



# NBFGR News

Vol. 6 No. 3 & 4

July-December 2008

## INTERNATIONAL WORKSHOP ON DNA BARCODING

An International Workshop on DNA Barcoding, first of its kind in India, was organized by National Bureau of Fish Genetic Resources (NBFGR), Lucknow and Aquatic Biodiversity Conservation Society (ABCS), Lucknow at National Agriculture Science Complex, New Delhi on December 4, 2008. The workshop basically aimed at strengthening the national capacity in DNA Barcoding and to identify priority areas and funding sources for



*The participants and guests of the International Workshop on DNA Barcoding*

strengthening the ongoing and future barcoding activities in the country for plants and animals. Among the prominent participants were the Father and Inventor of

### **Dr. Mangala Rai emphasizes on biotechnology**

Dr. Mangala Rai, Secretary, DARE and Director General, ICAR has highlighted the need to identify strategic points in the area of biotechnology in agricultural sciences including fisheries. The Director General who is also the President of the National Academy of Agricultural Sciences, New Delhi, provided new directions for biotechnology research in the country while chairing a Workshop on "Implementing a Holistic and Output-Oriented Biotechnology in India" organized by the Academy on December 23, 2008 at NASC, New Delhi.

DNA Barcoding, Prof. Paul Hebert from University of Guelph, Canada; Dr. Christian Burk, CEO and President of the Institute of Genomics, Ontario, Canada; Dr. Bob Hannerr from Fish-Bol and Dr. S. Ayyappan, Deputy Director General (Fisheries.), ICAR. A total of 100 participants including biodiversity managers, policy makers and researchers, from various institutes of ICAR, CSIR and other organizations from Canada and India including various central agencies namely Ministry of Environment and Forest, Ministry of Agriculture, Department of Biotechnology, Ministry of Science and Technology, Ministry of Earth Sciences and Ministry of Commerce; deliberated on the current status and potential of DNA Barcoding in biodiversity conservation and management.

Prof. Paul Hebert who first initiated barcoding programmes in Canada in 2003, in his keynote address presented the global perspective on barcoding of all life forms and highlighted the future road map of collaboration between different countries. He informed that DNA barcoding promises to revolutionize our capacity to know and monitor biodiversity and will exert broad impacts on all areas in which society interacts with biodiversity including pest and disease control, food safety, resource management, conservation, research, education and recreation. He emphasized the importance of India in joining the global Consortium on Barcoding of Life as India has the capacity to contribute immensely by virtue of its biodiversity richness and the scientific and technical strength.

Dr. S. Ayyappan, DDG (Fisheries.), ICAR who presided over the meeting complemented Prof. Hebert for visionary approach in developing the concept of DNA Barcoding of life. He highlighted the ICAR's efforts on cataloguing the bioresources of India through establishment of 5 national bureau dedicated to specific resources

namely plants, animals, fish, microbes and insects. He emphasized the need for close linkages in view of vast bioresources of our country.

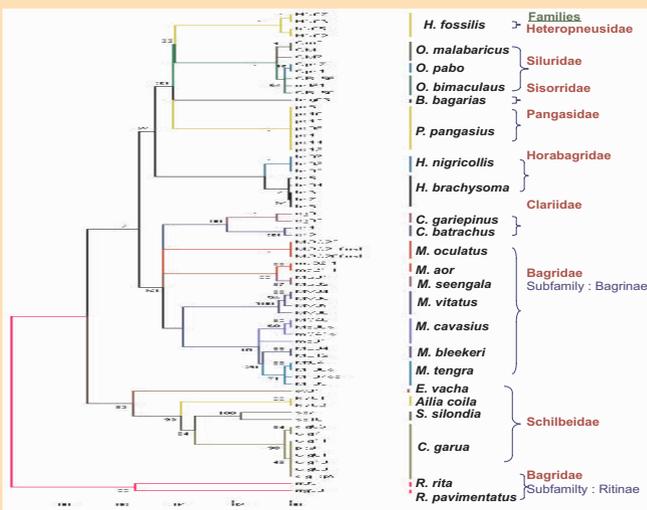
On this occasion, Dr. W.S. Lakra, Director, NBFGR, Lucknow and Regional Chair for DNA Barcoding in South Asia highlighted the need for up-scaling the efforts on barcoding various life forms at molecular level. He informed that the NBFGR, Lucknow has generated DNA barcodes of over 300 fish species and recently resolved two disputed cases of fish identification referred by Mumbai Police, Govt. of Maharashtra and the honorable judiciary, Govt. of Kerala showing the potential application of barcoding technology in product identification and management of endangered species. It is expected that the DNA barcoding technology would play a major role in identification of trans-boundary movement of animals, ornamental fish and aquatic bio-products.

Various issues related to international collaborations on DNA barcoding such as exchange of information, IPR issues, HRD, mechanisms to avoid duplication of efforts, enhancement of technical precision, etc; were deliberated in the workshop. In the concluding remarks, Dr. S. Ayyappan expressed satisfaction over the initiatives taken at different institutes and excitement of the researchers for venturing into barcoding research and establishing linkages. He emphasized on developing a concrete action plan and a road map for the country with NBFGR as lead centre. He also opined that this will need involvement of different ministries under Govt. of India and will have to be implemented in accordance to the provisions of Biological Diversity Act, 2002 and Biodiversity Rules, 2004. The workshop concluded on an optimistic note of enhancing the pace of documenting bioresources at molecular level through capacity building, human resource development and networking various researchers in the country and abroad.

## RESEARCH HIGHLIGHTS

### Molecular genetic divergence studies in prioritized Indian catfish group

The Siluriformes or Catfish is one of the richest fish orders in number of families and genera. India is home to a wide variety of catfishes belonging to different families. Most of them are confined to freshwater but some are marine. The relationship between various catfish families has been studied on the basis of osteological, myological and arthrological structures, however, much remain to be done to attain a satisfactory knowledge about catfish phylogeny. There are very few reports using molecular genetic markers in this area of work. Therefore, studies on molecular genetic divergence in prioritized Indian catfish group through mtDNA polymorphism were carried out through slow evolving mitochondrial gene 16s rRNA. The 16s rRNA was amplified using total genomic DNA isolated and purified and sequencing was carried out for 25 species belonging to eight families of Siluriformes.



Phylogenetic relationships among Indian catfish group (Based on 16s rRNA)

It was observed that in the subfamily Bagrinae of family Bagridae, the two species of Sperata

namely, *S. seenghala* and *S. aor*, which was earlier included in genus *Mystus*, were found to form a separate cluster from rest of the five *Mystus* species. It was confirmed with RAPD markers too. The newly named family Horabagridae consisting of *Horabagrus brachysoma* and *H. nigricollaris*, form a totally separate cluster from Bagridae. It was also observed that the cluster of subfamily Ritinae including *Rita rita* and *R. pavimentatus* of family Bagridae is significantly distinct from that of rest of the families.

