

S. PANDYA AND S. KALYANARAMAN

Dr. Baldev Singh's forebears were not medical practitioners. When asked what impelled him to turn to medicine, he recalled that he was brought up not in his father's family but in that of his mother.

His mother was the only daughter of affluent parents and so she continued to live with her own parents instead of with her husband's family. Dr. Baldev Singh was therefore really brought up not under his father's influence but under that of his own elder brother, Sardar Shamsher Singh. An intimate friend of Dr. Baldev Singh's brother was a doctor who later served in the army during First world war. Sardar Shamsher Singh was so impressed by his colleague's progress that he influenced his own younger brother to follow in the same profession.

His family pursued agriculture with excellent rewards. Some family members joined the army. His maternal grandfather was the first Honorary Captain in the British Army.

Dr. Baldev Singh was brought up in a village called Gandasinghwala near Amritsar. His maternal grandfather was named Sardar Gandasingh and the government had awarded him the jagir for his services in the army. Dr. Baldev Singh studied in the village school and after the third standard was sent on to the Government High School at Amritsar to begin schooling in English. After his matriculation from this school he moved on to Lahore and studied at the DAV College. After completing his F. Sc. (Med) he joined the King Edward Medical College in Lahore in 1922.

Dr. Singh recalls that during his school days, his brother kept insisting that he was to study medicine. As a consequence, he took up science in high school. In those days, physiology was taught as part of science in school. The school possessed an excellent science teacher named Shri Mohan Lal Bhalla. He taught by experiment and Dr. Baldev Singh recalls, to this day, the exact experiments and models (including those of the eye, ear and other human organs) used. Dr. Singh scored well in physiology. He and his friends formed a small group that met every fortnight to discuss physiology. Dr. Baldev Singh was made secretary of his group and he wrote out the proceedings of the meetings. He thus got deeply interested in the subject.

In college too he was blessed with an excellent professor of biology Shri Raghunath Roy. He stimulated interest in zoology. Finally, in medical college, he had as professor of anatomy Dr. Col. P. B. Bharucha, later to become Chief Surgeon at the King Edward Medical College, Lahore. Col. Bharucha, an excellent teacher, picked Dr. Baldev Singh to be the prosector in anatomy and made him do special dissections to be used for demonstration to the rest of the class. Dr. Baldev Singh recalls spending a lot of time dissecting the brain for Col. Bharucha who himself, was interested in the nervous system. Thus, slowly and steadily, he was being led towards what was to become his life long love—the study of the structure and function of the nervous system. Dr. Singh points out that he is very grateful for the grounding in neuro-anatomy. 'If I know physiology, it is from that knowledge of anatomy Anatomy is fundamental.'

In medical college the teachers followed the university schedules. In Anatomy and Physiology a substantial number of hours were spent doing practical experiments. Training in Pharmacology, in contrast, was principally theoretical. In Pathology and Microbiology there was better balance between lectures and practicals. Neurosciences were poorly developed then. 'The word neuroscience itself came much later', he points out. In the physiology text book there was just one chapter on neuro-physiology, and that too, by no means very comprehensive. Sherrington had just begun to influence neurophysiology. Dr. Singh recalls that his professor of physiology Hayes was more of a surgeon and was appointed professor of physiology as no one better was available: Neurology was taught without much application of anatomy or physiology. The teaching was very primitive. One of the professors of medicine was deemed to be an excellent teacher only because he had clear, fixed ideas on localization of lesions in the nervous system. He drew diagrams of the brain and spinal cord, made lesions and listed what he felt were the consequences.

But, as Dr. Baldev Singh points out, nature does not make such clear cut, well defined lesions. Disease processes produce a jumbled picture and the regimented form in which neurology was taught did not help greatly in practice. 'I don't think

we ever saw a postmortem examination of a patient dying from a neurological illness. Autopsies were few and far between and the only time we got to see them was when they were done for medico-legal purposes. Dr. Baldev Singh stood first in the first two professional examinations. Gold and silver medals and other academic honours came his way making him an outstanding student. By the time he completed his medical education, the First World War had ended and all those who had joined on temporary commission were released from service. They were given first preference for all postgraduate seats.

