VIDU 19-2-2

"It is a fact that Sri Lankans as a nation mainly comprise a rural community. It also has to be accepted that a considerable percentage out of this community has not had the good fortune of having an extended education. The most important responsibility that rests with the few who have come into contact with science education is to destroy the concepts that epitomise the unscientific and baseless beliefs that have taken root among the common people who suffer from an inadequacy of learning.

Unfortunately, some of the scientists among us are persons who are alienated from the rustic way of life and are blind to the problems associated with village life. The animosity shown by many villagers towards the scientists who try to spread modern scientific concepts may be the result of this wide gap between the villager and the scientist.

This unfortunate rift between the scientist and the villager is to a great extent a consequence of social and economic differences. The gap may have been widened further by the education we have received in the English medium.

In order to rescue the community from this state of ignorance, we should perceive the environment in which they are born and bred. We should understand their customs and practices and their daily problems. We should take a look at their thoughts and wishes and gradually convince them of the benefits they can reap from science for life..

Science cannot be disseminated in our country only through publications, broadcasting or public lectures. We should go to the villagers. The drama of science indulged in on stage by some at present should be enacted only by moving in among the spectators and enlisting them as actors in the drama.

It is not appropriate to think that there will be national liberation without science, for us or for any other (race in the world). To overcome the obstacles faced in spreading the knowledge of science, the adoption of this basic principle is not sufficient. The day the people of this country realise the benefits that will accrue to day to day life from the application of science, they will traverse the same path with us to disseminate the knowledge of science. To achieve this we should become one with them physically and mentally.

(An English adaptation of an editorial written by Prof. Nandadasa Kodagoda to the magazine "Vidya" in 1970.")

This volume 19(2) of Vidurava Science Magazine is published in appreciation of Prof. Nandadasa Kodagoda's services to science, education, arts and other fields .

Editor

VIDA 19-2-3

Prof. Nandadasa Kodagoda and NARESA

Prof. Priyani E. Soysa

My cordial and friendly association with Prof. Nandadasa Kodagoda dates back to nearly two and a half decades of academic life in the Colombo Faculty of Medicine. He was then a Senior Lecturer in Forensic Medicine.

At the request of Mr. Premadasa Udugama, we jointly authored a book on the Preschool Child, myself for expert knowledge and himself for his very special versatility of the Sinhala language.

Prof. Kodagoda served in three Boards of the Natural Resources, Energy and Science Authority (NARESA) along with other members of the Board appointed in 1992 by Hon. Ranil Wickramasinghe, then Minister of Industries and Science. He was also Chairman of the Steering Committee on Science Education from 1992. Prof. Kodagoda functioned to his utmost capacity, capability and cooperation, with me as Director-General and Chairman of 'the Authority'. He was reappointed to the Board, when in 1994, a Ministry of Science, Technology and Human Resources Development was given a position of Cabinet rank, with Hon. Bernard Soysa as Minister.

Then again in 1997, Hon. Bernard Soysa appointed him to the Board, when he became Minister of Science and Technology (but with Human Resource Development also within his purview). He was with us on this Board until his demise.

Prof. Kodagoda's contribution to Board activities was indeed illuminative, coming from his own scientific background and experience as an administrator as Head of Department of Forensic Medicine, Dean of the Faculty of Medicine and Vice-Chancellor in the University of Colombo. He also had other experience serving with various NGO's. All this wisdom and experience made him special among us on these Boards.

He was therefore on many sub-committees on revision of recruitment and review of promotions and salaries, firstly in 1994 when there was the imminent change of NARESA to the National Science Foundation, overhanging in 1994. There was a change of cadre and a need to upgrade appointments under consideration. This work continued as a Board activity up to his demise.

He also functioned in other sub-committees, so willingly and also inquiring officer with his knowledge of law in addition to his administrative capability. Though his decisions were necessarily judicious, he conferred a very human judgement with a resource of flexibility which should be an example to many a bureaucrat.

He was a source of great inspiration in the Board's work, culminating in a policy and Action Plan on Science and Technology, which was presented to the late Mr. Bernard Soysa (as Minister of Science & Technology). He was also present when this was approved by H.E. the President and the late Minister acceded to H.E.'s request to popularize this document among the people. Prof. Kodagoda wrote the Sinhala version of a paper for disseminating the need for Science & Technology Policy; but alas he was too ill to finish the last paragraph.

In sending condolences to the bereaved family, the Board expressed the need for a publication on him which was taken up by the Steering Committee for Science Education.

The authors of Chapters would give more apt descriptions of his contributions outside NARESA. Therefore the constraints of space to amplify this message is obviated.

His existence has been liberated in Samaya (peace) and vimukthie (satisfaction).

May he travel onwards on his forward path to ultimate nibbana.



Serpina and violin used by the Professor who was well versed in music.



Vishva Prasadini Award

VIDU 19-2-5

SCIENCE IN SINHALA

Prof. Lakshman Waidyasekera

The recently departed Professor Nandadasa Kodagoda was a scholar who studied the Sinhala language as a Sinhalese national and used it for the dissemination of science. On being invited to contribute paper to the commemorative volume of 'Vidurava' being released in his honour, the topic I selected was "Science in Sinhala". The teaching of science in Sinhala was first promoted in the island in the early nineteen fifties. Our children were not able to acquire a comprehensive knowledge of science then they were unable to study it in Sinhala. The causes and obstacles were many. One was the existence of scientists who had learnt science in English only and had no love for the Sinhala language. The other was the identification of science and scientific thinking as something that was far removed from Sinhala or national languages. Another reason was the scarcity of books written in Sinhala. University education being restricted to the English language was yet another reason. The birth of Vidyodaya and Vidyalankara Universities which were then known as Pirivena Universities was the beginning of a successful programme of teaching science in Sinhala in University education. The inclusion of science as a subject for secondary education at the same time, was also the beginning of the teaching of science in Sinhala.

