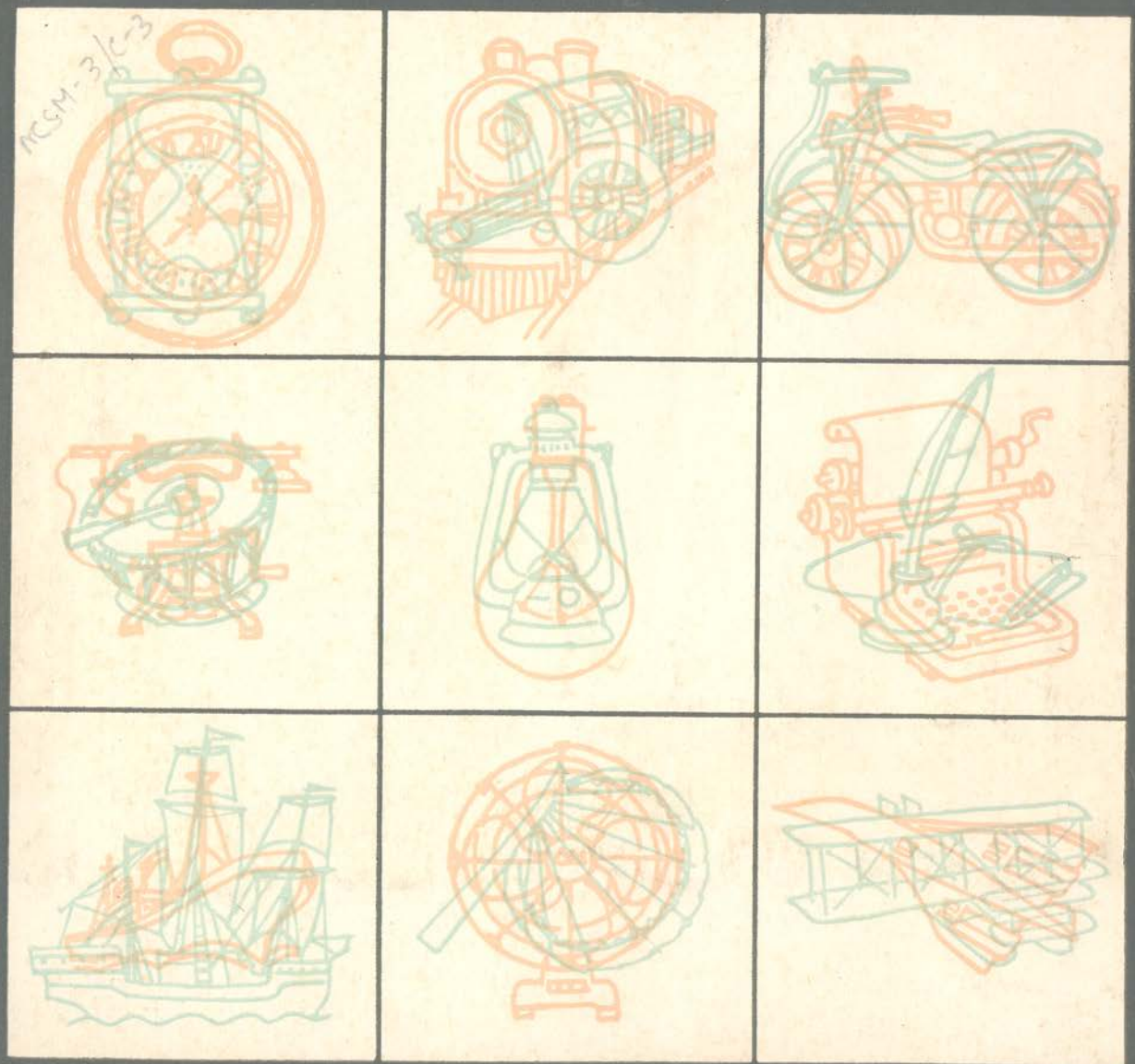
NATIONAL COUNCIL OF SCIENCE MUSEUMS ANNUAL REPORT 1980-81



NATIONAL COUNCIL OF SCIENCE MUSEUMS ANNUAL REPORT 80-81

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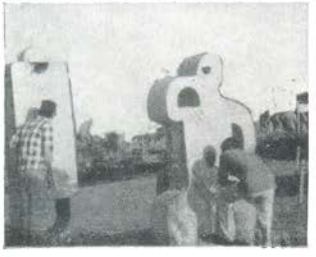


NCSM TODAY

NCSM TODAY

SPREADING THE WORD OF SCIENCE

We have been growing and trying all the while to make ourselves more interesting

The National Council of Science Museums was set up as an autonomous body in 1978. The council's primary function was to foster and monitor nation-wide efforts to make this supersonic age more comprehensible to the common man and nurture a general interest in science and technology. From the electric bulb to the nuclear reactor, from the telephone to the communications satellite, from the glider to the transcontinental missile — our mission was to explain scientific progress to the uninitiated.

We pause at the end of this year to take stock of our achievements. Are our three museums in Bombay, Calcutta and Bangalore as popular as we would like them to be? Have our mobile science exhibitions succeeded in reaching forgotten rural nooks of the country? Do our small-scale science centres evoke a sense of inquiry among schoolchildren in the districts?

1980-81 has proved to be a hectic year, allowing little time for such stock-taking. Apart from coordinating the many activities of its units, the NCSM has been busy chartering and implementing plans for expanding its operations.

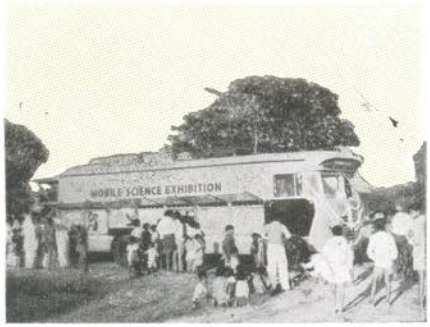
Reaching out to a country as large and diverse as ours is not easy. And we admit that we have as yet a lot to learn about teaching others. But in the past three years we have been growing and trying all the while to make ourselves more interesting in the wider context of the natural and physical sciences. Today you could join our evening classes and learn to make a telescope, or take admission to the adult education courses we offer. You could have your children enrolled at our Bunny Rabbit Club in Bombay and take home a couple of rabbits and guineapigs. Or you could drop by at our Animalorium in Calcutta and meet a Monocellate Cobra. And for those who can't come to us, our travelling exhibitions go to them.

With the targets we have set ourselves, it is essential that we keep growing. Right now we are busy expanding our network of museums and small science centres. There are plans to have a centre of national standing in New Delhi. The Delhi Development Authority has already allotted two plots of about 20 acres and 12 acres. A study group has drawn up a blueprint which envisages a spectrum of activities—from bird-watching to the designing of electronic circuits. There will be computer games, electronic contraptions and an artificial fairyland. 'Science in Life' will introduce children to the everyday role of science. And the 'World of Challenge' will trace man's struggle to understand his environs.

Among the NCSM's priority projects are two district centres at Purulia in West Bengal and Gulbarga in Karnataka.

These centres are already functioning on an ad hoc basis and offer only a limited range of facilities. While work on expanding the centres and making them permanent is fast nearing completion, plans for three more such centres at Dharampur in Gujarat, Tirunelveli in Tamil Nadu and Dimapur in Nagaland are being formulated.

Meanwhile, the first phase in the development of the Srikrishna Science Centre in Patna is almost over. One of its chief attractions will be a popular science gallery which will have closed circuit TV and, among several other thrills, an introduction to the mysteries of the ocean. The Science Park in Patna is also gradually taking shape and a large number of exhibits have been fabricated and installed.



Over the year, the NCSM has been sponsoring seminars, lectures and design contests, many of them specially conceived for students. A new exhibition on wheels with 'Technology, Society and Change' as its theme has been added to our fleet of mobile units. On display are 24 exhibits on such topics of present-day relevance as transport.
power, fuel, public health and

A mobile exhibition in rural Bengal

Construction under way at the Nehru Science Centre, Bombay

The Science Park in Patna

An index of our popularity is that 12.01 lakh people visited our permanent exhibitions this year, an increase of 1.61 lakhs over 1979-80. In fact, with the facilities offered by the NCSM rapidly increasing, we have had to set up a new cell to centralize planning and closely monitor the work being done by different units.

Finally, from 1980-81 the NCSM has been asked by the Union Government's Culture Department to play a role in cultural exchange programmes with the USSR, France, the Federal Republic of Germany, the German Democratic Republic, Bulgaria and Czechoslovakia

Eye to the districts : a full-fledged science centre for Purulia in West Bengal

OBJECTIVES

1 To establish, take over and administer new museums or centres of science, technology and industry and like institutions at all levels — national, state, district and block.

2 To establish centres for development of science exhibits and demonstration aids.

3 To portray the growth of science and technology and their application in industry and human welfare.

4 To collect, restore and preserve important historical objects which represent landmarks in the development of science, technology and industry.

5 To collect, restore and preserve old records and documents relating to the history of science, technology and industry with special reference to India, and to set up an archive for the above purpose.

6 To establish and maintain research and reference libraries in pursuance of the objects of the Society with reading and study rooms, and to furnish the same with books, reviews, magazines, newspapers and other publications.

7 To collect and disseminate information in regard to science, technology and industrial museums and centres.

8 To preserve the relics of industrial archaeology as site museums.

9 To design, develop and fabricate science museum exhibits, demonstration equipments and scientific teaching aids for science education and popularisation of science.

10 To popularise science and technology in cities, urban and rural areas for the benefit of students and for the common man by organising exhibitions, seminars, popular lectures, science camps and various other programmes.

11 To supplement science education given in schools and colleges and to organise various out-of-school educational activities to foster a spirit of scientific enquiry and creativity among the students.

12 To organise training programmes for science teachers/students/young entrepreneurs/technicians/ handicapped/housewives and others on specific subjects of science, technology and industry.

13 To render assistance to universities, technical institutions, museums, schools and colleges or other bodies in planning and organising science museums and also in training of personnel for museum profession.

14 To conduct research in the history of science and technology with special reference to India.

15 To establish and award research fellowships and financing of specific researches in relevant fields.

16 To publish scientific papers, books and journals devoted to the field of museology, history of science and technology and popularisation of science.