For the few seats that remained, the 40% Muslims, 20% Sikhs regulation was made applicable. So, in spite of his distinctive career, Dr. Singh could not get a house surgeoncy. He was offered a casualty officer's job but he didn't like it. Instead he took up a post in the Jammu and Kashmir Civil Service and served at Muzaffarabad (now in Pakistan). Dissatisfied with the routine work there and thirsting for further education, he started making moves for travel to U. K. so as to study for the MRCP or FRCS. There was immediate and wide spread resistance to his idea. By now Dr. Singh was a married man and it was felt in the family that it was time he settled down. Fortunately, Sardar Shamsher Singh came to his rescue and he was able to proceed to London.

In London, this raw youth had no idea of how he was to proceed. Dutifully he made the rounds at London Hospital, Guy's, Bart's and so on and was uniformly refused admission. At the London Hospital, he recalls, he saw the secretary who pulled out a sheaf of applications from scores of other Indians like himself and said, "Well, Dr. Singh; You have come here for the MRCP and we do have all the facilities you seek but we don't take more than two students per year from India. Here are about 300 such applications and you can be the judge of when your own turn will come'.

Returning in despair to his room in the Indian Students' Hostel on Gowers Street, he heard someone suggest to him that instead of going to a general teaching hospital, he could attend special courses in the various specialist hospitals and if he rotated through the chest hospital, the institute at Queen Square and so on, he would end up with a pretty good grounding

for any examination. He accepted this suggestion and got admission to a course in neurology at Queen Square. There, after three months, he appeared for a test. Collier examined him and was suitably impressed. Seeing him in the cafeteria the next day, Collier asked him of his plans for the future. Dr. Singh explained how he was primarily interested in training for the MRCP and how circumstances had forced him to go in for courses in specialist hospitals. He narrated his experience at the London Hospital as an example. Dr. Collier wrote a letter to the Dean at the London Hospital and asked Dr. Singh to take it personally the next day. Soon after the same secretary called him up and asked him to start working at the London Hospital the next day; At the London, Dr. Singh was able to study under Russell Brain. He appeared for the MRCP and fared so well in the first two parts that only perfunctory queries followed in pathology and the viva.

Dr. Singh recalls with affection the days spent with Drs. Collier, Kinnear Wilson, Riddoch, and the then juniors Brain and Critchley. He was not as well impressed by the state of neurosurgery then at Queen Square. Sir Percy Sargent did a very quick and spectacular operation which sometimes created a lot of difficulty. When Dr. Singh learnt of the return to Edinburgh of a surgeon who worked with Harvey Cushing, curiosity drove him to visit Edinburgh. There he introduced himself to that surgeon-Norman Dott-at the private clinic where he worked. (Edinburgh Infirmary could not then find a vacancy for Dott) Dott welcomed him and for the next few months Dr. Singh marvelled at the skill and care with which Dott worked. For the first time he saw large tumours being removed from the brain under local anaesthesia, with the patient talking normally during and after surgery. He marvelled at the meticulous attention with which all bleeding vessels were sealed. He witnessed radiological procedures and a variety of operative procedures. Dr. Singh recalls meeting Dott years later when the latter visited India and was pleased to see that Dott recognised him and recalled their earlier association with pleasure.

Dr. Singh was, by now, seriously considering neurosurgery as a career. His hopes of training further with Dott were shattered when he received cables informing him of his wife's illness and he hastened to India to be by her side.

down and insisted that henceforth he was to work in Amritsar alone. So he started private practice. In those days no fees were charged for consultations, the professional remuneration coming from the pharmacy. Dr. Singh altered this

pattern by charging for his consultations. As a consequence, during his first year he earned Rs. 251 a month! The next year his monthly income jumped to Rs. 100-and by the third year to Rs. 200/-. Then his practice soared and he soon went up to Rs. 40001 to 5000/- per month: a huge sum for those days, He practised in Amritsar for 18 years. Dr. Tandon recalls Dr. Baldev Singh as being a bit of a dandy in those days, dressed in accordance with the latest fashions, moving around in posh cars and, in general, living the good life. Pinstripes, a bowler hat and a new car every year were the norms.

