

Capsule

JULY
SEPT
1989

14

A new Science Centre in Bhubaneswar



The first Science Centre in the State of Orissa is now ready for inauguration.

It took NCSM about three years to commission this project with a building of 4000 sq. mt. in the first phase, and a Science Park over 8 acres, at an outlay of Rs. 150 lakh. Adjacent to the Regional College of Education, Regional Research Laboratory, and Pathani Samanta Planetarium, this Science

Centre on Sachivalaya Marg has emerged as a main attraction in the city of Bhubaneswar.

The Centre has four exhibition halls, out of which two are dedicated to the 'Sun'. Interactive, hands-on exhibits, many utilising electronic and microprocessor control, explain and elucidate topics related to the Universe, the Sun, the Earth and their bearing on human existence. How big is

the Sun, or our planet Earth? What is our address in the Universe? How does the Sun get its energy and how does it sustain life on the Earth? How do we measure astronomical distance or solar temperature? How do day and night, summer and winter, solar and lunar eclipses happen? How do the planets orbit round the Sun and the satellites round the planets? How are the stars born, and how they die? How do the

ideas about the Universe develop, and who are the pioneers? Exhibits provide answers to such questions. One can explore, discover and experience many such mysteries of the Universe in the galleries of the Science Centre. The second hall also accommodates a Children's Activity Corner—a carpeted oasis where young minds can fiddle and explore various kits, games and puzzles.

The third hall contains fully participatory exhibits highlighting the fun element of science. Apparently quizzical and paradoxical as they may be in their manifestation, they reveal the basic premises of science only to a probing, questioning mind. Exhibit topics include themes like gravitation, pendulum, sound, motion optical illusion, electricity, light, magnetism and mirrors. Here is also a Computer Corner with microcomputers, for imparting on a regular basis computer awareness programmes on young students and school teachers.

The fourth hall is designated for TARAMANDAL, for inflatable planetarium demonstrations and also for temporary exhibitions. The Centre opens with a fascinating exhibition on C. V. Raman, designed and developed by Birla Industrial and Technological Museum at Calcutta.

The Science Park, surrounding the main building of the Centre, accommodates about 100 hands on outdoor exhibits. Topics include motion, weightlessness, conventional and non-conventional energy, optics, sound, oscillation, iner-

tia and so on. The Science Park also includes three aviaries, a mammal corner, a rabbit cage, a picnic spot and a fair ground.

In actuality, the Centre is operational for quite some time, with various temporary exhibitions and programmes like observance of National Environment Awareness Campaign, National Integration Week, World Environment Day, National Science Day and other topical events. Till date, such programmes have attracted about one and a half lakh of visitors and participants.

The mobile science exhibition unit of the Centre on "Light & Sight" which was pressed into service on February 28, 1987, has recorded till date a travelling of above 5000 kilometres, holding exhibitions at 120 sites, in deep interiors of the State. With time, more and more areas will be brought under the network.

The Regional Science Centre being complete, planning is ahead at NCSM headquarters for setting up two district science centres in Orissa during the 8th Five Year Plan.

NCSM SPEAKS

Even a cursory glance at the contents is sure to convince one that CAPSULE is not just a spokesman of the NCSM Family, but the meet for all like-minded organisations in India and abroad, engaged in the field of science & technology communication, nonformal science education, community development and other allied work. Any new happening of significance in any part of the world is sure to find room in CAPSULE, and reach out to a wide audience across the world.

We believe, a network of interactive communication, exchange of information and assistance among all organisations sharing the same cause with us will be mutually rewarding. So, we invite you all to join the Forum. Let us know and understand better about our fields of activity, achievements and future programmes. Periodic brief reports from you with all publications, journals, brochures, souvenirs, cards etc. and photographs will be of much help. Along with publicity through CAPSULE, your information will go to our data bank, subjectwise and institution-wise for reference by anyone interested.

Various Gallery and Park exhibits have irresistible attraction for all, especially children.



(Top) 'Forest' exhibit. Children learn to identify birds hearing their calls.
(Bottom left) 'Conservation of Angular Momentum'—a Science Park exhibit.
(Middle) The 'Zodiac' exhibit.
(Below) Aquarium.



NEW ADDITION IN DISTRICT SCIENCE CENTRE, DHARAMPUR

District Science Centre, Dharampur, widens its scope of activities with the opening of a new exhibition hall on 'PERCEPTION', the science of understanding the world through constant interaction of sensory organs with the brain. The new exhibition hall was inaugurated on June 17, 1989, by Professor Mukundrai Trivedi, Vice Chancellor, South Gujarat University, Surat (Gujarat).

