

Capsule 36

JAN-MAR 1995

NATIONAL SCIENCE SEMINAR

National Council of Science Museums, like previous years, organised the National Science Seminar. For 1994 the topic was 'Population: A Resource or A Burden?' The interesting thing about these seminars is that students, under 15 years of age, deliberate on topics of great significance every year. This year 31 students, one from each State/Union Territory, barring Tamil Nadu (who could not participate owing to personal reasons), expressed their views. The seminar was held at the National Science Centre, New Delhi on October 20, 1994. This year over 50,000 students participated at different level of the Seminar and were heard by over 1.5 lakh students and public.

Apart from giving the facts and figures of the population scenario of the world, India in particular, and related environmental, economic and social issues, students put forth their own ideas to solve this global problem and strike a balance between population growth and development. It was interesting

to hear students citing latest data on population status of the world in support of their presentations. They talked of issues like the world population, 5.66 billion in 1994, would be over 6 billion by 2000 A.D. whereas India's population figure touched 90 crore mark in 1994. This phenomenal growth in global population has put tremendous strain on environment and natural resources of the earth. The unequitable distribution and over-consumption of resources is another area of concern which may lead to strained international relations. The population problem has also direct bearing on development, basic needs, good water and shelter, economy, education, health and ecological/environmental degradation. The threat to maintenance of index of physical quality of life is another serious global issue.

It was the students themselves who provided the solution. According to them, the key to solve the population problem is in empowerment of women and opening a wider range of choice for both women and men. Free and equal access to health care, family planning and education is the practical solution to environmental protection, economic development and social order. Reduction in consumption of natural resources in affluent countries would help in reducing global environmental degradation.

The seminar was inaugurated by Shri K P Singh Deo, Minister



Dy Minister of Education & Culture giving away the prizes in NSS 1994

of State for Information & Broadcasting. Shri Singh Deo stressed the need for cultivating and nurturing the talents of young students and developing a scientific temper. He appreciated the efforts of the Council in making them think on such socially relevant issues. Dr S Varadarajan, eminent scientist presided over the function and offered valuable suggestions to the young thinkers on the need to pursue challenging scientific and technical careers. He advised the students to take advantage of the recent scientific development to make India a progressive and wealthy country.

Ms Selja, Dy Minister for Education and Culture gave away the scholarships to the winners. She, in her valedictory address, felt the need for an all round effort for science popularisation and meaningful education. Attractive science kits and books were also given to all participants as token of encouragement.



Minister of Information & Broadcasting releasing NSS 1994 souvenir

Dr Saroj Ghose, Director General of NCSM and President, International Council of Museums (ICOM) also addressed the students.

After the day-long deliberations, awards, felicitations, speeches and media exposures, the participants were given an opportunity to meet distinguished scientists in the 'Meet the Scientists' programme on October 21. The meeting with eminent Heart Surgeon of All India Institute of Medical Science, Dr P Venugopal and Dr (Mrs) N Bhargava, Director, Nehru Planetarium, New Delhi, saw a fruitful exchange of ideas between the scientists and the students.

Participants were also given special tours of the NSC, Nehru Planetarium, National Museum of Natural History, National Museum, Jantar Mantar and other important monuments in the capital.

The programme was not merely limited to academic or scientific exercise. There were cultural events presented by students and teachers. The costumes of students exhibited the cultural diversity and colourful life of our people. It was national integration in true sense.

This year the first prize was jointly shared by Ms Shilpa Sharma of St. John High School, Tuensang (Nagaland) and Ms Jayanti of Prabhat Tara G. H. School, Muzaffarpur (Bihar).



First prize winners of NSS 1994

Presentations of Ms Shilpa Sharma (in English) of St. John High School, Tuensang, Nagaland and Ms Jayanti (in Hindi) of Prabhat Tara G. H. School, Muzaffarpur, Bihar, on the theme 'Population: A Resource or A Burden'. They jointly secured first place in the National Science Seminar 1994.

Population means the number of inhabitants in a specified territory. It is the end and means of all the economic activities of a nation. For Aristotle the population of a State should be such that the State should be able to sustain it.