Although he practised general medicine, he was soon recognized for his expertise in cardiology and came to be recognised as a cardiologist. His heart, however, was in neurosurgery and he tried to develop this speciality. As there was no facility for such surgery, he set up a nursing home and equipped it for neurosurgery. Dr. Randhir Singh, a youngster interested in learning from Dr. Baldev Singh, joined him. The first and the last operation they did was a neurofibroma in a limb and this went off well. Later, it became necessary to do a craniotomy and this was where his nerves failed him. He was not yet ready for such major surgery. Just then, he developed diphtheritic myocarditis and was strongly advised

to leave surgery well alone. After a year's convalescence, he resumed consultant medical practice with his reputation as a cardiologist. He did see patients with neurological illnesses and was specially keen on fundoscopic examinations. The urge to set up some kind of neurosurgery in Amritsar continued to stimulate him and he managed to interest Col-Mirajkar in the subject. Col. Mirajkar went to Sweden for further training in neurosurgery and returned with several instruments but never really got around to full time neurosurgery. Dr. Singh's practice was so organised that he had a fair amount of time on his hands. He utilised this to work as honorary physician at the medical college in Amritsar where Col. Amir Chand, the principal and professor of medicine, welcomed him' He also got facilities in the medical college to undertake some. research. His earliest work was on the creation of animal models for the study of anaemia. He would puncture the heart in a rabbit and bleed it daily and thus create microcytic anaemia. In another group, he would administer phenylhydrazine to produce macrocytic anaemia. he would then give the

animals with microcytic anemia phenylhydrazine and produce a combination of anemias to resemble what is found in humans. (He was then seeing several patients harbouring ankylostome duodenale and also suffering vitamin deficiencies). He later studied tuberculosis. He read of a technique for differentiating between tuberculosis and Hodgkin's lymphoma and decided to try it out. The biopsied lymph node was triturated and emulsified and the filtrate injected into the rabbit's cerebellum. If the filtrate was from Hodgkin's lymphoma, the rabbit would go round and round within a week of the injection. In order to make this injection, it was necessary to make a trephine hole over the cerebellum

and in order to do this, he had to have a small, delicate trephine. As none was available, Dr. Singh designed one and got an instrument maker in Sialkot to make it for him. He points out, with pride, that he had this trephine with him till recently. After 15 years of lucrative practice, a growing sense of dissatisfaction assailed Dr. Singh. As he put it, the money came too easily and there was no intellectual satisfaction associated. Often he went to his consultation rooms at 10 a.m. and found a long queue of patients awaiting him. Before he even talked to them, each of them would lay down his fees on his table. He hardly knew what he did for them but the money kept piling up. There came a stage when he decided to change all this and go in for training in a speciality. He was then 45 years old.

He had, for some time, been reading a booklet produced by an American EEC technician and was growing increasingly interested in this investigation. His interest had originally been stimulated by a review on Berger's rhythm in the British Medical Journal in 1940 and recalls contacting the professor of physics in Amritsar then for guidance and help in constructing a unit for studying electrical activity of the brain. At the professor's suggestion, Dr. Singh, in 1940, underwent a training course in electronics at the Khalsa College, Amritsar, and later contacted Professor P. K. Kitchleve at the Department of Physics, Government college, Lahore (Professor Kitchleve passed away in November 1982) Dr. Singh and the professor did construct an apparatus but obtained a lot of artefacts. Now, at the age 45, all these experiences came alive and the urge to study the activity of the brain, with special reference to epilepsy grew. He therefore wrote to the E E G. technician whose book he had read and in reply was asked to consult the chief of the laboratory, Professor F. A. Gibbs at the Neuropsychiatric Institute, Chicago. Accordingly, a letter was sent off to the professor.

In the meantime, a patient from Madras came to seek his help. An EEG recorded by Dr. Narasimhan in Madras was produced, to Dr. Singh's pleasant surprise. EEGs were being done in India and he didn't know anything about them! He started making enquiries. He learnt about Jagdishchandra Bose's experiments in recording minute biological currents. This instrument and an instrument rigged by Professor Bagchi have since been preserved in a Museum in Calcutta. He got in touch with Dr. Narasimhan and requested permission to visit him and see his instrument. At about this time, he learnt about Dr. Jacob Chandy's efforts at setting up neurological sciences in Vellore and got in touch with him as well. He proceeded to visit Madras and Vellore and spent two months there. At Vellore he had long discussions with Dr. Chandy and saw every aspect of the work already in progress. Dr. Chandy asked him of his future plans. When he learnt that Dr. Singh planned to study EEG abroad and return to India, he invited him to work at Vellore, which then had no EEG. In Madras, he saw Dr. Narasimhan's two channel instrument and how he localised intracranial diseases with it.

