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VP News

Calcutta Book Fair

Vigyan Prasar participated in the 24th Calcutta Book Fair. The fair was organised from 27th January to 7th February, 1999. VP Publications, though they are mainly in English and Hindi received good response. Arrangements for sky-watching through telescope were made which attracted viewers of all ages. VP activities like popularising HAM Radio, and establishing VIPNET Science Clubs evoked enthusiasm among interested visitors. Our first Bengali publication *Sisur Jatno O Lalan Palan* (Child Care) was released during this period, and subsequently received wide acclaim from the readers.



VIPNET Clubs sensitisation meeting at Meerut

VIPNET Science Clubs project of Vigyan Prasar seems to have made significant inroads into certain areas of the country. One of these, Meerut, was the venue of the first major gathering of VIPNET in northern India. Responding to local initiative taken by the district level committee of the National Children's Science Congress in Meerut, this meeting on 11 January 1999 was organised by Vigyan Prasar at Vikas Bhavan with a day-long programme. About 200 registered and many more unregistered delegates from the schools, inter colleges, clubs, NGOs of the entire district actively participated in the meeting.*

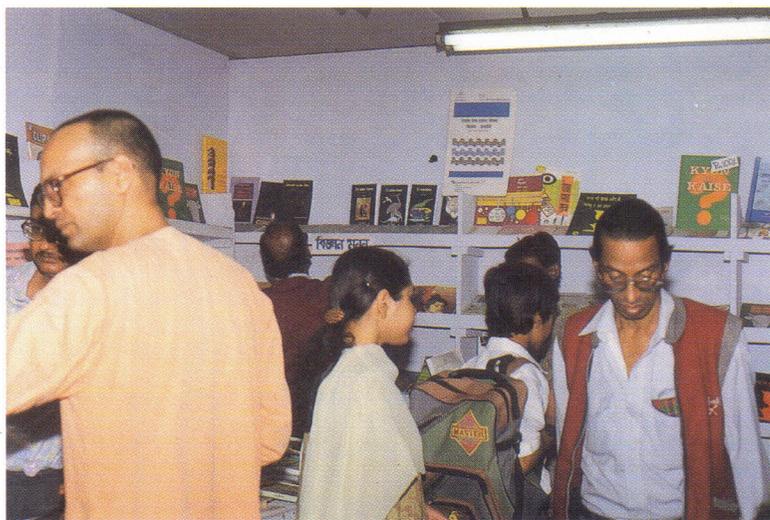
[*For photographs see page 3]

New Arrival

Mainbattia Rasayanik Itihas, the Marathi version of "The Chemical History of a Candle" by Michael Faraday has recently been brought out by Vigyan Prasar. Translated by Mrs. Sudha Gowariker, the book is now available for Rs.75/- It is distributed by M/s Unmesh Prakashan, Chandraneel Apartments, C Wing Cosmos Banksmor, Vithalvadi Rastha, Pune - 411030.

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Vigyan Prasar stall at Calcutta Book Fair, 1999

Science and technology dictionary in Hindi

A meeting-cum-workshop was organised at Allahabad on January 20, 1999, to finalise the modalities for publishing a Hindi Science and Technology dictionary. Incidentally, Vigyan Prasar has already brought out a working paper outlining the need for preparing such a dictionary and the various earlier efforts that have been undertaken in this direction. Vigyan Parishad at Allahabad has been assigned with the responsibility of preparing the dictionary.*

... think scientifically, act scientifically ... think scientifically, act scientifically ... think scientifically, act ...

Quality and us Indians

It would appear that we Indians generally have a very poor sense of quality and even a poorer sensibility when it comes to the quality and state of things around us. How else could one ever explain the high level of our tolerance of, and willingness to put up with, the poor and shoddy workmanship we come across everywhere, all the dirt and squalor around us, generally unkempt and poorly maintained public and private facilities we encounter everywhere — and much more and worse?

Perhaps, one needs to look at a specific example in some detail to point to different aspects and many an interlinked element of the quality problem. A closer examination of these aspects and elements could point to possible steps that need to be taken to deal with the quality problem.

