

National Children's Science Congress*

About 850 child scientists representing nearly 500 districts of India and some SAARC countries participated in a five-day 13th National Children's Science Congress (NCSC). The congress was organized by NCSTC Network, locally coordinated by Bharat Jan Gyan Vigyan Samiti (BJGVS), Bhubaneswar with support of Science and Technology Department, Government of Orissa.

The primary objective of the NCSC is that children in the age group of 10–17 years, both from the formal school system as well as from out of school, exhibit their creativity and innovativeness through their ability to think of a societal problem experienced, ponder over its cause and subsequently try to solve the same using scientific process. The programme encourages a sense of discovery by involving close and keen observation, raising pertinent questions, building models, predicting solutions on the basis of a model, trying out various possible alternatives and arriving at an optimum solution using experimentation, fieldwork, research and innovative ideas. It emboldens the participants to question many aspects of our progress and development and express their findings in vernacular languages.

The focal theme of the 13th NCSC was 'Harness Water Resources for a Better Future', aimed to generate awareness and enact measures for its judicious use and conservation and thus included sub-themes like: understanding the hydrological cycle in the local context, water harvesting – conservation and storage, water needs – efficient use and economy, water ecosystem and biodiversity, water and health, water transportation and recreation.

The child scientists of NCSC 2005 undertook specific small research projects on the above sub-themes and presented 528 projects with illustrative charts, photographs and tables before a panel of judges. This included 223 rural and 205 urban-based projects. The programme included 12 parallel technical sessions for presentation of the research projects by the child scientists individually.

*Based on the 13th National Children's Science Congress held at Kalinga Institute of Industrial Technology, Bhubaneswar during 27–31 December 2005.

The President of India, A. P. J. Abdul Kalam formally inaugurated the Congress. He turned the inaugural function into a virtual classroom interacting with school children almost oblivious of all others present. Much to the delight of the young minds, Kalam addressed them, taught them science, spoke of challenges ahead, put questions to them and answered a few himself. He went on to suggest certain books, each of which according to him was a must for every child. He wanted children to discuss, deliberate and work on challenges in areas of water, solar power, monsoon and earthquake forecast, etc. Kalam wanted them to read *The Life and Work of C. V. Raman*, *Brief History of Time* by Stephen Hawking and *Empires of the Mind* by Denis Waitley.

'During the last five years, I have met over one million students in all parts of the country in the age group 10 to 17 years. I make it a point to answer at least 10 to 15 questions wherever I go; in addition I have answered thousands of questions through my website', he informed.

Kalam asked the children to join him in reading out a message: 'Courage to think different, courage to invent, courage to discover the impossible, courage to combat the problems, and succeed, are the unique qualities of the youth; as a youth of my nation, I will work and work with courage to achieve success in scientific discoveries'.

In his brief address, Naveen Patnaik, Chief Minister of Orissa, mentioned that 'man's desire to know the unknown has taken him to different parts of the earth: to the depth of the oceans, to the top of the mountains, up in the atmosphere, above the clouds to moon and now to Mars. This is the search for unknowns. The spirit of science has made this adventure a worthwhile learning experience. From the invention of the shuttle to the development of the satellite, lastly the *Chandrayan* – is one great transition made by man, as he used science and technology to satisfy his wandering curiosity'.

On the second day, a children's rally, flagged off by Naveen Patnaik, was organized from the Forest Park to Indira Gandhi Park. A science teacher's convention was held during the afternoon,

which was addressed by many eminent scientists and educationists. The convention was dedicated to address the issues and innovations in science education and its strategies.

Addressing a large number of science teachers in the congress, Yashpal, (President of NCSTC-Network) urged the teachers for creativity and accountability in the school environment. Emphasizing on the importance of learning over mugging, he requested the teachers to transform the schools to be more relevant to the society. According to him, the teacher and the student should learn simultaneously to inspire each other.

Highlighting the concept and understanding in the pedagogy of learning, Yashpal advocated forming a curriculum where subjects chosen would be required to be understood rather than to be remembered for the sake of examination alone. Citing an example, he explained to the teachers on how remembering the names of currencies of various countries was irrelevant, as it was not the prime requirement compared to a lot more things which remain to be understood. In such cases the children could be made to understand on 'how' and 'where' to 'find such information', when needed.

The second day evening also involved a teleconference between scientists from Delhi and the child scientists at NCSC venue. Anuj Sinha, Advisor and Head, NCSTC, DST, Govt of India and Anupam Mishra, Gandhi Peace Foundation, interacted with the child scientists and answered a variety of questions on science, technology and their methodology. In his tele-interaction, Anuj Sinha advised the child scientists that, 'we see diversity in science and in scientific phenomenon. Science is not just a simple and routine activity like reading and writing. It cannot be learnt by merely remembering some equations by heart or memorizing Newton's laws. It involves the process of thinking, understanding, imagination, creativity, ingenuity, prediction... and much more'. He urged the child scientists to join this adventurous journey and contribute a lot for development of the society and our nation. The session was inspiring and thought-provoking.