Adequate labour force is a must for the steady and rapid progress of a country. In this respect population is a resource. It is a burden when the uncontrolled growth of population hinders progress and harms socio-economic and environmental balance. Thus, the link between the economic progress and population growth of a country becomes a debatable issue. The question here is not if population is a burden or a resource, or not a burden and not a resource, but to choose to utilise the population.

The United Nations estimated the world population as 5,385 million in the middle of 1991. It showed an increase of 93 million

in an year. The average rate of increase during 1980-1990 decade was 1.7 percent. The highest 3 percent growth rate was in Africa while the lowest 0.2 percent per year was in Europe. Asia has 58.8% of the world population with a growth rate of 1.9 percent. China has the largest population in the world and India comes second with 16 percent of the population of the world. In India 200 children are born every second. According to UNO, in the world there are extra 60 million children out of school, extra 65 million illiterate and an extra 50 million malnourished. Such a population explosion leads to unstable equilibrium in biosphere.

The 1991 census shows the population of India as 844 million. It is three times that of USA with a territory three times bigger than India. In 1947, Indian population was 347 millions. From 1950 to 1961 it grew to be 361 million and in 1971 it raised to 547 million. It turned to be 875.78 million in the year 1992-93. Between 1951 and 1981 the average rate of growth of population has been about 2.2 percent per annum. Among the States of India, Nagaland stands first with a 56.86 percent growth rate in 1991. Among the cities of India, Bombay has the largest population of 12.57 million and





Calcutta comes second with 10.86 million people.

Malthus said: The present food production is increasing in an arithmetical progression, while population increases in geometrical progression. Compared to the natural and human resources of the country, India is definitely overpopulated. Our neighbouring countries like China, Myanmar, Bangladesh, Sri Lanka, Afghanistan and Pakistan also come under the same category.

There are manifold causes for over population. In India marriage is universal. Early marriages give longer span for reproductive activity. The tropical climate, grinding poverty, the fatal beliefs, illiteracy, ignorance, scarcity of technical advices, lack of recreational facilities, lack of respect for women, absolute social beliefs, absence of welfare schemes, and a vertical decline of death rate etc contribute to the same.

The problem of unemployment, over crowding of urban areas, inadequate civic facilities, the



problems of migration of refugees, low per capita income, starvation and sub-human conditions of life and increase in crime rate etc point to the fact that inequalities have been caused by the uncontrolled growth of population. If this continues, the economic and social foundation of the nation will collapse under pressure and the environmental balance will also be harmed. Thus, the population will be a burden on itself.



So immediate action is demanded to check the population. The growth rate can be checked by the effective implementation of the family planning techniques, education of the masses, and by the conscientiousness of the public by the government machineries, voluntary organizations, effective execution of laws on marriagable age, female education, uplift of women's social status, sex education of married couples and effective utilization of the benefits of modern biotechnology etc will help the same.

On the other hand, we find countries with acute shortage of man-power and labour force because of the thin population. Australia is an example of it. Switzerland has 6.49 million and Singapore has 2.7 million people only. As a result they face the scarcity of



agricultural and industrial labourers. They have to attract skilled labour from other countries through higher pay scales and other comforts. Thus we find that less population too is equally defective to growth. We need to have a population equitable to the land and natural resources.

Population is a resource in countries which are thinly populated while a burden for those with thick population. Over population is always a burden, never a resource. Modern science and technology has advanced prosperity and increased production in manifold ways. But the alarming growth of population outpaces these achievements. The land and other natural resources face depletion.

To conclude, in my opinion neither a population explosion nor a population depression is conducive to a better economic, social and environmental growth of humanity. The desirable norm of population growth is to establish a balance between the natural resources and the human resources to utilize them for progress and development.