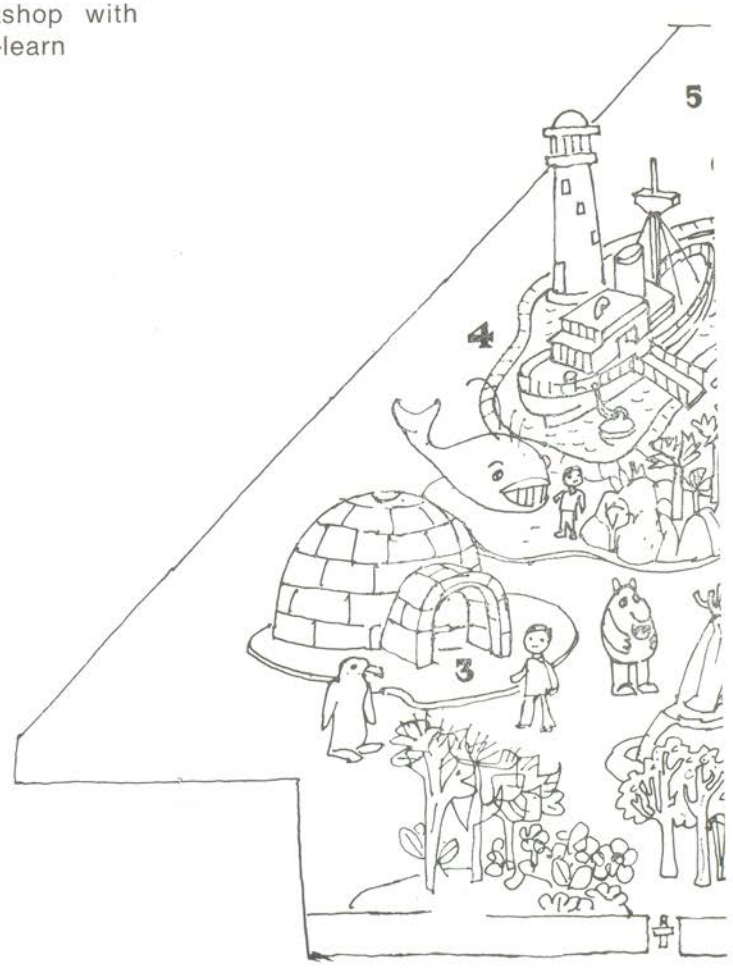
PLANNING

DELHI SCIENCE CENTRE

A think tank of experts has made the blueprint for this centre which will sprawl over 20 acres. Slated to be one of the NCSM's most prestigious units, there will be computer games, electronic gadgetry and an artificial fairyland. 'Science in Life' will serve as an elementary introduction to the everyday role of science, 'The World of Challenge' as an overview of man's efforts to develop science and technology.

There is to be an extensive use of audio-visual aids so that even the most casual visitor will be lured into a memorable sojourn in the world of science and technology. For children there will be fantasy exhibits to introduce an element of fun into the normally drab process of learning.

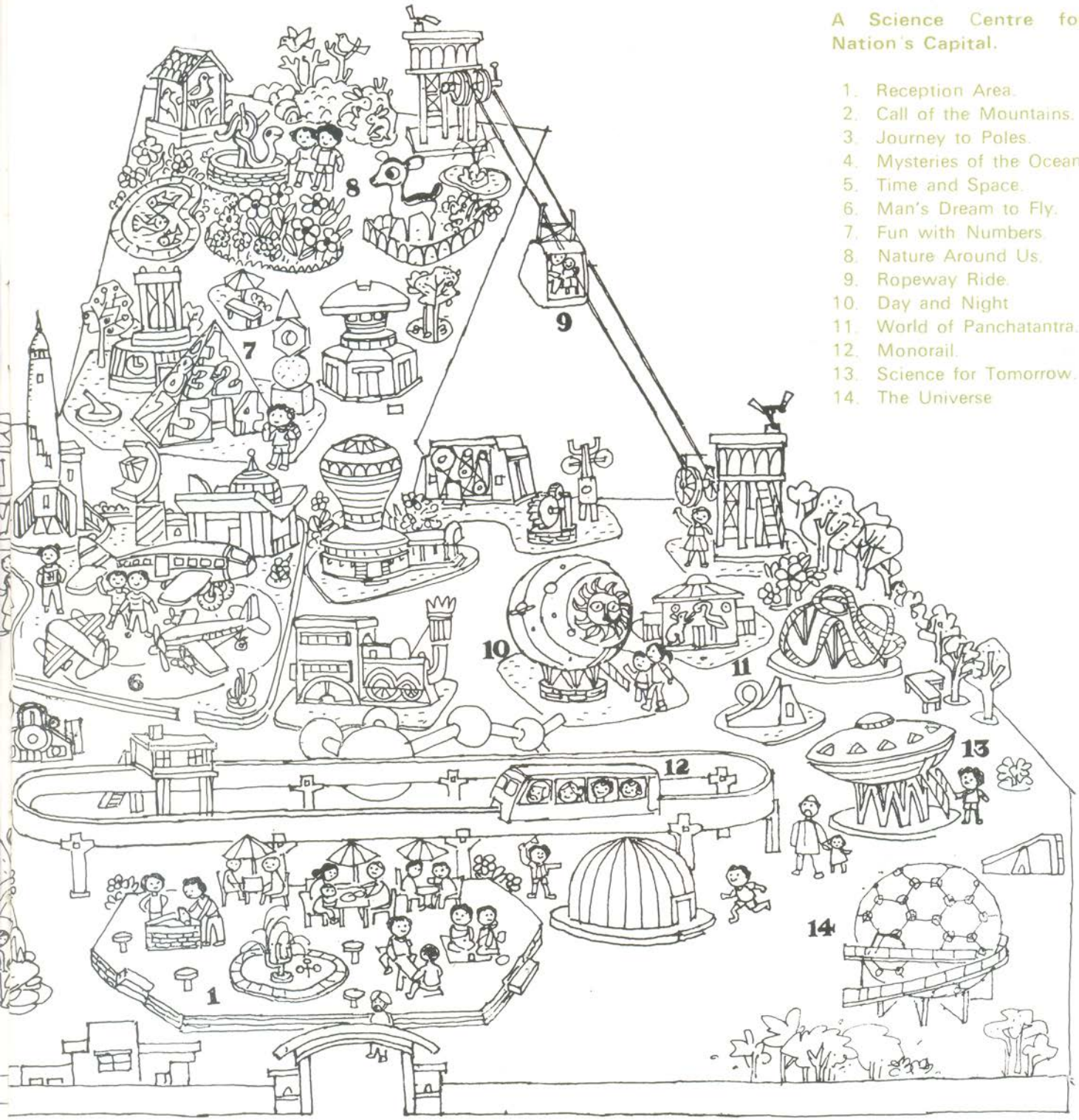
Amateur radio and weather stations. Bird-watching and astronomy. Designing electronic circuits and making scientific toys. The Delhi centre will be essentially activity-oriented, a year-round workshop with a do-it-yourself-and-learn ethos.



The proposed Delhi Science Centre : a 20-acre wonderland with a do-it-yourself-and-learn ethos

A Science Centre for the Nation's Capital.

1. Reception Area.
2. Call of the Mountains.
3. Journey to Poles.
4. Mysteries of the Ocean.
5. Time and Space.
6. Man's Dream to Fly.
7. Fun with Numbers.
8. Nature Around Us.
9. Ropeway Ride.
10. Day and Night.
11. World of Panchatantra.
12. Monorail.
13. Science for Tomorrow.
14. The Universe.



DISTRICT SCIENCE CENTRES

The district science centre at Purulia in West Bengal is soon to have its own little ecology corner of plants, animals, birds and insects. Called a Life Science Corner, it will seek to educate people to the need for an ecological balance and the importance of man's symbiotic ties with nature. A little soul-searching with one of our monkeys or an afternoon spent with some deer in the privacy of the Life Science Corner could be a vastly exhilarating experience.

The ecology corner is just one of the many new facilities that our district science centres will have. There are at present three such centres— at Purulia and Malda in West Bengal and Gulbarga in Karnataka — all of which are functioning on a very limited scale. Work on expanding the Purulia and Gulbarga centres is well under way. Construction of the buildings in which they will be permanently housed began this year. There are plans for having Science Parks at both the centres. The parks are already in the first phase of their development. Exhibits on energy, environment, meteorology, the physical and natural sciences and other areas of popular interest have been fabricated or bought and arrangements are being made for their installation.

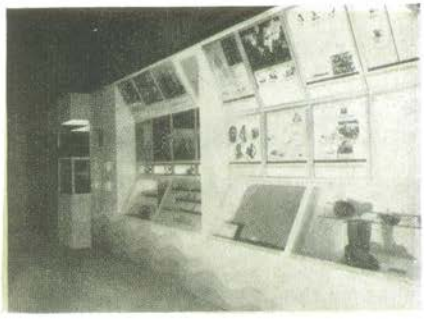
'Wealth of the District' will be another feature of these centres and a whole gallery will be devoted to it. People will be introduced to their immediate milieu through exhibits on natural resources, cultural heritage, local arts and crafts, food and nutrition, health and hygiene, power and industry. While good progress is being made at Gulbarga and Purulia, three more centres are being planned at Dharampur in Gujarat, Tirunelveli in Tamil Nadu and Dimapur in Nagaland. Advisory committees have been set up and architects are soon to begin designing the centres.

SRIKRISHNA SCIENCE CENTRE

Located in Patna, this centre is under the care of the Birla Industrial and Technological Museum, Calcutta. The centre's chief attraction, this year, is a popular science gallery comprising closed circuit television, various participatory games and displays on the mysteries of the ocean, mathematics and electronics.

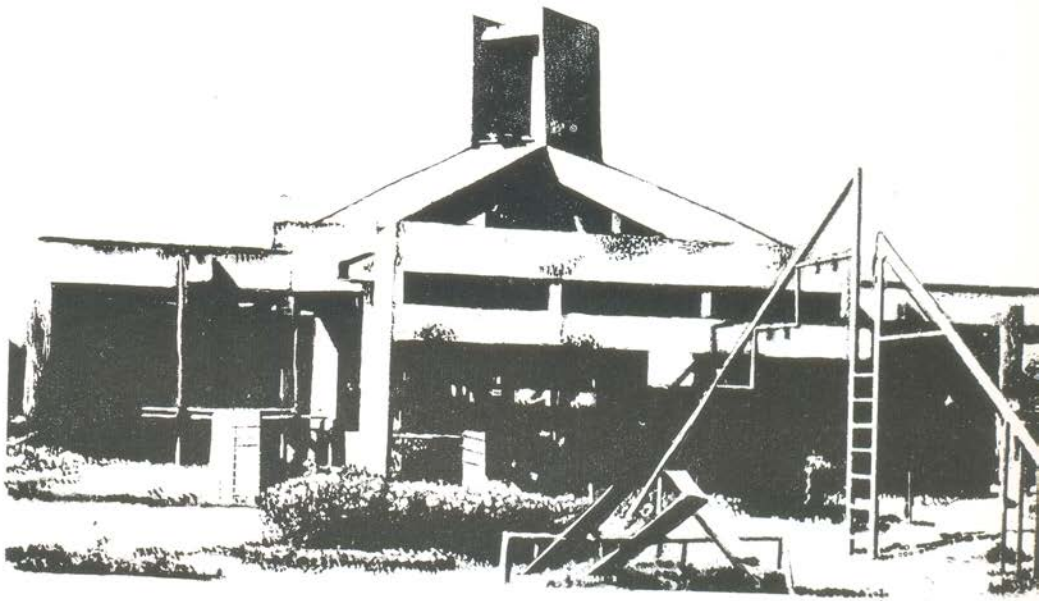
The main building already houses a small workshop, an exhibition hall and two auditoriums — one indoor and the other in the open. With the additional space it has been possible to organize film shows, courses for teachers, lectures and activities for students.

