

## CENTRAL SERVICES

### Computer Centre

The Centre provides computation facility to faculty members, research scholars and students of the University, and conduct training programmes in computer related subjects and develop software for NEHU administration.

At present there is a VAX 3100-40 computer system with nine terminals and nine personal computers. Utilisation of the computer system is on an average 8 hours per day. The total number of users per day is more than fifteen. Ninety percent of the machine time is devoted to research and teaching, while ten percent is devoted to other work.

**Head :** Dr S N Rai

#### Faculty/Technical Officers :

Name & Degrees	Designation
S N Rai, PhD (Varanasi)	Director
T K Sinha, PhD (NEHU)	Lecturer
P P Dey, B Tech (Warangal)	Sr. Systems Analyst
S Ghosh, M E (Jadavpur)	Systems Analyst
B Rynjah, B Tech (Kakinada)	Systems Analyst

#### Courses Conducted :

Computer in Library Management; Computer Courses for IGNOU Students & Training of NEHU Personnel.

#### Other Activities :

The Centre carried out computerised word processing for the Annual Report of NEHU 1996-97, and provided technical support for running the E-mail facility of the University.

Dr. S.N.Rai delivered a series of lectures to B.Tech. students of Rohilkhand University, Bareilly, during September 1996.

Dr. T.K.Sinha attended two Refresher Courses in Physics at Viswa Bharati, Santiniketan, during December 1996 and March 1997.

Mr. P.P.Dey developed software for the Finance Department of the University.

#### Publications :

Bajpai, R.P. and Rai, S.N. "Behavior of two, three, and four site states self-interacting neural networks" Computer Physics Communications 100 : 17 (1997)

## Library (Shillong)

Organisation of library facilities of the University remained the same during the year under review. The Central Library is located at Mayurbhanj Complex in the City, and the collection relating to the sciences have moved to the Permanent Campus along with the departments. The Library in the Mizoram Campus is located in Aizawl.

The librarian located in Shillong was Dr. Lalit Pathak. The Library in Aizawl was under the charge of Dr. K.M. Zakhuma, Assistant Librarian.

### Collections : Shillong

During the year, 7381 volumes of books and 1802 volumes of bound periodicals were added to the collection. The library is subscribing to 360 foreign and 340 Indian journals. The total collection of books and bound periodicals in the library now stands as follows :

1. Humanities & Social Sciences,	
Environmental Sciences	98449
2. Physical Sciences	14752
3. Life Sciences	12694
4. Hindi	2137
5. Others	24755

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Total number of books	152787
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5. Bound periodicals	36028
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Total	188815
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### Library Budget

(Rs. in Lakhs)

#### Books

(a) Non-Plan	- 10
(b) Plan	- 43

#### Periodicals

- 60

### Use of the Library

Total registered members	3048
Average daily consultation of the Library	424
Average daily issue of books	346
Seating arrangement for users	220
Members (other categories)	80

### Seminar/Conference etc. :

Dr. Lalit P Pathak

28th Convention of National Association of Geographers of India. NEHU, 29-31 Oct. 1996, and presented a paper

entitled "Feeders of Indian Culture - Migration into the Indian Sub-Continent during the Pre-Christian Era".

Fourth National Convention on Automation of Libraries in Education and Research Institutes On Information Technology applications in Academic Libraries in India : with emphasis on Network Services and Information Sharing at Patiala during 6-8 March 1997.

Seminar on New Challenges for Library and Information Professionals at USIS Calcutta on 21st March, 1997.

#### Publications :

Dr. Lalit P.Pathak : "Migration from the Ancient Near-East towards the Indian sub-continent : filling-up missing links in history through Onomastics". Manascharya Vol.2, 1996.

#### Equipment Added

One Multi-Media Kit, one Deskjet Printer, one Scanjet Scanner and two numbers of Zenith Pentiums were added to the computer unit of the Library.

#### Aizawl Campus

The acquisition during the year was as follows :

- |             |   |     |
|-------------|---|-----|
| 1. Books    | - | 972 |
| 2. Journals | - | 66  |

Under a special grant from the UGC for automating the Library two computers with two terminals along with necessary accessories were acquired. In addition reprographic facilities were made available.

#### Health Centre

All health facilities were provided through the health centres. The Shillong Health Centre has two branches; the main centre established in 1979 is located in the Bijni Complex and the other, a Sub-Centre, opened in 1990, is located in the Permanent Campus to cater to the resident University community. The Health Centre was opened in 1984.

The Shillong Health Centre is manned by two Senior Medical Officers and the Sub-Centre by one Senior Medical Officer and one Medical Officer. In Aizawl also there is one Senior Medical Officer. During the year the following were the Medical Officers :

Shillong Health Centre : Dr (Mrs) M Synrem, MBBS, MD (Gau)  
Dr V S V Prasad, MBBS (Andhra)

Sub-Centre : Dr I Hussain, MBBS (Gau)  
Dr (Mrs) M Marwein, MBBS (Gau)

These Centres are supported by Para-Medical Staff of nurses, pharmacists and attendants. A proposal for a 30 seater hospital for Shillong have been made in the IX Plan.