The District Science Centre, Dharampur, is a constituent unit of the National Council of Science Museums whose major responsibility in communication of science and technology to every nook and corner of the country is achieved through such small satellite centres which function in backward areas of the country. Dharampur is in the heart of the tribal area of Gujarat.

'Participation' is the keyword in the new exhibition hall in Dharampur. Participation with all sensory

organs brings in interaction of visual, aural, olfactory, glossal, and tactile perceptions; and kindles imagination in a child's mind. Parents also become equally engrossed with the exhibits. The new hall has become an attractive indoor playground where science is all fun.

Exhibits involving visual perception dominate the scene. Here, by mixing three primary colours in many different ways, visitors can create a new world of colours of their own. They can project multi-coloured shadows, create a colour print by superimposing several monochrome transparencies and play with reflected and refracted coloured rays with lenses and mirrors. Perception discs, Moire Pattern and concave mirrors create optical illusions; so do the other exhibits with mirrors.

Ripple tanks and exhibits demonstrating nodes and antinodes explain transmission of sound waves.

An ingeniously designed audiometer helps in testing the ears. Exhibits on smell and touch add a new dimension to science centre exhibits. A series of exhibits on mechanics demonstrating sympathetic pendulums and centrifugal force or micro-processor controlled matching games involve visitors into interactive participation.

Outside the four walls, the Centre organises extensive outreach programmes throughout the district of Valsad. Science demonstration lectures and film shows for the schools, teacher's training programmes for secondary school teachers and community programmes for farmers of the district are some of the important activities. The Centre organises regular sky observation through telescopes and runs children's play corner with plenty of science kits. A portable and inflatable planetarium is going to be added to Centre's activities very soon.

'PARTICIPATION'
IS THE
KEYWORD



International Workshop on Low Cost, Locally Produced Equipment for Chemical Education

Venue : University of Dacca
June 1988

Sponsored by :
UNESCO (ROSTSCA).

Inauguration of the Soviet Space Photo Exhibition
Venue : B. M. Birla Planetarium,
Adarsh Nagar, Hyderabad
June 8, 1989.

Training Course on Science Journalism and Media Practice

Venue : Indian Institute of Chemical Biology, Calcutta
June 16-July 31, 1989

Organised by :
The Science Association of Bengal.

To celebrate the 175th Anniversary
Indian Museum, Calcutta, organises

National Seminar on Museum Movement in India

Venue : Calcutta
September 18-20, 1989.

International Seminar on The Routes and Travellers in India

Venue : Calcutta
Last week of December, 1989.

International Conference on Environment Education

Venue : Goa, India
October 3-7, 1989

Sponsored by :
UNESCO (ROSTSCA).

ADOBE 90

6th International Conference on Conservation of Earthen Architecture
Venue : Las Cruces, New Mexico,
U.S.A.

October 14-19, 1990

Organised by :
The Getty Conservation Institute ;
Museum of New Mexico State
Monuments ; and ICCROM
Under the aegis of US/ICOMOS.

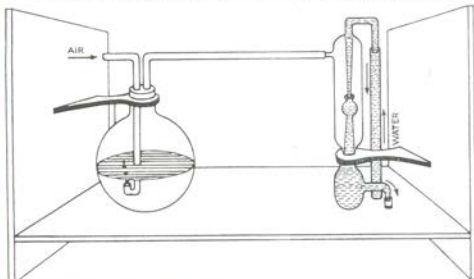
National Symposium on Acoustics -1989

Venue : Birla Industrial & Technological Museum, Calcutta
December 14-16, 1989

Organised by :
Sangeet Research Academy,
Calcutta ;
Indian Statistical Institute,
Calcutta ; and
Acoustical Society of India.

VACUUM PUMP

The famous principle enunciated by Bernoulli (Daniel Bernoulli, a Swiss scientist of the 18th century) is explained in this exhibit with the help of a liquid jet pump.



On pressing a switch a liquid jet is created which in turn creates a partial vacuum around it.

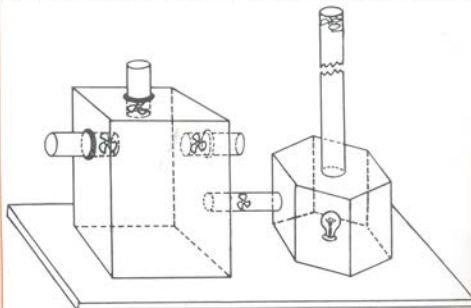
Air from outside rushes in to fill this vacuum through a connector tube, and while doing so, it is made to bubble through a coloured liquid kept in a glass jar : bubbles that carry Bernoulli's message.