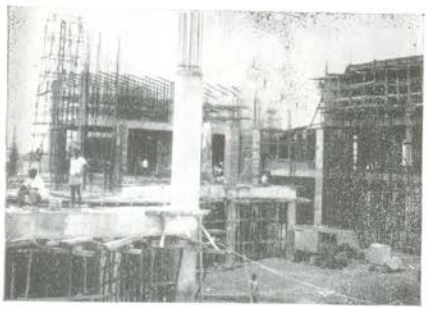
There is an open-air science park in front of the main building of the centre where exhibits on energy, astronomy, meteorology, the life and physical sciences were put on display this year.



NEHRU SCIENCE CENTRE

Much of the intensive planning that was being done at the Nehru Science Centre in Bombay fructified this year. Exhibits for a new mobile exhibition, 'You and Your Environment', have almost been completed. A permanent display with 'Science for Children' as its theme has been fully planned. The display will be in the main building of the museum, the first block of which is to be completed by October 1982. A few exhibits have been added to the Children's Science Park. The Exhibits Development Centre has been given more accomodation and will now begin fabricating exhibits for the 'Sound and Hearing' exhibition, the planning of which has been completed.



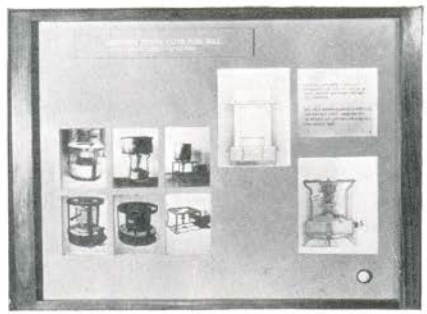


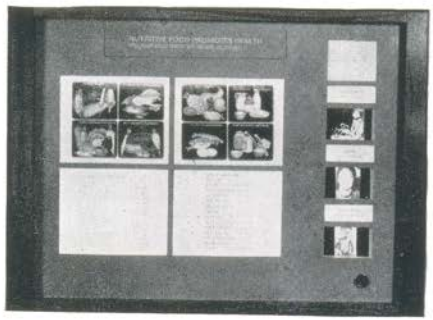
A profile of the Nehru Science Centre: the newly built reception hall (top) and the main building under construction

MOBILE SCIENCE EXHIBITIONS

The Birla Industrial and Technological Museum in Calcutta is planning an exhibition which will be of special interest to people in rural areas. The exhibition will cover animal husbandry, pisciculture, poultry farming and the development of piggeries and dairies. Twenty-four exhibits, of which five have been fabricated, have been planned on 'Food and Nutrition'. The exhibits deal with the ingredients of food, a balanced diet, diseases caused by a deficiency in diet, digestion and hygiene.

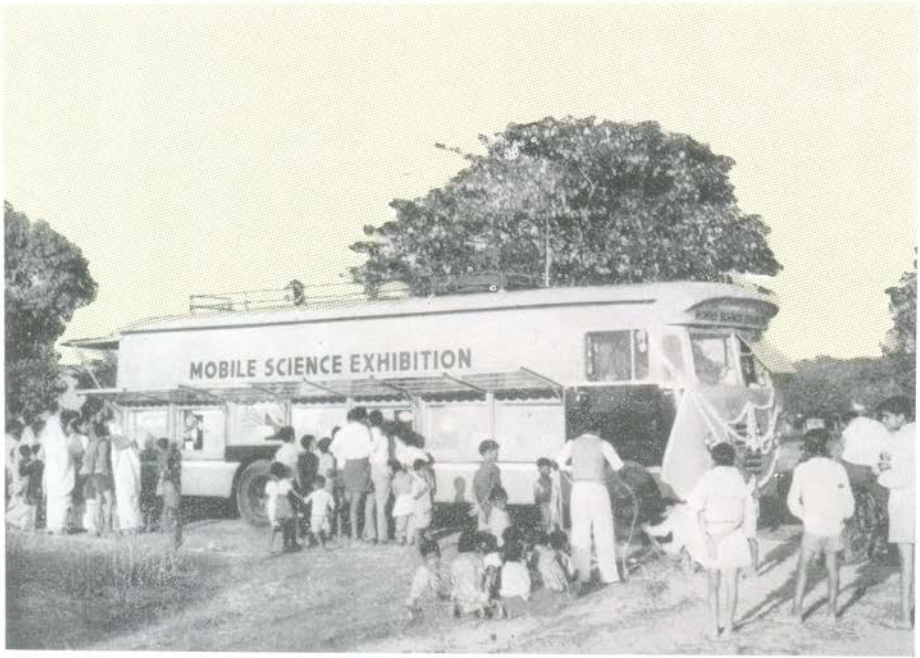
The BITM has also completed planning 'Know Mechanism Around You', a travelling unit with 24 exhibits, many of which have been fabricated. It will be a mobile exhibition with a difference as each exhibit will have its own stand and wheels. The whole exhibition will be moved from place to place by truck or some such large vehicle.





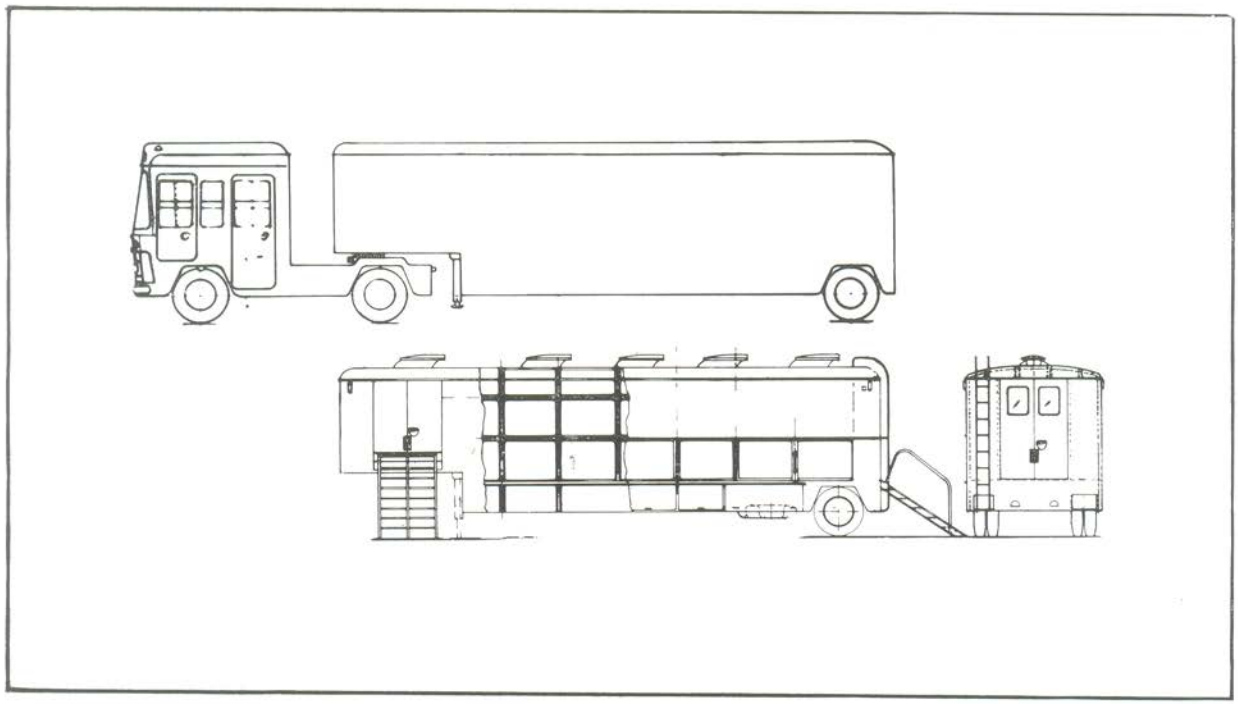
In Bangalore, the Visvesvaraya Industrial and Technological Museum put together 24 exhibits on 'Technology, Society and Change', a new mobile display dealing with power, fuel, public health and transport. The 24 exhibits have been fully fabricated and installed in a bus.

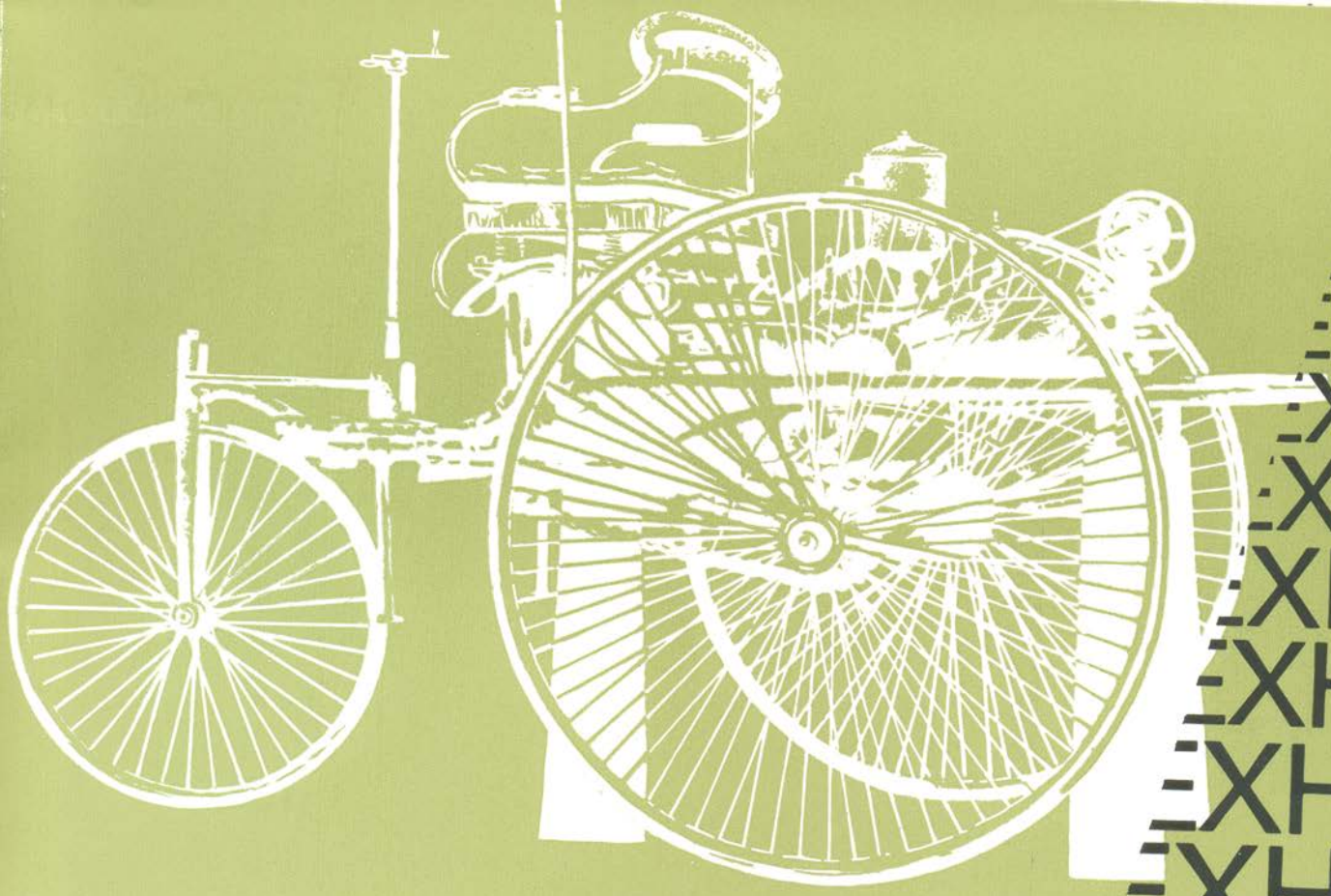
Mobile Exhibitions reach forgotten rural nooks of the country



Exhibitions on wheels visit areas where the bullock-cart is still a major mode of transport

The Nehru Science Centre in Bombay has in the meantime been working on an exhibition entitled 'You and Your Environment'. For this exhibition there is a special 'articulated' trailer-bus with an increased display area. The bus is particularly suited to travel on narrow, un-asphalted village roads.