The third day continued with presentations and interactive activities. In the after-

noon there was a session on explanation of 'miracles'. A videoconference was also arranged between the child scientists and the scientists at Ahmedabad. N. M. Ashok and A. R. Prasanna from Physical Research Laboratory and P. S. Thakkar and R. M. Pandya from Space Applications Centre of ISRO, Ahmedabad answered

questions on mysteries of science and technological advances.

The fifth day started with a teleconference programme between the child scientists and scientists at Bangalore. As is the usual practice, the children asked questions on water, atmosphere and biodiversity. The scientists at the other end patiently

answered all questions one by one, with lots of examples.

Narottam Sahoo, Gujarat Council of Science City, Sola-Santaj Road, Ahmedabad 380 060, India
e-mail: narottam@scity.org

MEETING REPORT

Science–society interface: Pugwash Conference on HIV/AIDS*

The Pugwash Conferences on Science and World Affairs brings together scholars and public figures to work towards reducing the danger of armed conflict and seek solutions to global security threats. The organization evolved primarily because of the manifesto of Bertrand Russell and Albert Einstein of 9 June 1955 which called upon 'scientists of all political persuasions to assemble to discuss the threat posed to civilization by the advent of thermonuclear weapons...'. The then prime minister of India, Jawaharlal Nehru offered to host the first meeting, which subsequently had to be turned down due to the Suez Crisis. The earlier offer of Cyrus Eaton to finance and hold the meeting was reconsidered and the first meeting was held in the village of Pugwash, Nova Scotia, Canada in 1957. It is from this small town that the organization takes its name. The first meeting was attended by 22 eminent scientists, and since then the organization has grown into an active platform to bring together, from around the world, influential scholars and public figures concerned with reducing the danger of armed conflict and seeking cooperative solutions for global problems. In 1995, the Pugwash Conferences on Science and World Affairs was awarded the Nobel Prize. M. S. Swaminathan is the current chairman of this organization.

The Pugwash Conferences until 2000 focused on nuclear peril, but then reviewed and reoriented its basic mission to include new threats to human security, particularly those like HIV/AIDS that cannot be attributed to an enemy. During the same time, in 2000, the UN Security

Council passed Resolution 1308 which recognized HIV/AIDS as a security threat; thereby encouraging all countries and especially the most affected areas, to consider it on par with conventional defence and security issues. Till date, four workshops have been organized in South Africa to examine the multiple dimensions of HIV/AIDS. It was decided to organize the fifth meeting in India due to the fact that the country harbours the second largest population (5.2 million) of HIV/AIDS infected people.

Elaborating on the purpose of the conference, M. S. Swaminathan in his introductory address stated that the Chennai Conference was an attempt to bring together experts from the first wave countries such as South Africa, Kenya and Uganda, where the epidemic has struck with great intensity and those from the second wave countries where the epidemic threatens to spiral out of control, to exchange successful and replicable strategies for the prevention, management and mitigation of HIV/AIDS.

The panelists at the Public Forum included N. Ravi of the *Hindu*, Soumya Swaminathan (moderator) of the Tuberculosis Research Centre, Sujatha Rao, Sheila Sisulu, Mary Crewe and Padma Chandrasekaran. The focus of all the panelists was on the need to develop and implement a holistic approach towards HIV/AIDS with equal attention accorded to prevention, treatment and care. Prevention of course, would be the first and most effective line of defence. Recalling experiences from South Africa, Sheila Sisulu of the World Food Programme stated that the message of prevention during the earlier phase of intervention was divisive and only sought to find new groups to blame. This phase was also blind to the social fabric of the country; and

often ended up targeting the most marginalized groups of the society. Further, the approach failed to utilize traditional forms of community organizations that were dismissed as being pagan.

Sujatha Rao, National Aids Control Organization, Government of India, stated that India has moved ahead from its earlier phase of denial and focus on blood safety to a more comprehensive programme on HIV/AIDS. She also said that the approach had to focus more on prevention rather than on treatment because medications/medical intervention continue to be problematic areas because of very high and often unaffordable costs. Rao said that while strengthening the health system is the top priority for action, a nutritional focus also needs to be brought into the approach. P. Krishnamurthy of the Voluntary Health Services, spoke on the initiative of the Government of Tamil Nadu, while Mary Crewe highlighted the complex interplay of social and cultural factors in the HIV/AIDS scenario.

Padma Chandrasekaran of Avahan – India Aids Initiative stated that although rapid strides have been made in developing two vaccines for HIV/AIDS, it may take a decade for the general release of the vaccine and 10 years more to make it affordable. Viewing HIV/AIDS as a problem that will force more people into poverty, Chandrasekaran stressed upon the need to continue working on prevention and support programmes, especially amongst marginalized sections of the society.

The presentations and the subsequent discussion with the audience at large highlighted prevention as the most viable strategy in mitigating HIV/AIDS. Therapeutic options are limited at this point of time to anti-HIV drugs that can prevent rapid spread of the virus and postpone some of the complications. These include

*Based on the Pugwash Conference on HIV/AIDS: Sharing of Experiences, What Works? organized in Chennai from 7 to 9 April 2006 by the M. S. Swaminathan Research Foundation.