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EDITORIAL

IITs: Two Histories

Editors are normally uncomfortable with abbreviations and acronyms in the titles of articles. After some thought and some misgiving I chose the title of this column. IIT seemed so much more familiar than the formal expansion – Indian Institute of Technology. I was emboldened by the use of this abbreviation in the titles of two excellent books on these institutions, which appeared in quick succession on my desk. *Monastery, Sanctuary, Laboratory: 50 years of IIT Bombay* by Rohit Manchanda (Macmillan India, 2008) and *An Eye for Excellence: Fifty Innovative Years of IIT Kanpur* by E. C. Subbarao (HarperCollins Publishers, India, 2008) look back on an eventful half century in the lives of two of India's best known institutions in the areas of engineering and science. The authors see their institutions from unique perspectives. Manchanda, a writer of uncommon talent and a young faculty member at IIT Bombay, views institutional history with a sense of professional detachment that is both valuable and instructive. Subbarao, a senior scientist of great distinction and an early pioneer at IIT Kanpur, provides an 'insider's view', which is at times both warm and personal. The IITs are truly creations of independent India, whose rapid rise to prominence within two decades of their establishment in the 1950s must rank as one of the outstanding achievements of the sector of higher technical education in India. In thinking of the IITs and the circumstances of their birth over half a century ago, I cannot help recalling Jawaharlal Nehru's words in 1956 at IIT Kharagpur, where he described the institution as 'representing India's urges, India's future in the making'. Nehru, more than any leader since, had a vision of a scientifically and technologically resurgent India. Manchanda begins his wonderfully crafted account of IIT Bombay going back to a March day in 1959 when Nehru arrived to formally lay the foundation stone for the institution at Powai, on the outskirts of the city that has now been renamed as Mumbai. He quotes Nehru: 'I suppose that among the many things that are being done in India today, the establishment of the great institutes of technical training and knowledge is perhaps the most important... It is relatively easy to put up a factory or a plant, it is much more difficult and it takes much more time to train the human beings that will run a factory or put up another factory or plant'. Nehru went on to describe the event as 'another symbol of our

attempt to grasp the future'. That future is here. In one of the many discussions on television about politicians, in the run up to the general elections, I recently watched a persistent and voluble anchor attempt to elicit an answer to the question 'whom do you admire among all the politicians in India since independence?' The audience was a group of young college students, many about to vote for the first time. After a long period of hushed whispers, smiles, nudges and some laughter one of the bolder students ventured the answer 'Mahatma Gandhi'. The anchor seemed relieved and moved on to criticizing the present, a somewhat easier task than reflecting dispassionately on the past. Nehru's fascination for scientists and technocrats (a word unknown in his time) and his romantic view of science, presumably influenced by his time in Cambridge, fuelled much of the scientific and technological development that was to take place in India after 1947. The Nehruvian vision created the generations of scientists and engineers, who have manned every institution that has come up in the last few decades. Nehru has, of course, been largely forgotten, but the institutions he helped create are visible symbols of an attempt to transform India. In an assessment of the Nehru years (1947–1964), albeit in the context of a different subject, the historian Ramachandra Guha notes: 'Yet more progress had probably been made in the first seventeen years of Indian independence than in the previous seventeen hundred' (*India After Gandhi*, Picador, London, 2007, p. 384). This conclusion may well apply to the sphere of higher technical education, where the IITs began to have a decisive influence by the 1960s.

Over the years the IITs have grown in stature and in public perception these institutions are preeminent in the field of undergraduate engineering education. They have remained unchallenged by the growing number of private and public institutions. In the new phase of expansion of higher technical education, in the ongoing 11th Five Year Plan, many new IITs are springing up, mentored and midwived by the original group that have now been seasoned by half a century of existence. In his preface, Manchanda thoughtfully draws attention to the differing views of the IITs from 'without and within'. He notes: 'Although the IITs, especially of late, have become unapproachable objects of desire for those who seek their

