Heilig library of SMS Medical College, the largest medical library in Asia at one time. He was an avid reader. He was a member of an elite Book Lovers club which included several luminaries such as Daya Krishan, Unnithan, Mukund Laat, Loknathan, Rao, Hemlata Prabhu, and Anil Bordia. This diverse group met once a month to review a book, be it the latest bestseller, fiction or nonfiction, on literature or arts, metaphysics or philosophy, on management or behaviour, and so on. According to Bordia, Sethi was the only one who constantly read the book to be reviewed, and moreover he was the one who consistently bought the book to read it.

As a teacher, Sethi had few peers. 'The relationship to be sought is not that between master and pupil, but between master craftsmen and apprentice', and so it was with PKS. He would set us problems and tasks, and indicate a line along which they may be approached, no spoon-feeding but was ready to help not when difficulty arose, but when he was sure that an earnest attempt had been made to solve or accomplish them.

The first qualities of the heart, a surgeon must possess, and which Sethi did in ample measure, was humility. It was reflected in his response to the citation for the R D Birla National Award, which seemed to come straight from the heart. 'The R. D. Birla Smarak Kosh has honoured our small team of doctors and artisans and the community of my town of Jaipur, without whose help and contribution it would not have been possible. For years our work went unnoticed because there was nothing exotic or glamorous about the simple, almost austere technology which was associated with it. . . the present award has lent credibility and legitimacy to the kind of clinical research which is meaningful and relevant for our country's needs. Hopefully our research institutions and planning bodies would now be compelled to carry out some hard reappraisal of their priorities'.

The perfectionist that he was, Sethi was not given much to writing, for it took time to produce a perfect masterpiece of an article. He was kind enough to pass on some of these gems to me. One of them entitled 'Orthopaedics in an unjust world – Whither Indian orthopaedics?' was published in the *Indian Journal of Orthopaedics*, 2004, **38**, 216. The second 'The doctor in the 21st century' was published in the Seminar, 500, April 2001. It truly reflects his philosophy, and needs to be emulated by all of us.

Sethi had a versatile personality, coupled with a charming and pleasant countenance. Many of his postgraduates joined orthopaedics not out of a genuine love or craze for the subject, but because of his charisma. I was one of them. In the words of William Shakespeare in his play *Julius Caesar*, 'Here was a Caesar. When comes such another?'.

P. K. Sethi passed away in the early hours of 6 January 2008. He is survived by his wife, three daughters, and a son.

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Jagannath Ganguly (1921–2007)

Jagannath Ganguly, an outstanding biochemist belonging to perhaps the first generation of biochemists of this country, passed away peacefully at the age of 86 on 12 December 2007 in Bangalore.

John Ganguly, as he was addressed by his close friends and admirers, was born in the small town of Serajganj, his ancestral place in Pabna District, East Bengal under British India on 1 April 1921. He had his early education in his native town and obtained B Sc degree in first class in 1940 from Pabna College, affiliated to Calcutta University. He took up a job as a clerk in a post office in Darjeeling. It was perhaps providential that he met Haridas Bhattacharya, an eminent professor of comparative religions and philosophy, and Provost at the Dacca University, who was on a holiday in Darjeeling in the summer of 1941. Bhattacharya persuaded him to join Dacca University – one of the best centres of higher education at that time. Ganguly passed M Sc in chemistry with first class first rank. One of his M Sc viva voce examiners, S. N. Bose (of the famous Bose–Einstein equation) was much impressed with his performance and suggested that Ganguly should

pursue his career at the Indian Institute of Science (IISc), Bangalore. He put Ganguly in touch with J. C. Ghosh, then the Director of IISc. Thus began what was to be an illustrious academic journey of Ganguly at IISc from 1944. Having already come in contact with K. P. Basu (an associate of Warburg), Ganguly took up biochemistry instead of continuing with pure chemistry. He secured the Lady Tata Scholarship and started working on the nutritive value of soybean milk, a problem that apparently did not excite him much. He decided to go abroad, got the Government of India Overseas scholarship and left for the National Institute of Research in Dairying at the Reading University, UK in 1946. There, he carried out pioneering work on establishing the conversion of beta-carotene to vitamin A in the intestine itself, but not in the liver as it was believed at that time. He had also shown the enzymatic hydrolysis of vitamin A esters in the intestine and received Ph D degree in 1949 for that work. During this time India had attained independence, also leading to partition of the country and Ganguly's native place became part of East Pakistan (now Bangladesh). Consequently, his family had to leave Serajganj for Cal-

cutta, taking very little with them. Sensing the urgent need to help his family (being the eldest of six children), Ganguly went to USA from UK, as a post-doctoral fellow at the University of Southern California. There he spent four academically highly rewarding years of research in the laboratories of Henry Deuel and Zechmeister, doyens in the field of lipids and carotenoids. It was during these years that Ganguly did outstanding work that led to the establishment that the circulating and storage forms of vitamin A are the free retinol and the ester form respectively. He was also the first to suggest that during circulation in blood, retinol is bound to proteins. Several papers have come out of this work and during this time Ganguly managed to play a small role in a Hollywood movie as well!