When he returned to Amritsar he found a letter from Professor Gibbs awaiting him. Professor Gibbs conveyed his willingness to help but pointed out that it might be six months to a year before a suitable opening would be available. In 1950, he went over to Gibbs' laboratory. Dr. Singh recalls that as his family learnt of his decision to give up practice and resume a student career, he was deemed mad; When quizzed as to how he could afford to give up such a profitable practice, Dr. Baldev Singh pointed out that his discomfort at making such easy money was intensified by his helplessness at dealing with the human misery after the partition of India. He had helped out as a doctor wherever he could but was appalled at the unmanageable devastation. It was now doubly difficult for him to reconcile himself to practice. Sardar Samsher Singh was, however, quite disturbed and urged his younger brother to reconsider. The Sardar even manoeuvred a meeting with Col. Amir Chand but the latter assuaged his fears. However, privately, Col. Amir Chand remonstrated with Dr. Baldev Singh. He pointed out that there was not much scope for a neurologist in India and that in any case, there was no therapy for most neurological disorders. So what was he going to do with all this highly specialized training?

However, he went over to Gibbs and spent the year 1950-51 learning EEG techniques and carrying out experimental studies on epilepsy. When

asked whether he went to Montreal he chuckled as he replied that such a visit could never have been envisaged because of some differences between Gibbs and Jaspers way of training. Dr. Baldev Singh met Percival Bailey whilst working in Gibbs' laboratory and participated in doing E. E. G. in cases of epilepsy on whom Bailey operated. This training proved useful to Dr. Singh when he worked subsequently at Vellore and Dr. Chandy did surgery for epilepsy.

On returning to India in 1952, Dr. Singh had nothing except Dr. Chandy's invitation to work with him. He tried to find an opening in a leaching institution in the north but failed to find one. He was offered the post of lecturer at Ranchi but on enquiry found that there was no equipment worth the name at Ranchi and not the slightest chance of a neurosurgery unit developing there then. Convinced that without neurosurgery, neurology could never develop, he gave up the offer and proceeded to Vellore.

Dr. Chandy's leadership and the simple life in Vellore inspired him. Work started soon after breakfast and went on till midnight, often beyond. There were only ten to fifteen patients under the care of Dr. Chandy's firm but no effort was spared to do everything that was to be done for them. After the day's work was done, Drs. Chandy, Singh and a couple of devoted residents would settle down with the paper work and plans for development. Around 10 p.m., Dr. Singh used to do the final ward round and this went on till midnight. Dr. Singh recalls with amusement that this daily routine of the late round by himself, Dr. Mathai and a lady resident prompted raucous laughter from a small group in the library as they passed by it. On enquiry, he discovered that each time they passed by, a wag would exclaim; "There go the neurons-father, daughter and son". The years 1951-1954 spent in Vellore affected him greatly. The missionary spirit, simple life and hard work, the impressive figure of the ' grand old lady, Dr. Ida Scudder, for ever encouraging patients and spurring everyone on inspired him. He also found a congenial group of spirits in Drs. Chandy, Betts, Cochran, Gopinath and other workers. His experiences in Vellore modified his philosophy of life permanently.

In 1954, Col. Amir Chand invited Dr. Chandy to set up a neurology and neurosurgery centre at the Tirthram Shah Hospital in Delhi. At first Dr. Chandy agreed to the move and Dr. Singh committed himself to Col. Amir. Chandy later

Dr. Chandy decided to stay on at Vellore. Dr. Singh felt duty bound to honour his commitment. Delhi then had Col. Ray who was the only neurosurgeon in the Military Hospital Delhi Cantonment but within six months of Dr. Singh's arrival he was transferred to Lucknow. An arrangement was therefore made with Dr. R. G. Ginde who would come to Delhi to operate on patients fully worked up and prepared for surgery by Dr. Singh. This continued till the day when Dr. Ginde's health did not allow him to continue this stress of work. Within six months of returning to Delhi, as the only competent neurologist in the capital, Dr. Singh found himself deluged with patients. To keep his academic interest alive, he started teaching neurology at Lady Hardinge Medical College and later at the Tirthram Shah Hospital itself.