Apart from the facilities provided at the health centres noticed in last year's report, the Centre at Shillong conducted a Blood Grouping and Donor listing programme during the year. The Centre also coordinated with the State Government in various national programmes such as measles vaccine campaign and pulse polio immunization.

### University Publications

The NEHU Publications continued with its printing and publishing programmes a Printing of forms, stationery items of the University were also taken up by the Department. Printing of various forms, answerscripts, etc. relating to Examination Department was also taken up.

Printing and publications of the following general books were taken up during the year under report.

1. Anecdotes of an Indian Life - Robert Lindsay edited by Dr. D.R. Syiemlieh.
2. The Life and works of Din Sevak Verrier Elwin : A Liberating Force and a Friend by Daniel O'connor.
3. Thomas Hardy 'The Ranging Vision' by Prof. N. Hasan.
4. The impact of Christianity on the Status of Women by F.S. Downs.

The following Two text books were reprinted viz.

1. "An Anthology of English Prose" and
2. "History of Modern World"

Sales during the year are as below :-

Text Book :- Rs. 3,28,082/-  
General Books :- Rs. 5,248/-  
Royalty received from publications under subsidy scheme  
Rs.960.94p.

The Department also held a book exhibition during the AIU Standing Committee meeting held on the 27 June, 1996 at NEHU Permanent Campus, Shillong.

## Regional Sophisticated Instrumentation Centre

The Centre was established and maintain by the Department of Science & Technology, Government of India, to cater to the analytical requirement of the scientific community in the North Eastern region. In addition to analytical services, the RSIC-Shillong conducts workshops, offers limited repair and maintenance services in computer, instrumentation and compressor based systems (ACs, refrigerators, cold rooms).

**Head :** Professor Darlando Khathing

### Scientific Officers :

Name and Degrees	Designation
Taposh Chakraborty, PhD (NEHU)	Scientific Officer
T S Basu Baul, PhD (North Bengal)	Scientific Officer
Sudip Dey, PhD (NEHU)	Scientific Officer
Thomas Job, MSc (NEHU), M Tech (IISc)	Scientific Officer
Begonia Dkhar, MSc (NEHU)	Scientific Officer
Bishnupada Roy, PhD (NEHU)	(On Contract)

### Seminar/Conference etc. :

1. A 3-day regional workshop on Electron Microscopy was organised from 18 - 20 November 1996.
2. A 3-day regional workshop on Advanced Techniques on Immuno Cytochemistry was organised from 21-23, 1996.
3. A 5-day regional workshop on NMR Spectroscopy was organised from 29th October to 2nd November, 1996.
4. A 4-day regional workshop on Analytical Techniques (Trace Element) in Earth Science was organised from 12-15 March, 1997.
5. Dey, S. "Air drying involving Tetramethylsilane : An effective alternative to CPD for a wide variety of soft biological tissue". XX Natl. Conf. Electron. Microscope Soc. India, Calcutta (1996).
6. Hooroo, R.N.K. and Dey, S. presented a paper entitled "A Scanning electron microscopic study on antennae and proboscis of a butterfly, *Graphium sarpedon*", at the XX National Conference of the Electron Microscope Society, India, held at Calcutta (1996).

### Training

Mr. Soumen Chakraborty and Mr. Bhairab Sharma of the Department of Electronics Science, Gauhati University were given two months (June & July 1996) of training in electronics, as partial fulfilment of the requirement of the M.Sc. degree in Electronics of Gauhati University.

## Publications :

Basu Baul, T.S. and Tiekink, E.R.T. "Bis(2-hydroxybenzoato-o,o')", Acta Cryst., C52, 1959 (1996).

Basu Baul, T.S. and Tiekink, E.R.T. "Crystal and molecular structure of chlorodimethyltin bis (p-chlorobenzoyl hydrazine) chloride p-chlorobenzoyl hydrazine : A diorganotin cation with pentagonal bipyramidal coordination", Main Gr. Met. Chem., 19, 183 (1996).

Basu Baul, T.S. and Tiekink, E.R.T. "Crystal and molecular structure of o-aminobenzoato (o-(p-dimethylaminobenzalidine)benzoato) (o-aminobenzoate) dimethyltin (IV), an example of a mixed carboxylate complex of tin", J.Chem. Cryst., 26, 393 (1996).

Basu Baul, T.S. and Tiekink, E.R.T. "Refinement of the Crystal structure of triphenyltin o-(2-hydroxy-5-methylphenylazo)benzoato acetone solvate (2/1),  $(C_6H_5)_3SnO_2C(C_6H_4)NN(C_6H_3)(OH)CH_3 \cdot 0.5C_3H_6O$ ", Z.Krist., 221, 489 (1996).

Basu Baul, T.S. and Tiekink, E.R.T. "Polymeric [p-(2-hydroxy-5-methylphenylazo)benzoato] trimethyltin", Acta Cryst., C52, 1428 (1996).