With the acceptance of Sinhala as the official language, during this period, a Department of Official Languages was also set up. In 1956, a publications bureau was set up by the Department of Official Languages and the formulations of technical terms or scientific words in Sinhala was begun. This was helpful in providing the terms required for G.C.E. ordinary level students and for persons who wished to study science or widen their knowledge of science through supplementary reading in Sinhala. Later, the contents of the technical glossaries were also published in the form of small booklets. Although some of the technical terms coined were not quite in harmony with the Sinhala language, these were helpful in extending the knowledge of science and helped those who sought knowledge in Sinhala and in translation work.

Asian countries were ahead of us in the study of science and expression of ideas in the national languages and preceded us in it. The extension of knowledge through the State language has been taking place for some time in every state of India. Although the official language is Hindi the knowledge of science developed in the Bengali language in West Bengal in Tamil in South India. It was the same in other South Asian countries. Even the Chinese are quite advanced in this respect. In Japan the knowledge of science developed only in the Japanese language and every scientific paper was prepared in Japanese and later into English and other languages.

With the acceptance of Sinhala as the official language, during this period, a Department of Official Languages was also set up. In 1956, a publications bureau was set up by the Department of Official Languages and the formulations of technical terms or scientific words in Sinhala was begun.

Although the Sinhalese took time to grasp scientific teachings in Sinhala, after a start was made, it progressed. Programmes to popularise science among ordinary rural people were also helpful. However, efforts to write books and publish them were few. This was because it took time to include this in University education.

In 1969 I presented a substantial amount of facts in an article titled 'University Education and the National Language' in the Sarasaviya magazine of the Vidyodaya University. In it I said that science education is yet unsettled in our country. This was due to the fact that there was little love for the Sinhala language in those who had a University education and further training abroad. Another factor is that those who entered the teaching profession without a higher education, entered that profession with a short-sighted out look. The widening of syllabuses while ignoring the basic percepts of science was yet another reason.

The path we should follow is to convert our education into an education founded on basic principles suited to our country as has been done by new Universities in other countries. The progress of science education commenced with the introduction of the teaching of science in Sinhala and progressed further with its entry into the realm of higher education. The Vidyodaya and Vidyalankara Universities contributed greatly to this process. The staff of the science faculties of these Universities were from the beginning dedicated to the teaching of science in Sinhala. Likewise there were groups of students who were desirous of science education in Sinhala and who co-operated in this endeavour. A new avenue was opened up for village students. It was a boon to students from areas considered as rural. Their knowledge of science began to develop. This process which began in the 1960's yielded at the beginning of the 1970's a large number of graduates who had developed their knowledge of science in Sinhala. Further, their post-graduate research work was equivalent to world recognized research. This wave of education in the national language which commenced during that period, saw the birth of scholars who are even today ranking as Directors of research institutions and Professors.

Just as the Vidyodaya and Vidyalankara Universities other Universities too gave high priority to science in Sinhala. Therefore, after the introduction of the teaching of Science in Sinhala as a foundation to higher education in science, in our country too science education in Sinhala received a similar status as occupied by the teaching of science in other languages in other countries.

This was due to the fact that there was little love for the Sinhala language in those who had a University education and further training abroad. Another factor is that those who entered the teaching profession without a higher education, entered that profession with a short-sighted out look. The widening of syllabuses while ignoring the basic percepts of science was yet another reason.

The main feature which helps the growth of a nation is the language. Language is a birthright of all persons from existence. Speech as well as thought is confined to language. Everything that we write any speak is born through the power of thought. A Japanese professor, whom we once met said, " **We think in Japanese, we write and speak in Japanese. A different language is not required only for science. To achieve proper results, we need the Japanese Language**". Such a country which is at the forefront in science and technology could be taken as an example. Just as in everything else during a period of five decades, the success achieved in the sphere of science too, was achieved through the development of mental powers by the concentration of thoughts in Sinhala as a person born Sinhalese.



With students at a School Science Day.
(Prof. P.L.D.Waidayasekera- middle and Prof. Nandadasa Kodagoda- right)

VIDU 19-2-8

PROF. NANDADASA KODAGODA
HIS CONTRIBUTION IN POPULARISATION OF SCIENCE

Dr. Upali M. Senanayake
Industrial Technology Institute
(ITI)

I met Prof. Nandadasa Kodagoda one day in June in 1967. It was a Science Day in a school close to Colombo. Dr Kodagoda was one of the speakers who spoke that day. I have listened to many science lectures, delivered by reputed speakers. However, there was a distinct difference, I would say a trade mark in Dr. Kodagoda's lecture. It was deep, full of fact, yet easy to understand. Eventhough I had listened to him over the radio, read his articles, that day was the first time I saw him in person. He was wearing the national dress. This scene reminded me of Dr. Adikaram. As I am also a popular science article writer and a participant in radio discussions our meeting turned out to be the beginning of a lasting friendship.

At that time Dr. Kodagoda was the Chairman of the Committee on Popularisation of Science (CPS) of Sri Lanka Association for the Advancement of Science (SLAAS). According to a proposal made by him, I was co-opted to the CPS. From that day, until his death, both of us were active members of CPS.

Prof. Nandadasa Kodagoda contributed in a number of ways for the popularisation of science . Writing science articles to popular news papers and magazines, radio discussions, western medical discussions, delivering science lectures at seminars, conferences and at schools on invitation, conducting science quiz programs over radio and TV, were some of them. Since another article covers his contributions to electronic media, I will concentrate on his contributions to papers, magazines and science day programs

In addition to writing popular science articles, Prof. Kodagoda acted as the editor or in the advisory board of various magazines. For example the Vidya Vyapthi magazine, the science magazine of the CPS, Vidurava Science magazine of former NARESA (now the NSF) received his guidance until his death. For the existence of these magazines, popular science articles written in simple language are very essential. These magazines are read by not only the science students, but also the general public. As such the content should be understood by them. Most of these articles were edited by Prof. Kodagoda before they were published.

There were two main reasons for this. Prof. Kodagoda had a wide knowledge in both medical and other science subjects. He was a master of the Sinhala language. He could not only correct or modify the factual content in an article, but also could correct the grammatical mistakes.

It was a pleasure to listen to Prof. Kodagoda's speeches. It was unique both in the art of lecture and lecturing. He laid emphasis where necessary, soft or a high tone accordingly. The content was never beyond the grasp of the audience. I have noticed many speakers trying to copy Prof. Kodagoda's art of speech.