Dr. Singh often had opportunities to discuss various medical matters with Dr. Sushila Nayar who was the Union Health Minister. This ultimately led to an offer to serve at the All India Institute of Medical Sciences (AIIMS). He was appointed Professor of Neurology there in 1965. Almost at the same time Dr. P. N. Tandon took up the Professorship in Neurosurgery. Asked about his neurophysiology research, Dr. Singh remembered the days when he worked with Professor Gibbs. One day Professor Fulton visited Professor Gibbs and learnt about an Indian in Gibbs' laboratory working on experimental epilepsy. Fulton went over to the laboratory and stood behind Dr. Singh as he tried to record a tracing from the thalamus of a cat. From time to time Fulton asked questions that Dr. Singh answered without knowing the identity of the questioner. After the experiment was concluded successfully, Fulton introduced himself and told Dr. Singh about the Indian in his own laboratory- Dr. B. K. Anand. He asked Dr. Singh of his plans for the future and learning that Dr. Singh was returning to India told him that so was Dr. Anand. He suggested that the two might be able to collaborate. Dr. Singh knew of Dr. Anand for he too hailed from Amritsar. Dr. Anand became Professor of physiology at Lady Hardinge Medical College on his return to India whilst Dr. Singh joined Vellore. From time to time the two met and discussed plans for research. Dr. Anand was interested in physiology, Dr. Singh in neurology. They decided to start off with EEG studies and Dr. Anand, by then at the AIIMS, purchased a 2 channel EEG unit, which is still functioning at the institute. On Dr. Singh's shifting to Delhi, he spent more and more time in Dr. Anand's laboratory. After joining the AIIMS himself, Dr. Anand urged him to develop neuro-sciences in general. Together, they prepared a programme and submitted the proposal

to the ICMR. Dr. K. N. Rao, Chairman of the scientific advisory committee, ICMR, however, felt that such development should take place at the NIMHANS in Bangalore. It was only after repeated attempts that Professors P. N. Tandon and B. K. Anand were able to push through the proposal that basic and clinical neuro-sciences be jointly developed at the AIIMS.

Most of the experimental work done by Dr. Baldev Singh has been in collaboration with Dr. G. S. Chinn. The work on feeding, sex behaviour, consciousness and sleep are examples. Later oscilloscope work and still later unit activity developed. Dr. Singh's interest in sleep dated back to the time he worked in Prof. Gibbs' laboratory. Gibbs and Fuster believed that sleep induced spike activity in temporal lobe epilepsy. Naturally, this interest in sleep continued after his return to India. The studies on yoga accentuated this interest as he studied the various stages of consciousness.

Dr. Singh vividly recalls the formation of the Neurological Society of India. At one of the 10 P.M. meetings in Vellore Dr. Chandy suggested that it was time they set up a nucleus of those interested in the neurological sciences. Dr. Singh agreed but also stated that whilst he would be glad to be a member-and an active member at that - he wouldn't like to shoulder any administrative responsibilities in the form of appointment as secretary treasurer etc. One day, Dr. Chandy decided to go to Madras and asked Dr. Singh to accompany him. They went to Dr. Ramamurthi's home, where Dr. Narasimhan too joined them. Dr. Chandy reiterated his suggestion and the four of them found themselves in agreement and the society was born. Four members to start with! Dr. Chandy was emphatic that only those in full time practice of the neurological disciplines were to be full time members and Dr. Ginde was thus made associate member. Dr. T. K. Ghosh joined the year after the society was formed. Dr. Singh also recalls fondly the enthusiasm characteristic of every act of Dr. Narasimhan.

Once the latter started using the EEG, he considered this machine the answer to the neurologist's prayers and that with its help localization of intracranial lesions was child's play. He confidently predicted the localisation of brain tumours and even operated on several patients. That he did these operations in his own private clinic emphasises his supreme self confidence. Dr. Narasimhan had trained with Dr. Bagchi in the U. S. A, and had obtained his two channel EEG unit second hand from there.

