

Preface to Addendum to Past Presidents Neurological Society of India 1952 – 1998

A volume entitled **Eminent Neuroscientists of India 1952- 1998** was brought out by Dr Rajshekar Nair in 1999, under the aegis of the Neurological Society of India . Considering the limitations in communication and technology at that time it was indeed a stupendous effort. With this to fall back upon, Dr K. Ganapathy in 2017 brought out a volume entitled “ **Past Presidents Neurological Society of India 2000 – 2016**”. In addition to the hard copy which was sent to all members of the Society, an e Version of the Book has been made available at the NSI website (<http://neurosocietyindia.org/site/NSI%20Book/All.pdf>) . This book was well received.

For the benefit of the present generation it was decided to make the original book also available as an eBook in the NSI website. The painstaking labour intensive job of scanning the original book was undertaken by the ever smiling Navneet Arora of the NSI Central Office . The editors of the two books, felt that it would be of interest to posterity if an addendum could be added wherein the Past Presidents of the 20th century could give their views on how they spent their “ post superannuation” career and what they have seen happen in the last two decades. Needless to say octogenarians and nonagenarians require some additional prodding.

It is most unfortunate and sad that several Past Presidents are alas no more with us. To the 21st century neuroscientist living in a world of intra operative MRI , personalized genomics and Artificial Intelligence it is impossible to relate to how neurosciences was practiced in the BC era. A dwarf standing on the shoulders of a giant sees farther than the giant himself. Reflections of super seniors will indeed add to the knowledge and wisdom of younger individuals. We do hope that this addendum (additions will be made as they are received) will be read not only by all members of NSI but all those who have anything to with neurosciences.

The Editors are thankful to the Executive Committee of the NSI for facilitating this venture.



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Second Career: Life after Superannuation

P. N. TANDON

National Research Professor

Just prior to returning home after completing my training at the Montreal Neurological Institute, I sought Dr. Penfield's blessings and advice for future. Among other things he said, "Develop a hobby other than Neurosurgery. We spend a long time to prepare for a working life but forget there is a life beyond it". He referred to his recently published book, "The Second Career". Regrettably until then I had no hobby, there was hardly any time to spare beyond striving to achieve the academic & professional goals. All neurosurgeons know what it takes to establish a neurosurgical department. Leave aside a hobby one doesn't have even time to spend with the family. Notwithstanding these limitations, over the years I got increasingly interested in research and basic neurosciences beyond clinical neurology and neurosurgery and progressively into science in general. Hence when time came for me to retire from my faculty position unlike most others instead of pursuing neurosurgery in private practice, I decided to give up the knife and pursue my love for intellectual pursuits. I now realise that unknowingly I was slowly driven in that direction even before I superannuated. Fortunately for me just before my retirement I was offered one of the most prestigious Fellowship recently established – the Bhatnagar Fellowship of the Council of Scientific and Industrial Research (CSIR). Besides other things it supplemented my meagre pension to take care of the modest family needs. I was the first medical man, and the best of my knowledge the only one so far, to be given this opportunity to pursue my "hobby" for at least five years with liberal financial support. I was also appointed at AIIMS as an Emeritus Professor and hence could continue my association with the Department of Neurosurgery. (Photo 1)

At around the same time I was elected President of the Indian National Science Academy having earlier as served as its Secretary and Vice President. I was the first clinician to be so recognized. Thus since my retirement in August 1990, I initially continued with my ongoing research in addition to some teaching but progressively got more involved with service and promotion of science in general and neuroscience in particular and continue to do so till today. At the time of my superannuation the Department of Neurosurgery was still a modest but well established well equipped nationally well recognized, with a competent cohesive faculty. During my Bhatnagar Fellowship for five years I fully participated in all its academic activities. For the next decade I visited the Department once a week for a seminar. Now, these visits are restricted to special occasions. In the meanwhile the Department has grown both in terms of its facilities and faculty and the quality and quantity of services rendered, no credit to me. There are however, two facilities – the microsurgery Cadaever lab and Centre of

Excellency in Epilepsy to which I could claim direct or indirect contributions. (For more details see Singh et al Neurology India 63,589-596, 2015).

Promotion of Neurosciences

In addition to my participation in the academic activities of the Department, I continued to pursue our research on foetal neural transplant along with Prof.GomathiGopinath. We published more than a dozen research papers and invited reviews on the subject during the next five to six years. At the same time it provided me an opportunity to complete some of the pending clinical studies. During the same time the Textbook of Neurosurgery was updated and published, as also a book on Head Injury, a Manual of Neurosurgery and Volume 3 and 4 of Lectures in Neurobiology for clinicians.

The National Brain Research Centre: Retirement has not abated the dream to complete the unfulfilled task of adding the basic science component to the now well established Clinical Neurosciences Centre. Taking advantage of the international declaration of the Decade of the Brain in 1990 and Prof. M. G. K. Menon becoming the Minister for Science and Technology, Government of India, I revived the proposal for creating such a Centre. Though approved in principle, after a national consultative meeting, it still took seven years to be finally approved as an autonomous institute under the Department of Biotechnology on 14th November 1997, with the persistent efforts of Dr.Manju Sharma, Secretary of the Department and blessings of Professor Murali Manohar Joshi, Minister for S&T and Human Resources Development. Throughout the intervening period I with the help of a steering committee chaired by me neurosciences were promoted in the country by organizing workshops and symposia, preparing a vision document and attending to the bureaucratic formalities. Once approved I was charged with the responsibility of the Chairman of the Management Committee and later as the President of the Society, Member of the Governing Body and Chairman of the Science Advisory Committee, positions that I continue to occupy up to date. In this capacity I have participated in planning, guiding and monitoring all its academic and research activities. It has been a very educative and intellectually satisfying experience – a fulfilment of a long – standing dream. The National Brain Centre is now a well-recognized institution even though for reasons beyond our control it could not be at AIIMS (Tandon PN; National Brain Research Centre: Ann. Indian Acad Neurol. 2,119.121, 1991) (Photo 2 a & b)

In addition to establishment of NBRC as mentioned in the Monograph by Prof. K. Rajasekharan, because of my association with DST, DBT, CSIR and ICMR (see later) I could catalyse the establishment of a NMR facility for Biomedical Research at AIIMS, a Brain Bank and a Neuro-informatic Centre at NIMHANS, Bangalore, a Primate Behaviour Lab at CDRI, Lucknow.

Service to Neuroscience Institutions:

I served on various academic and administrative statutory committees of various neuroscience institutions like National Institute of Mental Health and Neurosciences, Bangalore, SCTIMER, Thiruvananthapuram, SGPGI Lucknow, IHBAS Delhi, Centre for Behavioural and Cognitive Sciences University of Allahabad, Neurobiology Centre, Jiwaji University Gwalior in addition to AIIMS and NBRC. The limited scope of this write up does not permit any further details. Suffice it to say these assignments permitted cross-fertilization of ideas aimed at promoting neuroscience education and research in the country.

In addition to these over the years I was nominated to serve on the Governing Body or the Science Advisory Committee (as a member or Chairman) of several other scientific institutions e.g. Central Drug Research Institute (CDRI) Lucknow, Centre for Cellular and Molecular Biology (CCMB) Hyderabad, National Aids Research Institute (NARI) Pune, National Institute of Immunology (NII) New Delhi, Institute of Life Sciences (ILS) Bhubaneswar, Translational Health Science and Technology Institute (THSTI) Faridabad, ICMR – NIC Centre for Biomedical Research, New Delhi, Indian Institute of Advanced Research, Shimla, Nuclear Science Centre New Delhi, Patel Chest Institute, New Delhi, Indian Institute of Advance Study, Gandhinagar. This served the purpose of providing a broader view of Indian S&T and an opportunity to help its growth. Of course this often required to first update one's own knowledge to permit desired monitoring and mentoring.

Indian Academy of Neurosciences: I was inducted as an Honorary Fellow of the Academy in 1986. Over the years I was frequently invited as the Chief Guest to Inaugurate its Annual Conference or as an Invited Speaker and in that capacity as a member of the Council. In 2006 I was elected President for two years. In 2003 I was awarded the B K Bachhawat Life Time Achievement Award. Once again the Academy felicitated me for my contributions to neurosciences at its Annual Conference in Cochin in 2008. I contributed a Chapter on “Neurosciences in India: An overview”, to a book edited by Prof. B. N. Dhawan and P. K. Seth in 2009. This chapter updated an earlier publication on the subject by me with Prof. M. Gourie Devi in Annals of Indian Academy of Neurology in 2000. (Photo (3a & b) Indian Academy of Neuroscience. Annual Conference).

Service to Science through National Science Academies. Indian National Science Academy (INSA).

I was elected President for 1991-2, having served earlier as Secretary (1981-1984) and Vice-President (1989-1990). I was the first clinician to be so honored (Photo 5). This entailed an onerous responsibility to recognize reward and promote science in India, project Indian Science aboard and interact and collaborate with scientific academies around the world. In this capacity I had to spend a fair amount of time in organizing various national and international activities in pursuance of the objectives of the academy. Besides the usual functions of such an academy, only one of the most unique event is being mentioned here

since it projected the academy and Indian science on a high pedestal globally. In turn it helped in establishing a formal organization for scientific academies globally to define, discuss and laydown policy guidelines for the role of S&T on regional and global issues of societal relevance. It all started with a proposal by the Royal Society London, US National Academy of Sciences and the Royal Swedish Academy of Science to hold an inter-academy conference on Population. Representing INSA at the Consultative meeting of Ten academies at London, my proposal to hold such a conference at New Delhi was unanimously approved. The Population Summit in which, for the first time in the history of science, 55 science academies of the world participated, to arrive at a consensus statement on this complex and sensitive issue. (Photo 5)

I was assigned the responsibility of presenting the collective views of this Conference first at the Prep Com III of the UN International Conference on Population and Development (ICPD) at New York and then at a plenary session of the ICPD at Cairo in 1994. Once again it was first time in the history that collective views of the science academies were heard at a UN Conference.

As a consequence of this success the academies decided to establish a formal association for continued interaction which gave birth to Inter Academy Panel (IAP). Needless, to say my intimate association with INSA continues up-to-date. Along with other colleagues over the years. I participated in a number of Committees, Seminar, Symposia and Workshops dealing variety of subjects of national importance. I edited a series of books (see appendix) related to Indian S&T and the Academy. I was awarded the INSA Gold Medal for Promotion and Service to Science in 2011.

Inter Academy Panel (IAP):The Steering Committee of the Population Summit met once again during the Diamond Jubilee Celebrations of INSA. At this time a final decision was taken to establish IAP as a formal organization. I was requested to Co-Chair this body along with Dr. Sherry Rowland (NL) Foreign Secretary, US National Academy of Sciences soon more science academies joined it. IAP was requested by organizers of the UN Conference on Human Settlements – (Habitat II) to provide inputs on behalf of the science academies. We prepared a consensus statement on “S&T and Future of Cities” which was presented by me and Sherry Roland at a Plenary Session of the UN Conference at Istanbul, Turkey in 1996. The panel decided to take up the issue of Sustainable Development for its deliberations. For this purpose an international steering committee was constituted which organized discussion groups in different parts of the world – Washington (1996), Cairo (1999), Budapest (1999), Trinidad & Tobago (1998), Trieste (1998), Rio-de Janeiro (1997) – ending at a major conference at Tokyo in May 2000 resulting in a consensus statement, which was widely circulated by all member academies now numbering nearly one hundred. My term as Co-

Chair ended at the end of the Conference. I was invited to give a plenary talk at the IAP General Assembly at Mexico (2003), where I delivered a talk on “Genesis and Evolution of IAP”. A historical album prepared by me was released. (Ref: Tandon PN. The Inter-Academy Panel (IAP) and the Inter – Academy Council (IAC). Current Science 79, 101-102, 2000).

Inter Academy Council (IAC): Following a number of discussions between Bruce Alberts, President US. NAS. and myself, IAP decided to establish an executive arm – the Inter Academy Council – with fifteen Presidents of the member academies constituting its Governing Board. I along with a representative each from the French, Brazilian and German academies were charged with the responsibility of finalizing its constitution. IAC was finally established in 2000 at the end of the IAP conference at Tokyo. The first task undertaken by IAC was to produce a studied report on “A Strategy for Building Worldwide capacity in Science and Technology for the 21st Century”. A twelve member Study Panel, in which I was a member, was constituted in 2001. It held several meetings in different parts of the world and finally a draft report was submitted to IAC in 2003, which after an extensive external review was published in 2004 for release worldwide. Since this first report IAC has produced several such reports on subjects of global interest.

Indo- US Science and Technology Forum: Was constituted to utilize the remaining rupee fund from the PL480 scheme to promote Indo-US collaboration in S&T. I was nominated by Department of Science and Technology, GOI as one of the non-official members of its newly created Governing Body in 2001 for 5 years. The Forum met at New Delhi and Washington alternately to discuss policy issues of concern to the two countries and identify useful activities. In addition it sponsored a series of Seminars and Workshops of mutual interest both in India and the US. The first Workshop under its aegis on Research and Development in Genomics covering Health, Agriculture and Industry was held at Bangalore where I delivered an invited talk.