The CPS Committee has conducted a large number of science day programs in school through-out the island. Although many of these lectures were aimed at the school children, some of them were open for the public. A science day attended by Prof. Kodagoda was a memorable day for many schools. To see him in person was an experience by itself. Many science days where Prof. Kodagoda participated were given publicity weeks before the due day. All occasions he was received with a sheaf of betel leaves and garlands. The lecture hall was full and many stood outside the hall. This was a common sight.

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In 1980's and early 1990's Prof. Kodagoda, as a member of CPS, participated in a large number of science day programs in many parts of the island. Many of these areas were remote areas of the island with little or no facilities for science teaching. It was he who initiated a discussion session with the students. They were free to ask any question within or outside science lectures. I think many students learnt more in their discussions.

I should mention here about another contribution made by Prof. Kodagoda. This is the launching of what is called 'Public Awareness Seminars'. Committee on Science Education of NARESA (now the NSF) recently launched a number of seminars under this category. On the request of general public these seminars were held either during the lunch hour or during the weekends. The topics covered were Food & Nutrition, First Aid and Social Problems, Nutritional Status of Expecting mothers, Smoking and Alcoholism, Drug Abuse and Addiction.



I cannot think of any other person other than Prof. Kodagoda, who educated the school children and the general public on the danger of drug addiction. He conducted special teaching classes for the police, and the officers of the armed forces. He clearly showed the dangers of tobacco and narcotics. He often spent his weekend at far away places lecturing the general public. He was an active member of anti-narcotic committees and associations.

One active area of the CPS was the use and misuse of pesticides. He conducted special classes for school children at inservice training institute of Agriculture at Gannoruwa. As a

medical doctor Prof. Kodagoda was visibly moved at seing the number of deaths that occurred due to misuse of pesticides in the rural areas.

Prof. Kodagoda was very keen to educate the school children in the safe use of agrochemicals. He selected key students from rural areas and trained them on various aspects of safe use of agrochemicals. In turn, these students were asked to educate their elders at the village level. At early stages, when TV commercials were shown with people spraying agrochemicals with naked bodies, it was Prof. Kodagoda who corrected these advertisements. The importance of fully covering the body while spraying, refraining form eating , drinking, smoking or even chewing the betel nuts were demonstrated at village workshops. As a result of these activities, there was a definite drop in number of deaths due to agrochemical poisoning.



Lakshmi N. Menon International Award

Prof. Kodagoda loved school children. He called them 'son' and 'daughter' always when addressing them. No student was afraid of him asking questions. He conducted the quiz programs in his own style. When he asked a question in such quiz contests, it was clear and easy to understand. He conducted quiz programs both in TV and Radio, as well as in nonbroadcast school level.

"Vidusara" is a popular weekly science tabloid paper, published in Sinhala. Prof. Kodagoda was one of the key consultants in the educational advisory board. Actually it was he who mooted the idea of publishing such a paper in Sinhala.

I should specifically mention of an association created out of his effort. NARESA (now the NSF) over the years conducted a number of workshops on science writing for both print and electronic media. Participants were young men and women employed by local papers, radio and TV companies. During the last workshop held in 1996, he suggested the importance of forming a science writers association. Accordingly an association was formed called 'Sri Lanka Association of Science Communication'. Prof. Kodagoda was one of the advisors to the association. So far this association held twelve workshops in the various scientific fields.

Prof. Nandadasa Kodagoda was a key person in the field of science education and communication. The flame he kindled is still alight. It is the duty of our present generation to keep it alight.

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VIDU 19-2-11

Prof Kodagoda and Medical Science

Prof. Ravindra Fernando
Dept. of Forensic Medicine
Faculty of Medicine,
University of Colombo

Deshamanya Professor Nandadasa Kodagoda, MBBS, MD, FRCP, DMJ, FCCP, F.Acad. Sc., D.Sc. was a popular and eminent scientist, an academecian and a physician. His contribution to the medical sciences has exceeded a span of four decades.

Qualifying as a Bachelor of Medicine and Surgery in 1956, he served the Department of Health Services for a brief period. Then he joined the University as a Registrar in Obstetrics and Gynaecology. He was trained in the subject for three years, and continued to maintain that was his "first love". Fortuitous circumstances made him change disciplines, and in 1960, he joined the department of Forensic Medicine as a lecturer.

His further training was in the University of Edinburgh, where in 1964 he obtained the Diploma in Medical Jurisprudence, and the Membership of the Royal College of Physicians. On his return home, in 1965, he obtained the Doctorate in Medicine from the University of Ceylon. In 1973, the Royal College of Physicians of Edinburgh conferred its Fellowship on him. The Academy of Sciences of Sri Lanka admitted hin as a fellow in 1985, and the Ceylon college of Physicians in 1985.

Professor kodagoda's long career in the University is quite remarkable. In it, he held almost every conceivable post within the reach of an academic and made an immense contribution to medical education. He was the head of the Language Unit that was established in the Medical Faculty when medicine had to be taught and learnt in the Swabhasha. The posts of proctor, counsellor, and warden brought him into close contact with the students. Within his administrative ambit came the Directorships of the Institute of Workers Education and the Institute of Indigenous Medicine.

From time to time, Professor Kodagoda has been appointed to various Boards and Councils of Management at National Level. These included the Boards of the National Institute of Education, and that of the NARESA. Prominent among these positions is the Chairmanship of the National Dangerous Drugs Control Board.

Professor Kodagoda's scientific and medical publications cover a wide range of subject areas. He was the first in Sri Lanka to describe the effects of paddy husk on the lungs of rat. The first clinico-pathological description of interstitial pneumonitis also came out of his work. Perhaps the most outstanding of his original work was the formulation of the "Camp Method" for the treatment of drug dependent persons.

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Earlier in his career, Professor Kodagoda was instrumental in the compilation of Sinhala technical terms for medical and allied subjects. He went further in that direction by publishing translations of medical text books, the earliest being in histology. He then translated the well known text book in Forensic Medicine written by Prof. Sydney Smith, Professor of Forensic Medicine, University of Edinburgh.