जनसंख्या : एक संसाधन या एक बोझ

विश्व के अर्धशाब्दी, समाजशाब्दी या जनसंख्या विशेषज्ञ जो हमें सभी ने एक स्वर से जनसंख्या को संसाधन माना है। किन्तु भ्रमजीवी संख्या में वृद्धि की बात तो सिर्फ विकसित देशों ने की है। अन्य किसी देश का ध्यान इस तथ्य आकृष्ट नहीं हुआ। यही कारण है कि सभी विकासशील देश विशेषतः हमारा देश भारत जनसंख्या-संक्रमण की दूसरी अवस्था जनसंख्या विस्फोट की अवस्था से गुजर रहा है। १९०१-१९ ई. की अपेक्षा वर्तमान समय में जन्म दर और मृत्यु दर में इतना अधिक अंतर भारत में जनसंख्या विस्फोट का प्रत्यक्ष प्रमाण है और जनसंख्या - वृद्धि में भारत की यह विशाल स्थिति भी इसकी बड़ी आबादी की घटक है जबकि सभी विकसित देश जनोक्ति-संक्रमण की तीसरी अवस्था में हैं।



१९७४ ई. में बुखारेस्ट के U.N. World Population Conference से काहिरा सम्मेलन तक जनसंख्या और विकास के अन्वयोन्वाह्य संबंध को स्वीकार किया गया। वास्तव में आदर्श जनसंख्या ही किसी देश के आर्थिक विकास में सहायक होती है।



किन्तु प्रति मिनट १७६ बच्चों के जन्म और १ (एक) अरब से अधिक बेघरों के कारण २०वीं शताब्दी के उत्तरार्द्ध में विकासशील देशों की जनसंख्या बहुत तेजी से बढ़ी है जबकि विकसित देशों की अधिक धीमी गति से। अनुमान है कि सन् २००० तक विकसित देशों में विश्व जनसंख्या का प्रतिशत २१ होगा जबकि विकासशील देशों में ७९। अब प्रश्न

यह उठता है कि इन दोनों देशों में जनसंख्या एक संसाधन है या एक बोझ। इस प्रश्न पर हमें वैज्ञानिक रूप में विचार करना होगा। जिन देशों में क्षेत्रफल के हिसाब से आबादी कम है वहाँ जनसंख्या वृद्धि बरदान स्वरूप है क्योंकि तब प्राकृतिक संसाधनों का समुचित उपयोग संभव होगा। किन्तु विकासशील देशों की विशेष परिस्थितियों के संदर्भ में ऐसी बात नहीं। इस सिलसिले में भारत का उदाहरण सर्वोत्तम होगा क्योंकि भारत की समस्याएँ विश्व के हर छोटे व्यक्ति की समस्या है और मानव विकास रिपोर्ट के अनुसार २०३५ ई. तक यहाँ की आबादी १.५४५ अरब होगी। भारत में प्रजनन दर ४ है जबकि चीन में सिर्फ २ और इसका प्रभाव इन देशों में साक्षरता के स्तर पर पड़ा है। चीन में साक्षरता ६२ प्रतिशत है जबकि भारत में सिर्फ ४२ प्रतिशत और देखिए टिक-टिक करती हुई इस जनसंख्या पट्टी को जिसकी सुई ९० करोड़ की सीमा पार कर गई है और इसके साथ ही देश में भूमि पर दबाव बढ़ गया है। इसका अनुमान १९०१-९९ तक के जनघनत्व के इस ग्राफ से लगाया जा सकता है। आज जनघनत्व २७४ व्यक्ति प्रति वर्ग किलोमीटर है। जनघनत्व का दबाव कुण्ठित भूमि पर भी पड़ा। Census of India, 1991 के अनुसार १९९१ ई. में प्रति व्यक्ति कुण्ठित भूमि १.१ एकड़ थी जो १९८१ में ०.२६ एकड़ हो गई और आज ०.१५ एकड़ है। यह सत्य है कि १९८१-८६ में श्रमशक्ति में ५.५ प्रतिशत की वृद्धि हुई तो यह भी सत्य है कि १९८८ में बेरोजगारों की संख्या ३ करोड़ थी जो १९९० में बढ़कर ९ करोड़ हो गई और भारत में स्वीटजरलैंड की अपेक्षा प्रति व्यक्ति आय ६१ गुना कम हो गई। अमेरिका में ६६७ व्यक्ति पर एक डाक्टर है जबकि भारत में २५०० व्यक्ति पर एक डाक्टर। जनसंख्या वृद्धि में अमेरिका मात्र ६ प्रतिशत है जबकि कुल औद्योगिक उत्पादन का ३५ प्रतिशत अंश उत्पादित करता है। १९९२-९३ के इकोनॉमिक सर्वे से ज्ञात होता है कि १९८८ में २९.९ प्रतिशत व्यक्ति गरीबी रेखा के नीचे थे और वर्ष २००० तक यहाँ ४.१० अरब मकानों की कमी होगी। संक्षेप में विकासशील देशों में जो रहा विकास यहाँ की जनसंख्या की बकरियों की पूर्ति में असमर्थ है और परिणामतः जनसंख्या संसाधन होते हुए भी बोझ का रूप धारण कर रही है।