Dr.. Baldev Singh is sorely disappointed with the present state of research in all branches of the basic sciences and in the neurosciences. As he puts it, "At this age, this is my deepest despair. After spending so many years of my life with great enthusiasm, pursuing research, the achievements are hardly any. There are no contributions of merit. I see similar dismay in many of my colleagues in other branches as well. We're not able to break new ground. We repeat what is being done elsewhere but have hardly anything original of our own". When asked to analyse this, he points out that the spirit of collaboration with colleagues in other disciplines is lacking. This serious handicap leads to a paucity of outstanding contributions. In clinical research, for instance, the clinician will do all his studies in his own way not calling in the physicist or chemist who has a fundamental understanding and a grasp of the basics or an outlook that is original and different. The real depth that can only come from people trained in fundamental sciences is therefore lacking. What passes for collaborative studies in India is pathetic.

However, his eyes sparkle when he talks of the newer developments abroad. He lit up with excitement as he talked of the recent paper he'd read on transplantation of fetal cells from the basal ganglia into a patient with Parkinson's disease and how these cells, implanted in the patient's basal ganglia were developing neurotransmitters. It gave him great joy to learn of such developments. Likewise, when a Ph. D. student comes up with a stimulating project he still experiences a thrill as he sits down to discuss his work with him. This is what keeps him full of life and in the laboratory from 8 a.m. to 8 p.m on all days of the week.

BIODATA OF DR. BALDEV SINGH

Born on April 1904 at Gandasinghwala, Near Amritsar.

M. B. B. S., M. R. C. P; F. A. IV. S., F. N. A.

At present Emeritus Professor, All India Institute of Medical Sciences, New Delhi since 1968.

Associate Professor of Neurology, Christian Medical College and Hospital, Vellore 1951-1954.

Parttime Lecturer in Neurology, Lady Hardinge Medical College, Delhi 1955-1965.

Professor of Neurology, All India Institute of Medical Sciences, New Delhi 1965-68.

carried out several research projects in the fields of E. E. c., epilepsy, neuro-physiology, neurochemistry, consciousness, hypothermia, limbic system, cerebellum, hypothalamus, yoga and sleep.

Established and developed the department of Neurology at the Christian Medical College, Vellore, and A. I. I. M S., New Delhi.

Over 2-50 papers presented and published.

Member and chairman (for several years) Advisory committee for Neurology, Indian Council of Medical Research.

Member, International Brain Research organisation, Emeritus Medical Scientist, Indian council of Medical Research, Honorary Member, American Neurological Association (since 1971) Honorary consultant to Armed Forces. Honorary Brigadier Since 1976. Honorary Fellow, Acro Medical Society of India.

Amir Chand Basanti Devi Award 1961.

Padma Bhushan 1972.

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Dr. Baldev Singh.

MBBS, FRCB FAMS, F NA

On February 2, 7998, a legend of Indian neuro sciences, one of the four founder members of the Neurological Society of India, a doyen of medical profession, departed for his heavenly abode.

Born on 6th April 1904, at Zaffarwal Dutta (now in Pakistan), in a family of aristocratic rich landlords, Baldev Singh broke the family tradition to choose medicine as his career. Soon after his graduation from King Edward Medical College Lahore, in1927 winning many academic laurels and awards, he proceeded to England and obtained the Membership of the Royal College of Physicians, London in 1930.It is generally not known that it was at this stage that he was fascinated by thenewly emerging speciality of Neurosurgery. He proceeded to Edinburg to attain FRCS but unfortunately could not pursue his studies, circumstances forcing him to return home.