### New species from North Eastern Region

The North Eastern Region of India, comprising eight states possesses a unique potential of fishery resources and is considered as one of the hot spots of freshwater biodiversity in the world. The region has rich fish diversity and a total of 286 species have been reported from the region. The rivers Brahmaputra and Barak form the principal drainage of North East with their numerous tributaries and myriads of rivulets and lentic waterbodies flowing through different states of the region. Therefore, the region is a priority area for NBFGR's work. The Bureau is carrying out a collaborative programme in the region with identified local collaborators. During exploration carried out under this collaborative programme with Department of Zoology, Manipur University, Manipur, five new fish species namely, *Puntius ater*, *Puntius khugae*, *Glyptothorax chindwinica*, *G. granulus* and *G. ngapang* were described. These fish species are distributed in Chindwin basin of Manipur state. All the new species appear to be highly endemic to Manipur and has potential as food and ornamental value. However, more research is needed to study the details of the parameters related to aquatic biodiversity management and their conservation.

Details of new species described

S. No.	Name of the species	Distribution	Reference
1	<i>Puntius ater</i>	Manipur valley (Chindwin basin)	Linthoingambi & Vishwanath, 2007
2	<i>P. khugae</i>	Khuga river, Manipur valley (Chindwin basin)	Linthoingambi & Vishwanath, 2007
3	<i>Glyptothorax chindwinica</i>	Iril, Lokchao and Thoubal rivers of Manipur (Chindwin basin)	Vishwanath & Linthoingambi, 2007
4	<i>G.granulus</i>	Chindwin basin, Manipur	Vishwanath & Linthoingambi, 2007
5	<i>G. ngapang</i>	Chindwin basin, Manipur	Vishwanath & Linthoingambi, 2007



*Glyptothorax chindwinica* (Vishwanath and Linthoingambi)



*G. granulus* (Vishwanath and Linthoingambi)



*G. ngapang* (Vishwanath and Linthoingambi)



*Puntius ater* (Linthoingambi and Vishwanath)



*P. khugae* (Linthoingambi and Vishwanath)

New fish species described from the North Eastern Region of India

Molecular genetic divergence studies in Indian seahorse

Under the National DNA Barcoding programme of Indian fishes, Seahorse (*Hippocampus* spp) from Indian Ocean was studied. Seahorses, including pipe horses, pipefishes and seadragons are members of the family *syngnathidae* Order *syngnathiformis* (Syn: together, with + gnathos: jaw) which include 215 species under 52 genera. A total of 33 species are found around the world (Lourie 1999), of these five are reported to inhabit Indian coastal waters. The total DNA was isolated, PCR amplification was done and DNA Barcodes were prepared, for the first time, for *Hippocampus trimaculatus* (EU930320 - EU930324) and *H. kuda* (EU930325 - EU930330) based on cytochrome c oxidase (COI) mitochondrial gene fragment. Molecular genetic divergence studies were conducted in Indian seahorse based on mitochondrial DNA and nuclear gene segments. The 16S rRNA gene, which evolves at a slower rate,



*Hippocampus kuda*



*Hippocampus trimaculatus*

was selected to recover the phylogenetic information. The 16S rRNA region was amplified, purified and sequenced for Indian seahorse species. All the identified sequences [*H. kuda*

(FJ211362-FJ211367), *H. spinosissimus* (FJ211359 & FJ216432), *H. trimaculatus* (FJ211370 -72), and *H. kelloggi* (FJ211368 -69), *Fistularia petimba* (FJ211280-82)] were submitted to the NCBI GenBank.

### **Hon'ble Minister of Fisheries, Govt. of U.P. Visits NBFGR**

Shri Dharm Raj Nishad Ji, Hon'ble Minister of Fisheries, Govt. of UP visited NBFGR on Dec. 19, 2008. Hon'ble Minister was appraised of the activities and achievements of the Institute by the Director Dr. W. S. Lakra. On this occasion Dr. Har Sharan Das, Secretary, Fisheries, Government of Uttar Pradesh and Dr. Shiv Prasad, Director, Department of Fisheries, Uttar Pradesh were also present. In his address, Hon'ble Minister appreciated the efforts of the Bureau and expressed that it is a matter of great privilege to have such a reputed national institute in the state. Shri Nishad Ji threw light on current policies and future thinking of the Government of UP for development of fisheries in the state. He expressed that the fisheries department of the state will work in close collaboration with NBFGR so that benefits of research and technological advancements reach to the intended beneficiaries of the state. The dignitaries also visited the NBFGR farm and discussed about endangered & prioritized fish species with the Director and scientists.



*Hon'ble Minister discussing with the Director Dr. W.S. Lakra at the Institute farm*

## **HUMAN RESOURCE DEVELOPMENT**

### **ICAR Training- Cum-Workshop on "IP and Technology Management"**

An ICAR Training-cum-Workshop on "IP and Technology Management", with the theme 'Protection of Geographic Indications' was organized at the Institute during Dec. 18-20, 2008. It was a part of the ICAR's efforts and new initiatives to upgrade the knowledge base of human resources in IP and technology management. The workshop started with an illuminating Keynote Address by Dr. S. Mauria, Assistant Director General, IPR & Policy, ICAR, New Delhi on 'IPR & Technology Transfer: ICAR Initiatives'. Before that Dr. Sudhir Kochhar, Principal Scientist, Plant Breeding, ICAR, New Delhi welcomed the participants and explained the purpose and objectives of the workshop. In his remarks Dr. W.S. Lakra, Director, NBFGR, Lucknow thanked the Director General

Dr. Mangala Rai and appreciated the efforts of ICAR team led by Dr. S. Mauria, ADG, IPR & Policy, ICAR to organize such purposefully planned training workshops throughout the country. He also highlighted the increasing significance of IP issues in the changing global and national R&D and trade scenario. The workshop brought together resource persons from across the nation for the benefit of the participants. A total of 39 participants representing 10 ICAR Institutes, 2 State Agricultural Universities, 1 State Council of Agricultural Research and 1 private entrepreneur, participated in the workshop. Different specific theme-wise technical sessions were chaired by Dr. S. Mauria, ADG, IPR & Policy, ICAR; Dr. S.M. Ilyas, Director, NAARM, Hyderabad; Dr. U.C. Srivastava, Assistant Director General, Horticulture, ICAR, New Delhi; Dr. W.S. Lakra, Director, NBFGR and Dr. R.L. Yadav, Director, IISR, Lucknow.