A new programme – Indo-US Frontier of Science Initiative was started to encourage multidisciplinary symposia, involving mid-career scientists to be held alternately in India and US. The first such programme in India was held at Bangalore. Goverdhan Mehta and I were the Coordinators. It was followed by an Indo-US Round Table on Drug Development held at Hyderabad where I participated. For several years I served as a member of the Organizing Committee of the Indo-US Frontier of Science Program me, which is now a well-established organization for many such bilateral activities.

The National Academy of Sciences India(NASI):Having been elected a Fellow of this oldest science academy in the country in 1976 and served in its council since 1983 till

recently. I was elected its President 1997-98. My active participation in its activities continues up-to-date in various capacities. Limitation of this write up prevents enumerating this in details. My contributions to the Academy, and through it to Science in India, was recognized by the award of its most prestigious Fellowship – The MeghNadSaha Fellow (2000-2005) and NASI President's Platinum Jubilee Gold Medal (2006). The main focus of this Academy is concerned with S&T for Societal Issues and promoting Science education among the young.

The World Academy of Sciences (TWAS): I was elected a Fellow of TWAS in 1992. Between 1996 and 1998 I served as the Chairman of the Medical and Health Sciences Committee. Originally named Third World Academy of Science it is now christened as the World Academy. Its main objective is to promote S&T capacity building in the developing countries. It is playing a commendable role in this direction. During these years I also served as a nominated, Member Governing Body Indian Council of Social Science Research (ICSSR) 2002-2004 and Indian Council of Philosophical Research (ICPR) 2003-2005.

Service to Various Science Departments and Councils

Medical Council of India (MCI): Owing to the growing public criticism of the functioning of the MCI the Hon'ble Supreme Court of India, by its Order dated 20.11.2002, appointed a "committee of four eminent doctors namely Dr. N. Rangabhashyam of Chennai, Prof. P. N. Tandon of New Delhi, Dr. S. K. Bhansali of Mumbai and Dr. (Mrs) S. Kantha of Bangalore as members of an Ad-Hoc Committee to assist and monitor the work of Medical Council of India". The Committee which was expected to work for six to eight months really served for nearly six years. It met at least once a month, reviewed the current programmes and practices in MCI, participated in all its regulatory functions, suggested improvements in its procedures for inspection and approval of the proposed establishment of new medical colleges and the status of the existing ones. Detailed reports were prepared from time to time and submitted to the Hon'ble Supreme Court. In this brief write-up it is neither necessary nor possible to provide the details of the work carried out, but at least during the period the Ad-Hoc Committee functioned there was no public hue and cry about the Council. However, it is also true that though appointed by the Hon'ble Supreme Court the several undesirable aspects of MCI functioning vis-à-vis the Government, state High Courts and private medical colleges pointed out in our report were obviously not taken note of or consciously ignored by all concerned. It is not surprising that some of these maladies have once again come to light recently.

The University Grants Commission (UGC): I was nominated as a Member of UGC in June 2003 for 3 years by the Ministry of Human Resource Development (MHRD). Besides the

routine functions it entailed additional responsibilities as Member/Chairman of a host of other sub-committees like Committee on Research in Universities, Committee for Selection of Universities with Potential for Excellence, Screening Committee for Grant of Deemed University Status, Committee to Revise the Guidelines for Approval of Deemed Universities etc. It was here that we became aware of how commercially motivated individual entities attempted to manipulate the system and misused it to establish sub-standard “teaching shops” in the name public service. Soon large number of such fraudulently established institutions – so called Deemed-to-be-Universities came up all over the Country. (See Below)

A Committee to Review the Functioning of the “Deemed-to-be-Universities: This malady had acquired such vicarious proportions, adversely affecting the whole higher education system in the country, that Ministry of Human Resource Development appointed a Committee to review these institutions in July 2009. Thus three years after completing my term as a Member of UGC, I found myself (along with three other very distinguished educationists Profs. Anandkrishnan, Goverdhan Mehta, Mrinal Miri) as a member of this Committee, which for some unexplained reason came to be known as the “Tandon Committee”. A total of 126 such institutions were reviewed meticulously utilizing well defined criteria over three months. Only 38 institutions were found to justify their continuance as deemed-to-be-universities, while 44 held the potential for improvement. Another 44 institutions had no attributes or promise to retain their status as Universities.

The whole subject is too complex to be described here in any details. Suffice it to say the Hon’ble Supreme Court took nearly a decade to resolve the issue. It was only in 2017 that the final judgement was delivered. Ultimately once again a new committee is “re-reviewing it” and CBI is investigating some of these institutions. At the same time the so-called “Tandon Committee” (and in some instance I along with other members) were involved in related matters on the request of UGC till 2013-14. Needless to say all this required lot of our time and energy. At the moment we are working on bringing out a book on the subject.

Indian Council of Medical Research (ICMR): My long association with ICMR, initially as a recipient of research grants, later as member of the Neuroscience and Mental Health Task Forces and other committees continues unabated during the period covered in this write-up. Without detailing my participation in all such activities I will mention only few important ones. I served as Chairman of the Scientific Advisory Group for Basic Sciences including Neuroscience and later as a member of the highest policy making Committee the Scientific Advisory Board. Initially as a Member and later as it Chairman till recently I served the Central Ethics Committee of ICMR for over two decades. In this capacity I contributed to the formulation of the Ethical Guidelines for Biomedical Research on Human Subjects released

in 2000, revised in 2006, updated in 2017. In the meanwhile a draft of “The Biomedical and Health Research Regulation Bill” was submitted to the Government in 2013-14.

An equally time consuming task undertaken by a High Power Committee, with me as Chairman, comprehensively evaluated the ongoing research activities of ICMR – all its 32 Institutes, 13 technical divisions at Headquarter and extramural Centres and individual investigator driven proposals. The Final voluminous report was submitted in 2014. After a persistent effort Dr.Katoch (then DGICMR and Secretary DHR) finally got the Cabinet approval to initiate a major program on “Expanding Research Initiatives in Medical Colleges”. A Committee Chaired by me was assigned the task to implement this scheme by “Establishment of Multidisciplinary Research Units in Government Medical Colleges”. This is an ongoing activities and I continue as its chairman.

International Bioethics Committee (UNESCO): In 2001, I was a member of the Indian Delegate to UNESCO General Assembly led by Prof. M. M. Joshi who asked me to represent him at the Round Table on Bioethics and International Implications. Government of India nominated me as India’s representative to the International Bioethics Committee in 2002. In that capacity I represented the country at the Meetings of Government Experts Responsible for finalizing the (UNESCO) Draft International Declaration on Human Genetics Data at Paris in 2003. In the same year I was invited to be a Member of the Organizing Committee of an UNESCO-MHRD International Meeting on Dialogue among Civilizations. I gave a talk during Group Discussion on Science and Technology and helped in drafting the final declaration referred as “Delhi Declaration”.I was invited to be a Member of International Bioethics Committee (in my personal capacity) by D.G. UNESCO D. Koichiro Matsuura in 2004 for four years. During this period following a number of meetings at Paris, Tokyo and Nairobi IBC ultimately finalized a “Universal Declaration on Bioethics and Human Rights” which was adopted by the General Conference of UNESCO in October 2005. Besides several other discussions, ultimately a book on the subject was published to provide a new impetus to the promotion and dissemination of the Declaration to which I contributed a Chapter on Article 17: Protection of Environment, the Biosphere and Biodiversity.

Service to Government Science Departments: Department of Science and Technology (DST): I had earlier served the Department as a Member of the Science and Engineering Council (SERC); Chairman of Neurobiology and Animal Behaviour Task Force; Committee for BOYSCAST and Young Scientists etc. However, in recent years, I served on the two important Committees: Committee to draft Science and Technology Policy of the Government, released in 2003, and as Chairman of the Task Force for Promotion of Cognitive Science in the country (2008-2016). Besides screening and selecting research

grants applications, organizing some symposia and seminars to promote awareness and interest in this emerging discipline, we managed to publish a book, "Expanding Horizons of Mind Science (s) (eds) P.N. Tandon, R.C. Tripathi, N. Srinivasan, Nova Science Publishers Inc, New York 2011. In addition DST nominated me as a Member of the Institute Body of Sri ChitraTirunal Institute of Medical Research and Technology (SCTIMRT), Trivandrum (2002-2007). As already mentioned I was nominated as on the non-official Member of the Governing Body of the Indo-US S&T Forum.

Department of Biotechnology:I have been involved in many of the programmes of the Department since its inception till date. Brief mention is made of only a selected few. Activities related to the promotion of neurosciences and establishment of NBRC are already described. Others included, As a Member of the Science Advisory Council (SAC); Member of Biotechnology Research and Promotion Committee (BRPC). Chairman of the Medical Biotechnology; Chairman National Bioethics Committee; Chairman Task Force for Development of Immuno-diagnostics and Vaccines among several others for nearly two decades, provided me to promote Research and Development (R&D) in Biotechnology in general and wherever possible those related to neuroscience in particular. Mention may be made of programmes on developmental neurobiology, stem cell research, Centre of Excellence for Epilepsy Research etc. I was a Member of the Indo-US Vaccine Action Programme (VAP) since its inception for twenty years. Currently I am Member of the Technical Committee of Biotechnology Industry Research Assistance Council (BIRAC) for last more than ten years.

There were several other assignments in recent years like Membership of the Medical Education Group of the Knowledge Commission, Steering Committee on Perception Engineering, Department of Information Technology; SAC and GB, Thrombosis Research Centre Bangalore; some Committees of Ministry of Health and Family Welfare; Honorary Consultant, Principal Scientific Advisor to GOI.

During all these years academic activities were not neglected. Besides participating in teaching programmes at Neurosciences Centre, AIIMS and National Brain Research Centre I delivered nearly 40 named orations and approximately 100 invited talks and inaugural addresses at various conferences, seminars, symposia and workshops. In addition the Textbook of Neurosurgery 2nd Edition (1996) and 3rd Edition (2012) and Manual of Neurosurgery (2014) were published. Along with Prof. B. Ramamurthi I was a consulting editor of the Textbook of Operative Neurosurgery (2005). In addition one dozen monographs and books were also published (See list). Nearly one hundred papers and 50 Chapters in various books have been added to the list of publications after my superannuation.

Retrospectively having voluntarily dissociated with clinical work, I have no regrets for my decision since it helped me serve an equally dear aspiration, that is service and promotion of Science in general. Future will judge if I succeeded but at least at the moment there are indications that it was worth it. Unsolicited, unexpected, though not unappreciated, recognition through some of the most prestigious positions and awards may be an evidence that my services were worthwhile. These include the Co-Chair of Inter academy Panel of the World Academies of Sciences; Presidentship of the Indian National Science Academy; National Academy of Sciences, India; Platinum Jubilee Gold Medal of NASI, INSA Gold Medal for Promotion and Service to Science and the National Research Professorship among many others I consider myself blessed to have had unstinted support of my family, friends, colleagues and students in persuing my second career – “Service to Science and the Country”. I am grateful to the Almighty for granting me physical and mental faculties to enable me to continue to serve even at my advanced age.

ANNEX 1

Publications since Superannuation in 1990

Books and Monographs:

- Ramamurthi B, Tandon PN, Ramamurthi R, Sridhar K: Textbook of Neurosurgery (2nd Edition) B.J Churchill Livingstone, New Delhi 1996.
- Menon MGK, Tandon PN, Agarwal SS, Sharma VP (Eds) Human Genome Research: Emerging, Ethical, Legal, Social and Economic Issues. Allied Publishers, New Delhi 1999.
- Pursuit and Promotion of Science: Indian Experience .Indian National Science Academy, New Delhi 2001.
- Tandon PN: Health Scenario in India: Hope for a Better Future. Bharatiya Vidya Bhawan, Pune 2002.
- Inventing a Better Future: A Strategy for building worldwide capacity in science and technology: Inter Academy Council, 2003
- Tandon PN; Collected works of Professor V. Ramalingaswami: Indian National Science Academy and Ranbaxy Science Foundation, New Delhi 2009
- Mohan Ram HY, Tandon PN: (Eds) Science in India: Achievements and Aspirations: 75 years of the Academy. Indian National Science Academy, New Delhi 2010
- Tandon PN, Tripathi RC, Srinivasan N: (Eds) Expanding Horizons of Mind Science(s). Nova Science Publishers, Inc, New York, 2011
- Tandon PN, Ramamurthi R: (Eds) Textbook of Neurosurgery 3rd Edition: Jaypee Medical Publishers, New Delhi 2012

- Tandon PN, Muralidhar K, Gupta YK: (Eds) Use of Animals in Scientific Research and Education. Indian National Science Academy, New Delhi 2012
- Tandon PN, Ramamurthi R, Jain PK: (Eds) Manual of Neurosurgery, Jaypee Medical Publishers, New Delhi 2014
- Tandon PN: My Tryst with Bio-Medical Research. National Academy of Science, India, Allahabad 2015
- Sharma M, Tandon PN, Govil G: Festschrift Dedicated to Professor MGK Menon: National Academy of Sciences India, Allahabad. 2016
- Jana Nihar, Tandon PN, BasuAnirban (Eds) Inflammation: the Common Link in Brain Pathologies. Springer Science & Business Media, Singapore 2016
- Sahni SK, Tandon PN (Eds): Indian National Science Academy's Inspirational Journey in 75 years. Indian National Science Academy, New Delhi 2017.