stamp, to some of those who work, study, and live in them there has frequently been disappointment at the institutes' inner state of affairs... what is closer to reality, is the fact that the IITs despite their shortfalls, yet remain in a league of their own – then again a rather rarefied league – compared with the vast majority of Indian technical institutions, be it for rigor of education, evenhanded administration, inclusiveness of decision making or freedom of academic action' (p. x). The insider's view of institutions is always unflattering and outsiders most often seem to have a highly glamourised view, a phenomenon that is not restricted to the IITs. The two histories of the IITs must be required reading for those who wonder how the many new institutions, now on the anvil, will be built. They may prove inspirational for those who will struggle to build them. They will also undoubtedly educate those who study and work in these institutions on the processes by which academic settings evolve under the sometimes opposing demands of internal aspirations and external pressures.

The IITs at Bombay and Kanpur were born at the height of the Cold War. In keeping with the spirit of Nehruvian non-alignment, the institution at Bombay began with assistance from the Soviet Union, while Kanpur was supported by a consortium of some of the best known American Universities. Curiously, the true founder of the two institutions was one man, Purushottam Kashinath Kelkar (1909–1990). We are now in the centenary of P. K. Kelkar's birth and this may be an opportune moment to remember one of India's unsung institution builders. While Kelkar is revered by the early group of faculty he recruited at Kanpur, memories of his contributions are rapidly fading. The books by Manchanda and Subbarao serve to remind us of the debt of gratitude that succeeding generations of IIT faculty and students at Bombay and Kanpur owe this remarkable man. Kelkar was an alumnus of the Electrical Engineering Department at the Indian Institute of Science (IISc), Bangalore and later served on the faculty for several years, before moving to the Victoria Jubilee Technical Institute (VJTI), Bombay in 1943 (S. Ranganathan, *Current Science*, 1991, **60**, 185). I saw Kelkar momentarily and from a distance as a student at IIT Kanpur. All accounts of him suggest that he must have been an extraordinary man. The institutions he planned and built at Bombay and Kanpur stand as monuments to a man of very special talents. Kelkar was appointed the 'planning officer' for IIT Bombay in 1956 and began his work from one room at VJTI. By the time he left to

become the first Director of IIT Kanpur, the Institute at Bombay had been launched. The transformation of Powai had begun, the first band of faculty had joined and the first batch of students had entered in July 1958. Kelkar repeated his magic at Kanpur in an environment that must have appeared formidably inhospitable to an advanced technical institution. Working out of makeshift rooms at the Harcourt Butler Technical Institute, Kelkar built an institution which brought an unprecedented degree of freshness and enthusiasm to the Indian academic scene. It was really with the flowering of the IITs in the 1960s that the winds of change began to blow in academic settings across the country. Kelkar's abilities in recruiting and encouraging colleagues must have been the key to the rapid growth of both the IITs. From 1970 to 1974 Kelkar returned to lead the institution at Bombay, to cap a remarkable career. Subbarao paints a warm and sympathetic portrait of Kelkar, quoting P. C. Kapur's tribute in 1990: 'But it was his value system – his simplicity, patience, commitment to excellence, humane and caring nature – that made him a legend in his own life time' (p. 19).

In the years that have passed since their inception the IITs have encountered and surmounted problems. Even as their impact on the international scene has increased, so have the number of critics. The Joint Entrance Examination has now spawned a vastly successful commercial enterprise, the 'coaching industry'. The need to emphasize research and postgraduate education has been pointed out by review committees. The ongoing expansion of student strengths poses logistical issues, even as the recruitment of faculty becomes more difficult. The burden of mentoring new institutions is a fresh challenge. Subbarao in treating a difficult period in the 1970s in IIT Kanpur's history observes sombrely: 'There appears to be a curse that condemns Indian academia to a life of excellence of just a decade or two before these institutions start to decay'. He goes on to describe the last two decades at IIT Kanpur as the beginning of a renaissance, opening the section with a quote from Churchill: 'Success is the ability to go from one failure to another with no loss of enthusiasm'. Success and failure, triumph and defeat, hope and despair are part of both individual and institutional histories. The stories of the two IITs are uplifting and inspirational.

P. Balaram