*Dr. W.S. Lakra Director, NBFGR addressing during the concluding session. Also in picture Dr. S. Mauria, ADG (IPR & Policy), ICAR, New Delhi*

### **Awareness programme on Aquatic Exotics and Quarantine**

The Bureau jointly with Faculty of Fisheries Sciences, West Bengal University of Animal Sciences and Fisheries, Kolkata organized an awareness programme on aquatic exotics and quarantine at Kolkata on Nov. 26, 2008. Prof. C.S. Chakravarti, Vice Chancellor, West Bengal University of Animal Sciences and Fisheries, Kolkata presided over the inaugural function whereas Dr. P. Das, Former Director, NBFGR was the Guest of Honour. During the programme a team of NBFGR scientists led by Dr. Rehana Abidi, Principal Scientist and Dr. A.K. Singh, Senior Scientist gave presentations on different aspects of aquatic exotics and quarantine issues. Prof. K.C. Dora, Dean, Faculty of Fisheries Sciences, West Bengal University of Animal Sciences and Fisheries, Kolkata was also present on this occasion. Over 150 participants from universities, KVKs and state fisheries department including fish farmers participated in the programme.



*A view of the inaugural function of Awareness programme on aquatic exotics and quarantine*

### **Exploration-cum-Awareness Programmes on Aquatic Biodiversity**

The Institute, in collaboration with North Eastern Centre for Development, Guwahati, organised an exploration-cum-awareness programme on aquatic biodiversity on Dec. 24, 2008 at Deeper beel, Guwahati. Another awareness programme on aquatic biodiversity was organized in collaboration with CIFRI, Guwahati Centre at Guwahati on Dec. 30, 2008. Dr. Dilip Kumar, VC & Director, CIFE, Mumbai and Sh. A.K. Roy, Director, Dept. of Fisheries, Assam and Dr. W.S. Lakra, Director, NBFGR were also present on this occasion.

### **Training Programme on "Induced Spawning of Carps and Hatchery Management"**

The Bureau, at its Aquaculture Research and Training Unit (ARTU), Chinhat, Lucknow organized a short-term training programme on "Induced Spawning of Carps and Hatchery Management" for the benefit of the aqua-farmers



*A group photograph of the participants along with the Director and faculty of NBFGR*

of Uttar Pradesh during Aug. 01-07, 2008. Ten progressive aqua-farmers from six districts of Uttar Pradesh nominated through the Department of Fisheries, Uttar Pradesh participated in the training which was sponsored by the National Fisheries Development Board (NFDB), Hyderabad. The major emphasis of the programme was on practical demonstrations and field oriented activities. Besides, field visits to hatchery and fish farms in private sector at Barabanki were also conducted to provide exposure to the trainees and to allow them to

interact and learn from the private entrepreneurs. During induced breeding exercise 15 lakhs spawn of *Catla catla* and *Labeo rohita* were produced.

### **Training Programme on “Aquaculture Diversification”**

A short-term training programme on “Aquaculture Diversification” for the benefit of the aqua-farmers of Uttar Pradesh was organized during September 17-23, 2008 at ARTU, Chinhath of the Bureau. The programme was inaugurated by Dr. Dilip Kumar, Vice Chancellor & Director, Central Institute of Fisheries Education, Mumbai in the presence of Guest of Honor Dr Shiv Prasad, Director, Department of Fisheries, Uttar Pradesh. Twenty five progressive aqua-farmers from nine districts of Uttar Pradesh nominated through the Department of Fisheries, Uttar Pradesh participated in the training. The programme was sponsored by the NFDB, Hyderabad.

### **Training Programme on “Aquaculture Productivity Enhancement - A New Perspective”**

A short-term training programme on “Aquaculture Productivity Enhancement - A New Perspective” was organized during November 03 - 07, 2008 for the benefit of the aqua-farmers of the Uttar Pradesh at ARTU, Chinhath of the Institute. This programme was funded by the Agriculture Technology Management Agency, Muzaffarnagar, UP. A total of 15 progressive aqua-farmers from Muzaffarnagar district of UP participated in the programme.

### **Training Programme on Freshwater Prawn Culture**

Another NFDB sponsored training programme was organized at ARTU, Chinhath of the Institute on “Freshwater Prawn Culture” during November 14-20, 2008 for aqua-farmers of Uttar Pradesh. A total 31 progressive aqua-farmers from ten districts of UP participated in the programme. The programme was inaugurated by the Director Dr. W. S. Lakra.

### **Training Programme on “Integrated Aquaculture”**

The ARTU, Chinhath of the Institute also organized a NFDB sponsored training programme on “Integrated Aquaculture” during December 18 - 24, 2008. A total 14 progressive aqua-farmers



*Dr. Har Sharan Das, Secretary, Fisheries, Govt. of UP inaugurating the training by lighting the lamp*

from six districts of UP participated in the programme. The programme was inaugurated by Dr. Har Sharan Das, Secretary, Fisheries, Government of Uttar Pradesh, Lucknow.

## **PARTICIPATION IN WORKSHOPS / SEMINARS/ MEETINGS/ TRAININGS**

### **Abroad**

- Dr. Vindhya Mohindra, Sr. Scientist attended a training programme on “Gene expression and genome mapping studies in fishes” under the DBT overseas associateship during March 25, 2008 to Sept. 24, 2008 at the Institute for Marine Biosciences, Halifax, Novascotia, Canada.
- Mrs. Poonam Jayant Singh, Scientist (SS)

attended the residential programme for the degree of LLM, IPR under the World Intellectual Property Organization Fellowship during Sept.1, 2008 to Dec.12, 2008 at University of Turin, Italy.

- Mrs. Poonam Jayant Singh, Scientist (SS) attended and gave an invited presentation on Protection of Genetic Resources at the World Trade Institute, Bern, Switzerland, Nov. 29-30, 2008.

- Dr. L.K. Tyagi, Scientist (SS) attended a training course on "Towards participatory fisheries management" under the Netherlands Govt. Fellowship Programme during Oct.20, 2008 to Nov.07, 2008 at Wageningen International, the Netherlands.
- Mrs. Poonam Jayant Singh, Scientist (SS) attended an International Conference on Traditional Knowledge at WIPO, Geneva, Oct.2008.
- Mrs. Poonam Jayant Singh, Scientist (SS) attended an International Conference on Innovative Designs at Torino, Italy, Nov. 2008.