Second Career: Life after Superannuation

P. N. TANDON

National Research Professor

Just prior to returning home after completing my training at the Montreal Neurological Institute, I sought Dr. Penfield's blessings and advice for future. Among other things he said, "Develop a hobby other than Neurosurgery. We spend a long time to prepare for a working life but forget there is a life beyond it". He referred to his recently published book, "The Second Career". Regrettably until then I had no hobby, there was hardly any time to spare beyond striving to achieve the academic & professional goals. All neurosurgeons know what it takes to establish a neurosurgical department. Leave aside a hobby one doesn't have even time to spend with the family. Notwithstanding these limitations, over the years I got increasingly interested in research and basic neurosciences beyond clinical neurology and neurosurgery and progressively into science in general. Hence when time came for me to retire from my faculty position unlike most others instead of persuing neurosurgery in private practice, I decided to give up the knife and persue my love for intellectual persuits. I now realise that unknowingly I was slowly driven in that direction even before I superannuated. Fortunately for me just before my retirement I was offered one of the most prestigious Fellowship recently established – the Bhatnagar Fellowship of the Council of Scientific and Industrial Research (CSIR). Besides other things it supplemented my meagre pension to take care of the modest family needs. I was the first medical man, and the best of my knowledge the only one so far, to be given this opportunity to persue my "hobby" for at least five years with liberal financial support. I was also appointed at AIIMS as an Emeritus Professor and hence could continue my association with the Department of Neurosurgery. (Photo 1)

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establishment of a NMR facility for Biomedical Research at AIIMS, a Brain Bank and a Neuro-informatic Centre at NIMHANS, Bangalore, a Primate Behaviour Lab at CDRI, Lucknow.

Service to Neuroscience Institutions:

I served on various academic and administrative statutory committees of various neuroscience institutions like National Institute of Mental Health and Neurosciences, Bangalore, SCTIMER, Thiruvananthapuram, SGPGI Lucknow, IHBAS Delhi, Centre for Behavioural and Cognitive Sciences University of Allahabad, Neurobiology Centre, Jiwaji University Gwalior in addition to AIIMS and NBRC. The limited scope of this write up does not permit any further details. Suffice it to say these assignments permitted cross-fertilization of ideas aimed at promoting neuroscience education and research in the country.

In addition to these over the years I was nominated to serve on the Governing Body or the Science Advisory Committee (as a member or Chairman) of several other scientific institutions e.g. Central Drug Research Institute (CDRI) Lucknow, Centre for Cellular and Molecular Biology (CCMB) Hyderabad, National Aids Research Institute (NARI) Pune, National Institute of Immunology (NII) New Delhi, Institute of Life Sciences (ILS) Bhubaneswar, Translational Health Science and Technology Institute (THSTI) Faridabad, ICMR – NIC Centre for Biomedical Research, New Delhi, Indian Institute of Advanced Research, Shimla, Nuclear Science Centre New Delhi, Patel Chest Institute, New Delhi, Indian Institute of Advance Study, Gandhinagar. This served the purpose of providing a broader view of Indian S&T and an opportunity to help its growth. Of course this often required to first update one's own knowledge to permit desired monitoring and mentoring.

Indian Academy of Neurosciences: I was inducted as an Honorary Fellow of the Academy in 1986. Over the years I was frequently invited as the Chief Guest to Inaugurate its Annual Conference or as an Invited Speaker and in that capacity as a member of the Council. In 2006 I was elected President for two years. In 2003 I was awarded the B K Bachhawat Life Time Achievement Award. Once again the Academy felicitated me for my contributions to neurosciences at its Annual Conference in Cochin in 2008. I contributed a Chapter on “Neurosciences in India: An overview”, to a book edited by Prof. B. N. Dhawan and P. K. Seth in 2009. This chapter updated an earlier publication on the subject by me with Prof. M. Gourie Devi in Annals of Indian Academy of Neurology in 2000. (Photo (3a & b) Indian Academy of Neuroscience. Annual Conference).

Service to Science through National Science Academies. Indian National Science Academy (INSA).

I was elected President for 1991-2, having served earlier as Secretary (1981-1984) and Vice- President (1989-1990). I was the first clinician to be so honored (Photo 5). This entailed an onerous responsibility to recognize reward and promote science in India, project Indian Science aboard and interact and collaborate with scientific academies around the world. In this capacity I had to spend a fair amount of time in organizing various national and international activities in pursuance of the objectives of the academy. Besides the usual functions of such an academy, only one of the most unique event is being mentioned here since it projected the academy and Indian science on a high pedestal globally. In turn it helped in establishing a formal organization for scientific academies globally to define, discuss and laydown policy guidelines for the role of S&T on regional and global issues of societal relevance. It all started with a proposal by the Royal Society London, US National Academy of Sciences and the Royal Swedish Academy of Science to hold an inter-academy conference on Population. Representing INSA at the Consultative meeting of Ten academies at London, my proposal to hold such a conference at New Delhi was unanimously approved. The Population Summit in which, for the first time in the history of science, 55 science academies of the world participated, to arrive at a consensus statement on this complex and sensitive issue. (Photo 5)

I was assigned the responsibility of presenting the collective views of this Conference first at the Prep Com III of the UN International Conference on Population and Development (ICPD) at New York and then at a plenary session of the ICPD at Cairo in 1994. Once again it was first time in the history that collective views of the science academies were heard at a UN Conference.

As a consequence of this success the academies decided to establish a formal association for continued interaction which gave birth to Inter Academy Panel (IAP). Needless, to say my intimate association with INSA continues up-to-date. Along with other colleagues over the years. I participated in a number of Committees, Seminar, Symposia and Workshops dealing variety of subjects of national importance. I edited a series of books (see appendix) related to Indian S&T and the Academy. I was awarded the INSA Gold Medal for Promotion and Service to Science in 2011.

Inter Academy Panel (IAP): The Steering Committee of the Population Summit met once again during the Diamond Jubilee Celebrations of INSA. At this time a final decision was taken to establish IAP as a formal organization. I was requested to Co-Chair this body along with Dr. Sherry Rowland (NL) Foreign Secretary, US National Academy of Sciences soon more science academies joined it. IAP was requested by organizers of the UN Conference on Human Settlements – (Habitat II) to provide inputs on behalf of the science academies. We prepared a consensus statement on “S&T and Future of Cities”

which was presented by me and Sherry Roland at a Plenary Session of the UN Conference at Istanbul, Turkey in 1996. The panel decided to take up the issue of Sustainable Development for its deliberations. For this purpose an international steering committee was constituted which organized discussion groups in different parts of the world – Washington (1996), Cairo (1999), Budapest (1999), Trinidad & Tobago (1998), Trieste (1998), Rio-de Janeiro (1997) – ending at a major conference at Tokyo in May 2000 resulting in a consensus statement, which was widely circulated by all member academies now numbering nearly one hundred. My term as Co-Chair ended at the end of the Conference. I was invited to give a plenary talk at the IAP General Assembly at Mexico (2003), where I delivered a talk on “Genesis and Evolution of IAP”. A historical album prepared by me was released. (Ref: Tandon PN. The Inter-Academy Panel (IAP) and the Inter – Academy Council (IAC). Current Science 79, 101-102, 2000).

Inter Academy Council (IAC): Following a number of discussions between Bruce Alberts, President US. NAS. and myself, IAP decided to establish an executive arm – the Inter Academy Council – with fifteen Presidents of the member academies constituting its Governing Board. I along with a representative each from the French, Brazilian and German academies were charged with the responsibility of finalizing its constitution. IAC was finally established in 2000 at the end of the IAP conference at Tokyo. The first task undertaken by IAC was to produce a studied report on “A Strategy for Building Worldwide capacity in Science and Technology for the 21st Century”. A twelve member Study Panel, in which I was a member, was constituted in 2001. It held several meetings in different parts of the world and finally a draft report was submitted to IAC in 2003, which after an extensive external review was published in 2004 for release worldwide. Since this first report IAC has produced several such reports on subjects of global interest.

Indo- US Science and Technology Forum: Was constituted to utilize the remaining rupee fund from the PL480 scheme to promote Indo-US collaboration in S&T. I was nominated by Department of Science and Technology, GOI as one of the non-official members of its newly created Governing Body in 2001 for 5 years. The Forum met at New Delhi and Washington alternately to discuss policy issues of concern to the two countries and identify useful activities. In addition it sponsored a series of Seminars and Workshops of mutual interest both in India and the US. The first Workshop under its aegis on Research and Development in Genomics covering Health, Agriculture and Industry was held at Bangalore where I delivered an invited talk.

A new programme – Indo-US Frontier of Science Initiative was started to encourage multidisciplinary symposia, involving mid-career scientists to be held alternately in India and US. The first such programme in India was held at Bangalore. Goverdhan Mehta and I were the Coordinators. It was followed by an Indo-US Round Table on Drug Development held at Hyderabad where I participated. For several years I served as a member of the Organizing Committee of the Indo-US Frontier of Science Program me, which is now a well-established organization for many such bilateral activities.

The National Academy of Sciences India (NASI): Having been elected a Fellow of this oldest science academy in the country in 1976 and served in its council since 1983 till recently. I was elected its President 1997-98. My active participation in its activities continues up-to-date in various capacities. Limitation of this write up prevents enumerating this in details. My contributions to the Academy, and through it to Science in India, was recognized by the award of its most prestigious Fellowship – The Megh Nad Saha Fellow (2000-2005) and NASI President’s Platinum Jubilee Gold Medal (2006). The main focus of this Academy is concerned with S&T for Societal Issues and promoting Science education among the young.

The World Academy of Sciences (TWAS): I was elected a Fellow of TWAS in 1992. Between 1996 and 1998 I served as the Chairman of the Medical and Health Sciences Committee. Originally named Third World Academy of Science it is now christened as the World Academy. Its main objective is to promote S&T capacity building in the developing countries. It is playing a commendable role in this direction. During these years I also served as a nominated, Member Governing Body Indian Council of Social Science Research (ICSSR) 2002-2004 and Indian Council of Philosophical Research (ICPR) 2003-2005.

Service to Various Science Departments and Councils

Medical Council of India (MCI): Owing to the growing public criticism of the functioning of the MCI the Hon’ble Supreme Court of India, by its Order dated 20.11.2002, appointed a “committee of four eminent doctors namely Dr. N. Rangabhashyam of Chennai, Prof. P. N. Tandon of New Delhi, Dr. S. K. Bhansali of Mumbai and Dr. (Mrs) S. Kantha of Bangalore as members of an Ad-Hoc Committee to assist and monitor the work of Medical Council of India”. The Committee which was expected to work for six to eight months really served for nearly six years. It met at least once a month, reviewed the current programmes and practices in MCI, participated in all its regulatory functions, suggested improvements in its procedures for inspection and approval of the proposed establishment of new

medical colleges and the status of the existing ones. Detailed reports were prepared from time to time and submitted to the Hon'ble Supreme Court. In this brief write-up it is neither necessary nor possible to provide the details of the work carried out, but at least during the period the Ad-Hoc Committee functioned there was no public hue and cry about the Council. However, it is also true that though appointed by the Hon'ble Supreme Court the several undesirable aspects of MCI functioning vis-à-vis the Government, state High Courts and private medical colleges pointed out in our report were obviously not taken note of or consciously ignored by all concerned. It is not surprising that some of these maladies have once again come to light recently.

The University Grants Commission (UGC): I was nominated as a Member of UGC in June 2003 for 3 years by the Ministry of Human Resource Development (MHRD). Besides the routine functions it entailed additional responsibilities as Member/Chairman of a host of other sub-committees like Committee on Research in Universities, Committee for Selection of Universities with Potential for Excellence, Screening Committee for Grant of Deemed University Status, Committee to Revise the Guidelines for Approval of Deemed Universities etc. It was here that we became aware of how commercially motivated individual entities attempted to manipulate the system and misused it to establish sub-standard “teaching shops” in the name public service. Soon large number of such fraudulently established institutions – so called Deemed-to-be-Universities came up all over the Country. (See Below)

A Committee to Review the Functioning of the “Deemed-to-be-Universities: This malady had acquired such vicarious proportions, adversely affecting the whole higher education system in the country, that Ministry of Human Resource Development appointed a Committee to review these institutions in July 2009. Thus three years after completing my term as a Member of UGC, I found myself (along with three other very distinguished educationists Profs. Anandkrishnan, Goverdhan Mehta, Mrinal Miri) as a member of this Committee, which for some unexplained reason came to be known as the “Tandon Committee”. A total of 126 such institutions were reviewed meticulously utilizing well defined criteria over three months. Only 38 institutions were found to justify their continuance as deemed-to-be-universities, while 44 held the potential for improvement. Another 44 institutions had no attributes or promise to retain their status as Universities.

