in due course, he became Director of the Institute. This gesture on the part of Nityanand added to the harmony and goodwill in the Institute and Nityanand was able to win

the affection and cooperation of his colleagues throughout his whole career. I am emphasizing this for the young persons here, because I have found that what may look as a sacrifice or loss of opportunity at a time, often brings much greater rewards in one's personal satisfaction and respect from colleagues.

In my case, I was without a job for a couple of months after my return from Cambridge and London. Before going abroad, I had worked as a Lecturer in a leave vacancy in Delhi University's Physics Department, of which the great Prof. D.S. Kothari was the Chairman. At his suggestion, the National Institute of Sciences of India (now Indian National Science Academy) gave me an adhoc research fellowship pending the regular selections next year. My Professors, Prof. S. Chowla of Lahore, then at Princeton, and Prof. L.G. Mordell, Sadlezian Professor at Cambridge, wrote about me to Dewan Anand Kumar, the then Vice-Chancellor of Panjab University. Dewan Sahib told me that he will soon get a Readership created for me. However, due to some opposition in the Syndicate, it took him a few months to get the Readership created. In the meantime, I got elected to a Fellowship in my Cambridge college. I also got an offer of a 1-2 year membership of the Institute for Advanced Studies, Princeton, the Mecca for all mathematicians and the academic abode of Albert Einstein. When the Panjab University offer came, I met Dewan Sahib and informed him of the Cambridge and Princeton developments. He said to me "Cambridge aur Princeton se vapis aa jaoge". I said, "Yes Sir". He immediately said "join P.U. tomorrow at Hoshiarpur and I will give you two years' leave to work at Princeton and Cambridge." I joined the University and went on leave within a few months. I have spent a long time recounting these events, because I wanted to share with you my experience of how institutions are built by taking bold and imaginative decisions. On the other hand narrow minded considerations often deprive institutions of talent needed for excellence.

To continue with self-praise, the other Nobel Prize winner was Abdus Salam, who got the Nobel in Physics. He was one year junior to me in the Lahore College. But, since he was studying in M.A. Mathematics and we were both staying in the same hostel, we got very close. Our friendship continued at Cambridge, because we were at the same college for two years. Since one had to dine in the college Hall at least five times a week, some of us, including Nityanand and Abdus Salam, regularly dined together, went for walks together,

talked Panjabi and discussed our difficulties and plans. Nitya and I were to some extent responsible for Salam's decision to take up Research as a career. Incidentally, Salam, who was one year junior to me at Lahore, did better than me in all the University examinations except M.A. where he stood Ist with 573 marks out of 600, as against my 600 out of 600. At Cambridge also, he was elected to the College Fellowship one year before me. I hope you will excuse an old man's self-praise.

Friends, I have spent a long time talking about the Nobel Laureates of Punjab. There is plenty of other evidence also of the Punjab contributions. Of the 101 general Presidents of the Science Congress, at least 14 came from Panjab, mostly P.U. Another, Prof. M.G.K. Menon passed his matric exam from the Panjab University. If one notes that the earlier Presidents were mostly Britishers heading the imperial services, the proportion of Panjab Presidents is very high. Panjab University has a large number of Centres of Advanced Studies**.** Fellows of Science Academies including the Third World Academy of Sciences and awardees of Bhatnagar and other medals of distinction. Of the living ones, some have participated in the programme and some are even present here in the hall.

Looking at the past briefly, one is proud to remember some of the stalwarts who made high level contributions. For obvious reasons, I shall name only those who are no longer living. In Mathematics, S. Chowla was clearly one of the two best Indian mathematicians between Ramanujan and Harsh Chandra. Hansraj Gupta working in isolation in a small college did commendable work. Trehan and Malik won Bhatnagar award, and Luthar & Dumir were first rate mathematicians. Shiv Ram Kashyap was a Botanist of high order; he also inspired Birbal Sahni (son of Ruchi Ram Sahni and one of the first FRS's in India), A.C. Joshi, M.S. Randhawa, P.N. Mehra and others to work at high level. In Zoology, George Mathai, Vishwa Nath, G.P. Sharma and others made a mark. In Chemistry, we had S.S. Bhatnagar, Bawa Kartar Singh, Prof. Mohan Singh, Prof. R.C. Paul and Prof. O.P. Wig, among others. Geology had M.R. Sahni (another illustrious son of Ruchi Ram Sahni). In Physics, one remembers P.K. Kichlu, F.C. Anluck and P.S. Gill. One cannot but remember with pride the contribution of Satish Dhawan on the creation of our space programme. Because of my personal limitations, I have been able to mostly talk of our contributions to Science. But, as pointed out by Raj Mohan Gandhi also in his book, Panjab and P.U. have made contributions

in almost every other sphere of knowledge and human activity. We have had three Prime Ministers of the country, a number of eminent economists (many of them living), poets like, Amrita Pritam and Faiz Ahmad Faiz, story tellers, like, Mulk Raj Anand and Saadat Hasant Manto, industrialists, like, Karam Chand Thapar, singers, like, K.L. Saigal, Noor Jahan, Malika Pukhraj and Surinder Kaur, artists, like, Amrita Sher Gill, theatre leaders, like, Prithvi Raj Kapoor and so on. Our contributions in defence services and agriculture are well known.

Friends, while the Times-Reuter rating of Panjab University is highest in India, it is only in the 226-250 category in world ranking. Many institutions in China, Japan, Korea and Singapore are ahead of us. We certainly have the capacity to do better. But, for that one needs bold and enlightened decisions to attract and nurture talent. Our decision making bodies have to adopt an imaginative attitude. Our procedures have to adapt to the needs of excellence. We are definitely capable. I fervently request all the members of the University, faculty, students, staff and members of the Senate & Syndicate to decide to do their best to help achieve our potential.

Thank you very much.

R.P. Bambah