His contributions to books are numerous, outstanding out of which is his chapter on Abortion in Sri Lanka, in Sachdev's authoritative World Book on Abortion.

International recognition of Professor Kodagoda's contribution to medicine and science has been no less. He served three consecutive terms as a member of the Expert Panel on Drug Abuse of the World Health Organisation. The occasions when he was called upon to function as a consultant to the various agencies of the United Nations have been numerous. The International Council of Sex Education elected him its fellow. The International Organisation of Good templars honoured him twice, first for his work in the area of drug control, and again for services rendered to youth in this region of the world. Outstanding is his receipt of the Lakshmi N. Menon International Award for his contribution towards drug control.

Another branch of medicine Prof. Kodagoda made a contribution was toxicology, the science of poisons. He realised the need for specialized treatment units for poisoning and a poison information service in early seventies. He developed a card index system for common poisons which had information on treatment.

Prof. Kodagoda has been a General Secretary and the President of the Section A (Medical) of the Sri Lanka Association for the Advancement of Science, a Council member of the Ceylon College of Physicians, an Honorary Secretary of the Medico-Legal Society of Sri Lanka, the Chairman of the Committee for the Popularisation of Science, and a member of the Board of Management of the Post Graduate Institute of Medicine. Prof. Kodagoda made a great contribution in all these associations and institutions to improve quality of medical education which made an impact on the standard quality medicine practised in Sri Lanka.

Considering the contributions Prof. Kodagoda made to different branches of medical sciences it is a tragic loss that he left us so early. He spent his entire academic life to the advancement of medical science in his numerous activities. His vision, discipline and achievements in his professional career was worthy of emulation by all young physicians.



Vidya 19-2, 13

The Colossus of the era who extended both his hands to help amateurs

Amal Udawatta

Before, during and after my school days I have been afflicted by an unusual disease. This disease did not cause any mental or physical suffering. Yet due to this disease which worsened day by day I was compelled to select journalism as a profession.

A voracious appetite for reading which made me lap up everything that came my way in black and white, was doubled and trebled by two outstanding scholars. They were Dr. E.W. Adikaram and Prof. Nandadasa Kodagoda. Although I was attracted to Dr. Adikaram through his philosophical writing, I did not have an opportunity to get close to him through association. Not so with Prof. Kodagoda. .I was drawn to him through his writing and discourses and through association as well.

During the nineteen sixties and seventies, he was known to us as Dr. Nandadasa Kodagoda, as a member of the editorial staff of the popular magazine called 'Vidya' and as a popular writer. While being engaged in the medical profession, he displayed an innate skill in expressing complex scientific concepts in a simple and lucid language. Articles and magazine authored by him are carefully preserved by me. During my schooldays I read his writing with immense pleasure accessing a limit less expanse of knowledge. Just as his writing his speeches were also given in a lucid and refined language. The radio and television were adorned with his patiently explained Medical complexities. Due to this reason all sections of the community, from the medical College in Colombo to the Veddha community in Bintenna were his friends.

Although I had no opportunity to be closely associated with him during my school days, I was fortunate enough to come into contact with him from time to time in the late nineteen eighties through the Sri Lanka Science Students' Foundation established at Ananda College by some science students. He was also an honorary patron of the Foundation. Other eminent scholars such as Dr. Upali M. Senanayake, Dr. Granville Dharmawardene, Professor Tuley de Silva, Prof. Sarath Kotagama and Mr. Edwin Ariyadasa were also patrons of this society.

During the nineteen sixties and seventies, he was known to us as Dr. Nandadasa Kodagoda, as a member of the editorial staff of the popular magazine called 'Vidya' and as a popular writer. While being engaged in the medical profession, he displayed an innate skill in expressing complex scientific concepts in a simple and lucid language. Articles and magazine authored by him are carefully preserved by me. During my schooldays I read his writing with immense pleasure accessing a limit less expanse of knowledge. Just as his writing his speeches were also given in a lucid and refined language.

He was present on time at every seminar conducted by the Science Students' Foundation. He may sometimes come early but was never late for a seminar. Punctuality was never a problem for him. When he attends a seminar, it was his practice to deliver a lecture. His lectures were brief, yet rich in substance. When ever he met us his advice was that science should be taken to the village and that the effective medium for this is the Sinhala language He strongly believed that the knowledge of English was extremely useful for the expansion of the knowledge of science. In fact his entire life was spent in his efforts to popularize science.

The science day in a school was his favorite day. His questions at a quiz programme did not leave a contestant stranded or shaken. He had his own style of presenting question to contestants. Every questions was preceded by the words "could you tell" or "tell us" . He often give a clue through a phrase to a contestant who had a difficulty in giving an answer. He would often explain further, an answer that is given. Although the basic idea behind a quiz programme is to obtain answers, his attempt was to enrich the knowledge of the contestant as well as that of the listeners .

We met Prof. Kodagoda at a workshop on science writing conducted by him at the Natural Resources Energy and Science Authority in 1995. Among the scholars who addressed the workshop , the chief resource person was Prof Kodagoda. A large number of media personnel representing every media organization participated in this workshop. The workshop was reaching its final day. Mr. Nihal P Abeysinghe and myself met Professor Kodagoda and informed him that we were planning to establish a Science Writers' Association, of which the objective will be to popularise science, and sought his advice. He welcomed the two of us and our intentions. On the day the certificates of the workshop were being awarded, he conveyed our intention to the Hon. Dharmasiri Senanayake who was the chief guest. Nearly two weeks after that we were able to establish the Sri Lanka Association of Science Communication under the guidance of Professor Kodagoda and in the presence of Prof. Priyani E. Soysa, Prof. P.L.D. Waidyasekera, Dr. Upali M. Senanayake, Dr. Jayantha Lal Ratnasekera, Mr. Anura Siriwardene, Mr. Thusitha Malalasekera, Mr. B.M.C.K. Basnayake, and Mr. Percy Jayamanne. The contents of the constitutions for the society were drawn up by the Professor himself. The application for membership was also prepared by him. It is with great respect that I mention after one year of its existence that it was under the patronage of Prof. Kodagoda that the foundation for an active society of science communication was laid. Some months after this as a result of an interview I was to assist on the editorial work of the Vidurava magazine of NARESA to which Prof. Kodagoda provided editorial advice.