After spending two years as a medical officer in the State of Jammu and Kashmir he settled down in general practice at Amritsar. However, being deeply committed to academic medicine and research, he not only maintained informal links with Medical College at Amritsar and Lahore but established an experimental laboratory at his own place. He regularly travelled to Lahore to attend the monthly meeting of the medical association where his contributions were greatly valued. The meticulous records of his patients maintained by him provided a much sought after source of learning by postgraduate students of medicine at the Medical College. His personal library could be an envy of any medical institution. During this peiod, he developed an experimental model of human anaemia, carried out microscopic study of nail-bed capillaries in health and disease and attempted to differentiate between glandular tuberculosis and Hodgkin's disease by animal inoculation in rabbit cerebellum. He developed a lucrative practice and lived an aristocratic life. Those who have only known him in the later part his life would find it hard to believe,

that at that time he was the best dressed practitioner in town-attired typically as a Harley Street consultant, wearing a pin-stripe suit, spotless white solo-hat, brightly polished shoes, a gold-chained pocket watch and moving about the town in the latest model of an imported car.

All this, however, not enough to suppress his first love, the neuro-science, for too long. In 1950, reading some papers by Dr. Chandy who had recently initiated work in this field at Vellore, he decided to cast his lot with him. Giving up his family, his lucrative practice and along with it a life of luxury, he went to USA to work with Prof. H. Gibbs. From there he moved to Vellore in 1951, virtually to live as a "Sanyasi". Clinical neurology was thus born in India. At the same time he developed an EEG laboratory and an experimental laboratory in a short time, as a result of efforts of Chandy-Singh duo. Vellore became the Mecca of Indian neuro-science.

However, destiny took a new turn. Circumstances made him move to Tirath Ram Shah Hospital at Delhi in 1955 at the behest of late General Amir Chand. Prof B. K. Anand's neurophysiology laboratory at Lady Hardinge Medical College was made available to him for his research. Once more he was back in practice but did not give up his teaching and research pursuit. However, the practice was limited to few hours in the afternoons. He spent every morning in Dr. Anand's laboratory. This interaction continued when Dr. Anand moved to the All India Institute of Medical Sciences. He was greatly in demand from all major hospitals in Delhi, including the Lady Hardinge Medical College as a honorary consultant in Neurology. During this period he fully participated in a series of neurophysiological investigations dealing with limbic system, feeding centres, yogic states and later on sleep and wakefulness.

In 1965, when the All India Institute of Medical Sciences decided to initiate full-fledged department of Neurology (and Neurosurgery) he was persuaded to take up this responsibility. In three years' time he laid the foundations of his department which has now acquired the status of one of the finest in the country. Having fulfilled this responsibility he returned to full-time research as an Emeritus Professor in the Department of Physiology. He continued to inspire, guide and teach host of students, investigators and younger colleagues till his physical strength permitted. His own research included diverse fields like high altitude physiology, epilepsy, brain oedema, bio-feedback, heat-hyperpyrexia, sleep, consciousness etc.

He was a self-effacing, highly cultured, handsome and dignified person, with unquenchable thirst for knowledge, love for poetry and philosophy, who lived his last several decades of life in detachment and renunciation. In my personal association with him since 1965, I never heard him speak ill of anyone, finding every occasion to praise his colleagues and students. Always willing to help everyone who sought his advice and guidance, he was pillar of strength for his colleagues and students.

Dr Baldev Singh was recipient of several awards and recognitions including the Basanti Devi Amir Chand Award, Air Marshal Subroto Mukherjee Award, Sir Nilratan Sircar Oration, the National Academy of Medical sciences oration and chandy oration. He was a founder Fellow of the National Academy of Medical sciences, Honorary Fellow Aeromedical Society of India and the Indian National Science Academy and Honorary Brigadier Indian Army. He had the unique distinction of being the President of the Neurological Society of India twice - in 1962 and 1971. He was awarded Padma Bhushan in 1971 by the president of India. Above all, he was unique that he could claim the veneration and love of such large number of colleagues and students.

P. N. Tandon
Neurology India 1998;46:

Editor's note:

The first time I saw Prof. Baldev Singh was at Trivandrum Medical college, some time in 1965, when he came there on invitation from one of his previous house surgeons-Dr. G. K. warrier. on that day Prof. Singh talked to us about the mechanism of spasticity as was known then. Sitting on a low chair and talking intently, he could make us visualize the muscle fibres, their gamma and alpha motorneuron connections and how the normal tone is different from spasticity. we were very much impressed by the depth of neuro-physiological knowledge of Prof. Singh.