### **In India**

- Dr. W.S. Lakra, Director participated in the following meetings/ conferences during the period under report:
  - Meeting on Indian Bioresources Information Network on Aug. 19, 2008 at UAS, Bangalore.
  - Brainstorming Meet on "Peninsular Fishes and Aquaculture" on Aug. 23, 2008 at Bangalore.
  - Delivered a keynote lecture at the International Conference on "Technologies for mitigation of environmental pollution and their applications to conserve aquatic ecosystem" during Dec. 11-13, 2008 at Dept. of Zoology, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.
  - The meeting of the Director's of ICAR Fisheries Research Institutes during Nov. 29-30, 2008 at CMFRI, Kochi.
  - Meeting of the Board of Management of CIFE, Mumbai on Nov. 21, 2008 at Kolkata.
  - 8th Indian Fisheries Forum 2008 during Nov. 22-24, 2008 at CIFRI, Barrackpore.
  - 9th Indian Zoological Congress during Dec 29-31, 2008 at Guwahati.
- Shri Panchoo Lal, Asstt. Admn. Officer attended a training on "Improving Administrative Efficiency and Financial Management" during July 16 - 23, 2008 at NAARM, Hyderabad.
- Mrs. Poonam J. Singh, Scientist (SS) and Shri Subhash Chandra, Technical Officer (T-5) attended IIM-LibSys Workshop on "RFID Application in Libraries" organized by IIM, Lucknow and Libsys Corporation on July 18, 2008 at Gurgaon.
- Shri Subhash Chandra, Technical Officer (T-5) attended Digitization of Resources Using Open Source Software: Greenstone Digital Library, during Sept. 23-26, 2008 at IIM, Lucknow.
- Dr. A.K. Singh, Senior Scientist participated in the National Symposium of the Ethological Society organized at CIFE, Mumbai during Oct 16-17, 2008.
- Dr. P.K. Varshney, Sr. Scientist attended the Fisheries Workshop sponsored by Bank of India organized by FFDA, Barabanki at Barabanki on Dec. 3, 2008.
- Dr. A.K. Singh, Senior Scientist participated in the XIX Regional Committee Meeting of ICAR held at Indian Institute of Vegetable Research, Varanasi during Nov 21-22 2008.
- Dr. A.K. Singh, Senior Scientist participated in 8<sup>th</sup> Asian Fisheries Forum (Indian Branch) during Nov 23-25, 2008 at Kolkata organized by CIFRI, Barrackpore and presented an oral presentation.
- Dr. A.K. Singh, Senior Scientist participated in a two day National Hindi Workshop on "*Behar Paryavaran ke liye Bhartiya Krishi*" organized by Hindi division of ICAR at Indian Agriculture Research Institute, New Delhi during Dec 16-17, 2008 and presented a paper.
- Dr. Mukunda Goswami, Sr. Scientist and Shri A.K. Singh, Technical Officer attended 19th Indian Zoological Congress during Dec. 29-31, 2008 at Guwahati.
- Dr. K.K. Lal, Sr. Scientist participated as resources person in the Workshop on "Implementing a Holistic and Output-Oriented Biotechnology in India" organized by NAAS on Dec. 23, 2008 at NASC, New Delhi.

## AWARDS AND HONOURS

### Dr. W.S. Lakra awarded NAAS Fellowship

Dr. W.S. Lakra, Director, NBFGR has been conferred the prestigious Fellowship (2009) of the National Academy of Agricultural Sciences, New Delhi. The NBFGR family feels proud as this brings honour to the Institute and the fisheries fraternity.

- Dr. Vindhya Mohindra, Sr. Scientist was awarded the DBT Overseas Associateship for visiting Institute for Marine Biosciences, Halifax, Novascotia, Canada.
- Mrs. Poonam Jayant Singh, Scientist (SS) was awarded the World Intellectual Property Organization Fellowship to attend residential programme for the degree of LLM, IPR at University of Turin, Italy.
- Dr. L.K. Tyagi, Scientist (SS) was awarded a Fellowship by the Netherlands Govt. to attend an international training course at Wageningen International, the Netherlands.

## EXTENSION ACTIVITIES

### Exhibitions and Students' Visits

The Institute participated in the following exhibitions related to fisheries and aquatic resources:

- Exhibition organized on the occasion of the "32<sup>nd</sup> Conference of the Ethological Society & National Symposium on Fish Behaviors" during Oct. 16-17, 2008 at CIFE, Mumbai.
- Exhibition on the occasion of the 8<sup>th</sup> Indian Fisheries Forum organized by Asian Fisheries Society, Inland Fisheries Society of India and CIFRI, Barrackpore during Nov, 22-26, 2008.
- Exhibition organized on the occasion of the 19<sup>th</sup> Indian Zoological Congress at Guwahati by Dept. of Zoology, Gauhati University during Dec. 29-31, 2008.

The following batches of trainees and farmers visited different laboratories, hatchery and fish farm of the Institute during the period:

- A group of 21 students of B.F.Sc. from College of Fisheries, Shirgaon, Ratnagiri, Maharastra on Dec. 08, 2008.
- A group of 175 meritorious students under "Vigyan Manthan Yatra 2008-09" programme, selected by M.P. Council of

Science and Technology on Dec.15, 2008.

- A group of 60 students of B.Sc. from Dayanand Bachrawan Degree College, Rai Bareli on Dec. 17, 2008.

### Technical Lectures, Talks and Media programmes

- Shri A. K. Yadav, Tech. Officer (T-6) delivered a lecture in a training programme on "Seed Production and Fish Culture" organized by the Krishi Vigyan Kendra, Dhaura, Unnao, UP on July 14, 2008.
- Dr. P. K. Varshney, Sr. Scientist delivered a talk on "Fish Culture Management" for a TV programme, 'Annadata' by ETV on Nov. 7, 2008.
- Shri A. K. Yadav, Tech. Officer (T-6) served as an expert on "Fish culture" in a live phone-in programme for TV programme show "Krishi Darshan" on Dec. 11, 2008 at Doordarshan Kendra, Lucknow.
- Dr. P.K. Varshney, Sr. Scientist delivered a talk in a workshop organized by FFDA on "Possibilities of Freshwater Prawn Culture in UP" on Dec.3, 2008 sponsored by Bank of India at Barabanki.

## OTHER ACTIVITIES

### Fish Farmers Day Celebrated

The Bureau celebrated a Fish Farmers Day on July 10, 2008. Over one hundred fish farmers from nearby districts of Uttar Pradesh participated in the programme. Dr. W.S. Lakra, Director, NBFGR highlighted the steps taken by the Bureau towards strengthening technical competencies of the fish farmers for enhancing fish production in the state of Uttar Pradesh. Technical lectures on different aspects of aquaculture were delivered by Dr. P.K. Varshney and Dr. A.K. Singh, Senior Scientists of NBFGR. This was followed by an interactive open session in which the NBFGR scientists answered queries of the aqua farmers on different aspects including the hatchery establishment, induced spawning, seed rearing, insurance, poaching, ornamental fish culture, breeding and availability of the seed. The visit of aqua-farmers to the fish farms of the Institute at the headquarters, as well as, to its Aquaculture Research & Training Unit, Chinhat, Lucknow was also arranged and hatchery practices and seed production activities were demonstrated.