He carried on a strong campaign against the drug menace. He travelled through out the island creating awareness in school children against the dangerous drugs. He used the radio and television as powerful media against part the drug menace. Although he was sophisticated in his knowledge and skills, he valued simple living. His love for the Sinhala language knew no bounds. His affection for other languages too was immense. Although our country is small there is no dearth of learned persons and persons skilled in diverse fields. Although the activities of Professor Kodagoda who was skilled in a myriad fields survives, he is no more among us . There is also no one to carry forward his philosophy.

VIDU 19-2-15

Prof. Kodagoda's Contribution and Services to Ayurveda and Traditional Medicine.

Dr. S.P. Ranasinghe
Senior Lecturer
Institute of Indigenous Medicine

It was a bright and sunny day in the 3rd week of June in the year 1996. A black board placed near the main hall (which has now been named in honour of Dr. R. B. Lenora) of the College of Ayurvedic Medicine, displayed a simple notice in white chalk announcing that at 11.00 a.m. on that day, Dr. Nandadasa Kodagoda, Lecturer, Faculty of Medicine will deliver a lecture on Forensic Medicine in that hall. The invitation was to all the students and the staff. I was at that time, a first year student. Keen to see the lecturer, all of us were gathered there at the scheduled time. Nearly six hundred students belonging to all five academic years and many in the staff were present. Sharp at 10.55 a dark complexioned stout gentleman with a pleasant face entered preceded by the Commissioner of Ayurveda who functioned as the Principal of the College. This was my first encounter with Professor Kodagoda who passed away in the early hours of 2nd August 1997.

The Professor without the help of a note delivered his lecture on the "Identification of a Corpse" non-stop for one and a half hours. Although I could not grasp any of the scientific matter contained in his lecture, being merely a student in my first year at the college, I was quick and sensitive enough to gather some salient points in relation to the discourse.

I realized that there was at least one admirer of the Ayurvedic system outside the domain of Ayurveda. How a recently qualified graduate in Medicine and a lecturer in the Faculty of Medicine, could handle the Sinhala language with such competence was surprising. It was my first experience in listening to a western qualified doctor, a lecturer in the Faculty of Medicine who spoke fluently and with technical accuracy in Sinhala - a very rare occurrence in that era.

From that very sunny day, till he breathed his last, after 31 very fruitful eventful years, he remained deeply, and at times emotionally, attached to the field of Ayurveda and to the Institute of Ayurveda.

His attachment, understanding and devotion to this domain which we could presume was alien to him had sprung from a very deep corner of his intellectuality. He was very young at the time he built up this rapport. In spite of his stupendous academic and personal achievements the love he nurtured for Ayurveda and the traditional system of

Medicine never even wavered. Prof. Kodagoda was always the first to volunteer to air his views when and where his invaluable advice was sought. His advice was impartial, well thought out and to the point. He exhibited an uninhibited perception of facts, which carried much weight in resolving many a conflict.

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It is no wonder that he could not brush Ayurveda off, since he was a person deeply committed to everything that is National. He was of the opinion that, Ayurveda, above all was a valuable and living factor of our ancient and glorious civilization and it should be uplifted in every possible manner.



IOGT Regional Award for Services to Youth in the Region.

From 1965 the courses that were conducted in respect of Ayurvedic Medicine included lectures in Forensic Medicine. Prof. Kodagoda took the initiative in starting the series of lectures on Forensic Medicine, a totally new subject to us, the final year students. He proved his ability of teaching the subject in Sinhala, a very bold attempt, where no such endeavour had been made earlier, fearing that the lack of Sinhala terms would be an insurmountable obstacle. He overcame the problem by creating hundreds of technical words of his own, an attempt, which at a later date, paid him dividends where he successfully translated the text book " Forensic Medicine" by Sir Sydney Smith. He continued to teach the subject for more than 25 years, after which he gave the responsibility over to the younger members of the Faculty. **By then, he had created a tradition of teaching Forensic Medicine, in Sinhala. A good 98% of the Ayurvedic doctors who passed out from the College of Ayurveda had learnt this subject under his tutelage.**

His attachment to Ayurveda was not confined to academic activities. He was a person much sought-after as a resource person in many facets of Ayurveda Education as well. He was kind enough to get himself involved with student welfare activities and resolve students' dead-lock situations The student community, in return respected him much. He was interested enough to air his views and at times he took special pain to delve deep into his personal experiences to find solutions to settle conflict situations . He managed to acquire skills in the field of Administration, and tried to inculcate in others his, way of handling difficult situations at the institute. In most instances, he was successful. Prof. Kodagoda was a permanent and indispensable member of various committees set up to study

very different aspects of this field. His vision of the education and training in oriental Universities was unique because, he had the opportunity to be associated with both the Campuses, viz occidental and oriental. He was able to draw inspiration from both these streams and within him a philosophy sprouted and matured with which he worked through out his association with Ayurveda. It gave him a simple insight to steer matters at the institute during his short tenure as Acting Director. His concern with the Gampaha Wickramarachchi Ayurvedic College was also commendable. He was a member of the Committee which ultimately overcame the difficult situation that the College faced, in obtaining the University status. He rendered his services as a consultant to a Committee appointed to look into the standards of teaching and training at that College, while a few years earlier he participated in a similar task for the Borella Institute of Ayurveda.

His long spell as a member of the Board of Management of the Institute of Indigenous Medicine, from 1988 to 1995 proved to be a period of irreplaceable service. Even after that, until his death, he invariably attended the same as an appointee of the University Grants Commission. The records of the Board explicitly illustrates Prof. Kodagoda's views, concepts and ideology towards Ayurveda and Traditional system of Medicine. Although his association with this field was almost life-long he never became authoritative. On many occasions he exhibited modesty as well as his broad-mindedness while answering queries about Ayurveda. In such situations he maintained that, such views should be sought from the persons of that discipline and not from anybody else.