Take the state of toilets and bathrooms in the country. It is difficult to imagine anyone who hasn't encountered and thought about the problem on innumerable occasions. One is also aware of some significant and to some extent successful attempts that have been made to deal with the problem. One such effort that immediately comes to mind is that of Sulabh. I am sure there must be others, perhaps not as well-known, as well publicised, or even on a comparable scale. However, considering the sheer enormity of the problem, there is need to mount a much larger, sustained and far more extensive, integrated and a countrywide coordinated effort to arrive at a lasting solution. Let's see why.

There are several aspects of the problem : The toilet and bathroom technologies available in the country (involving design, plumbing, layout and fixing of tubs, pots, sinks, drains, faucets, valves, stopcocks, showers and so on); and availability of competent and trained manpower as well as good quality durable hardware and fixtures used in toilets and bathrooms.

Even a casual observer could not have missed noticing the ever-present and persistent problems in toilets and bathrooms one comes across in hotels, guest houses, cinema halls, railway and bus stations, such facilities at public places like government and municipal buildings, schools, colleges, university departments, airports and any other places you can think of. Typical problems include crudely or half-fixed, leaking or overflowing taps, pipes, faucets, sinks, other receptacles; stagnant pools of water in toilets and bathrooms because of the higher level of the drainage points in relation to the rest of the floor; ill-fitting and rusted nails, screws, bolts and brackets used with stainless steel or aluminium pipes/fixtures etc; invariably, the workmanship is so abjectly crude and amateurish that it betrays the illiteracy of the workers/executers involved. Heavy sinks, urinals, overhead tanks are never securely or properly fixed even to begin with — their sizes/weights are almost never taken into account while fixing them onto the floor, or onto the wall. With such poor workmanship to begin with, the repairmen who handle these later play havoc and leave behind unbelievably crude imprints of

their workmanship (even to call it that would be an insult to the profession).

It would appear that a nation, boasting of remote sensing satellites which are today delivering the "best in the world" quality data to users, has proved incapable of building bathrooms and toilets which work and are consistently usable! If that sounds incongruent, almost unbelievable, the only other inference can be that we have not thought it fit, all these fifty years, to pay this problem the kind of attention it deserves. Either way, shame on us!

There is another aspect which has often escaped our attention. But it is at the heart of the basic problem. For toilets and bathrooms, we have merely tried to foist on ourselves designs and technologies which are neither culturally or traditionally agreeable with a majority of our population, nor workable with the kind of water supply we have available or non-available at most places. Additionally, we have never really made any real effort to demonstrate to and teach common people how to correctly and properly use and maintain the kinds of toilets and bathrooms that we have been building. This combined with our Indian habit and tradition of "no maintenance and no upkeep" of whatever we build, has played havoc with the already inadequate and insufficient numbers of existing bathrooms and toilet facilities in the country.

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So, we need to initiate action on several fronts together. We need to improve our designs, layouts and workmanship by appropriate training and retraining of the personnel involved. We need to spread awareness, through various means, about the correct and proper use of western and Indian style toilets where flushing etc are required — with all the do's and don'ts. We need some R&D to develop more suitable and more workable solutions which take into account our cultural traits as well as ground realities concerning

availability and supply of water for proper operation of these facilities. Proper training of the workforce in laying out, fixing, building, running, maintenance and repairs is a must. Minimum acceptable standards need to be established and enforced.

One could begin by launching a project which would seek to solve once for all (i.e. through a lasting solution) the problem of neat, clean and well-maintained toilets and bathrooms in all public places and all State and Central government buildings in the country. Among other things, this

would do wonders for tourism in the country.

This example highlights quite well the kinds of hurdles and ground realities we are up against in dealing with the quality problem. To a large extent, it boils down to a question of attitudes, sensibilities, and tolerance levels. These have to be cultivated and built up over time. As a long-term strategy, we need to focus on children and youth for building up quality consciousness and the right kind of attitudes. Readers' views are solicited.

NKS

Vigyan Prasar: An Insight

Popular science writings

Science popularisation efforts were not unknown in our country and neither are they of recent origin. The preindependence era marked by luminaries like P C Ray, J C Bose, S N Bose, M N Saha, Ruchi Ram Sahni and C.V. Raman has contributed immensely to the progress of science. In their own way, these stalwarts have also either directly contributed to have inspired various individuals to tread on the path of science popularisation. The efforts of Ruchi Ram Sahni [(See the VP publication : *Memoirs of Ruchi Ram Sahni - Pioneer of Science Popularisation in Punjab*; Editors: Narender K. Sehgal and Subodh Mahanti, Rs. 60 (paperback)] has already been widely publicised. Similar efforts in the past by Zakaullah, Ramendrasunder Trivedi, Rajendralal Mitra, Pathani Chandra Shekhar Samanta and many others helped in continuing the noble tradition of science popularisation.