### New laboratories established

A new Biochemistry & Genomics laboratory was established at the Institute in Lucknow. Dr. S. Ayyappan, DDG (Fisheries.),



*Dr. S. Ayyappan, DDG (Fy.), ICAR, New Delhi inaugurating the new Biochemistry & Genomics laboratory*



*A view of the new laboratory*

ICAR inaugurated the new facility on Oct. 6, 2008 and expressed that the new infrastructure will strengthen the Bureau's research efforts in this field.

### Hindi Day and Hindi Pakhwada observed

The Institute celebrated the Hindi Day and also observed a Hindi Pakhwada during Sept. 15-30, 2008. Dr. W.S. Lakra, Director, NBFGR inaugurated the Hindi Pakhwada by lighting the lamp. During Pakhwada seven Hindi competitions were organized among the staff of the institute to promote the use of Hindi in official work. The Hindi Pakhwada concluded with a prize distribution function on Sept. 30, 2008. On this occasion, Dr. G.C. Mishra, Director, National Center for Cell Science, Pune was the Chief Guest whereas, Dr. K.K. Rishi and Dr. (Mrs.) S. Rishi, Former Professors, Dept. of Zoology, Kurukshetra University, Kurukshetra were the Guests of Honor. The guests appreciated Bureau's efforts to promote use of Hindi in the official work and emphasized the need to transfer our achievements of science and technology to the common masses in Hindi. Shri A.K. Mishra, T-4 won prize for the Best Hindi Competitor-2008. All the winners were given prizes by the Chief Guest. On this occasion the Chief Guest Dr. G.C. Mishra and Guests of



Chief Guest Dr. G.C. Mishra, Director, NCCS, Pune addressing during the Valedictory function of Hindi Pakhwada

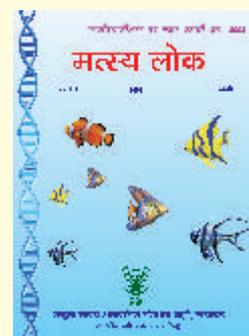
Honors Dr. K.K. Rishi and Dr. (Mrs.) S. Rishi were felicitated by Dr. W.S. Lakra, Director, NBFGR.

### Independence Day Celebrated

A flag hoisting ceremony was observed on the Independence Day. Dr. W.S. Lakra, Director hoisted the National Flag in the presence of staff members of the Bureau. On this occasion, the children of NBFGR staff who have secured meritorious positions in board examinations were felicitated by the Director from Staff Welfare Fund. A cultural programme was also organized on this occasion.

### NBFGR launches new Hindi Magazine 'Matsya Lok'

The Bureau, in its silver jubilee year, launched an Annual Hindi Magazine 'Matsya Lok'. The purpose of the magazine is to promote technical writing in Hindi so that the benefits of research & technological advancements can be effectively disseminated to the stakeholders.



## STAFF NEWS

### Welcome

The following new staff joined NBFGR family during the period under report:

- Dr. M. Goswami, Senior Scientist joined NBFGR on Aug. 08, 2008.
- Dr. P.K. Pradhan, Senior Scientist joined NBFGR on Aug. 19, 2008.
- Shri Sanjay Kumar, SSG-I joined NBFGR Cochin Unit on Aug. 11, 2008

The NBFGR family extends a hearty welcome to the new members.

### Congratulations!

The following staff members were promoted to the next higher grade during the period under report.

- Dr. Rehana Abidi was promoted from Sr. Scientist to Principal Scientist w.e.f. 27.07.2006.
- Dr. A.Gopalakrishnan was promoted from Sr. Scientist to Principal Scientist w.e.f. 05.10.2006.
- Dr. S.P. Singh was promoted from Sr. Scientist to Principal Scientist w.e.f. 18.11.2007.
- Shri Babu Ram T-6 (reviewed) w.e.f. 01.07.2004.
- Mrs. Reeta Chaturvedi from T-4 to T-5 w.e.f. 26.12.2006.
- Shri R.S. Sah from T-4 to T-5 w.e.f. 30.08.2007.
- Shri Subhash Chandra from T-4 to T-5 w.e.f. 18.09.2007.

- Shri Ved Prakash from T-II-3 to T-4 w.e.f 01.01.2004.
- Shri Sanjay Kumar Singh from T-II-3 to T-4 w.e.f 12.06.2005.
- Shri Satyavir Chaudhary from T-II-3 to T-4 w.e.f 26.12.2007.
- Shri R.K. Shukla from T-I-3 to T-3 w.e.f 01.01.2004.
- Shri Samarjit Singh from T-I-3 to T-3 w.e.f 29.06.2006.
- Shri Om Prakash from T-I-3 to T-3 w.e.f 29.06.2006.
- Shri Rajesh Kumar from T-2 to T-3 w.e.f 03.09.2007.

The NBFGR family extends hearty congratulations to all the staff members on their achievement.

### **Transfer**

- Mrs. Divya P.R., Scientist of the Bureau was transferred to NBFGR Cochin Unit on July 03, 2008.

### **Retirement**

- Dr. R. Soundararajan, Principal Scientist retired from ICAR service on superannuation on July 31, 2008.
- Dr. D. Kapoor, Principal Scientist retired from ICAR service on superannuation on Nov. 30, 2008.

### **Demise**

- Shri Desh Raj, SSG-III left for his heavenly abode on Nov. 04, 2008. The NBFGR family joins the deceased family in this moment of grief due to untimely demise of its member and prays to the Almighty that his soul may rest in peace.