But then there was a problem case of a spastic-ataxic patient which we discussed earlier with Dr. C. K. Warriar. The concepts of various hereditary ataxias were not clear then and Warriar could not really pin down the type of the disease when he took the clinics on that patient. The diagnosis of Friederich's ataxia was not accepted by him as the patient had too much of spasticity. Like our teacher we too were very much unconvinced about the nature of the patient's illness. We thought that Dr Singh would unravel the mystery for us. But then after his clinics we were more confused. But then the knowledge about these entities was next to nothing in early 1960's.

On my first day in AIIMS after I joined for my DM course. I saw a distinguished looking grand old man entering the South Indian mess run by in the 7th Hostel there (All these hostels

have different names which I do not remember now) with a very much vintage thermos flask and sitting in a far away corner. He ordered the breakfast which on that day was some rock-hard Idli, and Sambar. I had great difficulty to eat that but I saw him eating the same without much problem. Only on close scrutiny I could recognise him as Prof. Baldev Singh, whom I never expected in that South Indian mess. I came to know that he was living alone in the campus like a true Sanyasin.

By the time I joined there he had already moved out as Emeritus professor of Neuro-physiology but he used to attend all the combined Neurology-Neurosurgery sessions and the twice weekly Neuro-radiology sessions. Every investigation done by the residents of these departments would be discussed threadbare and invariably these sessions were dominated by three-Prof. P N. Tandon, Dr. A. K. Banerjee and Prof. Sneh Bhargava. The neurology residents were the unprotected group as there was none to defend us. So I had to struggle hard the night before these sessions with the radiology books like Wood and Tavara and with my radiology colleagues-Thanks to Dr Praveen Khanna (who died too young). Dr. Gulati (who himself was not in good terms with his chief). I used to wish in vain that we had a teacher who would defend us. Prof. Singh used to give his opinion only at last and that too when specifically asked. He had so much respect for his colleague Prof. Tandon that he practically never disagreed with him.

Gradually I came to know his great contributions to neuro-physiology. The trio, Chinnai, Dua and Singh had done yeoman work in the field of hypothalamic functions. His work with Dr. B. K. Anand was equally important. His studies on sleep, neurophysiology of yoga and neuro-behaviour changes and complex ideational activity were considered classic.

Prof. Tandon has given a vivid description how Prof. Baldev Singh got attracted to Electroencephalography and Neurology. Prof. K. V. Mathai has once told me that Chandy-Singh team was almost like a hand and glove phenomenon. To quote Prof. B. Ramamurthi, many neurosurgeons are determined dynamic doers and neurologists are serene docile dreamers. Prof. Chandy and Prof. Tandon belong to the first category. Prof. Singh was very docile and philosophically oriented, fitting nicely well in neurosurgically oriented departments. As a very non-controversial figure he commanded respect from his peers, assistants and students.

Prof. Singh was a father figure in Neurosciences in India. All of us felt proud when he was honoured at the world congress of Neurology in New Delhi in 1989. His death in Feb. 1998 was a severe loss to the Indian neurology.

K. Rajasekharan Nair

**Dr. Narasimhan and
Prof. Mahadevan Pillai**

K. RAJASEKHARAN NAIR

Indeed I am happy that I could include the brief biographies of these two stalwarts in Neuro-sciences. Both of them were enigmas as far as I was concerned. Prof. B. Ramamurthi's auto biography contains a lot of useful information about many of his seniors, contemporaries and peers. When his book is published fully, it is going to be a gold mine of information regarding the history of medicine in India. He was kind to send me many relevant chapters of his unpublished book with the permission to use the material as much as I need. Dr. Narasimhan was one of the founder

members of NSI. So far no one has written anything about him. Prof. BRM's write up is personal and very much informative. I thank him for permitting me to quote from his unpublished book.

I had so much of difficulty to get any information about Prof. Mahadevan Pillai. Prof. K. S. Mani was the only neurologist who sent me some information about Dr. Pillai in time. Prof. B R M's autobiographical notes reached me very much later. Thanks to Dr. Pillai's son and my colleagues in different parts of Kerala, I could write almost a complete biography of this pioneer neuro-radiologist and publish a brief article in the house magazine of Trivandrum Medical College- "Panacea". The write up about Prof Mahadevan Pillai is a part of a proposed publication of mine, titled "The Lore of Medical Men in Kerala".