There have also been contributions by innumerable people who have spent time and effort in popular science writing in the local languages. Being a country of many languages, such efforts in regional languages would remain unknown to others if no measures are taken to compile and translate these writings into other languages.

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Members deliberating on the proposed Hindi Science & Technology dictionary at the Allahabad workshop.



A section of the delegates attending VIPNET meeting at Meerut.

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Vigyan Prasar has undertaken the important task of compiling selected popular science writings of the period between mid -19th to mid - 20th centuries. Separate compilations of Hindi and Bengali writings are being readied for publication. Through this venture, an illustrative historical account of science popularisation is expected to emerge and once such compilations, in all major Indian

languages, are available, the English versions can easily be published so as to facilitate wider reach and dissemination. Such compilations are also expected to be of great utility to researchers, science popularisers, educationists and anyone who is following the progress of science with interest. Committed to the cause, Vigyan Prasar is engaged in coordinating efforts for speedy publication of these compilations.

Bookshelf

Two gems -

Everything Has A History and My Friend Mr Leakey

The world has seen few science popularisers of the calibre of J.B.S. Haldane. Haldane was not only a brilliant scientist but also a great science writer. A pioneer biologist, biochemist and geneticist, he helped provide the mathematical foundation for Darwin's theory of natural selection. Haldane was a professed Marxist though he developed some reservations in his later life. As the chairman of the editorial board of the *Daily Worker*—the mouthpiece of the Communist Party of Great Britain — he wrote 300 brilliant popular science articles for ordinary workers. He earnestly believed that every worker or craftsman, worthy of his/her profession, must understand the science & technology underlying his trade. This appreciation would make the job much more interesting. Many of these essays were later collated into books like "Everything Has A History" and "Science In Everyday Life".

Vigyan Prasar has recently reprinted two remarkable creations of J B S Haldane and plans to reprint a few more of his worthy books.

Everything Has A History

ISBN : 81-7480-031-X

pp: 165+xxiii

Price Rs.45 (Paperback)

A collection of 42 short popular science essays written by Haldane to educate the workers, but has always captivated the interest of anyone who loves science or has some relation to science. In a characteristic Haldane like simplicity, complex

issues of the scientific world have been treated here in a down-to-earth language which really demonopolises the issues otherwise reserved for high brow scientists. One may give examples of topics like Evolution, Cosmic Rays and Wildlife Census to name a few. The last 6 write-ups introduce the common readers to 6 great scientific workers of our times, like Einstein, Hardy, Hopkins, Langevin etc. in a highly readable form.

My Friend Mr Leakey

ISBN : 81-7480-029-8

pp: 145+xxx

Price Rs.40 (Paperback)

Three generations have already enjoyed *My Friend Mr Leakey*. Books like this are a delight for ever. Mr. Leakey is a loveable character created by Haldane, who is an enigmatic magician and who lives a weird life with his ever obliging assistants—a huge octopus, a small green cow, a monstrous dragon and many beetles. The reader will find this perfect team capable of hosting memorable parties, which will engross the minds of the children. The first three chapters make not only good reading, but also expose one to a great deal of scientific information. The other three chapters of the book titled Rats, The Snake With the Golden Teeth, and My Magic Collar Stud, deal with quite a few colourful creatures of nature that have always fascinated the younger ones. All these stories attain amazing reality due to the narrative style of Haldane in first person.