## **DISTINGUISHED VISITORS**

- Hon'ble Shri Dharam Raj Nishad, Minister of Fisheries, Govt. of Uttar Pradesh.
- Dr. S.N. Dwivedi, Former Additional Secretary, Govt. of India and Former Director General, Madhya Pradesh Council of Science and Technology, Bhopal.
- Dr. S.D. Tripathi, Former Vice Chancellor & Director, Central Institute of Fisheries Education, Mumbai.
- Dr. S. Ayyappan, DDG (Fisheries.), ICAR, New Delhi
- Dr. Dilip Kumar, Vice Chancellor & Director, Central Institute of Fisheries Education, Mumbai.
- Dr. S.M. Ilyas, Director, NAARM, Hyderabad
- Dr. Har Sharan Das, Secretary, Fisheries, Govt. of Uttar Pradesh.
- Dr. G.C. Mishra, Director, National Center for Cell Science, Pune.
- Dr. Shiv Prasad, Director, Department of Fisheries, Uttar Pradesh.
- Dr. S. Mauria, Assistant Director General, IPR & Policy, ICAR, New Delhi
- Dr. U.C. Srivastava, Assistant Director General, Horticulture, ICAR, New Delhi
- Dr. C.S. Singh, Former Dean, G.B. Pant University of Ag. and Tech., Pantnagar.
- Dr. K.K. Rishi, Former Professor, Dept. of Zoology, Kurukshetra University, Kurukshetra.
- Dr. (Mrs.) S. Rishi, Former Professor, Dept. of Zoology, Kurukshetra University, Kurukshetra.
- Dr. Shakeela Khan, Professor, Fisheries College, Narendra Dev Agricultural University, Faizabad.

## डीएनए बारकोडिंग पर अन्तर्राष्ट्रीय कार्यशाला

राष्ट्रीय मत्स्य आनुवंशिक संसाधन ब्यूरो, लखनऊ ने एक्वाटिक बायोडायवर्सिटी कन्जर्वेशन सोसायटी, लखनऊ के सहयोग से डीएनए बारकोडिंग पर एक अन्तर्राष्ट्रीय कार्यशाला का आयोजन किया। राष्ट्रीय कृषि विज्ञान कम्प्लेक्स, नई दिल्ली में दिसम्बर 4, 2008 को भारत में आयोजित होने वाली अपनी तरह की यह पहली कार्यशाला थी। कार्यशाला का मुख्य उद्देश्य डीएनए बारकोडिंग में राष्ट्रीय क्षमता को मजबूत करना व प्राथमिकता वाले क्षेत्रों की पहचान करना था। कार्यशाला में भाग लेने वाले महत्वपूर्ण विशेषज्ञों में डीएनए बारकोडिंग के जनक प्रो. पॉल हेबर्ट, ग्युल्फ विश्वविद्यालय, कनाडा; डा. क्रिश्चियन बर्क, मुख्य कार्यकारी अधिकारी तथा प्रेसीडेन्ट, इंस्टीट्यूट ऑफ जीनोमिक्स, ओन्टारिओ, कनाडा; डा. बॉब हेनर, फिश-बोल तथा डा. एस. अय्यप्पन, उपमहानिदेशक, (मात्स्यिकी), भारतीय कृषि अनुसंधान परिषद्, नई दिल्ली सम्मिलित थे। कार्यशाला में विभिन्न शोध संस्थानों तथा केन्द्रीय मंत्रालयों तथा भारत व कनाडा के विभिन्न संगठनों के कुल 100 प्रतिभागियों ने भाग लिया तथा जैवविविधता संरक्षण तथा प्रबंधन में डीएनए बारकोडिंग की वर्तमान व भावी क्षमताओं पर विचार-मंथन किया।

प्रो. पॉल हेबर्ट, जिन्होंने सबसे पहले वर्ष 2003 में कनाडा में डीएनए बारकोडिंग कार्यक्रम आरम्भ किए थे, ने अपने मुख्य व्याख्यान में इस विषय पर वैश्विक परिदृश्य प्रस्तुत किया तथा इस क्षेत्र में विभिन्न देशों के बीच सहयोग की दिशाओं पर प्रकाश डाला। प्रो. हेबर्ट ने इस क्षेत्र में भारत के सम्मिलित होने के महत्व पर प्रकाश डाला क्योंकि अपनी प्रचुर जैवविविधता तथा वैज्ञानिक एवं तकनीकी क्षमताओं के कारण भारत महत्वपूर्ण योगदान कर सकता है।

डा. एस. अय्यप्पन, उपमहानिदेशक (मात्स्यिकी) & भा.कृ.अ.प., नई दिल्ली ने कार्यशाला की अध्यक्षता की और प्रो. हेबर्ट के प्रयासों की सराहना की। इस अवसर पर डा. वजीर एस. लाकड़ा, निदेशक, रा.म.आ.स. ब्यूरो, लखनऊ तथा रीजनल चेरर फार डीएनए बारकोडिंग इन साउथ एशिया, ने विभिन्न जीवों की आण्विक स्तर पर बारकोडिंग के प्रयासों की अप-स्केलिंग की आवश्यकता प्रकट की। डा. लाकड़ा ने सूचित किया कि ब्यूरो ने 300 से अधिक मत्स्य प्रजातियों के डीएनए बारकोड तैयार किए हैं और हाल ही में मछलियों की पहचान के दो विवादित केस हल किए हैं जिससे प्रोडक्ट की पहचान तथा संकटग्रस्त प्रजातियों के प्रबन्धन में डीएनए बारकोडिंग तकनीकी की संभावित उपयोगिता का पता चलता है। कार्यशाला में डीएनए बारकोडिंग पर अन्तर्राष्ट्रीय सहयोग से जुड़े विभिन्न मुद्दों पर विचार-विमर्श किया गया। डा. अय्यप्पन ने विभिन्न संस्थानों द्वारा इस क्षेत्र में की गई पहल पर संतोष व्यक्त किया तथा इस दिशा में देश के लिए एक ठोस कार्ययोजना की आवश्यकता पर बल दिया जिसमें एनबीएफजीआर मुख्य केन्द्र होगा।

## डा. मंगला राय ने जैवप्रौद्योगिकी पर बल दिया

डा. मंगला राय, सचिव, कृषि अनुसंधान एवं शिक्षा विभाग तथा महानिदेशक, भारतीय कृषि अनुसंधान परिषद्, नई दिल्ली ने मात्स्यिकी सहित सभी कृषि विज्ञानों में जैवप्रौद्योगिकी में महत्वपूर्ण बिन्दुओं की पहचान करने की आवश्यकता पर बल दिया। महानिदेशक महोदय ने, जो कि राष्ट्रीय कृषि विज्ञान अकादमी, नई दिल्ली के अध्यक्ष भी हैं, “इम्प्लीमेंटिंग ए होलिस्टिक एण्ड आउटपुट-ओरिएन्टेड बायोटेक्नोलोजी इन इंडिया” विषय पर दिसम्बर 23, 2008 को राष्ट्रीय कृषि विज्ञान कम्प्लेक्स, नई दिल्ली में आयोजित कार्यशाला की अध्यक्षता करते हुए, जैवप्रौद्योगिकी अनुसंधान हेतु नई दिशाओं पर प्रकाश डाला।