The whole subject is too complex to be described here in any details. Suffice it to say the Hon'ble Supreme Court took nearly a decade to resolve the issue. It was only in 2017 that the final judgement was delivered. Ultimately once again a new committee is “re-reviewing it” and CBI is investigating

some of these institutions. At the same time the so-called “Tandon Committee” (and in some instance I along with other members) were involved in related matters on the request of UGC till 2013-14. Needless to say all this required lot of our time and energy. At the moment we are working on bringing out a book on the subject.

Indian Council of Medical Research (ICMR): My long association with ICMR, initially as a recipient of research grants, later as member of the Neuroscience and Mental Health Task Forces and other committees continues unabated during the period covered in this write-up. Without detailing my participation in all such activities I will mention only few important ones. I served as Chairman of the Scientific Advisory Group for Basic Sciences including Neuroscience and later as a member of the highest policy making Committee the Scientific Advisory Board. Initially as a Member and later as it Chairman till recently I served the Central Ethics Committee of ICMR for over two decades. In this capacity I contributed to the formulation of the Ethical Guidelines for Biomedical Research on Human Subjects released in 2000, revised in 2006, updated in 2017. In the meanwhile a draft of “The Biomedical and Health Research Regulation Bill” was submitted to the Government in 2013-14.

An equally time consuming task undertaken by a High Power Committee, with me as Chairman, comprehensively evaluated the ongoing research activities of ICMR – all its 32 Institutes, 13 technical divisions at Headquarter and extramural Centres and individual investigator driven proposals. The Final voluminous report was submitted in 2014. After a persistent effort Dr. Katoch (then DGICMR and Secretary DHR) finally got the Cabinet approval to initiate a major program on “Expanding Research Initiatives in Medical Colleges”. A Committee Chaired by me was assigned the task to implement this scheme by “Establishment of Multidisciplinary Research Units in Government Medical Colleges”. This is an ongoing activities and I continue as its chairman.

International Bioethics Committee (UNESCO): In 2001, I was a member of the Indian Delegate to UNESCO General Assembly led by Prof. M. M. Joshi who asked me to represent him at the Round Table on Bioethics and International Implications. Government of India nominated me as India’s representative to the International Bioethics Committee in 2002. In that capacity I represented the country at the Meetings of Government Experts Responsible for finalizing the (UNESCO) Draft International Declaration on Human Genetics Data at Paris in 2003. In the same year I was invited to be a Member of the Organizing Committee of an UNESCO-MHRD International Meeting on Dialogue among Civilizations. I gave a talk during Group Discussion on Science and Technology and helped in

drafting the final declaration referred as “Delhi Declaration”. I was invited to be a Member of International Bioethics Committee (in my personal capacity) by D.G. UNESCO D. Koichiro Matsuura in 2004 for four years. During this period following a number of meetings at Paris, Tokyo and Nairobi IBC ultimately finalized a “Universal Declaration on Bioethics and Human Rights” which was adopted by the General Conference of UNESCO in October 2005. Besides several other discussions, ultimately a book on the subject was published to provide a new impetus to the promotion and dissemination of the Declaration to which I contributed a Chapter on Article 17: Protection of Environment, the Biosphere and Biodiversity.

Service to Government Science Departments: Department of Science and Technology (DST): I had earlier served the Department as a Member of the Science and Engineering Council (SERC); Chairman of Neurobiology and Animal Behaviour Task Force; Committee for BOYSCAST and Young Scientists etc. However, in recent years, I served on the two important Committees: Committee to draft Science and Technology Policy of the Government, released in 2003, and as Chairman of the Task Force for Promotion of Cognitive Science in the country (2008-2016). Besides screening and selecting research grants applications, organizing some symposia and seminars to promote awareness and interest in this emerging discipline, we managed to publish a book, “Expanding Horizons of Mind Science (s) (eds) P.N. Tandon, R.C. Tripathi, N. Srinivasan, Nova Science Publishers Inc, New York 2011. In addition DST nominated me as a Member of the Institute Body of Sri Chitra Tirunal Institute of Medical Research and Technology (SCTIMRT), Trivandrum (2002-2007). As already mentioned I was nominated as on the non-official Member of the Governing Body of the Indo-US S&T Forum.

Department of Biotechnology: I have been involved in many of the programmes of the Department since its inception till date. Brief mention is made of only a selected few. Activities related to the promotion of neurosciences and establishment of NBRC are already described. Others included, As a Member of the Science Advisory Council (SAC); Member of Biotechnology Research and Promotion Committee (BRPC). Chairman of the Medical Biotechnology; Chairman National Bioethics Committee; Chairman Task Force for Development of Immuno-diagnostics and Vaccines among several others for nearly two decades, provided me to promote Research and Development (R&D) in Biotechnology in general and wherever possible those related to neuroscience in particular. Mention may be made of programmes on developmental neurobiology, stem cell research, Centre of Excellence for Epilepsy Research etc. I was a Member of the Indo-US Vaccine Action Programme (VAP) since its

inception for twenty years. Currently I am Member of the Technical Committee of Biotechnology Industry Research Assistance Council (BIRAC) for last more than ten years.

There were several other assignments in recent years like Membership of the Medical Education Group of the Knowledge Commission, Steering Committee on Perception Engineering, Department of Information Technology; SAC and GB, Thrombosis Research Centre Bangalore; some Committees of Ministry of Health and Family Welfare; Honorary Consultant, Principal Scientific Advisor to GOI.

During all these years academic activities were not neglected. Besides participating in teaching programmes at Neurosciences Centre, AIIMS and National Brain Research Centre I delivered nearly 40 named orations and approximately 100 invited talks and inaugural addresses at various conferences, seminars, symposia and workshops. In addition the Textbook of Neurosurgery 2nd Edition (1996) and 3rd Edition (2012) and Manual of Neurosurgery (2014) were published. Along with Prof. B. Ramamurthi I was a consulting editor of the Textbook of Operative Neurosurgery (2005). In addition one dozen monographs and books were also published (See list). Nearly one hundred papers and 50 Chapters in various books have been added to the list of publications after my superannuation.

Retrospectively having voluntarily dissociated with clinical work, I have no regrets for my decision since it helped me serve an equally dear aspiration, that is service and promotion of Science in general. Future will judge if I succeeded but at least at the moment there are indications that it was worth it. Unsolicited, unexpected, though not unappreciated, recognition through some of the most prestigious positions and awards may be an evidence that my services were worthwhile. These include the Co-Chair of Inter academy Panel of the World Academies of Sciences; Presidentship of the Indian National Science Academy; National Academy of Sciences, India; Platinum Jubilee Gold Medal of NASI, INSA Gold Medal for Promotion and Service to Science and the National Research Professorship among many others I consider myself blessed to have had unstinted support of my family, friends, colleagues and students in pursuing my second career – “Service to Science and the Country”. I am grateful to the Almighty for granting me physical and mental faculties to enable me to continue to serve even at my advanced age.

ANNEX 1

Publications since Superannuation in 1990

Books and Monographs:

- Ramamurthi B, Tandon PN, Ramamurthi R, Sridhar K: Textbook of Neurosurgery (2nd Edition) B.J Churchill Livingstone, New Delhi 1996.

- Menon MGK, Tandon PN, Agarwal SS, Sharma VP (Eds) Human Genome Research: Emerging, Ethical, Legal, Social and Economic Issues. Allied Publishers, New Delhi 1999.
- Pursuit and Promotion of Science: Indian Experience .Indian National Science Academy, New Delhi 2001.
- Tandon PN: Health Scenario in India: Hope for a Better Future. Bharatiya Vidya Bhawan, Pune 2002.
- Inventing a Better Future: A Strategy for building worldwide capacity in science and technology: Inter Academy Council, 2003
- Tandon PN; Collected works of Professor V. Ramalingaswami: Indian National Science Academy and Ranbaxy Science Foundation, New Delhi 2009
- Mohan Ram HY, Tandon PN: (Eds) Science in India: Achievements and Aspirations: 75 years of the Academy. Indian National Science Academy, New Delhi 2010
- Tandon PN, Tripathi RC, Srinivasan N: (Eds) Expanding Horizons of Mind Science(s). Nova Science Publishers, Inc, New York, 2011
- Tandon PN, Ramamurthi R: (Eds) Textbook of Neurosurgery 3rd Edition: Jaypee Medical Publishers, New Delhi 2012
- Tandon PN, Muralidhar K, Gupta YK: (Eds) Use of Animals in Scientific Research and Education. Indian National Science Academy, New Delhi 2012
- Tandon PN, Ramamurthi R, Jain PK: (Eds) Manual of Neurosurgery, Jaypee Medical Publishers, New Delhi 2014
- Tandon PN: My Tryst with Bio-Medical Research. National Academy of Science, India, Allahabad 2015
- Sharma M, Tandon PN, Govil G: Festschrift Dedicated to Professor MGK Menon: National Academy of Sciences India, Allahabad. 2016
- Jana Nihar, Tandon PN, Basu Anirban (Eds) Inflammation: the Common Link in Brain Pathologies. Springer Science & Business Media, Singapore 2016
- Sahni SK, Tandon PN (Eds): Indian National Science Academy's Inspirational Journey in 75 years. Indian National Science Academy, New Delhi 2017.

Dr S. Kalyanaraman – April 2018 :

Twenty years have passed since the first volume of biographical sketches of past presidents of NSI was published. These twenty years have been a smooth transition, stage by stage, from a very clinical and operative neurosurgical practice for fifteen hours a day to a life of outpatient consultations only for three hours a day. Such consultations are often for a second, third or even fourth opinion for difficult neurological and neurosurgical problems with multiple comorbidities. After building up a very good teaching department in Apollo Hospitals recognised for training for three candidates for DNB (Neurosurgery) every year, I handed over the administration to Prof J Reginald.



I gave up attending to emergencies when I was seventy-five and I stopped operating when I reached the age of eighty years. During my tenure of two decades in Apollo hospitals, I encouraged subspecialisation in Neurosurgery, I referred my private cases to many of my junior colleagues who had become senior consultants with very good clinical acumen and operative surgical experience. Cerebrovascular surgery, paediatric neurosurgery, spinal surgery and stereotaxic radiosurgery developed very well in Chennai. It is a matter of great pride and joy for me that my former students and assistants have become heads of departments and senior consultants in neurology and neurosurgery in various medical college hospitals and tertiary care private hospitals.

During the past two decades, fifteen different organisations and institutions have thought it fit to honour me with awards recognizing my lifetime contributions. I dedicate these awards to my family members and numerous colleagues who always helped me in my endeavours to help patients. Perhaps the one award I prize most is the Acharya Seva Rathnam Award conferred by His Holiness Shri Shankaracharya Swamiji of Sri KanchiKamakoti Mutt. As neurosurgeons, we have always recognised that surgical success is not only governed by the surgical techniques but also influenced by various other factors. During my post retirement years I have realised this more and more. Compliance with doctors' instructions and life style modifications are very vital in the cure of patients. Bearing this in mind, I have prepared small pamphlets on the medical surgical and other aspects of common conditions like seizures, post traumatic sequelae, spondylosis, headache and Parkinsonism. I have found them very useful to make patients follow the doctors' instructions properly and achieve maximum possible relief from their symptoms.

At the age of eighty-four, I find great satisfaction, happiness and peace of mind in devoting several hours every day to prayers and pooja at home and visits to temples and holy places.



The Famous Five : S Kalyanaraman, B Ramamurthi, V Balasubramaniam, K. Jagannathan & G Arjundas



Mrs. Kalyanaraman, Prof Ramamurthi, Prof Kalyanaraman and Dr. K. Ganapathy @
Panmunjom Seoul 1991 AASNS conference

Prof Gourie Devi

As Director/Vice Chancellor of National Institute of Mental Health and Neuro Sciences (1997 to 2002)

Continued from the narrative published in "Evolution of Neurosciences in India" ..page 282.

National Institute of Mental Health and Neuro Sciences became a Deemed University in 1994 under the stewardship of Dr.SM Channabasavanna as the Director/Vice Chancellor and I was appointed as the Dean. To conform to the rules and regulations of University Grants Commission, major changes in administrative , academic and educational structure were made with considerable time and effort. These administrative responsibilities further increased with my appointment as Director /Vice Chancellor of NIMHANS in 1997, which also provided an opportunity and a challenge to take the institute to further heights and fulfill the vision and dreams of former Directors, Dr.RM Varma, Dr.GN Narayana Reddy and Dr.SM Channabasavanna.