As his last contribution to the Institute, his guidance and stewardship was sought to resolve a very difficult situation the institute ever faced since its inception in 1929, that is to resolve and to find ways and means to bring reconciliation between two animated groups of students. This task was given to him when he was at the last stages of his life, although, many of the persons concerned were unaware of the fact. His last energies were spent to bring peace and harmony, though we did not know that, Prof. Nandadasa Kodagoda himself had obtained from his creator, an assurance that he himself will be given rest, peace and happiness which he sought through out his life.

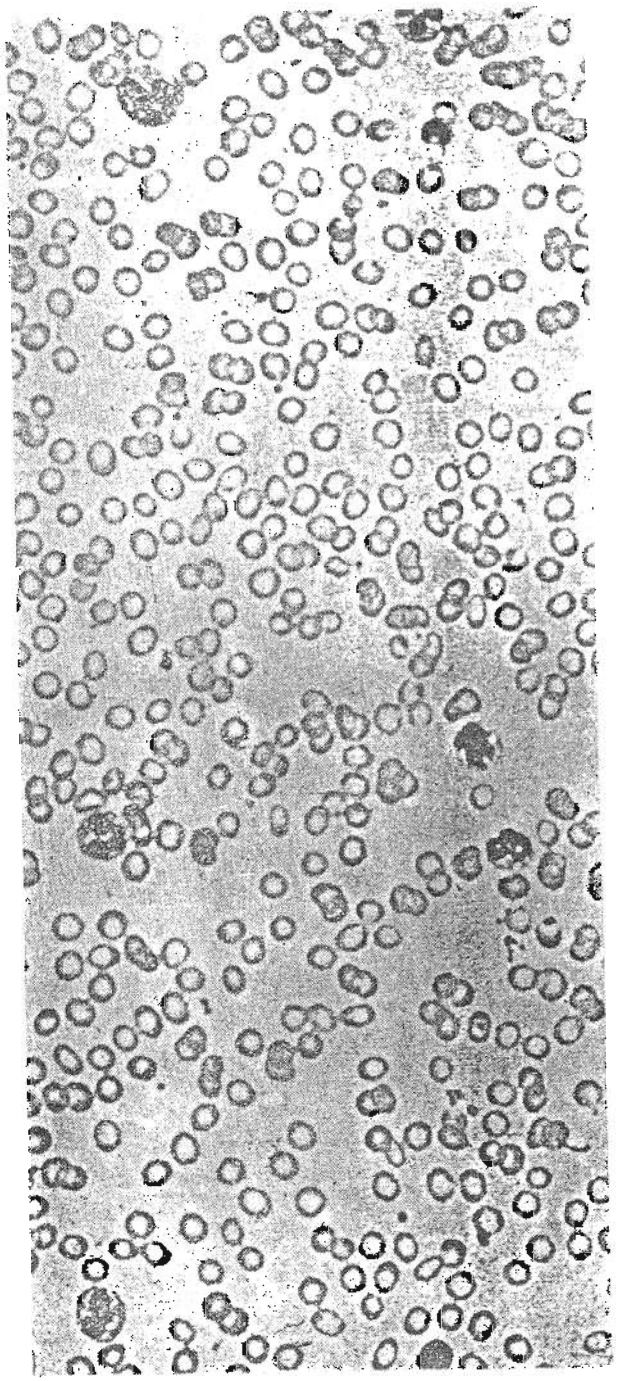
Sir, we appreciate your services to us rendered without malice and hatred. We appreciated your yet impartial and humane instincts. We lost a true friend.

May you attain Nibbana !!



අරුණ පුදුම රතු සෛල

A copy of an article written by Prof. Nandadasa Kodagoda which had been published in Vidya Science Magazine Vol 1 (ii) 2, 1968.



සෛලය යනු, ශරීරයේ ඉන්ද්‍රියයන් සමන්විතව ඇති ඒකකය බව ඔබ දනිති. ඉන්ද්‍රියයන් සෑදී ඇත්තේ මෙම සෛල එකිනෙක හා සම්බන්ධ වන අයුරෙන් බැඳීමෙනි. සාමාන්‍ය වශයෙන් කියන හොත්, මෙම එක් සෛලයක් වෙන්කොට ගත් විට, එය මිය යනු ඇත. ඉන්ද්‍රියයක සෛල ජීවත්ව පවත්නේත්, ක්‍රියා කරනුයේත් සමූහයක් වශයෙන් එක්ව බැඳී සිටය.

මෙම සාමාන්‍යයට බොහෝ දුරට අනුකූල නොවී පවත්නා වැදගත් සෛල විශේෂයක් ශරීරයේ වෙයි. ඒ, රක්තාණු යන නමින් හැඳින්වෙන රතු රුධිර සෛල වෙයි.

රුධිරය සමන්විතව ඇත්තේ, ලවණ සහ ප්‍රෝටීන් ද්‍රාවණයෙක පා වෙමින් පවත්නා සෛල වර්ග කිපයෙකිනි. රුධිරයේ ඇති මෙම සෛල වර්ග අතුරින් ඉතා බහුල වන්නේත්, ඉතා වැදගත් වන්නේත් රතු සෛලයි. රුධිරයට රතු පැහැයක් ලැබීමට හේතු වන්නේත් මෙම රක්තාණු මය.

රුධිර ඝන මිලිමීටරයෙක රතු සෛල 5×10^6 ක් පමණ වෙයි. රතු සෛලයක ප්‍රමාණය ඉතා වැටහෙනු ඇත. ඇත්තවශයෙන්ම, රතු සෛලයක විශ්කම්භය, මිලිමීටරයෙකින් දහසෙන් පංගු 7.2 ක් පමණ වෙයි. රක්තාණුවක් කොතරම් කුඩාද යනු ඉන් වටහා ගත හැකිය.

එක් එක් රක්තාණුවක් කුඩා වුවද, ශරීරයෙහි ඇති මුළු රුධිර ප්‍රමාණයෙහි අන්තර්ගත රතු සෛල සංඛ්‍යාව අති විශාල වේ. ඝන මිලි මීටරයක කෝටි පහ ගණනේ, ශරීරයෙහි ඇති රුධිර ලීටර හයෙහි, රතු සෛල 3×10^{13} ක් තිබිය යුතුවේ. මෙම රක්තාණු සංඛ්‍යාව රුධිර තරලයෙන් ඉවතට ගෙන, එක් පෙළකට සිටින සේ තැබුවහොත්, එම පේළිය අජටාකාශය තෙක් විහිදෙනු ඇත.