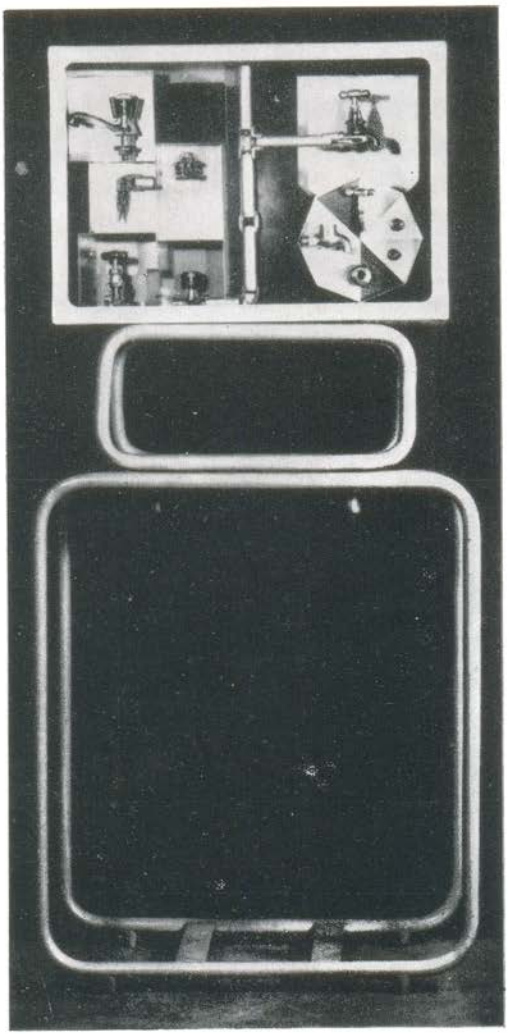


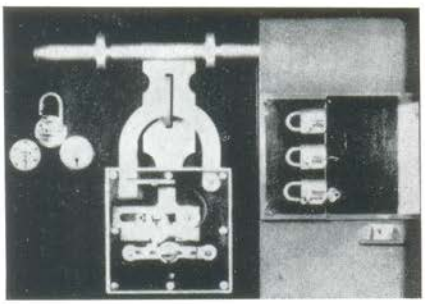


EXHIBITS

For museums with the mission of popularizing science, exhibits rank among the most effective media for communicating with the layman. Charts, posters, diagrams, working and static models vividly explain processes and mechanisms.

Exhibits at the NCSM's museums and centres are grouped together in 24 sections. Each gallery has an original collection. The accent is on systematic and arresting presentation. The exhibits are so arranged that they follow a chronological sequence and form a narrative. Exhibits that work and have an immediate visual appeal are preferred.





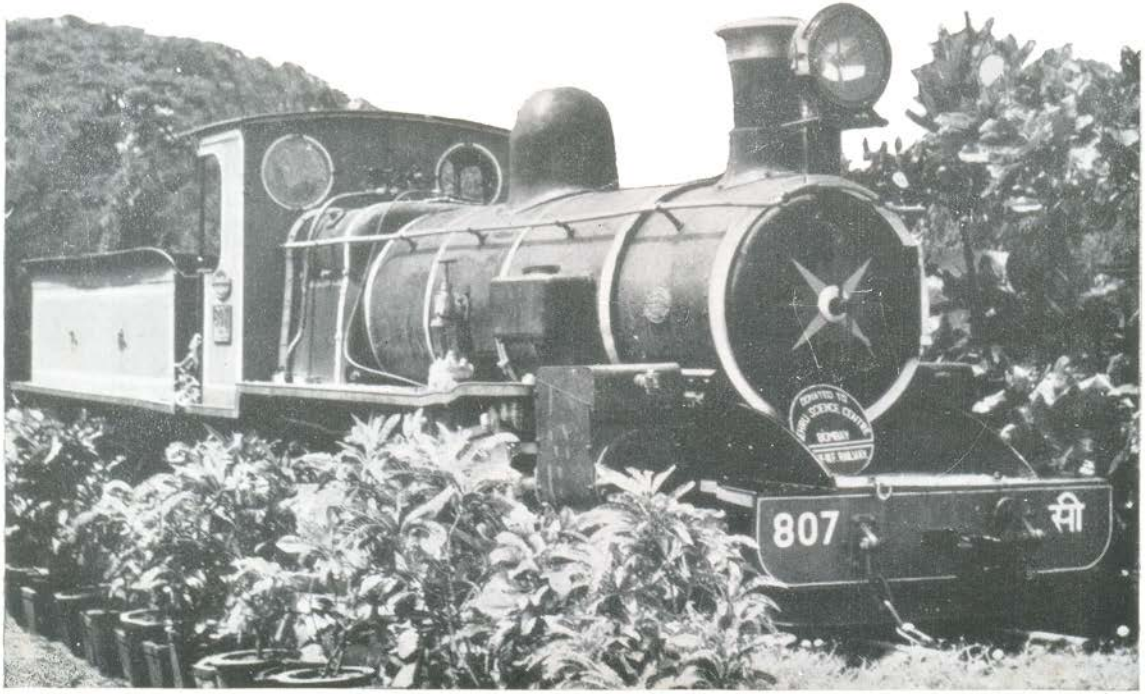
What is a six-lever tumbler lock ? How does a tap work ? "Know Mechanisms Around You" is about the small things that matter a lot

Walk the floor of the ocean with us in Patna. Learn about exotic underwater creatures. Let us tell you about sea-bed mining, the hazards of water pollution, what tidal power is all about

Say hello to a Black Molly. Spend a little time with a Banded Krait. In the open-air Animalorium in Calcutta human beings and animals get to meet

At the Birla Industrial and Technological Museum in Calcutta there are open pits with lizards : the Common Monitor and Yellow Monitor ; snakes : the Monocellate Cobra, Banded Krait, Green Whip Snake, Russel's Sand Boa and the Bronze Back Tree Snake. And aquaria with fish : Golden Guppy, Black Molly, Angel Fish. Called an Animalorium, it is in its own right a compact ecology rendezvous where human beings and animals get to meet.

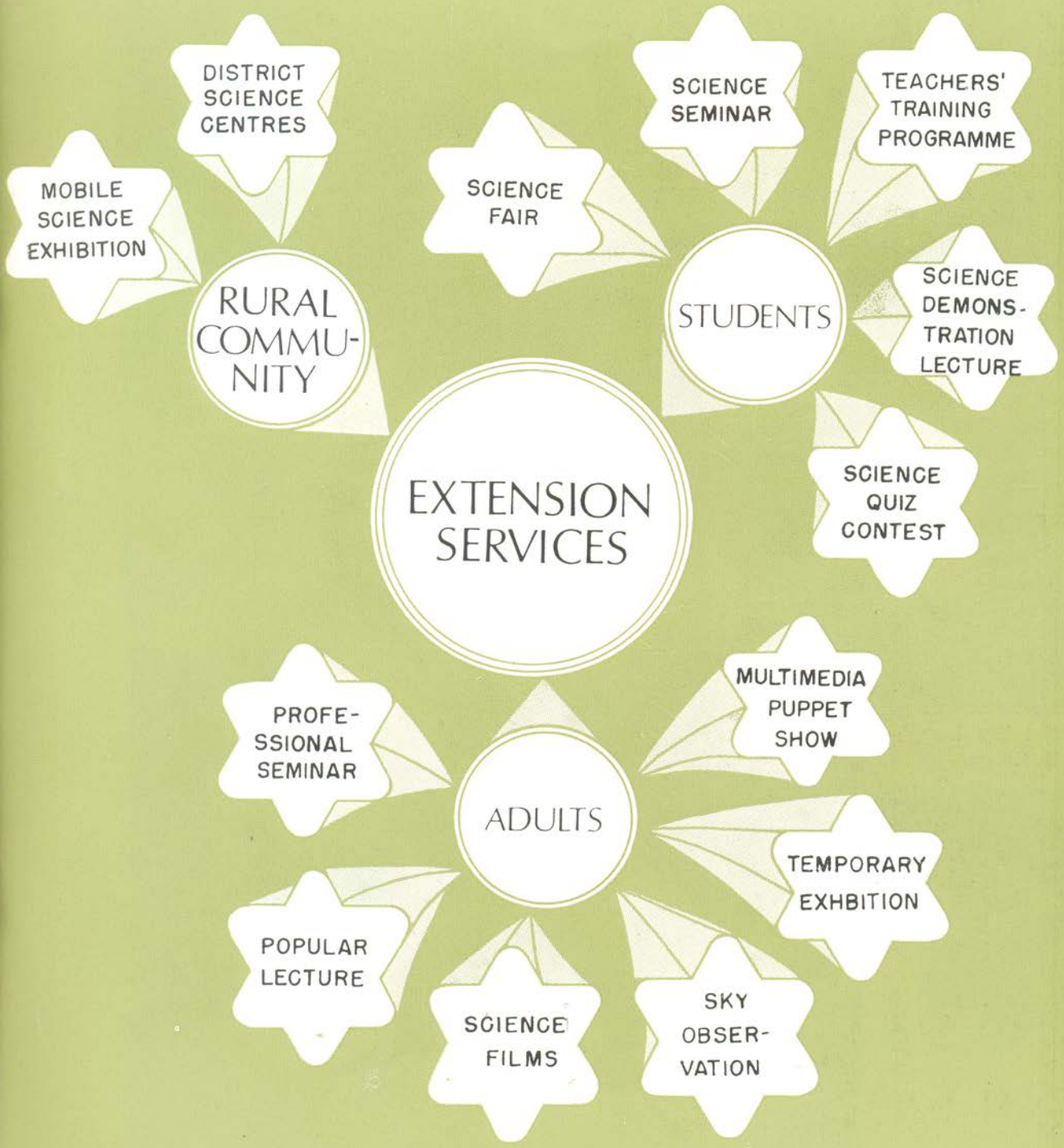
In 1980-81, Exhibits Development Centres fabricated 93 exhibits—34 at the BITM, 32 at the VITM and 27 at the NSC. These are all working exhibits and will be installed in galleries or used for Extension Services



Our Science Park in Bombay, Patna and Purulia provide education through entertainment. Education becomes fun when a see-saw or a swing is used to explain a scientific principle. Or a giant globe in the open offers an introduction to geography

The NCSM's units are always on the look-out for items which represent milestones in the annals of science and technology. This year the Visvesvaraya Industrial and Technological Museum in Bangalore acquired a wire recorder, a 1902 model of an Adler typewriter and an electronic telephone exchange (10.2E PAX) with two receivers. The Nehru Science Centre in Bombay added to its collection a narrow-gauge 'C Class' locomotive, 1932 HMV gramophone and, in the life science section, a weaver bird's nest.

extension services



RURAL COMMUNITY

MOBILE SCIENCE EXHIBITIONS

The mobile science exhibition was specially designed to take the word of science to areas where the bullock-cart is still a major mode of transport. This year we reached 6.16 lakh people in rural Karnataka, Tamil Nadu, West Bengal, Orissa, Goa and Maharashtra. One of the mobile exhibition's functions is to hold open-air film shows in the areas that it tours. 291 film shows were held and they were attended by 1,28,574 people.