National Science Day offer

Order for both the gems *Everything Has A History* & *My Friend Mr Leakey* and avail of a special discount of 40%. Write back to us or better still send an email to vigyan@hub.nic.in before May 31, 1999

National Science Day - Recognition of excellence

The Government of India, way back in 1986, at the initiative of the National Council for Science and Technology communication (NCSTC), Department of Science and Technology (DST), declared 28 February as the National Science Day and instituted National Science Popularisation awards. In addition to remembering with gratitude the contributions of the renowned Nobel Laureate, C.V. Raman, the Government stands committed to inculcating a scientific temper in all so that overall development of society can be achieved. For several days (upto a month), either starting or culminating on this day, special meetings, functions, debates, lectures, seminars, competitions and so on are organised with a view to giving impetus to science popularisation activities. In addition, NCSTC, DST, installed the following awards, to recognise and honour outstanding work in the following areas:

- ❑ best efforts in science popularisation
- ❑ best S&T coverage in newspapers
- ❑ best S&T film
- ❑ best efforts in science popularisation among children
- ❑ best S&T toy/Do-it-yourself kit.

Subsequently the awards were rationalised and their number reduced to three. The selection for the awards has been on the basis of work done during the past five calendar years. They have been given away every year since 1987.

The National award for best effort in science popularisation is presented to either an individual or an institution for outstanding work in science popularisation.

The National Award for best S&T coverage in mass media (Rs.50,000) has been instituted to honour an individual or an institution for outstanding contribution to S&T coverage in mass media—print, radio, television, or film.

Finally, the National Award for science popularisation among children (Rs.50,000) is awarded for best efforts towards popularisation of science and promotion of scientific temper amongst children. This again can be presented to either an individual or an institution.

Professor M.A. Sethu Rao is best known as a builder of a number of institutions/organisations devoted to promotion and popularisation of science and technology in Karnataka. He has been a founder member of Karnataka State Council of Science Technology (1975), a founder member of Karnataka Vijnana Kendra (1983). He has been the Executive Editor of Kannada science monthly "Bal Vijnana" for 10 years, and as Member Secretary of Publications Committee of KRVP produced over 60 books on popular science. At present, he is the Chief Editor of the forthcoming science encyclopaedia in Kannada. He is actively associated with several scientific and social organisations in Karnataka. The honour of accepting the 1999 National Award for best efforts in Science popularisation (General) goes to him.

Dr. Bijoy Krishna Dev Sarma, the Director, College Development Council, North-Eastern Hill University, Shillong, has interests in mathematics and science education. He has published 35 popular science books in Assamese and 4 in English. He had been a regular science column writer in a number of science magazines/dailies/monthlies like *Amar Pratinidhi*, *Assam Batori*, *Dainik Assam*, etc. He has to his credit a series of write-ups on Astronomy written in a simple and lucid manner and over 3,000 science articles and features. He has inspired many young writers to write to popularise science in Assamese. Dr. Sarma has worked as science magazine editor at All India Radio, Shillong, from 1989 to 1993 and has delivered over 150 radio talks on popular aspects of science and mathematics. He has the distinction of being the 1999 awardee of National Award for best S&T coverage in the Mass Media.

The national award for Best Effort in science popularisation among Children, this year goes to SRUJANIKA, which was established in 1987 as a society for research and innovation in science education, and development. The objectives of SRUJANIKA include promotion of education and inculcation of scientific spirit among people in general, and children in particular. The efforts of SRUJANIKA are visible in Orissa.

The legendary Dr. C.V. Raman

The relevance of science & technology in the present day can best be appreciated when one ponders over its contributions to the areas of food, health, communication, industrial growth, etc. But at no point of time can one afford to belittle the responsibility of science and scientists towards the betterment of society leading to an overall improvement in socio-economic indicators. A reiteration of this responsibility is the true purpose of celebrating the National Science Day, year after year, on 28th February. This day is special also for honouring one of our legendary scientists Dr. C.V. Raman. It was on this day, way back in 1928, that the discovery of "Raman Effect" was publishing announced.



C. V. Raman was born on 7 November 1888 in a small village near Tiruchirapalli (Trichonopoly in those days) in Tamil Nadu. Raman's parents were R. Chandrasekhara Iyer and Parvathi Ammal. His father taught physics, mathematics and physical geography at the Mrs. A. V. Narasimha Rao College at Vishakhapatnam. In 1903 Raman joined the Presidency College in Madras from where he passed the B.A. (1904) and M.A. (1907) examinations. He stood first both in B.A. and M.A. examinations and won all the prizes available. While he was a student he independently undertook original investigations in acoustics and optics. Raman was the first student of the Madras Presidency College to get a research paper published; that too in a prestigious international journal. His first paper on 'Unsymmetrical diffraction bands due to a rectangular aperture' was published in the Philosophical Magazine in November 1906. This was followed by another note in Nature in 1907.