ශරීරයේ ඇති සියළුම සෛල තුළ, න්‍යෂ්ටිය නමින් හැඳින්වෙන්නාවූ, ජීවන කේන්ද්‍රස්ථානයක් වෙයි. මෙම

කේන්ද්‍රස්ථානය නොමැතිව සෛලයකට ජීවත් විය හොඳකිය. න්‍යෂ්ඨියේ බලපෑම නොමැතිව සෛලයකට ක්‍රියා කළ නොහැකිය. එහෙත් රතු සෛලය මෙම නියමයට හාත්පසින්ම විරුද්ධ වෙයි. මනුෂ්‍යයාගේ රතු සෛලයෙහි න්‍යෂ්ඨියක් නොමැත්තේය. පරිණත නොවූ රක්තාණුවෙහි න්‍යෂ්ඨියක් තිබී. සෛලය මේරීමත් සමඟ එය නැතිව යෙයි. එසේ වුවද, රක්තාණුව තරම් සජීව, එතරම් ක්‍රියාකාරීත්වයෙන් අනූන තව එකද හෝ සෛල ඝණයක් ශරීරයෙහි නොමැති තරම් යයි කිව හැකිය.

සියළු සත්ත්වයන්ගේම රතු සෛල එක හා සමාන නොවේ. හැටයේ ඇති මෙම වෙනස කොතරම් දුරට ලාක්ෂණික දැයි කිව හොත්, අත්වීක්ෂයක ආධාරයෙන් රතු සෛල කීපයක් පමණක් පරීක්ෂා කිරීමෙන්, එම රුධිර කවර සත්ත්ව විශේෂයකට අයත් දැයි පවා කිව හැකිවේ.



දෙස්තර
නන්දදස කෝදගොඩ

මනුෂ්‍ය රුධිරයෙහි ඇති රක්තාණුව වටකුරු දේහයකි. එය පැතලියෝ මැදින් තුනීය. එහි හැඩය මෙසේ වුවද, එයට සිහින් තාලයක් ඔස්සේ වුවද මිරිකී නෙරැපී යා හැකි වෙයි.

රතු සෛලයෙහි හැඩය රඳ ඇත්තේ එය තුළ තිබෙනා සැකිල්ලක් හා එය වටා ඇති පටලයක් ද හේතු කොට ගෙන වේ. මෙම සෛල පටලයෙන් වටවී ඇති රක්තාණුව තුළ ප්‍රෝටීන්ද, නොයෙක් ලවණ වර්ගද, ඉතා වැදගත් වර්ණකයක් වන හිමෝග්ලෝබින් නැමති ද්‍රව්‍යයද වෙයි. රුධිරයෙන් සිදුවන ඉතා වැදගත් ක්‍රියාව වන, අම්ලකර වායුව පෙනහැල්ලේ සිට විවිධ ඉන්ද්‍රිය කරා ගෙන යාම කරනු ලබන්නේ මෙම හිමෝග්ලොබින්වල ආධාරයෙනි. රක්තානුව තුළ ඇති ලවණ වර්ගවල සාන්ද්‍රණය නොවෙනස්ව පවත්වා ගැනීම අත්‍යවශ්‍ය වෙයි. මේ සඳහා බෙහෙවින් උපකාරී වන්නේ සෛලය වටා ඇති පටලයයි. සෛල තුළ ඇතැම් ලවණ වර්ග එක්රැස් වන්නට පටන් ගත හොත්, සෛල පටලය ලවණ පොම්පයක් මෙන් ක්‍රියා කරමින්, ඒ අධික ලවණ ප්‍රමාණය ඒ තුළින් පිටකර හරියි. යම් අයුරෙකින් රක්තානුව තුළ ඇති සෝඩියම් ප්‍රමාණය සාමාන්‍ය ප්‍රමාණය ඉක්මවා ගිය හොත්, එය පිපිරී යන්නට පවා පිළිවන.

රක්තානුවේ සාමාන්‍ය පැවැත්ම සඳහා, එය වටා ඇති තරලයේ ලවණ සාන්ද්‍රණයද වැදගත් වේ. එම තරලයේ සාන්ද්‍රණය අධික වුවහොත්, සෛලය හැකිලී යයි. එය තනුක වුවහොත්, රක්තානුව තුළට තරලය උරා එය පිම්බී, අවසානයේ දී පුපුරා යයි.

කෙතරම් කුඩා වුවද, රක්තානුවක් තුළ සිදුවන්නාවූ රසායනික ක්‍රියාවලි අනන්තය. ඒ තුළ ක්‍රියාත්මක වන්නාවූ එන්සයිම වර්ග අප්‍රමාණය. අප ජීවිතය රඳ පවත්නේ මෙම සුසැසුම රසායන ක්‍රියා මත බව මෙතෙහි කිරීම බිය ගෙන දෙන්නක් නොවේද?

රතු සෛල නිෂ්පාදනය සිදු වන්නේ අස්ථිමාව සහ පිලාව යන ඉන්ද්‍රියයන්හි සහ ඇට මිදුළු වලය. එහෙත්, යමෙක් තව අවධිය පසු කරන්ම, රක්තාණු නිෂ්පාදනය ඇට මිදුළුවලට පමණක් සීමාවේ. සතකුගේ ඉළ ඇටයක් හෝ කොදු ඇටයක් හෝ ගෙන කපා බැලූ විට, එහි මැද රතට හුරු ද්‍රව්‍යයකින් පිරී තිබෙනු පෙනෙන්නේ මේ හේතුවෙනි.

