

Guest Editorial

THE END OF AN ERA

With the passing away of Professor Bal Krishan Anand on 2 April 2007 came to an end an era in Indian Physiology. When India gained freedom in 1947, Prof. Anand (b. 18 September 1917) was one of the very few right men around at the right time to contribute to nation building. He had completed his studies for the M.D. degree, but his examination had been delayed by the upheavals of partition. Finally, the examination was held in 1948, and he received an M.D. in Medicine with a special paper in Physiology from the University of Punjab. The hand of destiny uprooted him from Punjab and also from clinical medicine in 1949, and installed him in New Delhi to teach Physiology at Lady Hardinge Medical College. Although he had the imposing title of Professor and Head of the Department of Physiology, there was not much of a department to head. He was the only teacher in the department, and had been 'borrowed' from Punjab Health Services to replace a lady British professor who had left in 1947. With plenty of teaching to do, there was no time for research, but he at least collected an idea for research from an observation made in the course of teaching. He observed that while vagal stimulation stopped the frog heart as expected in the summer season, in winters it increased the heart rate. Dr. Anand then neither had the time nor the means to investigate the discrepancy further. But he stored the idea in some accessible corner of his head, and took it up when the circumstances were more favourable. The result was the discovery that the synthesis of acetylcholine declines in winters, and that small amounts of acetylcholine accelerate rather than slow down the heart. This piece of research earned him a publication in the prestigious *American Journal of Physiology* (1).

Dr. Anand sailed to the USA to work in the neurophysiology laboratory of Prof. John Fulton at Yale in 1951. There, he discovered the hunger centre in the rat hypothalamus – apparently a serendipitous discovery, but truly the result of intellectual honesty, hard work, total dedication to the job in hand, and a brilliant and fertile mind. Although Dr. Anand was offered a faculty position at Yale in 1952, his patriotic zeal made him decline it. Soon after his return to India, the Government inducted him into a group constituted to work out the plans for setting up a medical centre of excellence in teaching, research and patient care at New Delhi. The idea materialized in 1956 in the form of the All India Institute of Medical Sciences (AIIMS), and Prof. Anand was the obvious choice for the post of the founder Head of the Department of Physiology. At AIIMS, his leadership qualities were put to good use in the task of institution building. Besides proving to be a super teacher and an

eminent research worker, he built up a strong department of physiology with excellent traditions which continue to keep the department productive and harmoniously knit to this day. As the first Vice-Dean, and later as the first Dean of AIIMS, he laid the foundations of progressive and innovative practices in teaching and assessment. In his research at AIIMS, he not only expanded on his earlier work on food intake but also diversified in related, and even a few unrelated areas to provide opportunities to students with a wide range of interests, and also to make his research more relevant to national needs. He expanded the scope of his studies from the hypothalamus to limbic system as a whole (2) and from food intake to other bodily functions, particularly cardiorespiratory regulation (3) and reproduction (4). He also did some pioneering studies on yoga, which continue to be quoted even today, nearly fifty years after they were published (5–7). When our losses in the wake of the Chinese invasion in 1962 taught us the need for a better understanding of high altitude physiology, he responded by doing a few studies in that area (8) and serving in an advisory capacity for many more done by the Defence Institute of Physiology and Allied Sciences.

Another milestone in his national role was the part he played as a founder member of the Association of Physiologists and Pharmacologists of India (APPI) born through an informal discussion he had with a few close friends in 1955. Soon after its inception, APPI also started publishing the *Indian Journal of Physiology and Pharmacology* (IJPP) in 1957 (9). His futuristic vision and understanding of human factors in the success of organizations gave the APPI a constitution which ensured a democratic structure and adequate

representation to different regions of the country among its office bearers. The result is that APPI has grown steadily in size and strength, and IJPP has consolidated its position as one of the best indexed medical journals published in India. His services to the nation were not confined to AIIMS and APPI: he is remembered fondly for his substantial contributions also to the Sher-e-Kashmir Institute of Medical Sciences, National Academy of Medical Sciences, Medical Council of India, Family Planning Foundation and Vallabh Bhai Patel Chest Institute, just to name a few.