In 1917 Raman was invited by Ashutosh Mookerjee (1864-1924), to be a professor of physics in the newly established Science College, of the Indian Association of Cultivation of Science. Even after joining the Calcutta University, Raman was allowed to continue his work at the Association's Laboratories. Following the death of Amrit Lal Sircar in 1919 Raman was elected as honorary Secretary of the Association, the post he held till 1933.

In 1933 Raman left Calcutta and went to Bangalore to become the Director of the Indian Institute of Science. He was the first Indian to become its Director. He served the Institute both as its Director (1933-1937) and as head of the Physics Department (1933-1948). Though Raman proved his brilliance in scientific investigations, he was not encouraged to take up science as career, by his parents or relatives. At the instance of his father Raman took the Financial Civil Service (FCS) examination. He stood first in the examination and in the middle of 1907 proceeded to Calcutta to join the Indian Finance Department as Assistant Accountant General.

On knowing Raman's background and his eagerness for carrying out research outside his office hours he was wholeheartedly welcomed by Amrit Lal, the nephew of Mahendra Lal Sircar, who is credited with the establishment of the Indian Association for the Cultivation of Science. Thus Raman started his long and very distinguished scientific career. It was not an easy task. Raman stayed in Calcutta from 1907 to 1933. Till 1917 he continued his research at the Association in his spare time. Doing research in his spare time and that too with very limited facilities Raman could publish his research findings in leading British and American journals like *Nature*, *The Philosophical Magazine*, and the *Physical Review*. During

this period he published 30 original research papers. His research carried out during this period mainly centred on areas of vibrations and acoustics. He studied a number of musical instruments viz., *ektara*, violin, *tambura*, *veena*, *mridangam*, *tabla* etc.

Under the present circumstances it seems worthwhile to stop and ponder over the great man's world view and what he envisaged for Indian science. Presented below are a few of them. "What is science in the last analysis but the study and the love of nature, displayed not in the form of abstract worship but in the practical form of seeking to understand nature?" "One aspect of Indian culture was its profound understanding of nature. Much of India's philosophy related itself to the understanding of the rationale and the meaning of the phenomena of nature."

"The true wealth of a nation consists not in the stored-up gold in its coffers and banks, not in the factories, but in the intellectual and physical strength of its men, women and children." "I would like to tell the young men and women before me not to lose hope and courage. Success can only come to you by courageous devotion to the task lying in front of you and there is nothing worth in this world that can come without the sweat of our brow. I can assert without fear of contradiction that the quality of the Indian mind is equal to the quality of any Teutonic, Nordic or Anglo-saxon mind. What we lack is perhaps courage, what we lack is perhaps driving force which takes one anywhere. We have, I think, developed an inferiority complex. I think what is needed in India today is the destruction of that defeatist spirit. We need a spirit of victory, a spirit that would carry us to our rightful place under the Sun, a spirit which will recognize that we, as inheritors of a proud civilization, are entitled to a rightful place on this planet. If that indomitable spirit were to arise, nothing can hold us from achieving our rightful destiny."

"If you ask me what is the greatest industry of a Nation—the key industry—I have no hesitation in saying that it is the production and diffusion of knowledge... There is no nobler work for a man or an institution than to bring up a young generation in health and strength and in the vigour of intellectual and physical activity."

"In the past, India had shown her greatness in the fields of scholarship, philosophy and science but today, we are helplessly dependent on western countries for knowledge of science. India should not be a camp-follower but a leader in science. It is no use getting our ideas from the west. We have to think out our problems and find the solutions to them." "There is only one solution for India's economic problems and that is science and more science."

"While the foundation of the scientific reputation of a country is established by the national journals which proclaim their best achievements to the rest of the world. Manifestly the edifice of science in India is incomplete... It is true that the spirit of science and its service are international, but is it not also true that every nation has its own academies, learned societies, magazines and journals? India will have to organize and develop her national scientific institutions before she can enter into the comity of international scientists."

"Let us try to make our universities the best — we should not be satisfied with anything less than the best. What will be the result? Instead of a great many of our young men going out of the country, they will remain here and strive to advance our reputation and that will make us strive for more and more good things."

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