CHIMNEY EFFECT

Why should there be holes both at the top and at the bottom of a household lantern? Or, 'What is the function of a tall factory chimney?'—Questions like these need not be explained further after one interacts with this exhibit.

A bulb glows at the hexagonal base of a tall chimney and heats up the surrounding air which then

moves up. The tall and narrow chimney helps to build a good hot air draught in the chimney tube due to which a tiny fan atop rotates. A grid of transparent tubes with fans fitted in each of them serves as an inlet of air to the chimney and is connected to the base of the chimney. You can close with your palms any two of the three inlet tubes to allow air to enter through the third tube where the fan rotates due to cold air draught. Play with the inlets and learn more about convection.



MICRO TO MACRO



Imagination unbound—the French exhibition uses modern art as a correlative to Particle Physics

As a part of the Festival of France in Calcutta, Alliance Francaise of Calcutta in collaboration with Birla Industrial & Technological Museum has organised a fascinating twin exhibition which was inaugurated on May 6, 1989, at the Museum's exhibition hall. "The Dance of the Universe" and "Cosmos" are the two parts of this exhibition which depicts the evolution of man's concepts about the Universe—from Plato and Aristotle to Newton and Einstein.

The most interesting aspect of this exhibition is that in addition to papyrus prints, woodcuts and photographs by astronomers, modern works of art by Seurat to Kandinsky, Larinov, and Melavich have also been made the vehicles for carrying the abstract scientific concepts. Indeed, this representation of scientific ideas through art highlights the dialectical relationship between science and art, not only of a given time, but also of all times.

25 YEARS OF SPACE PHOTOGRAPHY

It is perhaps the rare chance to see our planet Earth from outside Earth. Or seeing the Earth and its Moon together. Or perhaps it is just the mystique of space photography—the sheer pleasure of beholding the images of man's supreme techno-artistic adventure.

Whatever be the cause, "25 years of Space Photography", the travelling exhibition that NCSM brought to India from the USA in 1986, is still going on with undiminished interest in different parts of the

country. The travelling schedule is quite impressive, and speaks for itself:

THE GRAND SCHEDULE

1. Birla Industrial & Technological Museum, Calcutta
November 19, 1986
January 4, 1987
2. District Science Centre, Tirunelveli
January 31, 1987
February 28, 1987
3. Visvesvaraya Industrial & Technological Museum, Bangalore
March 14, 1987
April 13, 1987
4. Nehru Science Centre, Bombay
May 9, 1987
June 7, 1987
5. National Science Centre, Delhi
July 4, 1987
August 2, 1987
6. Regional Science Centre, Bhubaneswar
August 29, 1987
September 20, 1987
7. Shrikrishna Science Centre, Patna
October 20, 1987
November 3, 1987
8. B. M. Birla Planetarium, Hyderabad
November 27, 1987
January 31, 1988
9. H. P. Municipal Planetarium, Warangal
March 4, 1988
March 31, 1988
10. District Science Centre, Dharampur
May 20, 1988
June 20, 1988
11. Department of Museums, Gujarat
July 27, 1988
August 10, 1988
12. Planetarium, Science & Technology Centre, Jaipur
August 22, 1988
September 23, 1988
13. Engineering University of Jodhpur, Rajasthan
October 11, 1988
October 26, 1988

14. Kutch Museum, Gujarat
December 1, 1988
December 31, 1988

15. Regional Science Centre, Lucknow
February 1, 1989
July 31, 1989

16. M. P. Council of Science & Technology, Bhopal
August 15, 1989
August 31, 1989

Many hosts are waiting to receive the exhibition. Fresh requests are also coming. Plans are being finalised at NCSM headquarters accordingly.

'ENTERING SPACE' ON TOUR

Under NCSM-USIS (United States Information Service) collaboration programme this fascinating and informative exhibition made its debut in Calcutta during February—March 1989. In an interesting way the exhibition, with graphic panels and scale models of various Space Probes like Space Shuttle, Lunar Lander, Apollo, Viking, Co-orbiter etc, presents to the public the different chapters of space exploration carried out by the USA over the last three decades.

After Calcutta the exhibition was held at District Science Centre in Purulia (April 12—May 7, 1989) and at Shrikrishna Science Centre in Patna (May 20—June 18, 1989), everywhere attracting crowds of enthusiastic visitors. Further shows throughout the country are being planned and finalised.