බ්ලීදු වියෙහිදී ශරීරයෙහි ඇතිවන රක්තාණු සඳකල්ම පවතිනු නොවේ. එක් රතු සෛලයක් වැඩි වශයෙන්ම පවත්නේ දෙතුන් මසක් පමණි. ඉන්පසු එය බිඳී යෙයි. එහි අන්තර්ගත ද්‍රාවණය සෛල සාධනය සඳහා යෙදේ. මේ නයින් සලකා බැලූ විට, දිනපතා අප ඇට මිදුලු තුළින් රක්තාණු කොතරම් සංඛ්‍යාවක් නිපැදී පිට වෙන්දැයි ඔබට වටහා ගන්නට හැකිවනු ඇත.

රක්තාණුවක අන්තර්ගත විවිධ ද්‍රව්‍ය ගැන සින යොමු කළ විට, රක්තාණු නිෂ්පාදනය සඳහා කොතෙක් දැ අවශ්‍ය දැයි පෙනෙනු ඇත. එහෙත්, මින් බොහෝ දැ අවශ්‍ය වනුයේ අල්ප මාත්‍ර වශයෙන් පමණි. රතු සෛල සෑදීම සඳහා සැහෙන ප්‍රමාණයක් අවශ්‍ය වන්නේ ප්‍රෝටීන් ධාතු සහ යකඩද වේ. මෙම දෙවර්ගය අඩු වීමෙන් සෛල සෑදීම - සංඛ්‍යාව - අඩුවනු ඇත. යකඩ පදර්ථය අඩු වීමෙන් තවද ලාක්ෂණිකවූ වේ. හිමොග්ලොබින් සාධනය සඳහා යකඩ අත්‍යාවශ්‍යය. එබැවින් ශරීරයට යකඩ මඳ වුවහොත්, රතු සෛල සාමාන්‍ය ප්‍රමාණය තිබුණද, ඒවායේ හිමොග්ලොබින් සාන්ද්‍රණය අඩු වනු ඇත. එසේ වූ රක්තාණු අඩපන වූ ඒවායෝ ක්‍රියාත්මක භාවයෙන් හීනවූ ඒවාය. තිරක්තිය (anaemia) යනුවෙන් හැඳින්වෙන තත්ත්ව අතුරින් එකක් මෙයයි.

මෙතරම් කුඩා රක්තාණුවකින් ශරීරයට ඇති ප්‍රයෝජන විස්මය ජනකය. සත්ත්වයකු කරන්නාවූ සියළු දස්කම් සැබවින්ම කරනුයේ මනුගේ රතු සෛල යැයි කිව, ඒ බොරු නොවේ.

VIDU 19-2-20

Some Appointments and Honours -Prof. Nandadasa Kodagoda

Appointments

* Chairman, Board of Directors, Alcohol & Drugs Information Centre of FORUT.
* Senior Superintendent, Police Medical Reserve.
* Member, Board of Management, National Institute of Education.
* Member, Board of Management, Post-graduate Institute of Medicine.
* Member, Board of Management, Institute of Indigenous Medicine.
* Member, Board of Management , Natural Resources, Energy & Science Authority of Sri Lanka.

Honours -National

* "Kala Keerthi" President's National Award for original contributions to Arts and Culture.
* "Sinha" Gold Medal for outstanding services in the field of Education.
* National nominee for 'Kalinga" Award for popularisation of Science.
* Sri Lanka Science Students Foundation Award for popularisation of Science.
* 'Deshamanya' Award
* Honorary Doctorate in Science, awarded by the University of Colombo.

Honours-International

* IOGT Regional Award for services to youth in the region
* Regional Award of the International Organisation of Good Templars, for the most outstanding personality in the region in the field of drugs.

Education

* Member, Government Committee for compilation of Sinhalese technical terms.
* Member, Committee on Admissions to the National University System, Ministry of Education.

Art & media

* Member, Science panel, Government Arts Council of Ceylon.
* Vice-President, Sambhavya Sangeeth Sabha (Classical Music Society)
* Member, Board of Directors, Kalaakendra Foundation.
* Patron, Science Writers' Association of Sri Lanka.



Prof. Nandadasa Kodagoda was born in the village of Ahangama in Galle in Southern Sri Lanka on 31 October 1929. His parents were Suvaneris de Silva and Babynona. He was the eldest and only son in the family and brother to three younger sisters. He obtained his basic education from the village school, and later entered Nalanda College in Colombo and Mahinda College in Galle which were considered as the most eminent Buddhist educational centres in Sri Lanka, for his secondary education. Thereafter he entered the Colombo Medical College from where he graduated as MBBS in the year 1957. In 1959 he joined the Medical College as a lecturer in Forensic Medicine. Afterwards, he became the Dean of the Medical Faculty and later was the Vice Chancellor of the University of Colombo. In 1995, he retired from the government service.

He married Ratnavali de Costa, daughter of Muhandiram de Costa and Sumanawathie de Silva of Galle and was the father of two (2) sons and a daughter.

Prof. Kodagoda served as a member in three consecutive Boards of the Natural Resources Energy and Science Authority of Sri Lanka (NARESA), the predecessor of the present National Science Foundation (NSF), having been appointed in 1992, 1994 and 1997. He was also the Chairman of the Steering Committee on Science Education from 1992 to 1996. He held the Chairmanship of the National Dangerous Drugs Control Board where he rendered valuable service to this field which was an area in which he was greatly interested.

He loved the Sinhala language and Sinhala literature and was interested in popularizing of Science in Sinhala among rural people. He was also interest and talented in Sinhala music and poetry and was an able writer too. The "Jana Jana" magazine he edited with the late Mr. G.W. Surendra is ample evidence to his competence in literature. The translation of the book titled "Forensic Medicine" written by Prof. Sandy Smith of the University if Edinburgh into Sinhala was an appreciable task executed by Prof. Kodagoda . In appreciation of services rendered to the upliftment of local arts, he was awarded the titles,"Kala Keerthi" in 1986 and "Deshamanya" in 1994. In 1997, University of Colombo awarded a honorary doctorate for his contribution to science. He had contributed thousands of articles on science and literature to newspapers and magazines which were very popular among school teachers and students in the sixties and seventies.

He took part frequently in the science seminars in schools and institutions and was skilled in teaching the people, science for everyday life in simple language through the educational programs launched by the radio and television. Prof. Kodagoda was a Sri Lankan who valued Buddhist customs and regarded, practice is better than precept.