The mobile exhibitions dwell on themes which are of immediate relevance — 'Water : the Fountain of Life', 'Man Must Measure', 'Agriculture', 'Light and Sight', 'Our Familiar Electricity', 'Transformation of Energy', 'The Planet We Live In', 'Technology, Society and Change'.

DISTRICT SCIENCE CENTRES

The three district science centres at Gulbarga in Karnataka and at Purulia and Malda in West Bengal functioned on a small, experimental scale. Various educational activities were organized for students and adults. Exhibitions, film shows, lectures, hobby centres, fairs and seminars at these centres attracted 1,16,000 people this year.

STUDENTS

SCIENCE FAIRS AND CAMPS

An important function of science museums and centres is to encourage students to be creative and put text-book knowledge into practice. Science fairs and camps are jamborees at which 'whiz kids' get an opportunity to meet and display their work.

More than 500 students from 250 schools participated in the Southern India Science Fair held in January 1981. Organized in Bangalore

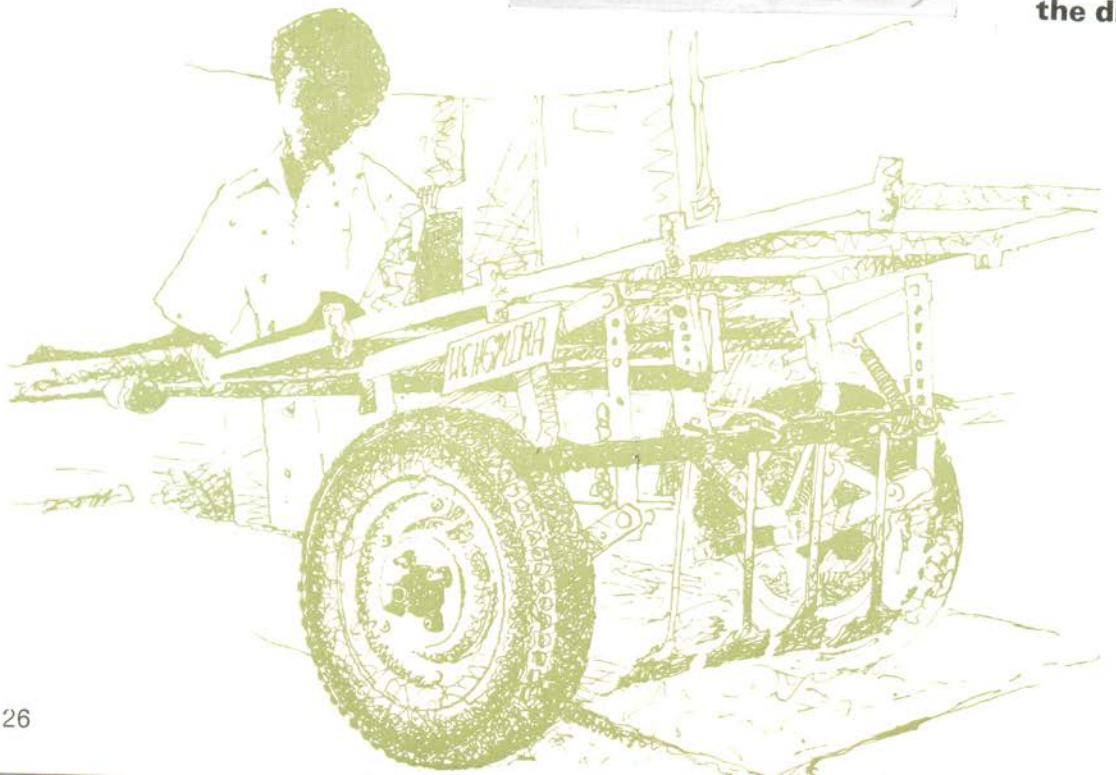
by the Visvesvaraya Industrial and Technological Museum, the fair offered training in various trades. Four zonal science fairs were organized by the VITM at Chickmagalur, Belgaum, Bellary and Gulbarga. The 308 exhibits at the fairs were fabricated by students from 154 schools.

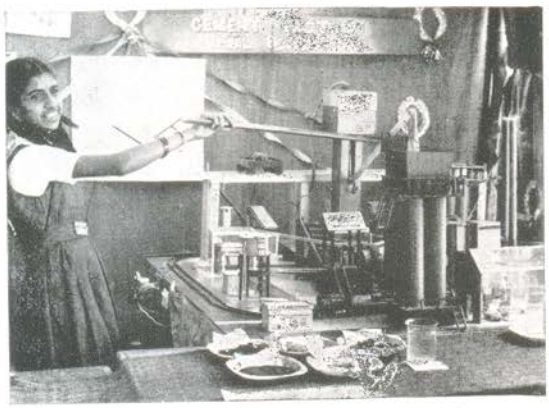
In February 1981, 14 science fairs were organized in the districts of West Bengal by the Birla Industrial and Technological Museum and the Department of Youth Services. The fairs were held at Bankura, Malda, Nadia, Cooch Behar, Murshidabad, Hooghly, the 24-Parganas (South), Birbhum, Burdwan, Midnapore, Purulia, Howrah and Calcutta. In these fairs 662 models were presented by 815 participants from 196 schools and 80 science clubs. The best exhibits were chosen for the Eastern India Science Camp which was also held in February 1981.

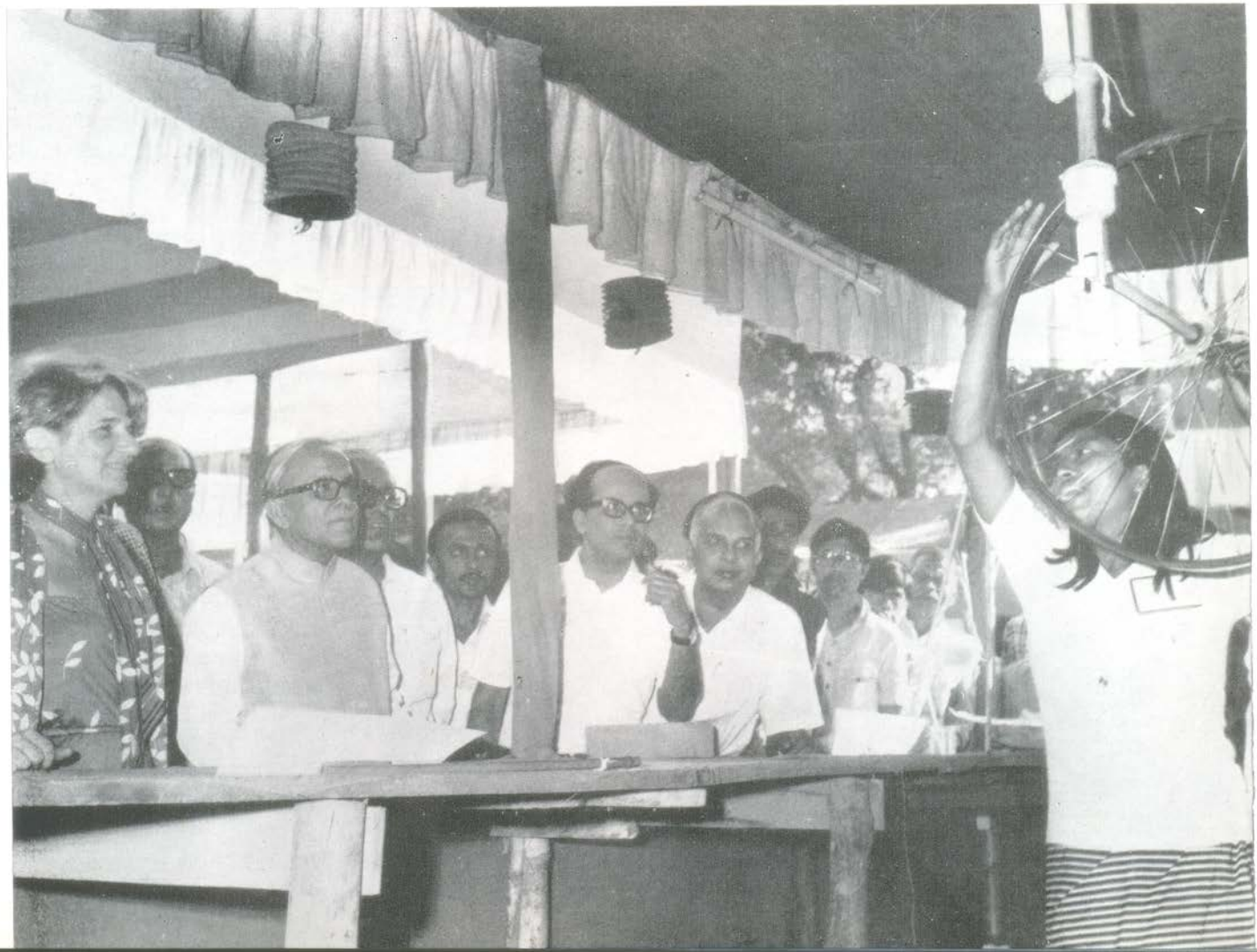
The Eastern India Science Camp was held in Calcutta by the BITM in collaboration with the Education Directorates of States in eastern India and West Bengal's Department of Youth Services. Taking part in the camp were 167 students from 102 schools and members of science clubs in Assam, Arunachal Pradesh, Bihar, Manipur, Meghalaya, Nagaland, Tripura and West Bengal. There were also three participants from a Science Club of Bangladesh. The camp featured an exhibition of 137 models, a work experience programme, special film shows and lectures.

Two regional fairs were held by the BITM in March 1980 at Purulia and Malda in West Bengal. Students from 53 schools and science clubs presented 179 models.

500 students participated in the Southern India Science Fair. 167 took part in the Eastern India Science Camp. And students presented 662 models at 14 Fairs held in the districts of West Bengal.