अब अगर हम आर्थिक पहलू से हटकर विचार करें तो पायेंगे कि इस जनसंख्या वृद्धि ने हमारे जीवन के आधार पर्यावरण को इतना अधिक प्रदूषित कर दिया है कि एक और पराभैनी किरणों के आगमन से Skin Cancer उत्पन्न हुआ तो दूसरी ओर उत्पन्न हुआ Green House Effect। जलवायु परिवर्तन के कारण शेर, चीता, गेंडा जैसे कई जानवर तुम हो गए और कुछ की अनुवांशिकी में परिवर्तन

आया तो पृथ्वी सम्मेलन में Climate Change-Need for Global Partnership की जरूरत आन पड़ी। वृक्षों की कटाई से उत्पन्न समस्याएँ तो World Watch Institute द्वारा पोषित आगामी आपातकालीन समस्या की सूचक स्वरूप हैं।



Dr. P. Venugopal, an eminent Heart Surgeon, delivering a lecture at NSS 1994

अतः अब जब हम २०वीं शताब्दी के स्वागत हेतु तैयार हैं तो हमारे समक्ष विश्व संकट उपस्थित है - जनसंख्या विस्फोट के रूप में। किन्तु संयुक्त राष्ट्र जनसंख्या नियंत्रण कोष और विश्व स्वास्थ्य संगठन के प्रयासों से ३० प्रतिशत क्षियाँ सीमित परिवार हेतु इच्छुक हैं। किन्तु ये परिमाण संतोषजनक नहीं। परिवार कल्याण जैसे कार्यक्रम को और अधिक मजबूती चाहिए, संचार माध्यम को सराफ होना है, शिक्षा का प्रसार होना। सर्वप्रमुख है इस कार्यक्रम को जन आंदोलन का रूप प्रदान करना और World Watch Institute के Six Steps to Sustainable Society के सभी छः कार्यों को पूरा करना। तब कहीं जाकर हमारी आबादी नियंत्रित होगी और हम गर्व के साथ स्वयं को एक आदर्श जनसंख्या उत्पादन के लिये उत्तम संसाधन कहेंगे।



World Wildlife Week was observed by **Birla Industrial & Technological Museum, Calcutta** from Oct 5 to 7 to create awareness to conserve our rich and



Young children in Wildlife costume during the Wildlife Week programme at BITM

Picturesque Matigara at Siliguri, West Bengal, is to be the site of **North Bengal Science Centre**. On Nov 7, under the aegis of Siliguri-Jalpaiguri Development Authority, NCSM began construction work of the Centre. Hon'ble Minister for Power, Science, Technology and Non-Conventional Energy Sources, Prof Sankar Sen was the chief guest and Dr Krishnanath Chattopadhyay, Vice Chancellor, North Bengal University, presided over the function. Dr Saroj Ghose, Director General, NCSM, Hon'ble Minister of State-in-Charge for Municipal Affairs Dept. & Hill Affairs Dept., Ashok Bhattacharya, Minister of State for Animal Husbandry, Dada Lama and Bikash Ghosh, Mayor, Siliguri Municipal Corporation were among the other dignitaries present. The dignitaries also inspected with avid interest a detailed scale-model of the proposed centre prepared by NCSM. A large crowd consisting of local people, students and science popularisers also took part in this programme.