A real-life astronaut and a model spacecraft—Ms. Sharon W. Lucid was an inspiring presence at Calcutta



HONOURS FOR A SCIENCE MUSEUM DIRECTOR



Dr. A. K. Barua, Director of the Indian Association for the Cultivation of Science, Calcutta, presented the award to Mr. Bagchi

The Science Association of Bengal organised their 13th All Bengal Science and Industrial Camp at Howrah during March 1989. On this occasion the Damodar Valley Corporation Award for Popularisation of Science was conferred on Shri S. K. Bagchi, the Director of Birla Industrial and Technological Museum in Calcutta, for his contributions towards popularisation of science, towards development of science club activities in the State of West Bengal.

NCSTC PROGRAMME

National Council for Science & Technology Communication (NCSTC) has taken a new scheme—a systematic programme of development and production of science & technology communication software in all the 15 Indian languages. This is probably the largest among NCSTC's major schemes which is expected to finally develop into a continuing programme. Presently NCSTC is doing a prioritisation exercise, and to make this prioritisation in conformity with people's needs, NCSTC seeks the co-operation of all the organisations and individuals engaged in the field of science & technology communication.

ACTIVITIES IN GULBARGA

District Science Centre, Gulbarga in Karnataka, in collaboration with Gulbarga Telephones celebrated the World Telecommunications Day on May 17, 1989, with a variety of programmes. Open House Quiz, Popular Lecture on developments in telecommunication, drama and film shows on telecommunication were parts of the programme which attracted quite a number of people and students. The next day, on May 18, the District Science Centre inaugurated its first portable, inflatable planetarium, or TARAMANDAL, as it is called. About a year ago NCSM had developed this planetarium system, which now takes basic astronomy education to the nooks and corners of the country.

PROJECT SCHOOL SCIENCE CENTRE

NCSM's Plan is to help, during the 8th Plan, 1000 schools to set up their own Science Centres, for developing creative activities in their students. These nucleus science centres are envisaged to be of self-generating status; and NCSM's role is largely of catalytic support.

The project saw its first implementation in the State of Madhya Pradesh, where 53 school science centres have started functioning, after the leader-teachers had been given training by NCSM during January-March, 1989.

32 schools have been identified in West Bengal and the leader-teachers have undergone training at the Central Research & Training Laboratory of NCSM during June, 1989.

A new orientation—teachers at work during the training sessions



Schedule for initiating training is being prepared for Manipur, Tripura, Uttar Pradesh and Orissa. It is also planned to start 100 more school science centres in Tamil Nadu, Andhra Pradesh, Karnataka and Kerala during 1989-90.

WORKSHOP ON PHYSICS EDUCATION

In collaboration with the Indian Association of Physics Teachers, NCSM organised a workshop at the National Science Centre, New Delhi, during April 15-16, 1989. "Development of Teaching Aids For Improvement of Physics Education" was the theme of the workshop, and 27 experts including 13 from NCSM interacted in the brainstorming sessions of this 3 day Workshop, to generate many creative ideas. After deliberations the following points emerged:—

1. NCSM is interested in new inputs from physics teachers of the country for introduction of quantitative measurements in their exhibits as well as for developing analytical teaching aids.
2. Infrastructural facilities exist in the four major Centres of NCSM at Bangalore, Bombay, Calcutta and Delhi, where interested teachers could join on deputation and develop new teaching aids. The academic environment necessary for such innovative work will be available in these centres.
3. The new experiments so developed shall be put on display in these four centres where a space of 300 to 500 sq. mt. may be made available.
4. Resource personnel who have innovative ideas but can not find infrastructural facilities by themselves or in the institutions where they are working are also welcome to utilise the facilities in these four centres of NCSM. Such people may work in NCSM for shorter periods like vacations or for longer duration as may be convenient to them. They may work individually or in a group of 3-4 people as may be expedient.
5. IAPT, while formulating the criteria for selection of the resource personnel, may put due emphasis and priority on the educational value of their ideas and experiments.

INTRODUCING THE EDUCATION SERVICE



On-the spot study is the most important part of their programme

One of the aims of English Heritage is to promote wider knowledge and enjoyment of England's heritage of ancient monuments and historic buildings. To help teachers at all levels in education make better use of the historic environment, English Heritage has set up an Education Service. The Education Service comprises a central staff and Regional Education Officers whose job is to provide a variety of services for education. One of the most important aspects of the work of the education service staff is to arrange and teach, courses for teachers. Some are residential like the annual five day course, and many are one day or linked day schools on a variety of themes: using the historic environment, a detailed look at a particular site, planning a visit, historical cookery, practical on-site work, and many others.