Biswas, N. and Dey, S. "Scanning Electron Microscopic detection of a specialised cuticular structure on the abdominal surface of the maggot of *Blephania zebina* (walk) (Diptera: Tachinidae), parasitizing the larvae of the muga silk moth, *Antheraea assamensis*" Curr. Sci. 70, 5, 347-348 (1996).

Dey, S. "Metal-binding ability of retinal pigment epithelial cells of some mammalian species: an energy dispersive X-ray spectroscopical study". Biomedical Letters 53, 163-171 (1996).

Dey, S. "Possible involvement of surface ultra-structural features in utilizing the semi-conductive properties of pigments in chemically coloured insect cuticle". Curr.Sci. 72, 6, 366-367 (1996).

Nongkynrih, P., Dkhar, P.S., Khathing, D.T. "Micronutrient Elements in Acid Alfisols of Meghalaya under Rice Cultivation", Journal of Ind. Soc. of Soc. Science, Vol. 44, 3, pp. 455-457 (1996).

Gupta, A. and Gupta, S. "Antennal sensilla of the subimago of *Cleon* sp. (Ephemeroptera: Baetidae)" J. Anim. Morphol. Physiol. 43(1): 137-139 (1996)

## Research Programmes :

### R & D Activities

(a) Studies concerning the application of Scanning Electron Microscopy, Transmission Electron Microscopy, Atomic Absorption Spectroscopy, Inductively Coupled Plasma Spectroscopy, IR, FT-IR,

NMR, FT-NMR on different aspects of Life Science research have been pursued. These have included :

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a. <sup>1</sup>H NMR and FT-NMR studies of biological macromolecules/whole tissue in relation to intracellular pH and the effect of organic and inorganic toxicants and environmental stress.

b. IR and FT-IR studies of biological structures in relation to metal - ligand environments, in natural and experimental conditions.

c. Application of Scanning and Transmission Electron Microscopy on Applied Biology, e.g. Fish biology, Sericulture, Agricultural and Medical Entomology, in relation to growth, development and pathology.

d. AAS and ICP studies on tissue distribution of toxic metals in fishes, and the effect of abiotic and biotic factors on their absorption in the body; possible roles of different elements on the growth and development of economically important species; relation between inorganic components and cellular organization.

#### Research Projects :

Dr. D.T.Khathing :

Determination of Trace heavy metal including radioactive elements using suitable techniques after pre-concentration and its applicability to biosystems around uranium deposits to assess the environmental impact (DAE).

Dr. T.S. Basu Baul :

Nuclear magnetic resonance, tin Mossbauer and X-ray crystallographic investigation of organotin (IV) carboxylates and evaluation of their biological properties with reference to anti-tumour and anti-cancer activity (CSIR).

Trace Element monitoring in rice plant at different growth stages in the state of Meghalaya.

#### Other Activities :

1. The Centre continues to offer consultancy in the procurement of sophisticated analytical equipment and facilities to the Meghalaya Pollution Control Board.

2. 3 (Three) research scholars have submitted their Ph.D. dissertations.

## University Science Instrumentation Centre

The Centre started to function from the year 1977 as USIC Level I. An expert team from UGC came to visit USIC on 26-27 May, 1994 to assess the functioning of USIC. The Team agreed to upgrade conditionally to level II and to sanction the following :

1. Lecturer/T.O. (I) - Three Posts.  
(2 posts specialized in Electronics & Instrumentation, and the third in Electrical and Electronic).
2. Technician - C (Glass Blowing) - One Post.  
Equipment  
1. Electronics Workshop - Rs. 2.00 lakhs.  
2. Glass Blowing Shop - Rs. 1.50 lakhs.  
Recurring (Per annum)  
1. Consumables & Contingencies - Rs. 0.30 lakhs.  
2. Data-sheet reference - Rs. 0.10 lakhs.  
3. Seminar/Training/Meeting - Rs. 0.30 lakhs.

The conditions to be fulfilled are the appointment of a full-time person to head USIC, and the segregation of the Carpentry Section from USIC. Accordingly, the University appointed Prof. T.S.B. Narasaraju, (former head of Chemistry Department, NEHU and Dean, School of Physical Sciences, NEHU) as a Professor in-charge on a full-time basis, with effect from \*24.8.96. In addition, the Carpentry Section has been segregated. Since the conditions for upgradation are fulfilled, the University requested the UGC to elevate USIC to Level II, and to release sanction of the posts and the grant. (details given above). The UGC had indicated its approval for the fulfilment of the conditions. The sanction letter is awaited.

Head : Professor T.S.B. Narasaraju

### Other Activities :

The repair of electrical and electronic instruments belonging to different science departments of the University was carried out. This was in addition to the repair of some equipment belonging to USIC.

Mechanical Section : Work involving the fabrication of equipment and welding works of the academic departments, transport section and USIC was done. Repair work and fabrication of glass apparatus for the science departments were carried out.