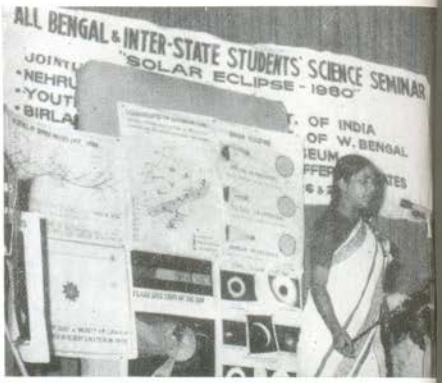
STUDENTS' SEMINARS

These seminars are designed to inculcate in students the ability to gather information, give it a certain theoretical coherence and structure and then present it to an audience with visual aids.

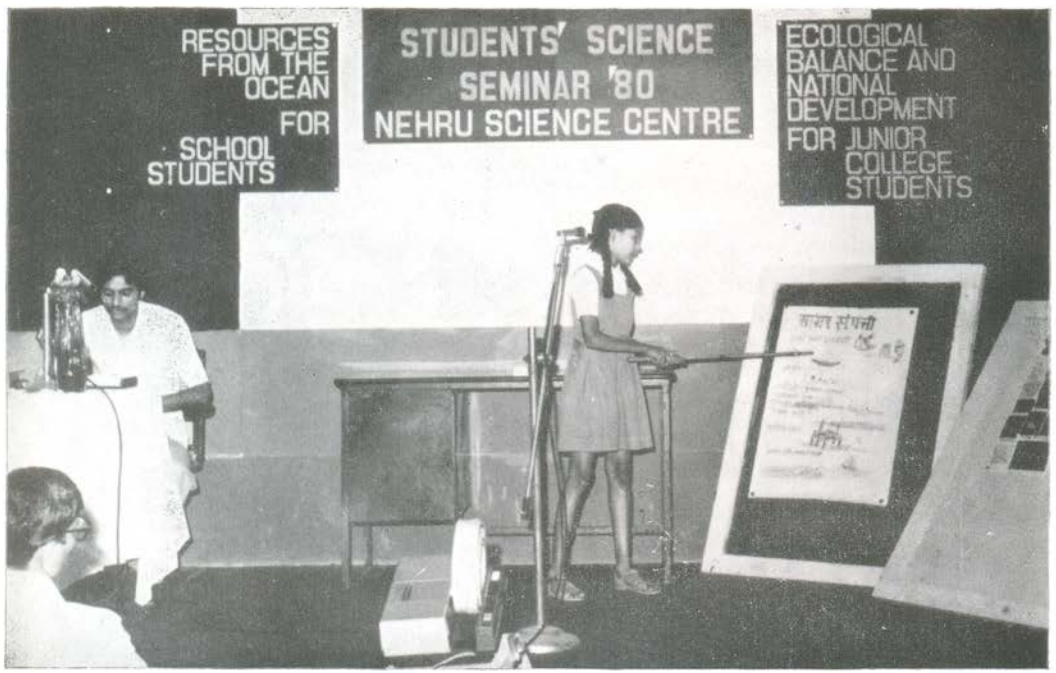
The Visvesvaraya Industrial and Technological Museum organized in Bangalore in August 1980 a seminar on 'Chemicals, Fertilizers and Self-sufficiency on the Food Front'. Students from 55 schools participated. The VITM also organized a seminar on 'The Energy Crisis and a Global Solution to the Problem' at which 19 students from 15 colleges spoke.

In West Bengal, the Birla Industrial and Technological Museum in tandem with the State Department of Youth Services organized from August to September 1980 a series of seminars on 'Solar Eclipse — 1980'. One thousand five hundred and forty students took part in 158 block-level seminars and 494 students in 17 district-level seminars.

'Solar Eclipse—1980' was also the topic for State-level seminars in Arunachal Pradesh, Bihar, Manipur, Mizoram, Nagaland and Orissa. In Bihar, 16 students spoke at the seminar which was organized at the Srikrishna Science Centre, Patna.



Three rounds of seminars slated to be held in 1979 were held by the BITM in July 1980. First 16 seminars were held at the district level on the topic 'Science : A Boon or a Curse for Children ?'. The winners at these seminars spoke at an All-Bengal seminar. And on July 19, 16 winners of State-level seminars in Assam, Bihar, Manipur, Tripura and West Bengal spoke at an Inter-State seminar.



Forty-nine students spoke on the 'Indian Artificial Satellite', 'Importance of Solar Energy', 'The Pollution Problem and Solutions' and 'Importance of Measurement in Life' at a seminar conducted at Shevagaon in September 1980 by the Nehru Science Centre alongwith their mobile science exhibition. The Centre supplemented it by organizing two more seminars in Bombay in December where 69 school students deliberated on 'Resources from the Ocean' and 10 Junior College students spoke on 'Ecological Balance and National Development'.

QUIZ CONTESTS

The quiz contest is used by NCSM units as a game through which students learn informally. It serves as a relaxed objective test. The contests are held on a knockout basis and there are attractive prizes for the winners.

The Birla Industrial and Technological Museum organized a quiz this year in which 96 students from 24 schools took part. The Nehru Science Centre in Bombay organized a similar science quiz in April 1980 in which 92 schools participated. And followed it up with two special written quiz contests to create interest in the 'Man Must Measure' exhibition. The first was held on August 1 at Pusad and the second on August 15 at Hingoli. Eight hundred and sixty-three students from 114 schools participated in the two contests. Books were given as prizes. In Bangalore, the VITM conducted written quiz contests based on gallery exhibits on August 13, 1980. One hundred and eighty-five school students participated.

FILM SHOWS

Film has proved to be a very effective medium for popularizing the sciences because of the vast possibilities it offers for exciting yet accurate presentation. Film shows are held regularly at the NCSM's centres and museums. In Bombay, a film festival was opened by the Nehru Science Centre on September 9, 1980. The response from schools in Greater Bombay was so good that the films had to be shown till October 30.

Place	*No. of Shows*	*Visitors*
BITM, Calcutta	307	29,112
VITM, Bangalore	695	56,985
NSC, Bombay	580	23,200
SSC, Patna	294	38,750
District Science Centres—Malda and Purulia	446	17,071
District Science Centre—Gulbarga	—	2,430

HOBBY CENTRES

The hobby centre affords the student the opportunity of giving an idea tangible, three dimensional form. It prods his creativity. Even a rudimentary model made in a hobby centre takes the student from theory to practice, from the text-book to the workshop or laboratory.

The Visvesvaraya Industrial and Technological Museum conducted in Bangalore a Summer Hobby Centre from May 6 to 31, 1980. One hundred and twenty students availed of the facilities of the hobby centre. The subjects covered were the physical sciences, electronics, aeromodelling, nature study, chemistry, screen printing, clay modelling and photography.

The VITM also conducted a Winter Hobby Centre (October 3 to 8, 1980) at which 175 students completed 27 projects.

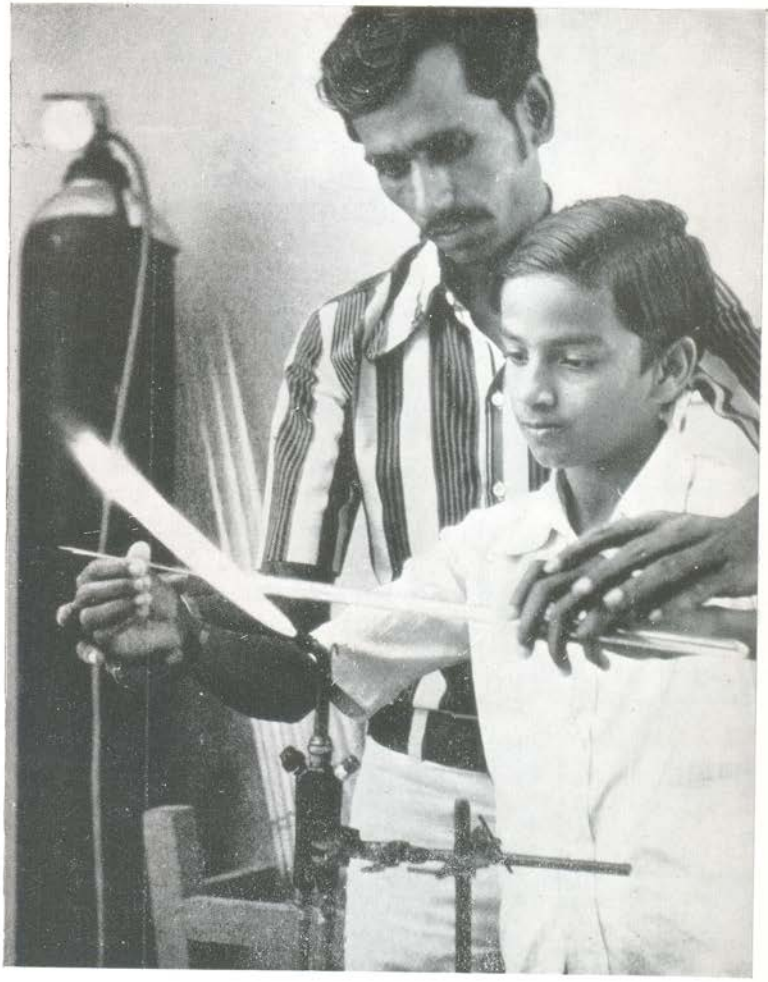
Also on the VITM's calendar were three hobby centres at Dharwar and Chickmagalur in Karnataka and at Anantapur in Andhra Pradesh. The focus of these hobby centres, at which 140 students enrolled, was on trades such as carpentry, fitting and soldering.

In Bombay, the Nehru Science Centre organized a special competition in which students were asked to design exhibits which could be added to the centre's 'Light and Sight' display. Interesting exhibits resulted from the contest and were used by the NSC.

In Patna, 40 students under the guidance of the Srikrishna Science Centre fabricated 92 models. And at the Birla Industrial and Technological Museum's Creative Ability Centre in Calcutta students fabricated several good exhibits for the science camp held in February 1981.

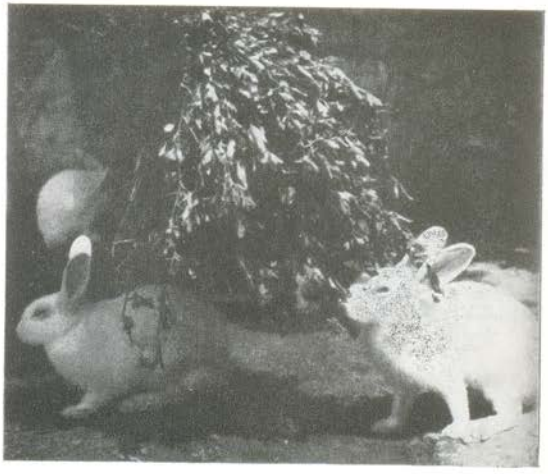
NATIONAL DESIGN COMPETITION

To encourage students to be innovative, an all-India design contest was held in Bangalore by the Visvesvaraya Industrial and Technological Museum in September 1980. The competition was open to final year students in all branches of engineering. The 50 designs received by the VITM were judged by experts and prizes were awarded.