Dr Ghose in his speech emphasised that this Science Centre

diverse species of wildlife among school children. There was an Open-house quiz on Wildlife for students of classes VIII and below in the morning and an afternoon session for students of class IX to XII. About 115 students took part in this programme. A 'Costume Parade' was arranged for children of class V and below where 40 children dressed as different animals and plants, narrated their life history and characteristics for three minutes. A hands-on programme 'Assemble-the-Animal Competition' was organised for students of classes V

would not be just a passive depository of exhibits but will help nurture a rational mind free from blind faith and superstitions. He also mentioned that the National Council of Science Museums has already completed building 20 science centres all over India and a few more are in the offing. The fact that West Bengal contains maximum number of science centres among all the states is a reflection of the conscious cooperation of the West Bengal Government as well as the science awareness of its people. Dr Sankar Sen explained that the Govt of West Bengal desires to see science reach every nook and corner of the State just as it wants to bring electricity to the remotest part of West Bengal. Science, he said, should not be confined within four walls of academic institutions and laboratories but it should be taken to the common people. After Purulia and Bardhaman, a Regional Science Centre at Siliguri is a step in that direction, he added.

Hon'ble Minister Ashok Bhattacharya who, incidentally, hails from Siliguri, explained how

and VI. Each participant was asked to cut the parts of the animals drawn on a piece of mountboard. They assembled the different parts to make a complete animal and describe the animal with ten sentences. About 50 students took part in this event. Two interesting Field Study programme on Insects and Bird Watching, organized in collaboration with WWF-India on Oct 5 and 6, inside the Museum campus attracted 60 students from different schools in and around Calcutta. They prepared a list of some 15 varieties of common local birds. Both the

the Siliguri-Jalpaiguri Development Authority (SJDA) had to overcome a lot of difficulties over a period of three years in order to acquire 10 acres of land for the Centre. He also mentioned that a part of the cost for building this Centre will have to be raised locally. Siliguri Mahakuma Parishad and the Hill Council have already contributed their shares in this regard. He invited all other individuals and organisations to contribute towards this end.

At the end of the deliberations a Mobile Science Exhibition bus with the unit titled 'We are One' was formally inaugurated by Minister Dr Sankar Sen. Belonging to the North Bengal Science Centre, the bus would travel all over North Bengal in the coming months.



programmes were followed by slide-talk. Five films on wildlife were screened to 745 students and teachers from 7 schools.

The 9th Nature Study Camp was organised by the BITM in collaboration with the Zoological Survey of India, Prakriti Samsad and Nature Observer from Oct 24 to 28 at the Sub-Regional Science Centre at New Digha, Midnapur with an idea of 'Love the Nature - Know the Nature - Serve the Nature'. 38 school students from districts of Calcutta, Howrah and 24 Parganas in West Bengal participated in the Camp. The Camp was inaugurated by the Chairman, Digha Development Authority. The subjects of study covered were Birds, Trees, Shells, Marine Invertebrates, Waves, Tides, Coastal Morphology, Weather, Insects etc. Under the guidance of expert bird watchers the campers were acquainted with what to watch for a bird to identify it. Besides, identification of the birds, a list of local birds was prepared and ecological relationships with their coastal surroundings were explained to the children. Study of sea shells

and other marine fauna was also explained under the programme 'Beachcombing'. Watching of night sky along with hands-on astronomy projects and preparation of herbarium sheets were also included during the camp. Moreover, field study, nature trek, class-room lecture, slide talk and film shows were added to cover a wide area of nature and ecology. The campers also visited Marine Aquarium and Research Centre at Digha and the Regional Meteorological Centre to give an exposure of various types of Marine fishes and Meteorological instruments which are used in weather forecasting.