In 1953, the Indian National Science Academy has offered Ganguly a Senior Research Fellowship (Rs 500 at that time), which enabled him to join the Department of Biochemistry at IISc. Within a year he became lecturer, took students and started a vigorous research programme on the absorption and metabolism of vitamin A in experimental animals. Ganguly was able to obtain grants from international agencies like Rockefeller Foundation. The first refrigerated high-speed centrifuge for the department was purchased from these grants, that facilitated the research work in the areas of cell fractionation and intracellular metabolism. Pioneering work on the association of vitamin A with plasma proteins (now recognized as retinol-binding protein), intestinal absorption and the role of esterases in vitamin A metabolism was carried out in the late fifties. Ganguly visited the Enzyme Institute of the University of Wisconsin at Madison for a year and discovered, along with Wakil, acetyl CoA carboxylase, and showed that it is the rate-limiting step in fatty-acid synthesis. He was invited to participate in the Karrer Symposium on Vitamin A, held at Switzerland in 1960 and was conferred the D Sc degree of the Reading University in 1962. In recognition of his work, Ganguly was awarded the prestigious Shanti Swarup Bhatnagar Award in biology in 1963 and became a professor of biochemistry in 1965.

Ganguly realized that modern equipment was necessary for quality fundamental research and used every opportunity to obtain grants. He was the first one in the department to get an ultracentrifuge and scintillation counter. His laboratory was one of the best-equipped and thus aided in the improvement of the quality of research in the whole department. During the 1960s and 1970s, the laboratory witnessed extraordinary turnover of quality work mainly concerned with lipid metabolism, more importantly in deciphering the biochemical and molecular functions of different forms of vitamin A like retinol, the alcohol form and retinoic acid, the acid form. By that time the physiological function of the aldehyde form of vitamin A in vision has already been established. Significant contributions came out of Ganguly's laboratory, to suggest a crucial systemic role for retinoic acid. Indeed his laboratory was the first to conduct a systematic investigation to examine the growth-promoting activity of retinoic acid, which resulted in a classical paper in *Biochemical Journal* in 1963, announcing better growth promoting activity of the acid form of vitamin A in comparison to the alcohol form. This prompted scientists to consider the acid form as the 'active' form of vitamin A as far as systemic functions are concerned. Truly, in the years to follow, several laboratories all over the world have established the role of retinoic acid in cell differentiation. Work from Ganguly's laboratory has also suggested a role for vitamin A in reproduction and sulphate metabolism.

Ganguly was a visiting professor at Birmingham University in 1964, Columbia University in 1967 and Max Plank Institute in 1970. He visited Russia as UNESCO Fellow in 1973, Japan as a fellow of the Japanese Society for Promotion of Science in 1974 and UK as INSA/Royal Society Fellow in 1979. He was a member of many learned societies and for sometime he was a member of the FAO–WHO joint Expert Committee on vitamin requirements. Over the years, many honours were bestowed on Ganguly. He was elected a Fellow of the Indian National Science Academy (1968), chosen for the Bireschandra Guha Lectureship in 1975, received the Federation of Indian Chamber of Commerce Award for Life Sciences in 1979, and the Rafi Ahmed Kidwai Memorial Award for 1978–79, to mention a few.

Ganguly retired in 1981 as Professor and Chairman of the Centre for Advanced Study in Biochemistry, IISc. Even after formal retirement, he was academically active and wrote a book on vitamin A, which is considered a treatise on vitamin A biochemistry.

In retrospect, Ganguly has been one of the pioneers ushering in biochemistry research in India. His achievements, considering the contemporary research climate and facilities, could be considered monumental. Those of us who had the good fortune of association with him, fondly remember his clarity of thinking while interpreting results and the manner in which such interpretations were put down in the form of a scientific publication. Indeed, it was so educative to sit down with Ganguly and write a scientific paper, notwithstanding the curt and pungent comments/questions one might face.

Ganguly is survived by his wife, two sons, a daughter and grandchildren.

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