NEW IN ATLANTA

The new Science & Technology museum, better known as Scitrek, has opened in Atlanta, Georgia, USA. More than 11,000 people turned out for the opening weekend in October.

In the first phase, nearly 100 hands-on exhibits on the physical sciences have been installed in 20,000 sq. ft. space. Exhibits are grouped in four areas: Hall of Mechanics, Light and Perception, Magnetism and Electricity, and Kidspace. Phase II, which will open in the early 1990's, will show practical application of technology. The Museum will eventually have 96,000 sq. ft. area.

RENOVATION IN CANADA

In order to undertake extensive renovations the National Museum of Science & Technology in Ottawa remained closed between February 13 and June 02, 1989.

The Museum gets a new look when it reopens: a new reception lobby and auditorium, a gift store, new classroom and demonstration areas, a large temporary exhibition hall, a separate entrance and reception area for school and town groups, and also changes to some of the permanent exhibits.

BACK TO THE SKIES

The maiden voyage of Sky High Summer proved to be such a resounding success that the New York Hall of Science is prepared to reach even greater heights with Sky High Summer II, scheduled to take off July 1-August 27, 1989. Visitors to the Hall will experience the return of some of the last summer's favourite activities, such as stunt kite flying, model rocket launching, and Frisbee finding. There will be some special events during the year's Space Week too.

ICOM ASIA—PACIFIC AGENCY BOARD MEETS IN BEIJING

The Governing Board of the ICOM Regional Agency in the Asia and the Pacific met in Beijing during March 1-7, 1989 under the chairmanship of Mr. Tadashi Inumaru of Japan. Dr. Saroj Ghose, Chairman of the Indian National Committee for ICOM took part in the meeting. The Board has drawn up a triennial programme for 1989-92 as indicated below:

- * Publication of a Directory on regular training facilities in museology as available in universities and museums in Asia (through courtesy of Bangladesh National Committee of ICOM)
- * Publication of a revised Directory of Museum Experts in Asia and the Pacific (through

courtesy of Korean (South) National Committee of ICOM)

- * Regular publication of Asia-Pacific Agency newsletters from January 1990 onwards for a period of three years (through courtesy of Indian National Committee of ICOM)
- * Development of co-operative international programme on museum training in the Asia-Pacific region
- * Establishment of closer communication links amongst National Committees of ICOM in the Asia-Pacific region
- * Helping museum and colleagues in countries in the Region that are too small to have their own National Committees.

(From left to right) Professor Tsuruta, Professor Shen Quing-lin, and Professor Inumaru at the Regional Assembly in Beijing





DISCOVERY DOME

Participatory science exhibits are now travelling in a circus tent. That is the way how Discovery

Dome with about 50 exhibits, some even outdoor, are travelling all over the United Kingdom now-a-days. The exhibition recently held in Edinburgh was just another feather to its cap of success.

LEONARDO DA VINCI IN CANADA

Engineer, painter, sculptor, architect, stage designer, mathematician, geologist, anatomist, natural historian, and inventor of practically everything :

July 1-October 9, 1989 the Ontario Science Centre is organising an exhibition of flying machines, churches, and other working

models constructed according to Leonardo da Vinci's original drawings. The exhibition will offer the visitors a chance to wander through a tranquil Italian garden of models, machines and drawings that illustrate Leonardo da Vinci's engineering, architectural, and artistic genius.

BRING BACK BEAUTY



MUSEUMS : GENERATORS OF CULTURE

The International Council of Museums (ICOM) will be holding its 15th General Conference in The Hague, Netherlands, from August 27 to September 06, 1989. The central theme of this meeting will be "Museums : Generators of Culture". A fascinating and stimulating subject, and one that covers almost every aspect of museum work : a challenge for museums the world over, in all their diversity. And that is precisely why it is a theme that lends itself to discussion in the international committees and affiliated organisations, in addition to their own special subjects, and theme that provides numerous points of contact for exchange of views and co-operation between committees and affiliated organisations.

ICOM 1989 is expecting some 2000 participants in the Hague.

There will be plenty of peripheral activities around the conference, with excursions to Amsterdam, Rotterdam and other destinations, working visit to museums and other institutions for members of the international committees and affiliated organisations, as well as a museum trade fair, where museum suppliers from all over the world will display their products.

THE NEXT.....

A Regional Science Centre, the first in the State of Uttar Pradesh is now ready for inauguration. CAPSULE-15 will give you the details.

WE NEED.....

The Editor of CAPSULE is looking forward to your sending by July 30, 1989, publication materials for CAPSULE-15. Please send short notes, photographs, problems, suggestions, cartoons and puzzles.



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