Through a series of measures after collective deliberation and a thorough analysis of the existing situation, keeping in mind the current developments and envisaging the future perspectives in Mental Health and Neurosciences, thrust areas were identified. To achieve the defined goals, major restructuring with strengthening of infrastructure including computers and connectivity, up gradation and addition of equipments and introduction of cutting edge technology was done. New training programs to create a critical mass of specialists in MPhil Neurosciences, Post doctoral Fellowship Programs in Neuropathology and Neuroanesthesia, DM in Neuroradiology and enhancement of postgraduate seats in neurology, neurosurgery and psychiatry, strengthening of molecular genetics and molecular neurobiology were some of the important measures to galvanise the academic and research activities were established. Steps were initiated with Medical Council of India to start DM in Child Psychiatry. To strengthen and create specialized clinical facilities, Stroke unit, Advanced centre for Ayurveda in Mental Health and Neurosciences and Child psychiatry block were created. Research

collaboration with Jawaharlal Nehru Centre for Advanced Research (JNCAR), National Centre for Biological Sciences (NCBS), Tata Institute of Fundamental Research and Defense Bioengineering and Electromedical laboratory (DEBEL) were facilitated through Memorandum of Understanding.

There was a long felt need of facilities for holding conferences at the institute, hence a state –of- art Convention Centre with adequate seating capacity and excellent infrastructure for audio-visual system was constructed. The convention centre was inaugurated in September 2002 by Dr.AB Maalaka Raddy, Hon'ble Minister of Medical Education, Government of Karnataka. I will be failing in my duty if I do not record the passionate efforts and commitment of Prof.Ramakrishna, an international expert in acoustics, for his advice and guidance. With development in all spheres which was possible due to overwhelming and unstinted support of faculty and staff, I retired from my 'Karma Bhoomi' in November 2002, with the satisfaction that NIMHANS is one of the finest institutions for delivery of clinical services, high standard of teaching and training and for conducting research ranging from public health to clinical, molecular and neurobiological aspects in the field of Mental Health and Neuro Sciences and will script a new phase in the history of neurosciences in the country. I am confident that the rich legacy of NIMHANS will be carried forward by the future Directors and the faculty.

Role at National level

It was possible to contribute to the development of neurological sciences in India as Expert member of numerous research organisations of Government of India, to name a few; (i) Programme Advisory Committee in Neurobiology, Department of Science and Technology (DST); (ii) Task Force on Medical Biotechnology, Immuodiagnosics, Vaccines and Neurosciences, Department of Biotechnology (DBT); (iii) Medical Sciences Research Committee, Council of Scientific & Industrial Research (CSIR); (iv) Council of the National Academy of Medical Sciences; (v) Advisor for Neurological Research and Chairperson of Core Committee of Neurological Sciences, Indian Council of Medical Research (ICMR) and (vi) Management Council of the Society for Biomedical Technology, Defense Research and Development Organisation (DRDO),

Ministry of Defense. I am continuing to function in many of the committees as Expert Member.

As a component of activities of National Neuroscience Information Centre established by Department of Science and Technology at NIMHANS, I took the initiative to develop "Neurology India on CD" covering full text of articles published in the journal 'Neurology India' during 45 years from 1953 to 1997 expending considerable effort in retrieving old issues of the journal. As one of the founding members of the Indian Academy of Neurology and the first Vice President, I played a critical role in the formation and growth of this society. A new journal, Annals of Indian Academy of Neurology, was launched by the Indian Academy of Neurology and I had the honour of being the Founding Editor. From giving a name to the journal, registration, soliciting authors, trying to attract contributions and nurturing the newborn was an exacting task, which became possible with the energetic effort of the Associate editors, Dr.Satishchandra and Dr.Taly.

Role at International level

I was (i) **Vice-Chairperson** of "Standards for Neurological Care and Technology Committee", World Federation of Neurology; and **ExpertMember** of a number of academic bodies namely: (ii) World Federation of Neurology Research Committee on Neuroepidemiology; (iii) World Federation of Neurology Research Group on Neuromuscular Diseases; (iv) World Federation of Neurology Research Group on Tropical Neurology; (v) International Federation of Societies for Electroencephalography and Clinical Neurophysiology; (vi) Board on Global Health, Nervous System Disorders in Developing Countries, Institute of Medicine, Washington; (vii)World Health Organisation Expert Advisory Panel on Neurosciences, 2004 till date; (viii) Fogarty International Brain Disorder Review Committee, National Institute of Health, USA, 2003 to 2010; (ix) World Health Organisation International Advisory Group for the Revision of ICD -10 Diseases of the Nervous System, 2009 to 2015 and (X)Advisory Committee for development of guidelines for management of Guillain-Barre syndrome in the context of Zika virus 2016. Through these various international organisations I was able to reflect the views of Indian neurologists and also facilitate

international collaborative research. I am continuing to function in many of the committees as Expert Member.

Awards, Honours, Distinctions

I am a Fellow of a number of Academic bodies, National Academy of Medical Sciences, Indian Academy of Neurology, Andhra Pradesh Akademi of Sciences and National Academy of Sciences. More than 30 orations in prestigious universities and Academic Organisations in India and abroad have been delivered. DSc (Honoris Causa) was conferred by NTR University of Health Sciences, Andhra Pradesh and I was also a recipient of notable awards, some of them are: (i) Basanti Devi Amir Chand Prize of Indian Council of Medical Research, in recognition of contribution to the field of Neurology and Neuroepidemiology in 1997; (ii) Om Prakash Bhasin Award by Shri Om Prakash Bhasin Foundation Trust for outstanding contributions in the field of Health and Medical Sciences in 1998; and (iii) Dr.B.C.Roy Award in the highest category of Eminent Medical Person, Medical Council of India, 2001.

Life time Achievement Awards have been conferred by Institutions and Professional Associations: National Institute of Mental Health and Neuro Sciences, 2011; International Congress on Neurology and Rehabilitation, 2012; NeuCon Lifetime Achievement Award, 2013, Delhi Neurological Association, 2016, BK Bachawat Lifetime Achievement Award of Indian Academy of Neurosciences, 2016 and Indian Epilepsy Society 2017.

It was extremely gratifying that International Federation of Clinical Neurophysiology has conferred the prestigious "Kugelberg Award Lecture" for outstanding contributions to Clinical Neurophysiology; award will be given at the 31 International Congress of Clinical Neurophysiology, Washington, USA, in May 2018.

Activities Post Retirement, 2002 onwards

It was a major decision to move from Bangalore to New Delhi due to personal reasons. The appointment as Emeritus Professor of Neurology for life, at the Institute of Human Behaviour and Allied Sciences, by the Government of National Capital Territory (NCT) of Delhi in 2003, has given me a unique opportunity to pursue research and

teaching. I also have an assignment from 2003 of Senior Consultant Neurologist and Chairman of the Department of Clinical Neurophysiology Department at Sir Ganga Ram hospital at New Delhi. As Advisor for Neurological Research and Chairperson of Core Committee of Neurological Sciences, Indian Council of Medical Research, I continue to play an active role in promoting research in Neurological Sciences in the country and the assignments in World Health Organisation and National Institute of Health, USA provided a global platform to address practice, policy, trends and perspective of public health and research issues in the domain of neurological sciences.

The clinical and research contributions have been documented in 180 publications in peer reviewed journals and many chapters in books. At Sir Ganga Ram Hospital in New Delhi, I continue to see patients, teach students and do research particularly in Motor neuron diseases and Monomelic Amyotrophy with emphasis on clinical and genetic profiles.

It is just not only professional commitments, but I am also very interested in sports and play badminton, table tennis, have keen interest in photography, and enjoy listening to carnatic classical music and playing veena.

As I come to the end of my narrative, I wish to respectfully acknowledge the guidance and impact of my mentors Prof. Baldev Singh, Lord John Walton, Prof. PK Thomas and Prof. PN Tandon in my pursuit of seamlessly blending clinical, academics and research in Neurosciences. There are no words to convey my appreciation to colleagues and students who formed my family in these endeavours. Trials, tribulations and challenges which had to be faced to achieve the envisaged goals, hopefully may provide guidance and solace to some young aspiring neurologists. I wish to end this narrative with the words of wisdom from Upanishad:

***You are what your deep, driving desire is;
As your desire is, so is your will;
As your will is, so is your deed;
As your deed is, so is your destiny.***

.....Brihadaranyaka Upanishad IV. 4.5

Prof. Sambasivan

Prof. M. Sambasivan, one of the great teachers in Neurosurgery in India, passed away on 19th May 2018 at the age of 82 years after a brief illness. He was an unusual person, who received great accolades from the public, his students, his peers and the professional bodies, both in India and abroad.



Born in a very orthodox Brahmin family on 1st May 1936, he had his Sanskrit and Vedic education from his early childhood along with his routine school studies. He was a very bright student in both Vedic and school studies, aggressively active in extracurricular activities including sports, martial arts, National Cadet Corps and social service associations. His academic achievements were brilliant. Though he wanted to take up Medicine after his preliminary college studies, which he passed with distinction, his lawyer-father suggested to him to pursue his science graduation and to continue his Vedic studies so that he would become a traditional 'Tantri'. After passing his Bachelor of Science degree, scoring the first rank, he joined in the newly opened Medical College in Trivandrum in 1955, the 5th batch of MBBS, promising his father that he would pursue his Vedic studies uninterrupted [Figure 1].

His passed his MBBS with more than half a dozen gold medals (in various subjects like Surgery, Obstetrics, and basic sciences) and secured the prize for the best outgoing student in 1959. It was during his student days that he rose to the very top of National Cadet Corps (NCC) in Kerala and led the Kerala contingent of NCC at the Republic day parade in New Delhi [Figure 2] and [Figure 3].

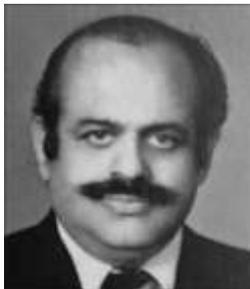


Figure 1:
Prof. M.Sambasivan in
1971



Figure 2:
Prof. M. Sambasivan as a
Vedic Pundit in 2015



Figure 3:
Prof. M. Sambasivan as an
NCC Commandant

His flair for surgery was keen and he devoted most of his undergraduate period in the surgical wards and operating theatres, where he learnt the art and practice of surgery

under doyens like Prof. R. Kesavan Nair and Prof. Raman Nair (the first pediatric surgeon in India). Both the teachers were confident of his surgical skills and he was allowed to do minor surgeries even during the time he was only a house surgeon. After his MBBS (Bachelor of Medicine, Bachelor of Surgery) course, he joined as a Tutor in General Surgery in Trivandrum Medical College in 1962. It was during this period that Prof. K. Mahadevan Pillai (the first neuro-radiologist in India) was brought in as a Professor of Radiology in this College on a contract basis. Dr. Sambasivan became a willing assistant to him and learned angiographic studies by catheterizing major vessels. He was quite deft with his hands and soon became a sought-after, young, surgeon-radiologist who was often called to conduct angiographic studies on vascular lesions of the brain, heart and kidneys, although he was only a MS Surgery student then.

He passed his primary Fellowship of the Royal College of Surgeons (FRCS), conducted in Calcutta in March 1963 but did not go to London although he was offered some help by Sir Clement Price and Prof. RJ Last. He passed his Master of Surgery (MS) in General Surgery in 1964 and proceeded to Christian Medical College, Vellore for pursuing his MS Neurosurgery. The taciturn professor, Dr. Jacob Chandy became his guru. When he appeared for his MS (Neurosurgery) examination, the external examiners, Prof. B. Ramamurthi, Prof. Ram S. Ginde and Prof. R. M. Varma were only too happy to confer on him a distinction and a gold medal for his MS (Neurosurgery) degree. [Figure 4] and [Figure 5].



Figure 4:
Prof. M. Sambasivan with
Prof. Jacob Chandy in 1983



Figure 5:
Prof. M Sambasivan
and Prof. TK Ghosh

He returned to Trivandrum in 1966 to organize a small neurosurgical unit with 2 beds. In doing so, he had to overcome many service hassles, organizational hiccoughs and paranoiac feeling against cranial surgery. He was all alone in his unit without even a single assistant or houseman. Though there were plenty of neurological and neurosurgical outpatients, his surgical colleagues refused to refer patients to him.

As a child, I have seen him many times even before his entry to Medical College as both of us are from Trivandrum City. He would come with his father to a famous temple in my native place, Karamana, to chant Vedic Houtrams when his father would do the priestly duties there. Even during his adolescence, he was known as a brilliant student leader in NCC and as a very good equestrian.