Professor Anand also played a major role in putting Indian science on the world map. He was among the first Indians to go to USA for medical research, and the first Indian to work in Professor Fulton's laboratory. When Dr. Anand had been active in research for barely eight years, he was invited to speak at the 1959 Congress of the International Union of Physiological Sciences (IUPS) held at Buenos Aires. Not counting the Japanese, he was the first Asian to be ever invited to give a lecture at an IUPS Congress. Prof. Anand organized the twenty sixth Congress of IUPS in 1974 at New Delhi. This was the first international conference on a medical subject to be held in India, and as a mark of that distinction, was inaugurated by none other than the President of India. Prof. Anand's international recognition led to his being offered the post of Advisor on Health Manpower Development at the South East Asia Regional Office of the World Health Organization in 1972. He finally accepted it in 1974, for which he had to take voluntary retirement from AIIMS (10).

In a sense, he never really retired from AIIMS. He was conferred Emeritus Professorship by AIIMS in 1977. But at that

time he had other full-time pre-occupations which kept him busy. However, after he took retirement from the Directorship of the Sher-e-Kashmir Institute of Medical Sciences in 1985, he started coming regularly to the Department of Physiology at AIIMS. His presence was most felt in the postgraduate seminars. With his irrepressible, insatiable curiosity, and his fetish for fundamentals, he managed to fox the speaker with seemingly simple questions. He continued to inspire and stimulate the department by his physical presence in the forenoons everyday till around the year 2000. But the new millennium brought him a series of serious health problems which made it difficult for him to leave home. The prolonged illness that he went through gave him not only much physical pain but also imposed idleness and restricted mobility on a man who had loved activity so much all his life. However, he went through the ordeal with exemplary courage and fortitude. Fortunately he remained mentally alert and agile till the

last day, and used these faculties for growing spiritually – a vital aspect of life for which his busy schedule earlier had not left much time.

Prof. Anand was one of the architects of an era of great importance in the history of independent India. In 1947, medical education in India essentially meant undergraduate courses in a handful of medical colleges which ran with the help of teachers who were either British, or Indians who had received their postgraduate education in Britain. Today we have more than 200 medical colleges manned entirely by Indian teachers who have received their postgraduate education also in India. This transition from dependence to honourable self-sufficiency was made possible by persons like Prof. Anand who got involved willingly and enthusiastically in the task of nation building. The likes of Professor Anand were truly the architects of India's post-independence rebirth in academics.

RAMESH BIJLANI

*Sri Aurobindo Ashram – Delhi Branch
New Delhi – 110 016
rambij@gmail.com*

REFERENCES

1. Anand BK. Influence of temperature on vagal inhibition and liberation of acetylcholine in frog hearts. *Am J Physiol* 1952; 168: 218.
2. Anand BK, Dua S. Stimulation of the limbic system of brain in waking animals. *Science* 1955; 122: 139.
3. Anand BK, Dua S. Circulatory and respiratory changes induced by electrical stimulation of the limbic system. *J Neurophysiol* 1956; 19: 393–400.
4. Anand BK, Malkani PK, Dua S. Effect of electrical stimulation of the hypothalamus on menstrual cycle in monkey. *Indian J Med Res* 1957; 45: 499–502.
5. Anand BK, Chhina GS, Singh B. Some aspects of electroencephalographic studies in yogis. *Electroenceph Clin Neurophysiol* 1961; 13: 452–456.
6. Anand BK, Chhina GS, Singh B. Studies on Shri Ramanand Yogi during his stay in an airtight box. *Indian J Med Res* 1961; 49: 82–89.
7. Wenger MA, Bagchi BK, Anand BK. Experiments in India on “voluntary” control of the heart and pulse. *Circulation* 1961; 24: 1319–1325.
8. Dikshit PK, Anand BK, Boparai MS. Oxygen requirements for thermogenesis during cold adaptation at high altitudes. *Indian J Physiol Pharmacol* 1972; 16: 31–45.
9. Anand BK. Forty years of APPI and IJPP. *Indian J Physiol Pharmacol* 1996; 40: 281–288.
10. Bijlani RL, Anand BK. *Easy to Admire, Difficult to Emulate*. New Delhi: Jaypee, 1997.