The Alliance Française of Calcutta in collaboration with BITM organized an exhibition from Nov 18 to 30. The exhibition revolved around four main aspects: air, water, land and life. Comprising of 20 panels (with texts both in English and French), it presented certain readily appealing features like interactive experiments. The objectives were, on the one hand, to make everyone understand better the major natural systems of our planet and the contributions of

scientific research both in the developing and the developed world, and on the other, to propose areas in which we can take action individually to manage our local environment in a better way for a healthier life. An interesting feature of this exhibition was that it could also be complemented with lectures, discussions, debates, video films. Being part of the Villettes (the City of Science & Industry in Paris) initiative to bring science to the common man, this exhibition was interesting, interactive and instructive to one and all, be they scientists, businessmen, industrialists, teachers, college students or school children. Each one of us, whatever our field and background be, has a responsibility towards protecting nature for our own benefit. Earth! Earth! was a timely reminder of our role.

Visvesvaraya Industrial and Technological Museum, Bangalore organised the Computer Fair '94 between Nov 16 and 22. The inaugural address was delivered by Dr V Rajaraman, Chairman, Super Computer Education and

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A nature lover of Valsad city found a pair of migratory birds on the seashore of Tithal near Valsad in a severely injured state in May 1994.

Aware of the facilities of animal corner at **District Science Centre, Dharampur**, he brought the injured pair to centre through office bearers of the Environment Awareness Club of South Gujarat (one of the non-government organisation) for further treatment and protection of the birds.

Since the last six months these migratory birds enjoying their stay in centre alongwith Peacock family

with comfort and safety and became an attraction for local students and people in general. Proper treatment rendered to them also made them capable for normal flights.

International Crane foundation Barboo (WF) USA, supplied more information about these visiting guests. They are Demoiselle Cranes,



one of the wide spread species of Crane which normally nests across the steppes of Asia. It has a feathered head with elongated plumes behind the ears and are known for long migration. These type of Crane are also known as *Lovely Ladies*. Snowy Himalayas is a major gateway for them to India.

The Foundation has advised to release these guests with identification bands in proper season. Accordingly they will be released during November-December at roosting areas in South Gujarat so that they would be able to join the flocks and return.

Paving the way for a Tunisian Science City

In early November, an international seminar was organised at Tunis, the capital of Tunisia, on the topic 'Public Understanding of Science'.

More than 35 senior museum experts gathered at Tunisia, a country that has adroitly nurtured a progressive Islamic society. The administrators are always open to constructive ideas that will further the welfare of their country. Therefore, the participating senior museum experts, science educators and writers from USA, France, Italy, Germany, Spain, Egypt, Kuwait, Tunisia and India had an extremely fruitful interaction.

Shri S Goswamy, Director, Birla Industrial & Technological Museum, Calcutta presented a paper entitled 'Public Understanding of Science in India'.

Mr Tahar Guellali, General Director of Tunis Science City projected the future plans regarding the science city. Occupying an area of 30 acres, the science city would be opened to the public in phases - the first in November 1995 and then after completion in December 1996. From the deliberations in the seminar, it

has been evident that for a multilingual country like Tunisia, the communicating language would play an important role.

Shri S Goswamy had an exclusive meeting with Mr T Guellali and apprised him of the NCSM's activities. A video recording of the 'Fun Science' aspect and of the interesting and massive exhibits being prepared by the NCSM was also screened. Impressed by the video screening and talk, Mr Guellali showed a keen interest to strike a fruitful collaboration with India. But of course a final approval would be forthcoming only after he is able to see the exhibits in working condition. He showed special interest in exhibits like Tyrannosaurus Rex, Khagen Babu and Aquamobil from NCSM.

From Barcelona, Ramon Bassels also showed a keen interest in the exhibits and requested a detailed catalogue for consideration.

With its unique exhibits, NCSM is now being sought by many countries who are trying to communicate scientific thoughts in an user-friendly manner.

Project: Science City

Tunisian Science City is intended as a lively interactive area where children, youngsters or adults can keep their own pace as actors rather than spectators, helped (if they so wish) by a team of organisers and demonstrators. They will be offered interactive exhibits like:

- * The Earth in the Universe
- * Life and Men
- * Water and men in Tunis
- * Science Park

There will be other facilities like:

- * The cinema area
- * The workshop
- * Exhibitions on "what fun to learn in play". The exhibition will contain thematic presentation on:
 - (a) Human Biology
 - (b) The Human senses
 - (c) Energy and its effects
 - (d) Waves
 - (e) Electricity and Magnetism
 - (f) Structures
 - (g) Maths
 - (h) Earth & Environment and
 - (i) Chemistry.
- * Open air exhibitions
- * Temporary exhibition.