BUNNY RABBIT CLUB

This club is for children only. It was set up in Bombay in December 1980 by the Nehru Science Centre and has since then been giving to its members on loan two pairs of rabbits and two pairs of guineapigs. The idea is to give citified children the opportunity of living with animals and caring for them. In fact, many of the members of the Bunny Rabbit Club grow up with the bunnies they borrow.



The Hobby Centre prods a student's creativity

EDUCATION AND TRAINING

SCIENCE DEMONSTRATION LECTURES

The demonstration lecture is designed to supplement the science curricula of the senior classes in secondary schools. In West Bengal, the Birla Industrial and Technological Museum held 111 such lectures for 12,219 students in 57 schools. Thirty lectures attended by 2,046 students were also held on the premises of the BITM this year.

The right DITs and DAHs could have you talking to someone at the other end of the world

The Visvesvaraya Industrial and Technological Museum made the demonstration lecture part of the mobile exhibition which toured Karnataka and Tamil Nadu. Two hundred and fifteen lectures were delivered to 9,400 students.

AMATEUR RADIO

The right DITs and DAHs could have you talking to someone at the other end of the world. The NCSM's units have been offering courses for training amateur or ham radio operators. It costs just Rs. 5 to take the course and a ham radio comes for as little as a new stereo. Once a qualified ham operator, it is possible to have world-wide communications through short-wave radio equipments.

The Birla Industrial and Technological Museum inaugurated a ham station on May 27, 1980. The other stations under the NCSM are at the Visvesvaraya Industrial and Technological Museum in Bangalore and the Nehru Science Centre in Bombay.

TRAINING FOR MUSEOLOGY STUDENTS

Museology students are allowed by the NCSM to gain first-hand experience of how its science museums and centres function.

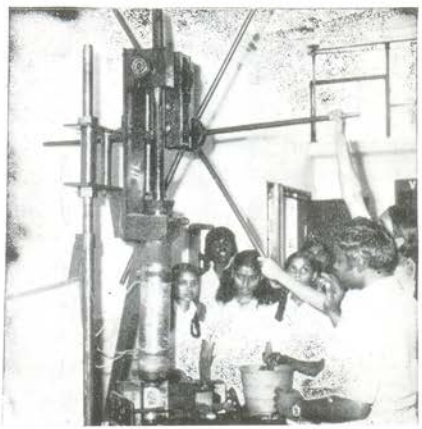
Thirteen students of Calcutta University's Department of Museology were at the Birla Industrial and Technological Museum from July 21 to August 1, 1980. They made dummy layout models, dioramas, posters and labels.

Students of the Birla Institute of Technology and Science, Pilani, availed of this facility at the Visvesvaraya Industrial and Technological Museum in Bangalore. They designed exhibits on solar energy as a project.

INDUSTRIAL DEMONSTRATIONS

These demonstrations expose students to the technology used in various trades. Seventy-five students attended a demonstration on ceramics held in Bangalore by the VITM in June 1980.

In August 1980, the VITM in tandem with the Indian Institute of Science sponsored a demonstration on glass technology. And a demonstration on plastic moulding for 80 students from two schools followed in February 1981.



SCHOOL LOAN SERVICE

Forty-nine portable educational exhibits were offered to schools this year by the Birla Industrial and Technological Museum in Calcutta. Designed as classroom aids, the exhibits were on topics taught in schools.

TEACHERS' TRAINING PROGRAMME

The Birla Industrial and Technological Museum organized a special programme for training teachers in the fabrication of low-cost teaching aids. Fourteen teachers from the teachers' training colleges at Kalyani and Hastings enrolled for the course. From May 5 to 16, 36 teachers from 24 schools were trained by the BITM. The course was also offered to teachers at Purulia and Malda.

The Srikrishna Science Centre in Patna conducted the course from July 7 to 18, attracting nine teachers from nine schools. And at the Nehru Science Centre in Bombay 19 teachers learnt basic model-making in November 1980.

ADULTS

PROFESSIONAL SEMINARS

The Birla Industrial and Technological Museum held a symposium in Calcutta on 'Teaching Through Exhibits' at which 15 teachers from teachers' training colleges spoke.

The Nehru Science Centre organized a get-together for teachers in Bombay to discuss the difficulties in establishing and running science clubs. Thirty-one teachers attended the get-together, which was organized in collaboration with the Homi Bhaba Science Teachers' Library and the Ashok Mandal.

'Development Through Electronics', a seminar-cum-exhibition, was organized at the BITM from December 27 to 29, 1980, by the Small Industries Service Institute.

POPULAR LECTURES

Twenty popular lectures were held by units of the NCSM in Calcutta, Bangalore, Patna and Bombay. The lectures were of topical interest and attracted large audience.

ASTRONOMY

Efforts have been made to popularize astronomy. The Nehru Science Centre and the Srikrishna Science Centre regularly conduct a course in which stars and celestial configurations are observed through the refractive telescope. At the NSC, 19 people learnt how to make a reflector telescope. And a camp organized at Lonavala by the NSC in February 1981 attracted 31 astronomy buffs who spent a whole night star-gazing. In Calcutta, seven people joined a course at the Birla Industrial and Technological Museum which ended with them making a reflecting telescope.

TEMPORARY EXHIBITIONS

Whether it is to remember Einstein or note the 100th year of the electric bulb, the temporary exhibition has an important role in the NCSM's scheme of activities. Essentially ad hoc in nature, such exhibitions supplement permanent displays in museums. The NCSM's units in Calcutta, Bangalore, Bombay and Patna used temporary exhibitions to focus on subjects of topical interest such as the solar eclipse, space science and solar energy.

Theme of the Exhibition	Venue	Date	No. of Visitors
Centenary of Electric Lamp	NSC, Bombay	May 7 to June 2, 1980	8,200
-do-	SSC, Patna	Oct. 21 to Nov. 5, 1980	14,244
-do-	BITM, Calcutta	Jan. 17 to Feb. 15, 1981	7,790
Solar Eclipse	BITM, Calcutta	May 2 to June 4, 1980	19,080
Rubber & Rubber Products	VITM, Bangalore	June 10 to July 10, 1980	45,000
Space Exhibition (In collaboration with the Indian Space Research Orgn. (ISRO)	BITM, Calcutta	July 1 to 20, 1980	10,606
-do-	SSC, Patna	March 25 to April 5, 1981	9,823
High Technology French Industries (In collaboration with the French Cultural Centre and French Trade Commission, Calcutta)	BITM, Calcutta	Aug. 21 to Sept. 7, 1980	3,831
Einstein—His Life and Works	VITM, Bangalore	Sept. 15 to Nov. 15, 1980	not kept separately
-do-	MEI Polytechnic, Bangalore	Dec. 25 to 31, 1980	5,000
-do-	Jindal High School, Bangalore	January 2 to 12, 1981	
'Profitopolis' or Man Needs a Different City (In collaboration with the Max Muller Bhavan, Calcutta)	BITM, Calcutta	November 1 to 23, 1980	3,004
Astronomy (In collaboration with the Amateur Astronomers, Bangalore)	VITM, Bangalore	February 15 to 22, 1981	10,000
Solar Energy (In collaboration with the Indo-German Association, Calcutta)	BITM, Calcutta	March 3 to 21, 1981	3,003

MULTI-MEDIA SHOW

A multi-media biography of Dr M. Visvesvaraya was produced in Bangalore by the VITM. Narration, slides, pre-recorded tapes and stage acting were used to provide a profile of Dr Visvesvaraya. The show was presented to 120 students on March 19, 1981.

WEATHER STATION

As a prelude to the opening of a full-fledged amateur weather station at the Nehru Science Centre in Bombay a mini station has been making regular observations.

SEMINAR-CUM-WORKSHOP

'Audio-Visual Learning Resources for the Child' was a seminar-cum-workshop held in Bangalore by the VITM from September 1 to 4, 1980. It was sponsored by the NCERT, New Delhi. Forty delegates discussed the use of audio-visual techniques.

TECHNICAL ASSISTANCE

NCSM Museums/Centres rendered technical assistance to the following Organisations :

a) Bangiya Bijnan Parishad
b) NSCL Engineers' Association
c) Dept. of Architecture, B.E. College
d) National Research Development Corporation of India (NRDC)
e) United Commercial Bank Staff College
f) Jute Technological Research Laboratory, Calcutta
g) Navyug Bal Niketan, Bhagalpur

INFORMATION

LIBRARY

Libraries at the NCSM's units have books and films on a plethora of subjects. There are collections on the history of science, technology, popular science, museology, engineering, art, archaeology, architecture, graphic design.

The reference facilities at the libraries are open to students, researchers and the public.

There are also microfilm, Microfiche, Xerox and other reprographic facilities which are widely used.

	Addition during the Year	Total
Books	1678	19,771
Pamphlets	76	3,205
Journals	151	151
Films (16 mm)	107	682
Microfilm/Microfiche	44	71
Reports, Reprints, Xerox Copies	167	1989
Maps & Charts	11	96

GENERAL INFORMATION

A. National Council of Science Museums

In 1978 as per the decision of Government of India an autonomous Society—National Council of Science Museums (NCSM) was formed for administering the existing Science Museums under the CSIR and for taking up the development of new Museums/Centres. At present the registered office of the Society is situated at 19A, Gurusaday Road, Calcutta-700 019.

B. Birla Industrial & Technological Museum

Location : 19A, Gurusaday Road, Calcutta-700 019 near the crossing with Syed Amir Ali Avenue.
Museum Hours : 10 a.m. to 5 p.m. Open everyday except Mondays, Doljatra and Kalipuja.
Entrance Fee : Rs. 0.50 for visitors. Free for organized student groups.

C. Nehru Science Centre

Location : Dr. E. Moses Road, Worli, Bombay-400 018.
Exhibition Hours : 12 noon to 7 p.m. all days except Mondays.
Entrance Fee : Rs. 0.50 for visitors, Free for organized student groups.

D. Visvesvaraya Industrial & Technological Museum

Location : Kasturba Road, Bangalore-560 001.
Museum Hours : 10 a.m. to 5 p.m. All days except Mondays and notified holidays.
Entrance Fee : Rs. 0.50 for visitors. Free for organized student groups.

E. Shrikrishna Science Centre

Location : West Gandhi Maidan Patna-800 001.
Exhibition Hours : 12 noon to 7 p.m. Open every day except Mondays and notified holidays.

F. District Science Centre, Purulia

Location : M. V. Institution, P.O. & Dist. Purulia, West Bengal.
Exhibition Hours : 12 noon to 7 p.m. Open everyday except Mondays, and notified holidays.

G. District Science Centre, Malda

Location : Model Madrasha, P.O. & Dist. Malda, West Bengal.
Exhibition Hours : 12 noon to 7 p.m. Open everyday except Mondays, second Saturdays and notified Notified.

H. District Science Centre, Gulbarga

Location : Govt. Multipurpose High School, Gulbarga, Karnataka.
Exhibition Hours : 12 noon to 7 p.m. Open everyday except Mondays, second Saturdays and notified holidays.

I. NCSM Planning Cell

Location : NDMC Swimming Pool, Nehru Park, Vinay Marg, Chanakyapuri, New Delhi-110 021.