## अनुसंधान समाचार

### प्राथमिकता-प्राप्त भारतीय कैटफिश समूह में आणविक आनुवंशिक विभिन्नता अध्ययन

प्राथमिकता-प्राप्त भारतीय कैटफिश समूह में माइटोकॉन्ड्रियल जीन 16 S rRNA का प्रयोग करते हुए mt DNA पालीमरफिज्म द्वारा आणविक आनुवंशिक विभिन्नता का अध्ययन किया गया। सायलुरिफार्मेस गण के 8 परिवारों की 25 प्रजातियों के 16 S rRNA का टोटल जीनोमिक डीएनए पृथक करके सिक्वेन्स किया गया। इस अध्ययन में पाया गया कि बैगरिडी परिवार के उप-परिवार बैगरिनी की दो प्रजातियों, *स्पेरटा सिंधाला* तथा *स्पेरटा एओर*, जो कि

पहले मिस्टस वंश में थी; ने मिस्टस वंश की शेष 5 प्रजातियों से भिन्न समूह दर्शाया। इस परिणाम की आरएपीडी चिन्हकों से भी पुष्टि हुई। नए परिवार होराबेग्रिडी का, बैग्रिडी परिवार से अलग समूह प्रदर्शित हुआ। इसी प्रकार उप-परिवार रीटिनी (परिवार-बैग्रिडी) का समूह शेष सभी परिवारों से निश्चित रूप से भिन्न था।

उत्तर-पूर्वी क्षेत्र से नई प्रजातियां भारत के उत्तर-पूर्वी क्षेत्र, जिसमें कि 8 राज्य सम्मिलित हैं, में मात्स्यिकी संसाधनों की अपार संभावनाएं हैं और इसीलिए इस क्षेत्र को विश्व के प्रमुख मीठाजल जैवविविधता हाट-स्पाट क्षेत्रों में सम्मिलित किया गया है। इस क्षेत्र से

अभी तक कुल 286 मत्स्य प्रजातियां अभिलेखित की जा चुकी हैं। अतः यह क्षेत्र एनबीएफजीआर के लिए एक प्राथमिकता का क्षेत्र है और ब्यूरो इस क्षेत्र में विभिन्न स्थानीय सहयोगियों के साथ एक वृहत् शोध कार्यक्रम चला रहा है। इस कार्यक्रम के अन्तर्गत, मणिपुर विश्वविद्यालय के सहयोग से 5 नई प्रजातियों को अभिलेखित किया गया।

## भारतीय समुद्री घोड़े (सीहार्स) में आणविक आनुवंशिक विभिन्नता अध्ययन

भारतीय मछलियों के राष्ट्रीय डीएनए बारकोडिंग कार्यक्रम के अन्तर्गत, भारतीय समुद्र से सीहार्स की भारत में पाई जाने वाली 5 प्रजातियों का आणविक आनुवंशिक विभिन्नता अध्ययन किया गया। जिसमें 16 S rRNA को एम्प्लीफाई करके सिक्वेन्सिंग की गई तथा सभी सिक्वेन्सेज़ एनसीबीआई जीन बैंक में सम्मिलित किए गए।

## माननीय मात्स्यिकी मंत्री, उ.प्र. सरकार ने ब्यूरो का दौरा किया

श्री धर्मराज निषाद जी, माननीय मंत्री, मात्स्यिकी, उ.प्र. सरकार ने दिसम्बर 19, 2008 को संस्थान का दौरा किया। संस्थान के निदेशक डा. वजीर एस. लाकड़ा ने माननीय मंत्री महोदय को संस्थान की गतिविधियों व उपलब्धियों से अवगत कराया। श्री निषाद जी ने ब्यूरो की उपलब्धियों की सराहना करते हुए प्रसन्नता प्रकट की कि ऐसे उच्च कोटि के राष्ट्रीय शोध संस्थान का होना प्रदेश के लिए गौरव की बात है। माननीय मंत्री महोदय ने आशा प्रकट की कि प्रदेश का मात्स्यिकी विभाग, ब्यूरो के साथ परस्पर सहयोग से प्रदेश में मात्स्यिकी विकास का कार्य करेगा। इस अवसर पर डा. हरशरण दास, सचिव, मात्स्यिकी, उ.प्र. शासन तथा डा. शिव प्रसाद, निदेशक, मात्स्यिकी विभाग, उ.प्र. भी उपस्थित थे। सभी अतिथियों ने संस्थान के मत्स्य फार्म का भ्रमण भी किया और निदेशक तथा वैज्ञानिकों से विचार-विमर्श किया।

## मानव संसाधन विकास

### “बौद्धिक सम्पदा तथा प्रौद्योगिकी प्रबंधन” पर भा.कृ.अ. प. की प्रशिक्षण कार्यशाला

संस्थान में दिसम्बर 18-20, 2008 को ‘बौद्धिक संपदा एवं प्रौद्योगिकी प्रबंधन’ पर एक प्रशिक्षण-कार्यशाला आयोजित की गई। इस क्षेत्र में भारतीय कृषि अनुसंधान परिषद् द्वारा मानव संसाधन विकास हेतु किए जा रहे नए प्रयासों के तहत आयोजित इस कार्यशाला में परिषद् के शोध संस्थानों, कृषि विश्वविद्यालयों व अन्य संगठनों के कुल 39 वैज्ञानिकों ने भाग लिया। कार्यशाला की शुरुआत डा. एस. मौर्या, सहायक महानिदेशक, आईपीआर एवं पालिसी, भा. कृ.अ.प., नई दिल्ली के मुख्य व्याख्यान से हुई। इस अवसर पर संस्थान के निदेशक डा. वजीर एस. लाकड़ा ने परिषद् के महानिदेशक महोदय, डा. मंगला राय का आभार व्यक्त किया और परिषद् मुख्यालय की आईपीआर टीम की सराहना की कि उन्होंने देश भर में मानव संसाधन विकास हेतु इस प्रकार के उद्देश्यपूर्ण कार्यक्रम आयोजित किए हैं।

### ‘एक्वाटिक एक्जोटिक्स एवं क्वारनटाइन’ पर जागरूकता कार्यक्रम

ब्यूरो ने मात्स्यिकी संकाय, पश्चिमी बंगाल पशुधन विज्ञान एवं मात्स्यिकी विश्वविद्यालय, कोलकाता के साथ मिलकर कोलकाता में नवम्बर 26, 2008 को ‘एक्वाटिक एक्जोटिक्स एवं क्वारनटाइन’ पर एक जागरूकता कार्यक्रम आयोजित किया। कार्यक्रम में विभिन्न विश्वविद्यालयों, कृषि विज्ञान केन्द्रों तथा राज्य मात्स्यिकी विभाग के 150 से अधिक प्रतिभागियों ने भाग लिया। कार्यक्रम में ब्यूरो के