But our friendship started rather abruptly in 1966 when I was pursuing my Doctor of Medicine (MD) Medicine course. I was in the first medical unit of Prof. K N Pai when I admitted from the casualty, a deeply comatose middle-aged man, almost dying. There were no definite lateralizing signs and we were almost certain he would die soon. It was by about 6 pm when Dr. Sambasivan came to the ward and asked me what that patient had. I did not know that it was his routine then to do an extensive search of all the wards to see if there was any patient worth transferring to his side. He made a quick examination of the patient and asked me how I planned to proceed.

The ward was over crowded already and there were at least five or six more emergencies waiting in the casualty to be admitted in the ward. I was curious to see what he would do with this patient and hence wrote the transfer note immediately. He took the patient directly to the radiology room, coaxed an unwilling radiographer to set up the equipment for an angiogram. A percutaneous carotid angiogram was done with the only autoclaved set available in the ward. It had only a thick lumbar puncture needle and some syringes and cotton. The deftness of his work amazed me and after seeing the first picture, he asked me to come and perform the cross compression of the opposite carotid artery so that the cross flow and the blood vessels of both sides could be visualized.

The apparently 'hurry less- hurry' in transferring the patient to the operating theatre further surprised me. He asked me if I had had any surgical training, to which I agreed. With an almost hostile theatre sister and neither an anesthetist nor an assistant (other than me, a postgraduate [PG] student in Medicine!) he coaxed the relatives of the patient to give the consent for surgery and drained a large subdural hematoma under local anesthesia. Within minutes, the respiration of the patient was better, and in an hour's time, he opened his eyes. This, in 1966, was a miracle of sorts in Trivandrum, brought on by a simple evacuation of a massive subdural clot. This apparently minor event made a host of Medicine PGs his ardent admirers.

As in the case of any primitive neurosurgical set up with no investigational facility, the surgical victories he achieved, were admixed with occasional failures as well. In an unsympathetic environment, these failures were highlighted. His surgical colleagues were often not too happy to see his popularity among the medical students in general and people at large. The phenomenal energy of this surgeon was seen to be believed. Even during the heights of his professional work, he was quite keen to practice Vedic rites for which he would be ready by 4.30 am onwards. After his early morning studies, he would start his hospital work, which would go on some times until the late hours. His wife would lament that even his Vellore days under the hard task master Prof. Jacob Chandy had been better and easier. The almost daily emergency surgeries, routine work of admitted patients, seeing the outpatient and referred patients with no trained assistants formed an assiduous task. Though all patients who sustained road traffic accidents were admitted under the department of General Surgery in those days, he had to manage them daily by going to different wards. It took a few months before an MBBS tutor was allotted to him on a permanent basis.

Such was his stupendous effort that among the super-specialties, Neurosurgery was the first to get an independent status in Kerala. He was promoted soon as Professor of Neurosurgery and by then a couple of his assistants returned with MCh Neurosurgery from Christian Medical College, Vellore. MCh training in Trivandrum Medical College was started in 1979.

Among the routine emergencies, referred mainly from the General Medical side and from Neurology, there were a few patients with hyper-acute onset of severe headache and sudden loss of consciousness without any other problems. The diagnosis of subarachnoid hemorrhage could be made on clinical grounds and by the blood-tinged cerebrospinal fluid. Since most of them were normotensives, the cause of the hemorrhage could not be guessed.

It was here that Dr. Sambasivan had a definite role to play, and by his angiographic studies he could prove that the intracranial haemorrhage in these patients was caused by the presence of intracranial aneurysms at very many different sites, some almost inaccessible. These patients were taken up for surgery within an hour or so. The outcome was mostly successful, though patients coming in quite late after the ictus did not fare well. His initial reports of a rather high incidence of aneurysmal subarachnoid hemorrhage (SAH) in Kerala were seen with scepticism by all his colleagues both from India and abroad. I have heard a very senior and respected academic neurosurgeon questioning his claim in an open conference session. Dr. Sambasivan's very polite rebuttal was, 'Sir, if you look for it even among your patients with SAH, you too would agree with my contention, as I am getting a lot of patients from your region also'.

Another disbelieving great vascular surgeon from Canada, Prof. Charles Drake, visited Trivandrum to actually confirm with his own eyes the types of cases Dr. Sambasivan had described. By sheer chance, there was a patient with a large aneurysm of the anterior communicating artery on the first day of his arrival. As would happen usually, he had to perform the surgery in an emergency under local anesthesia, and that too, a bit late in night. The pleased visiting surgeon was convinced about Dr. Sambasivan's cases and his treatment protocols and its successes, even in a very much less sophisticated set up that we had in Trivandrum Medical College at that point of time. His words of appreciation were carried all over neurosurgical fraternity.

With quite limited facilities, he took up very high risk neurosurgical procedures of third ventricular region and pineal body tumors.^[3] His paper, when presented in Munich, was immensely applauded and was taken up for publication in 'Modern Neurosurgery'.

He was a daring surgeon who saved a lot of lives. I still remember a 73-year old unconscious woman who was seen by me in 1983 in Government General Hospital, Trivandrum, who was practically dying with recurrent seizures and raised intracranial pressure. The computed tomographic (CT) scan facility had by then become available in Trivandrum in the private sector, and with great difficulty, we got her scan done which showed a large falcine meningioma. She had a lot of co-existing morbidities like severe

asthma, psoriasis, and high blood pressure. She was the mother of a very senior police official who initially agreed to accept whatever I suggested as treatment.

On transferring her to the Medical College Hospital the same evening, the officer rushed to me requesting the patient to be discharged as he was told by his friends and superiors that the surgery would invariably be fatal. I had to coax him to get his consent. The anesthetist saw the patient and reported that the patient was unfit for general anesthesia because of her asthma, high blood pressure and generalized psoriasis. Dr. Sambasivan also heard these stories but did not refuse my request to operate. The patient underwent tumor removal in the same evening under local anesthesia. She lived for another ten years to tell the story of her brain tumor to all her kith and kin.

From his early days in Neurosurgery, he was quite active in the Neurological Society of India (NSI). The highest point of his career in NSI was his two terms of Secretary of the society from 1984 to 1990 when India hosted the International Conference of World Federation of Neurological Surgery in 1989 in New Delhi. It was a grand success by any count. He became the President of the Neurological Society of India in 1996.

He trained scores of young surgeons for their Neurosurgery examinations and was as an examiner for MCh Neurosurgery in many Indian Universities. He was a regular delegate, invited speaker, organizer of many international conferences and gradually became a very familiar face in international neurosurgery fora.

He was the Director-Professor of Neurology and the Vice Principal of Trivandrum Medical College for a long time. In those days, it was exceedingly difficult for any of us to get Governmental sanction to go abroad for international conferences even though we paid our expenses. Occasionally, some very unexpected funny events would also arise. Sometime in the early 1990s, the Principal of the Trivandrum Medical College was given permission to attend an Epidemiological Conference in USA. I, too, was given permission to go and present my paper in another conference in USA. The Principal gave charge of the administration of the College to Prof. Sambasivan, the Vice Principal, to whom I applied for necessary leave and permission to leave Trivandrum for a few days.

The Principal and I landed in Los Angeles (LA) airport by different flights on our return trip to India. To my surprise, I found the bald pate of Prof. Sambasivan in a far away seat. Quietly I went to him and asked how he had managed to arrive in LA when he was supposed to be in Trivandrum. He then told the story of how he too succeeded in getting the governmental order permitting him to hand over the charge of the Medical College to his next junior faculty member and to leave station to attend a neurosurgical conference in USA. The Principal was not too happy to hear all these stories but could do nothing as his leave was already granted by the Government.

Prof. Sambasivan was an all-rounder, a much appreciated teacher, a leader among students, an orator par excellence, an organizer with great capacity to get things done when nothing was available, a brilliant neurosurgeon who would take risk to do

surgeries, and a wonderful co-worker and friend. I still remember when just the four of us organized the 28th Annual Conference of NSI in Trivandrum in 1978.^[4] There were no persons to provide help, both physical or financial, to us. But like a magician, he charmed doctors, industrialists and the government to give us everything we needed to organize a major national conference. The 1978 Trivandrum session was an excellent success.

Again in 1998, we organized the national Annual Conference of the Neurological Society of India (NSI) in Trivandrum. I have very pleasant memories regarding this conference. It was the time when I was elected President of NSI. I wanted to do something worthwhile for our society during that time. I had the pet idea to bring out the history of neurosciences in India and I had all the help initially from only one person, Prof. Sambasivan. I collected most of the data and could get a lot of missing links from him. Despite all the heavy workload of being the Organizing Secretary of the 47th Annual Conference of NSI, he gave me his autobiographical notes in time. I am sure that our book 'Evolution of Neurosciences in India' will remain as a great reference book on the history of neurosciences in India [Figure 6] and [Figure 7]



Figure 6:
Prof. K.R.Nair, Prof. P. Sreekumar and
Prof. M Sambasivan

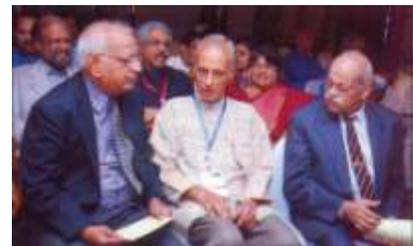


Figure 7:
H.E. the Governor of Kerala Sri. Sukhdev
Singh Kang, Prof. Jacob Chandy, Prof. M.
Sambasivan and Prof. K R Nair in NSI
Conference in 1998 December in
Trivandrum

It is again so pleasant to remember that we- the Department of Neurosurgery and Department of Neurology in Trivandrum Medical College, could work together having the most cordial relationship, unlike the scenario at in many other places.^[4] He got plenty of honors and awards both from India and abroad and was elected to World Federation of Neurosurgical Societies. Locally also, he had plenty of honors bestowed upon him.

Even after retirement, we worked in the same hospital for more than 22 years, and in our leisure moments he would recite Samaveda in the most traditional manner. He had a fall and developed multiple problems from which he had almost recovered when the sudden end came on 19th May 2018. I am sure that he will be remembered for a long time as a great name in neurosciences in India [Figure 8] and [Figure 9].



Figure 8:
Prof. M. Sambasivan in 2016



Figure 9:
Maharaja Sri Chitra Thirunal Award 2017
given
to Prof. K R Nair and Prof. M.
Sambasivan

Prof. M Sambasivan is survived by his wife Mrs. S. Gomathy, his children, Dr. Mahesh Sambasivan (neurosurgeon, Cosmopolitan Hospital, Trivandrum), Mr. S. Kumar (Master of Business administration) Mrs. Sreevidya Sivakumar (Master of Arts) and their families and grandchildren

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My stint as Professor and Head of the department, Neuropathology, National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore from 1982 to 1998 concluded on 28.02.1998. After retirement, I did not wish to settle at Bangalore and hence returned to Cuttack, my native, soon thereafter. My husband, Dr Bhabani Sankar Das, who had served as Professor and HOD, Neurosurgery at NIMHANS, Bangalore had retired earlier, was already at Cuttack. He was working at Bhubaneswar in the newly established private hospital - "Kalinga Hospitals". Unable to idle, I started to work from home as a neuropathologist! I reported on specimens of brain and spinal cord, muscle and nerve biopsies. The slides for histological examination were prepared by a trained technician; however it fell short of my expectation. Shortly thereafter, I joined Kalinga Hospital as chief pathologist and set up their laboratory services including histopathology. With the launch of this post-retirement engagement, I began to organise the domestic front to lead a happy family life. My daughter, an educational psychologist was at Hyderabad and son, a paediatric surgeon had just returned to St.John's Medical College, Bangalore after his training at AIIMS, Delhi.

It was my good fortune that the other consultants in histopathology, microbiology and biochemistry were competent and helpful; and with their co operation, I was able to establish the laboratory for routine diagnostic services. We updated the laboratory services, especially biochemistry with the introduction of machines for automation. As a neuropathologist, I initiated a few special techniques like squash preparations and special stain in histopathology. My colleagues were equally prompt in setting up state of art services in their respective specialities. The functioning of this laboratory not only facilitated quality diagnostic support at Kalinga hospital, but also helped us gain recognition as a referral laboratory in Bhubaneswar.

Meanwhile, I was invited by several institutions at Hyderabad, Kolkata, Ranchi, Guwahati and Chennai for delivering guest lectures in conferences, workshops and short training courses for post-graduates. This gave me ample opportunity to meet and interact with young students and senior colleagues at these institutions. It provided me the much needed professional satisfaction. I have

benefitted from the exchange of ideas and cherish the love and respect they have showered on me. These lectures were prepared from the material collected during my service at NIHHANS and at Kalinga Hospital. A good lab, efficient technicians and active support from clinical departments provided for the preparation of the teaching material. In retrospect, I had never imagined that after my return from Bangalore, I would set up a laboratory where I could continue to work up cases optimally.