Visitors Statistics for 1980-81 (in Lakhs)

	BITM	VITM	NSC	SSC	Total
Permanent Galleries	2.01	6.98	1.07	1.95	12.01
Mobile Exhibitions	3.38	1.34	1.44	—	6.16
District Science Centres (including all programmes)	1.04	0.12	—	—	1.16

Visitors Statistics in NCSM during last 5 years (in lakhs)

	1976	1977	1978*	1979-80	1980-81
Permanent Galleries	7.58	7.79	12.49†	10.40	12.01
Mobile Exhibitions	5.20	6.87	5.59	6.52	6.16
District Science Centres (including all programmes)	3.40@	0.66	0.97	1.45	1.16

* Figures were maintained on the basis of Calendar years till 1978. From April 1979, figures are maintained on the basis of financial year i.e. April to March.

† The figure includes visitors to special U.S. Exhibition on Technology.

@ The figure includes visitors to a special festival in Gulbarga.

management

Shri S. B. Chavan

Dr. Yash Pal

Dr. M. S. Swaminathan

LIST OF SOCIETY MEMBERS OF NCSM

1. Hon'ble Shri S. B. Chavan,
   Union Minister of Education & Culture, New Delhi.
   President

2. Dr. Yash Pal,
   Director,
   Space Applications Centre,
   Ahmedabad.
   Chairman, Governing Body
   (Until 25.4.81)

3. Dr. M. S. Swaminathan,
   Member,
   Planning Commission,
   New Delhi.
   Chairman, Governing Body
   (Since 25.4.81)

★4. Dr. (Mrs.) Madhuri Shah,
   Chairman,
   University Grants Commission,
   New Delhi.

5. Dr. A. K. De,
   Chief Controller,
   Defence Research & Development Organisation,
   New Delhi.

6. Shri M. S. Parthasarathy,
   Standard Pencil Factory,
   Madras

7. Shri R. N. Mirdha,
   New Delhi.

8. Dr. S. T. Satyamurthi,
   Madras.

9. Dr. (Miss) A. Chari,
   Director,
   Krishnamurti Foundation,
   Varanasi.

10. Dr. Atma Ram,
    New Delhi.

11. Dr. A. N. Bose,
    Jadavpur University,
    Calcutta.

★12. Shri M. N. Deshpande,
    Adviser, Nehru Centre,
    Bombay.

★13. Prof. A. N. Bose,
    National Council of Educationa
    Research & Training,
    New Delhi.

★14. Shri Y. N. Gangadhara Shetty,
    Bangalore.

★15. Shri B. P. Poddar,
    Calcutta.

★16. Shri S. Gorakshkar,
    Director,
    Prince of Wales Museum,
    Bombay.

17. Prof. M. G. K. Menon,
    Secretary, DST & Director General, CSIR,
    New Delhi.

18. Shri Mahatab Singh,
    Dy. Secretary, DST,
    New Delhi.

★19. Shri J. A. Kalyanakrishnan,
Financial Adviser,
Ministry of Education & Culture,
New Delhi.

★20. Shri Mir Nasrullah,
Addl. Secretary,
Ministry of Education & Culture,
New Delhi.

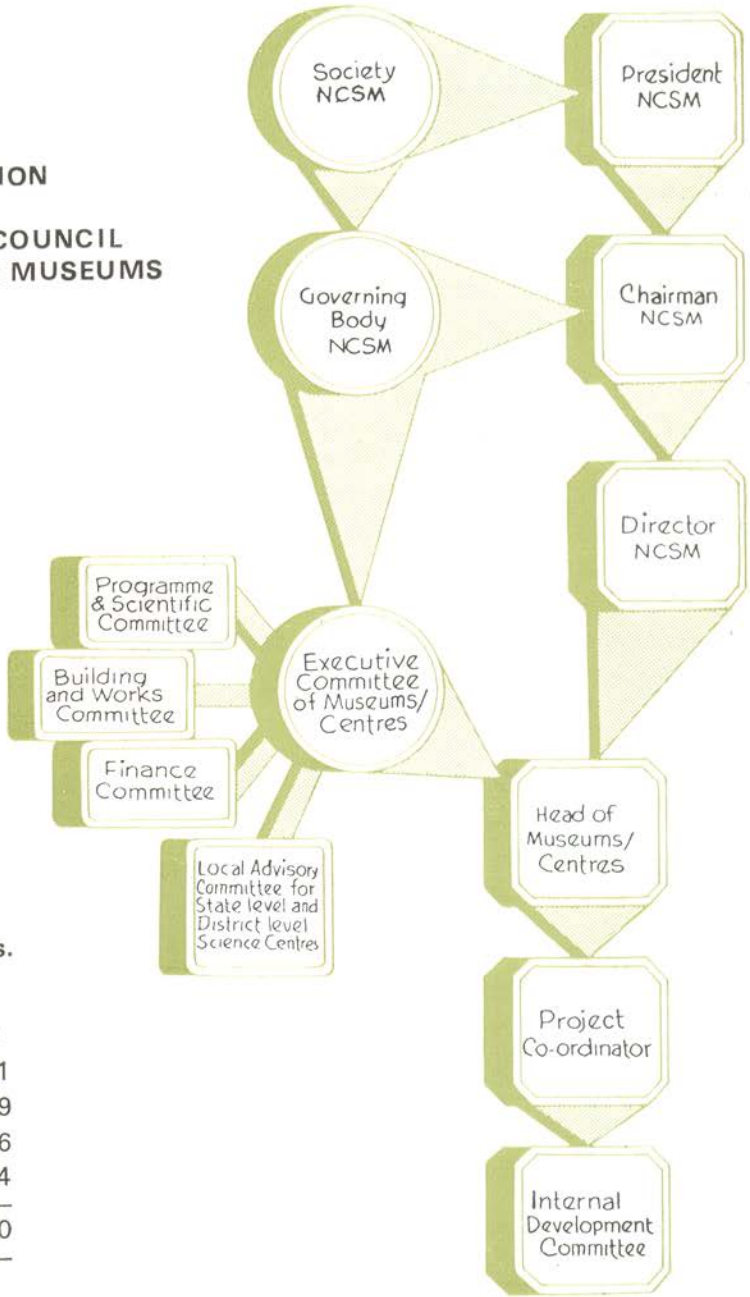
★★21 Dr Amarjit Singh,
Director, C.E.E.R.I.,
Pilani.

★22. Dr. Saroj Ghose,
Director,
National Council of Science Museums,
Calcutta.

23. Shri T. K. Ray,
Secretary,
National Council of Science Museums,
Calcutta.
Non-Member Secretary.

★ Denotes members of Governing Body.
★★ Represents DGSIR in the Governing Body.

ORGANISATION CHART OF NATIONAL COUNCIL OF SCIENCE MUSEUMS



Total Gross Expenditure for 1980-81 NCSM Hqrs. and its constituent Units (in lakhs of Rs.)

		Non-Plan	Plan	Total
1.	NCSM (Hqrs.)	1.161	8.480	9.641
2.	BITM Calcutta	35.032	22.417	57.449
3.	VITM Bangalore	21.672	19.164	40.836
4.	NSC Bombay	10.988	47.226	58.214
	Total	68.853	97.287	166.140

All figures include C.O.H.

PAPERS

- 'Science Centres for 2000 A.D. in newly emerging Countries' — by Dr. Saroj Ghose, Director, NCSM.
- 'Science Museums and Education in India' —by Dr. Saroj Ghose, Director, NCSM.
- 'Development of self-supporting technology in remote areas with special reference to Purulia —a Pilot Project' by Dr. Saroj Ghose, Director, NCSM.
- 'Transportation and Handling of Science Museum Objects' by Dr. T. K. Ganguly, Curator NCSM.
- 'Curatorial Responsibilities in the Preservation and Storage of Museum Objects' —by Shri M. Parvathinathan, Curator, NSC.
- 'Audio Visuals —an Aid to Education' —by Shri G. S. Rautela, Curator, NSC.
- 'Application of Learning Packages as Instruction Material in Environmental Education' by Dr. (Miss) S. B. Sreekumari, SSA, NSC.

PROFESSIONAL MEMBERSHIP

- Dr. Saroj Ghose, Director, NCSM is elected a Member of the Executive Board of ICOM International Committee on Museums of Science & Technology for 1980-83.
- Dr. T. K. Ganguly, Curator, NCSM is elected a Member of the Executive Committee of the Museums Association of India, New Delhi for 1980-82.
- S/s. R. M. Chakraborti, Project Officer, NSC, S. K. Bagchi, Senior Curator, BITM, P. K. Bhaumik, Curator, NCSM and Mrs. Ila Sandhu, Scientist, BITM are elected Members of the Executive Committee of the Indian National Committee for ICOM for 3 years.
- Shri P. K. Palit, Sr. Information Assistant, NCSM is elected a Member of the Executive Board of ICOM International Committee on Museum Public Relations for 1980-83.
- Shri S. R. Agarwal, Curator, SSC, Patna is elected a Member of the Working Committee of 'Science For Society' constituted by the Patna University.
- Shri S. K. Bagchi, Senior Curator, BITM is elected a Member of the Board of Management of the Ananda Niketan Kirtishala (A Rural Reconstruction and Social Upliftment Research Institute) Bagnan, Howrah.

DEPUTATION

- Dr. Saroj Ghose, Director, NCSM was deputed to Mexico from October 20 to November 13, 1980 to attend the Workshop organised by the Association of Science & Technology Centre (ASTC) and also for participation in the General Conference of the International Council of Museums (ICOM).
- S/s. G. Nagarajan, Curator, VITM and Shri P. K. Bhaumik, Curator, NCSM were deputed to U.S.S.R. from 29.11.80 to 6.12.80 to work out the details of exchange of exhibitions between the two countries under the Indo-USSR Cultural Exchange Programme.

CULTURAL EXCHANGE PROGRAMME

Bilateral cultural exchange programmes have been taken up between NCSM and Science Museums in USSR, France, FRG, GDR, Bulgaria and Czechoslovakia for exchange of exhibitions and personnel.

PUBLICATIONS

BITM

Museum Programme of Events–July-September, October-December, 1980 and January -March, 1981 —three issues.

Brochure on Quiz Contest.

Annual Report 1979-80.

West Bengal Science Club Newsletter Vol. (V), Issue-1.

Folder on Eastern India Science Camp —1981.

Brochure on Eastern India Science Camp —1981.

VITM

Folder on the exhibition "Rubber & Rubber Products".

Folder on the exhibition "Einstein —Life & Works".

Booklet on Motive Power Gallery.

Booklet on Popular Science Gallery.

Brochure on Industrial Demonstration on Ceramics.

Annual Report 1979-80.

Brief Report on Southern India Science Fair 1981.

NSC

Annual Report 1979-80.

Sky-observation Programme — Introductory Note (Cyclostyled).

Folder on Bunny Rabbit Club.

SSC

Monthly News Bulletin on the Centre (Cyclostyled).

NCSM

Annual Report of the National Council of Science Museums — in English and Hindi 1979-80.