In Tunis Science City, science will not be presented by discipline (Physics, Chemistry, Biology etc) but via a thematic approach allowing visitors to understand natural phenomena in their global character.



The Temple of Dougga

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Research Centre, Bangalore. The valedictory address was delivered by K Kumar, Additional Director, Electronics and Radar Development Establishment, Ministry of Defence, Bangalore. He also gave away the prizes.

Nehru Science Centre, Bombay in collaboration with the Education Depts of Goa, Gujarat, Madhya Pradesh, Maharashtra, Daman & Diu, Dadra & Nagar Haveli and Dept of Science & Technology, Rajasthan, organized the Western India Science Fair 94-95 during Nov 23 to 27. Prof Virendra Singh, Director, TIFR, was the chief guest on the inaugural day. A N Prasad, Director, BARC, was the chief guest on the valedictory day.

Regional Science Centre, Tirupati, observed Wildlife Week between Oct 2 and 8. The function was inaugurated by Prof T Krishna Rao while Prof R Rama Murthi was the chief guest. Sahitya Shiromani S Lakshmaniah presided. Throughout the week, various programmes were organized - open quiz, painting, elocution and essay writing competitions, field quiz and group discussions. Other organisations who helped out were Forest Dept, Tirupati, Dept of Zoology, S V University, Environmental Society of Tirupati, Youth Hostels Association, Tirupati.

On Oct 28, RSC, Tirupati and Sub-Science Centre (TPPM High School), Tirupati organized a sub-centre level children's Science Congress - 1994, on the theme 'Clean-up India'. The Congress was inaugurated by T Janardhana Naidu, V.C., TUDA.

On Nov 5, RSC, Tirupati and District Science Centre, Chittoor

organized district level National Children's Science Congress '94 on the theme 'Clean-up India'. Dr R Ramamurthy, V.C., S V University, Tirupati inaugurated the Congress. P V Lavanya Rao, Regional Coordinator, National Children's Science Congress presided.

On Oct 21, Srikrishna Science Centre, Patna observed the birthday of Dr Srikrishna Singh. Central Minister Rameswar Thakur was the chief guest.

In collaboration with Byte Consultant, Patna, SSC organized Computer Fair '94 between Oct 28 and 30. Uttam Sengupta, Editor, Times of India, Patna inaugurated the Fair. On the valedictory day, Dr S Nazar Ahsan, Pro-Vice Chancellor, Patna University gave away the prizes.

District Science Centre, Tirunelveli and office of the Chief Educational Officer, Vinodhannagar organized District Science Fair - 1994 at SHNV Boys' Higher Secondary School, Sivakasi, between Oct 19 & 21.

The Fair was inaugurated by Kanaga Sabhapathy, industrialist and member, SHNV HSS Committee, Sivakasi while K Srinivasan, Correspondent presided. The valedictory address was delivered by A Vairaprakasam, industrialist and Correspondent MEPCO Engineering College. He also gave away the prizes. Industrialist and Member of SHNV HSS Committee, S K D Rathinasamy Nadar presided.

District Science Centre, Dharampur and Gujarat Council on

Science and Technology organized a special science exhibition and educational programme during Oct 26 to 28. On the inaugural day, Maharaja of Vansda, Digveerendra S Solanki was the chief guest. The various programmes included workshop on environment education for college level students, slide shows, taramandal shows and science film shows, popular science lectures, demonstration of science kits and teaching aids of secondary schools, lecture demonstration on computer awareness for students of rural studies.

Between Nov 10 and 14, a nature education camp was organised by Environment Awareness Club of South Gujarat, Dharampur, DSC and Dept of Forest, Dang (South). The camp was organised at National Park, Vansda.

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