On the home front, I relished spending time with my close relatives and friends. Before I moved to NIMHANS, Bangalore, I was a faculty at SCB Medical College, Cuttack from 1961 to 1981. Many of my professional contemporaries of those days had also retired while several of my junior colleagues were still in service as faculty in the Department of Pathology in the medical colleges of Odisha. I used to frequent the department of pathology at Cuttack and refresh myself with examining the slides and interacting with the pathologists there. At their behest, I discussed neuropathology with the postgraduates too. This kept me updated and brushed up my concepts in pathology of other systems too. I helped my colleagues in Odisha establish the "IAPM House" for the Indian Association of Pathology and Microbiology at Cuttack.

Dr. Das and me continued to attend several national conferences regularly – the Annual conferences of Neurological Society of India, Annual Association of Neuroscientist of Eastern India, Neurotrauma conference, Annual Conference of Indian association of Pathology and Microbiology etc. Indeed, after retirement, I had the good luck of being elected as President of the Association of Neuroscientists of Eastern India in 2013 and President of the Neuropathology Society of India in 2015. These responsibilities kept me occupied and were an impetus to work assiduously. Besides, I was glad to offer my expertise to further the progress of these scientific societies. I am thankful to my senior colleagues who have reposed immense faith in conferring such onerous responsibilities onto me. I have often pondered the gain in this ardour and must confess they have been lessons in

academics, management, networking and above all these have nurtured a pleasant friendship and camaraderie amongst my colleagues.

When the laboratory at Kalinga Hospital was outsourced to an external agency , I resigned from the job and spent my time leisurely visiting the department of Pathology at SCB Medical College ,Cuttack ,my Alma Mater . A few months later, I was offered to start the lab at a new private hospital - “The Apollo Hospitals” at Bhubaneswar. I donned the mantle of Senior consultant, Neuropathology and Pathology and got the laboratory going with the technicians there. Soon thereafter, another subspecialist Dr Nachiketa Mohapatra - a Nephropathologist joined us. Able technicians and a good cryostat made it possible to set up a functional histopathology laboratory in a short time. Frozen section reporting, special stains and immunohistochemistry followed as we expanded our services. We were joined by an oncopathologist, Dr Manas R Baisakh. The lab is now NABL accredited. In the last one and half years, we have embarked on a DNB pathology program. Currently, we are training two such students. These feathers on my cap reflect the hard work of my efficient colleagues and other staff members. I am also privileged to work with experienced consultant Neurosurgeons and Neurologists.

My husband and I visit our village, Gajarajpur frequently; we love the rural freshness and the rustic homeliness of our caretaker, his family and other villagers. It is an interaction based on mutual affection and support. I believe that village folk are generally simple and frank and we ought to lend a helping hand to them to climb the ropes in an urban society. Our modest two bed room house with a central courtyard and greenery around has amenities for comfortable living. In addition, the backyard has a pond and the village is flanked by the ‘ Debi’ – a large distributaries of the Mahanadi.

The post retirement blues were hardly ever there! I have reconnected ties with my family members, close relative and long lost friends. I have renewed contacts with old professional acquaintances and students – old and new. I have enjoyed strong family support at Cuttack from my parents’ place as well as my in laws. We meet our friends, relatives, students, teachers and colleagues in marriages,

meetings and social gathering. Between our continuing professional engagements, we visit our daughter's family at Delhi and son's family at Bangalore. There is family reunion of sorts now and thena most memorable one was a Europe trip in mid 2017! This was orchestrated by my eldest granddaughter Madhavi ! Visiting Switzerland , Paris and Amsterdam with the kids was so different from the earlier professional ones ! I must admit that travel has become less cumbersome though age seems to be catching up nonetheless.

As a family, we love to be in the midst of greenery. This has spurred us to build a garden and lawn in front of our house. It infuses freshness into our existence and looks elegant. We spend some quality time in the evening in the lawn or on the balcony overlooking it. After several difficult stepping stones all along our career since 1962, I realise that one should march through any situation that comes in life with stoic acceptance.

Today, we live with our son Kanishka at Cuttack. He has recently joined as Professor of Paediatric surgery at AIIMS, Bhubaneswar after a two decade stint at St.John's, Bangalore. It appears as if his career is mirroring ours in a different manner and our lives have taken a pleasant turn of enrichment again! My daughter Tapaswini (Delhi), son in law Tushar (Bangkok) , their daughters – Madhavi (Jewellery designer) and Tavishi (Graphic designer) ,daughter in law Suravi (Paediatric Pathologist)and grandsons Tejaswi and Kharabela (both footballers and Odissi artistes!), our Dalmatian 'Spotty' and their activities garnish our lives ! I am grateful to the almighty for providing me all that it takes for a contented retirement and hope to continue to work and serve the sick in His creation to the best of my abilities.

Dr. K RajasekharanNair MD DM

Seldom does one get a chance to rewrite or add on what has been written about oneself . Here is one which came to my way in the most unexpected time. Way back in 1997-1998 when I planned to compile the book ‘The Evolution of Neurosciences in India’, the initial response was lukewarm at best. But the after the publication of the book the historical relevance of the same gradually dawned to all. Indeed I am happy that Dr. Ganapathy has brought out a sequel to my



book titled ‘Past Presidents of NSI 2000-2016 ’. The same example has been replicated by Indian Academy of Neurology and Indian Epilepsy Association. It is heartening to see that medical fraternity in India gradually learns the great relevance of history of medicine. I am happy that this trend which a few of us like Drs. Sunil Pandya, S. Kalyanaraman and I started in Neurological society of India has gradually spread to other societies also.

A Post Script.

The continuation of the script I wrote for my book in 1998 may need some traversing back and forth from my active teaching service period to the present time. I have recounted some of these tales in one of my papers in Neurology India recently ¹ . I am sure that my generation of Indian neuroscientists who opted out to start specialty services in the mofussil centers of India had almost the same sort of stories to tell about the small victories we won, failures we endured, the chances we missed and unexpected help we got.

There are many friends who still say that I should have joined AIIMS, New Delhi after my DM course, when there was an acute dearth of teachers there. But I rejoined in my Kerala state service knowing fully well that I would never again get the type of academic atmosphere I had in New Delhi. But had I remained in New Delhi I would have been miserable through out my life as an uprooted person.

Life in the Kerala Medical College service was no way easy and I had my own share of disagreements. I may quote one of my favorite poets Yevgeny Yevtushenko here.

‘I disagree with a lot of things
and cannot possibly agree with them.

It will go hard for me at times

And they will say:

"He'd better hold his tongue!"

Not holding my tongue.

When every one in my generation would speak of their very big centers of their learning, the big centers they built up, their big achievements, their big contributions, some one like me who took up a job in a small town should also tell very pertinent though mundane small things of our small places, our small achievements and our small contributions which are in fact comparable to those of the big achievers. With all humility, I may add that I could rise on my own and stand shoulder to shoulder with the big achievers of neurosciences of big towns. I am happy that I could accomplish that with the work I did in my small towns, Calicut and Trivandrum.

When I chose to return to a ‘mofussil’ place to live and work in 1973, naturally I accepted all its limitations but knew its quiet virtues, beauties, kindness and all time solace. I agree we had so much financial constraints, so many problems related to its geographical position of being the southernmost state of India and its inaccessibility to the centers of power and the strain of overcoming the language barriers.

Incidentally the word ‘mofussil’ has an interesting beginning. It originated in the East India company days when places other than their company capitals, Bombay, Calcutta and Madras were considered rural or mofussil.

The place which I chose initially was the northern most region of Kerala- Calicut, the headquarters of Malabar. Calicut Medical College was started in 1957, six years after the first Medical College of Kerala in Thiruvananthapuram. Being far away from the capital of Kerala, Calicut Medical College had so much of teething trouble which continued even to 1990s.

The general financial status of Kerala even in late 1900s was certainly not bright. (The enviable changes which started becoming evident from 2000 onwards are so remarkable, we old timers, stand awestruck). Most of our initial tales would appear unbelievable now. The salary which we got on entry to the teaching service in late 1960s was around Rs. 300 +. Nothing much changed even after three decades. When I retired from the senior most post of Director Professor of Neurology in 1996, my take home salary was less than Rs. 10,000/-. Surprisingly we did not think that we were badly paid as we didn't have a chance to think about ourselves when we were building our departments with all the resourcefulness and mental strength we could muster.

There was a provision for restricted private practice for us in the clinical side. In the non-clinical side, teachers were given 'non-practicing allowance'. The private practice gave us at least some amount of financial independence. Kerala with its high literacy rate and very critical view on everything and almost militant approach in public matters did not (and would not) allow any unethical practice.

There was a very widespread notion among many of our colleagues who took up jobs in non-practicing set ups in India that medical research would be highly compromised by private practice and research publications could come only from their institutions. In reality it was a terrible misunderstanding as we, who were allowed private practice, had taken up research projects and published papers in Indian and foreign journals as often as they did.

Ironically there was no need for us to do any such work officially as our promotions were not linked to publications, conferences attended or academic achievements. I do not remember anyone in our official circle who ever encouraged or gave any support to us for our research work. But it is with pride and happiness we remember we still could bring out excellent papers on hereditary sensory neuropathies, multiple sclerosis and cognitive neurology. 138 research papers and 12 books to be precise! I may very politely add that there was hardly anything in the way of research from teachers in preclinical subjects in our own set ups in those days. They had non-practicing full time jobs with better pay also. Perhaps I may quote Dr. B Ramamurthi here as the

research output from his Institute of Neurology, Madras which allowed private practice was in fact far superior to that of many other non-practicing institutes². We were really happy to be busy with all our work and being happy at work really made us more productive. The situation has changed further with many of the premium private hospitals encouraging research also competing with the academic institutions as a part of their development plan in therapeutics and surgery.

(Now it is interesting to note that now all Medical College jobs all over India are made 'strictly' non-practicing. I don't dare to say anything about the present practices by many, as it would invite unnecessary criticism. The publication of research papers has been made compulsory for promotions etc for those in service. In the place of only reputed journals available in India in the past, now there are many journals with quite quaint practices. As one who was on the editorial board of a few journals, I am quite perturbed to see the arrival of many so called 'indexed' journals showing their 'Index Copernicus value' etc inviting articles for publication within 3 or 4 working days! I am told that they flourish very well. Perhaps we may require another Abraham Flexnor (1866- 1959) to bring in reforms so badly needed in our medical education sector.

Conferences and publication of books

Going to conferences was another hustle which we had to face every year. Our colleagues and officials considered this as an unnecessary extravaganza by which we evaded routine hospital duties. Requesting leave for attending conferences was futile and so the only way was to take our 'casual leaves' and / or 'earned' or 'accumulated' leave. All the expenses were met from our personal savings. Despite all these supposedly 'insurmountable' difficulties, we used to be regular attendees not only in the annual conferences of our society but also other such societies. Certainly I could rise up in those organizations and could come upto the very top as well.

But going abroad for conferences was another matter altogether as 'proper Governmental Sanction' was mandatory for getting the precious 'foreign exchange money' from the Customs Department. For all the four medical colleges of the our

state then, some money was allotted each year, of which more often than not, almost the entire sum was given to applicants from Trivandrum Medical College. Requesting and getting the grant was a tiresome job and perhaps I was the very first to get such a sanction in Calicut Medical College. Many times I have ruefully viewed when many of my colleagues from other institutes given all the help for presenting their papers in International conferences.

Back to my Alma Mater.

Moving back to Trivandrum in 1982 after my Commonwealth scholarship program and a short sojourn abroad, I had to do a tiresome job of replicating all the work I did for Calicut Medical College to re- start a neurology department in Trivandrum which was in total disarray when I took over. Equipping my new department with all new electronic gadgets for our post graduate course (started in 1983) was a Herculean task but truly rewarding. I was all alone as a consultant in the first ten years or so even in Trivandrum. Scores of postgraduate students were trained by me for both DM Neurology and Dip NB Neurology.

Though not prescribed as a mandatory requisite by the Kerala University, I insisted that those who appeared for DM Neurology from Trivandrum Medical College should have at least three or four published papers in peer reviewed journals and should have presented their research data in at least one national conference before their examination. These could be implemented without too much of resistance as the students were also eager to get involved in advanced research in their subjects. Indeed it was really pleasing that we could organize pediatric neurology section also and the students passed out from our center started Pediatric Neurology service in different Medical Colleges in the state.

Even in those impoverished days we could organize CMEs and conferences fairly regularly- at least two or three an year- a total of 35 over a period of 14 years. Some were national conferences on Strokes, Epilepsy and Movement Disorders too. Looking back, it still was a wonder how we could organize them with so much limited resources and virtually no financial help from the College.

In order to function in an organized manner, I started a small group which we called as TAN (Trivandrum Association of Neurologists), membership restricted to the students who got trained by me. The books we brought out during these conferences were of very good standard and I have had the pleasure of seeing them as reference books in the libraries of some major institutions also. I sincerely wish that we too had the facility as is available now to bring out our books in better get up by professional publishers. In order to keep high standards in the books published from my Department (Recent Advances in Stroke -2 Volumes, Recent Advances in epileptology, Selected Topics in Extrapyrimal syndromes etc) I kept half the number of papers from my center, a quarter from my Indian colleagues outside the State and the rest from my friends and colleagues abroad working on the respective fields. Since all these publications were made on behalf of TAN, naturally all these had only limited circulation.

Our dedicated work had not gone unnoticed as I was invited as a orator, teacher, examiner, inspector for DM, MCh and Dip NB examinations and as member of selection committee for the post of professor of neurology in various centers in India. Though I was promoted as Principal of a Medical College in our state some time in 1991, I did not take up the post as I cherished my teaching post more than any administrative post. By refusing to take up that post, I lost my opportunity to get any further senior administrative jobs like Director of Medical Education. Somehow even now I do not think much about it.

Organizational activities.

I feel proud that we in Trivandrum could organize two annual conferences of Neurological society of India in Trivandrum- in 1978 and again after two decades in 1998. The organizational skill of our neurosurgery colleague Dr. M. Sambasivan is quite praiseworthy. The 1998 conference was a very high point in my career. It was during this session I assumed the office of the President of Neurological society of India for the year 1999. During my President elect period I decided to bring out the book 'Evolution of Neurosciences in India'. We were happy to have both Dr. Jacob

Chandy and Dr. B. Ramamurthi in the book releasing function during that Conference.

During my period as President of Neurological society of India, I could sort out some odd issues with the Indian Academy of Neurology which were left unsolved for a long time like the subscription to the World Federation of Neurology. Certainly I could improve the camaraderie between the neurologists and neurosurgeons.

I was one of the founding members of Indian Academy of Neurology started in 1991 and was its elected President in 1996. As luck would have it I had to function as President Elect of IAN in 1995 at Chandigarh as the person elected for that year didn't attend the session. My term as President of IAN was in 1996. I had the fortune to be elected as the Vice President of Indian Epilepsy Association also.

Most of the neurologists of our generation had our ties with Association of Physicians of India (API) and most of neurosurgeons had ties with Association of Surgeons of India (ASI). We really did enjoy the friendship we had with these organizations too and indeed they acknowledged and respected our continued support. The API had conferred many honors on me including "Outstanding Referee Award" of the Journal of the Association of Physicians of India, "Honored Guest Lecture" of the Association of Physicians of India, Guwahati, Jan 1994, "Sarabhai Oration" of the Association of Physicians of India, Katmandu, Nepal. Jan 1996.

Awards and Honors

It is pleasing to note that the work I did for the Government of Kerala was applauded as I was given the 'Best Doctor Award' of the Government of Kerala in 1998. More than 30 nationally acclaimed awards were also given to me by different Institutes/organization from different parts of India and few from abroad. I thank particularly KG Medical College Lucknow, Institute of Neurology Madras, Association of Neuroscientists of Eastern India, AKMG (All Kerala Medical Graduates Association. Muscat,Oman) and others. I had the pleasure to be invited as Visiting professor of Neurology in some Universities in USA also.

More than half a dozen Life time Achievement Awards were given to me by various associations including Kerala Chapter of Neurological society of India, IndianAcademy of Neurology, Kerala Association of Neurologists, Maharaja Sri. ChitraThirunal Award etc.

As I was born in family of writers and artists I started writing stories, poems and skits both in Malayalam and English from my early school days onwards. I had to stop writing as I entered medical college. I could resume it only after my retirement. It was such a pleasing surprise for me that I became a very wanted writer in Malayalam. So far I have published more than ten books – all very well received by Keralites. In 2005 and again in 2006 my books were selected in the category of Best Book published in those respective years. They have had rave reviews also in Malayalam literature. The Sahitya Academy has bestowed the great Award for Scholarly Literature for 2014 for one of my books. I am only one medical doctor in Kerala so far who bagged such a prestigious literary Award.

Epilogue.

It is a pleasure to acknowledge all the love, support and help I received from my wife Mrs. Indira Nair. She resigned her teaching job when I married her in 1966 for helping me through out my postgraduate studies and my entire life. I am sure that I would not have ventured to take my specialty studies but for her, when such an attempt was considered unnecessary for practical success in life for a practicing doctor in Kerala. My son is a MBA who runs his own business and is quite keen in agriculture. My daughter has taken up Medicine as her career in life and has become an endocrinologist. Now she is the Director of Osteoposis Department in a major hospital abroad.

I will be 78 years old in this December 2018. To say the least I am contended in my life and that is the best one can hope in life.

Though there is some overlap one of the editors Dr Ganapathy felt that this version should also be included as it does contain many historical

facts.

It was in 1998, I was elected President of the Neurological Society of India for the year 1999. I decided that I should contribute something substantial for our society during my President-Elect period too. Having read excellent volumes like Paul Bucy's 'Neurosurgical Giants- the feet of Clay and Iron' and Haymaker's 'Founders in Neurology' ^{1, 2}, I had planned even in the early 1990s to bring out such a book on the evolution of neurosciences in India. I knew that if such an attempt was not begun at least then, it would be impossible to compile such a volume later. There were no written records of anything in neurosciences in India till the laudable write-ups of Prof Sunil Pandya ³ and brief skits in the CME Volumes edited by Prof. Kalayaraman and Prof. Sunil Pandya ⁴ were published

It was fortunate that we, the old timers, lived and worked during those interesting times. The neurosciences in India began in 1949 and practically all pioneers like Prof. Jacob Chandy, Prof. Ramamurthi, Prof. Asoke Bagchi, Prof. N. H. Wadia, and Prof Baldev Singh were still very much active during our early professional period. Further, I had the unique luck to have had personal contact with almost everyone in neurosciences in India when our society, The Neurological Society of India, was small and neuroscientists of all disciplines knew each other very well. I had the privilege to have worked in AIIMS, New Delhi also in Institute of Neurology Madras in their heydays when people like Prof. B. K Anand, Prof. G.S. Chhina, Prof. Baldev Singh, Prof. P N Tandon and Prof. B Ramamurthi were quite in power. Fortunately, I used to travel all over India for various purposes, as a teacher, examiner, orator to all major neurological centers in India for my

professional work and also for the various academic activities and hence could befriend both senior and junior members of our fraternity.

But the only way by which I could get the salient information in the evolution of neurosciences in different parts of India was to request the pioneers to write down their lives and times so that their own personal stories would bring out the relevant historical data. It was a rude shock for me that some of my colleagues initially flatly refused to cooperate with my suggestion. But I persisted with my work in an assiduous manner which by today's account would be considered a Herculean task as the communication facilities were postal snail mail and the miserable and very costly telephonic conversations would require STD dialing and sometimes by even 'Trunk Telephone' for which you need to wait for hours!

The first person who applauded my attempt was Prof. B Ramamurthi who sent his write up in time. Gradually others followed. I gave a cut off time limit for submitting their write-ups. Even those who initially refused, by then, recognized the historical importance and they too chipped in. Some of them requested me to give them a few more days than the cut off time. The book I brought out 'Evolution of Neurosciences in India' during the 1998 Annual Conference of the Neurological Society of India in Trivandrum is still the very exhaustive publication about the origin and early development of neurosciences in India⁵. I am indeed glad that it is being republished as an e-book with some additional data. It is a matter of pride that the Indian Academy of Neurology and the Indian Epilepsy Association have followed our steps and brought similar publications.

Though I could collect quite a large data, write up of some really important persons were conspicuously missing. Some were quite sad too. I used to ask all my Bombay friends about Dr. Menino D'Souza and Dr. Grillmeyer. I was told that Dr. Menino D'Souza (1904- 1996) passed away decades ago when he was actually living in Bombay itself. He died on 5th May 1996. Just before the finalization of my book Prof. SaroshKatrak gave me the details of Prof. Menino D'Souza which I could, fortunately, incorporate in the book. But his photograph was made available by Prof H.V. Srinivas.

Dr. Grillmeyer was an elusive subject to me even now. The only person who gave me some information about him was Prof. K S Mani of Bangalore who gave me a script of his lecture in the seventh Annual Conference of the NSI and showed me a printed book containing a group photo and pointed out a figure as Dr. Grillmeyer. My visual memory is good and now after failing to get any further information I doodled his figure from my memory which is included here. If and when his photograph is obtained this can be changed.

(In fact, I did a similar work for another great pioneer, one of the foursome who started the Neurological Society of India. Dr. S. T Narasimhan. He was Prof Ramamoorthi's colleague. I have written about him in details elsewhere ⁶ . Ramamurthi gave me permission to use the picture of Dr. S. T Narasimhan and Prof. K. Mahadevan Pillai from his autobiography 'Uphill All the Way' but the picture clarity was inadequate ⁷ . Fortunately, I got a good quality picture of Prof. Mahadevan Pillai, the first neuroradiologist of India, and published his detailed biography elsewhere ⁸ . Incidentally, Dr. S. T Narasimhan was the one who started Neurosciences in India almost and year before even Prof. Jacob Chandy. But Dr. S. T Narasimhan's picture

as given in Ramamurthi's book could not be used because of its poor quality. The only option I had was to do his pencil sketch myself. That is the picture which is used by NSI also officially now. I could gather a few more information about Dr. Narasimhan which was elaborated in my previous paper ⁶.

But in the case of Dr. Grillmeyer, there is no written record available. All I gathered from Dr. K S Mani was that he was an (East) European by birth and after having had his medical and neuropsychiatric training he left his home country during War years and settled in British India in 1940' (?). In one of his publications (Script of his lecture at the seventh conference of NSI in Trivandrum 1958) his address was given as Neuropsychiatrist, General Hospital Colombo and Mental hospital Angoda, Ceylon (Sri Lanka).

Dr. Mahendra Singh was another person about whom I obtained very little information. He was from Army, I am told, and was in CMC Vellore for his neurosurgical training. He was a contemporary of Dr. Jacob Abraham and Dr. K V Mathai. Further details and photographs are not available to me though I tried at some possible places.

During the initial phases of NSI the presidency was rotated among neurosurgeons, neurologists, and allied specialists. That is how Dr. C.G.S Iyyer (Pathologist, Director of Central Leprosy Teaching and Research Institute (CLTRI) Chengalpattu), Dr. BK Anand (Professor of Neurophysiology, AIIMS, New Delhi) Dr. NS Wahia (Professor Psychiatry, Bombay) and others became President of NSI.

Dr. Chokkanathauram Ganapathy SubramanyIyyer (1921- 1984) was a great pathologist-scientist who was noted for his seminal publications in many foreign and Indian Journals. Though he was born in Tamil Nadu his education was in Bombay. He graduated from GS Medical College, Bombay and took FCPS and MD from Bombay in 1947. On the basis of his publications, he was awarded Fellowship of the Royal College of Physicians (London). He was the first Indian to get trained to Neuropathology at the Armed Forces Medical College, Pune and got an appointment as a research officer in the Neuropathology Unit of ICMR. There were two phases of his contribution- the first being in neuropathology when he studied cerebral malaria, lathyrism, various encephalitidae including Kaysaur Forest Disease and polio. The second phase was in Leprosy from 1961- 1982 and became the Director of Central Leprosy Teaching and Research Institute (CLTRI) Chengalpattu. He was elected President of NSI on the basis of his work done on neuropathology. I thank Dr. G Arjundas of Madras and Dr. Sunil Pandya of Bombay who kindly sent me the relevant obituary notes of Dr. Iyyer from where I collected all these data.

I have seen many times Prof B.K Anand (1917-2007) during my AIIMSonian days as a close friend of Prof Baldev Singh, the then Emeritus Professor of Neurology there. Dr. Anand was an internationally acclaimed neurophysiologist and his publications include many related to Yoga, Hypothalamus, feedingcenter etc. I have picked up some of his publications ⁹⁻¹² .

Dr. N.S.Wahia (1916-2007) was a great psychiatry professor in Bombay. He was the founder head of the Department of Psychiatry at the Seth G. S. Medical College and K.E.M. Hospital Mumbai and head of the Department of Psychiatry at the Lokmanya Tilak Medical College and Sion Hospital, Mumbai. In those days psychiatrists did not have their separate society and hence a few of them joined in NSI. But I did not get any relevant information about him from my senior friends in neurosciences.

There were two other persons whose pictures or write-ups could not include in my previous book. Dr. Dayanada Rao (Dr. Bodapatti Dayananda Rao 1916-1997) was a pioneer neurosurgeon in Andhra Pradesh. He died before I planned my book. Though I included Prof. Sunil Pandya's write up about him I collected further details about him from Prof Raja Reddy and published it in one of the journals. That is still available on the net. But I got his photograph only now, Thanks to Prof. Arjundas who kindly sent it to me.

I had seen Prof. Sriramachari (1925- 2009) a few times while I was in New Delhi. By then he became one of the recognized neuropathologists of India. I had written to him many times to give his write up but for some reason or other I didn't get his script. Thanks to his daughter Dr. Sandyamani who is a Professor of Pathology, I got his photograph now.

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