वैज्ञानिकों की एक टीम ने डा. रेहाना आबिदी, प्रधान वैज्ञानिक तथा डा. ए.के. सिंह, वरिष्ठ वैज्ञानिक के नेतृत्व में तकनीकी व्याख्यान प्रस्तुत किए।

### मत्स्यपालकों हेतु अल्पकालीन प्रशिक्षण कार्यक्रम

संस्थान ने अपनी जलकृषि अनुसंधान एवं प्रशिक्षण इकाई, चिनहट, लखनऊ पर मत्स्य पालकों हेतु निम्नलिखित विषयों पर अल्पकालीन प्रशिक्षण कार्यक्रम आयोजित किए :

1. कार्प मत्स्य प्रेरित प्रजनन एवं हैचरी प्रबंधन (अगस्त 01-07, 2008)
2. जलकृषि विविधीकरण (सितम्बर 17-23, 2008)
3. जलकृषि उत्पादकता वृद्धि- एक नया परिदृश्य (नवम्बर 03-07, 2008)
4. महाझींगा पालन (नवम्बर 17-20, 2008)
5. समन्वित जलकृषि (दिसम्बर 18-24, 2008)

उपरोक्त में से कार्यक्रम सं. 3 को छोड़कर शेष सभी प्रशिक्षण कार्यक्रम राष्ट्रीय मात्स्यिकी विकास बोर्ड, हैदराबाद द्वारा वित्तीय सहायता प्राप्त थे जबकि कार्यक्रम संख्या 3 को कृषि प्रौद्योगिकी प्रबंधन प्राधिकरण, मुजफ्फरनगर, उ.प्र. ने प्रायोजित किया था। इन सभी प्रशिक्षण कार्यक्रमों में उ.प्र. के विभिन्न जिलों से उ.प्र., राज्य मात्स्यिकी विभाग द्वारा नामित कुल 95 प्रगतिशील मत्स्य पालकों ने प्रशिक्षण प्राप्त किया।

## पुरस्कार एवं सम्मान

- संस्थान के निदेशक डा. वजीर एस.लाकड़ा को प्रतिष्ठित राष्ट्रीय कृषि विज्ञान अकादमी (एनएएएस), नई दिल्ली की फैलोशिप प्रदान की गई।
- डा. विन्ध्या मोहिन्द्रा, वरिष्ठ वैज्ञानिक को इंस्टीट्यूट फार मैराइन बायोसाइंसेज़, इलीफेक्स, नोवास्कोटिआ, कनाडा में 6 माह के प्रशिक्षण हेतु डीबीटी एसोसिएटशिप प्रदान की गई।
- श्रीमती पूनम जयंत सिंह, वैज्ञानिक (व.वे.) को ट्यूनिंग विश्वविद्यालय, टोरिनो, इटली में एलएलएम (आईपीआर) के अध्ययन हेतु, विश्व बौद्धिक संपदा संगठन (डब्ल्यूआईपीओ), जेनेवा, स्विट्ज़रलैण्ड द्वारा फैलोशिप प्रदान की गई।
- डा. ललित कुमार त्यागी, वैज्ञानिक (व.वे.) को वागनिंगन इंटरनेशनल, नीदरलैण्ड्स में एक तीन सप्ताह के अन्तर्राष्ट्रीय प्रशिक्षण कार्यक्रम में भाग लेने हेतु, नीदरलैण्ड्स सरकार द्वारा फैलोशिप प्रदान की गई।

## अन्य मुख्य गतिविधियां

- संस्थान के तीन वैज्ञानिकों ने कनाडा, इटली, स्विट्ज़रलैण्ड व नीदरलैण्ड्स में 6 अन्तर्राष्ट्रीय प्रशिक्षण कार्यक्रमों व सम्मेलनों में भाग लिया।
- संस्थान के निदेशक डा. वजीर एस. लाकड़ा ने देश के विभिन्न भागों में कुल 7 महत्वपूर्ण सम्मेलनों/बैठकों में भाग लिया।
- संस्थान ने देश के विभिन्न भागों में तीन प्रदर्शनियों में भाग लिया।
- संस्थान के वैज्ञानिकों व तकनीकी अधिकारियों ने चार आमंत्रित किसानोपयोगी तकनीकी व्याख्यान/मीडिया कार्यक्रम दिए।
- संस्थान में जुलाई 10, 2008 को मत्स्य पालक दिवस मनाया गया जिसमें उ.प्र. के विभिन्न जिलों से आए 100 से अधिक मत्स्य पालकों को, संस्थान के वैज्ञानिकों ने तकनीकी व्याख्यान दिए तथा संस्थान के मत्स्य फार्म पर मत्स्य बीज उत्पादन से सम्बन्धित प्रदर्शन किए गए।
- संस्थान में एक नई 'बायोकेमिस्ट्री एवं जीनोमिक्स' प्रयोगशाला स्थापित की गई जिसका उद्घाटन डा. एस. अय्यप्पन, उपमहानिदेशक (मात्स्यिकी), भा.कृ.अ.प., नई दिल्ली ने अक्टूबर 6, 2008 को किया।
- संस्थान में हिन्दी दिवस तथा हिन्दी पखवाड़ा समारोह मनाया गया जिनके दौरान हिन्दी के प्रयोग को बढ़ावा देने हेतु 7 हिन्दी प्रतियोगिताएं आयोजित की गईं। समापन समारोह में डा.जी.सी. मिश्रा, निदेशक, एनसीसीएस, पुणे ने विजेताओं ने पुरस्कार प्रदान किए। श्री अखिलेश कुमार मिश्र, टी-4 ने 'सर्वश्रेष्ठ हिन्दी प्रतियोगी 2008' का पुरस्कार प्राप्त किया।
- अपने रजत जयंती वर्ष 2008 के उपलक्ष्य में संस्थान ने एक नई वार्षिक हिन्दी पत्रिका 'मत्स्य लोक' का शुभारम्भ किया। इस पत्रिका में जनोपयोगी लेखों एवं रचनाओं का समावेश किया गया है ताकि तकनीकी ज्ञान को सरल भाषा में उपयोगकर्ताओं तक पहुंचाया जा सके।
- संस्थान में स्वतंत्रता दिवस धूमधाम से मनाया गया। इस अवसर पर निदेशक महोदय डा. वजीर एस. लाकड़ा ने राष्ट्रीय ध्वज फहराया तथा स्टाफ के प्रतिभाशाली बच्चों को स्टाफ कल्याण निधि से पारितोषिक प्रदान किए। इस अवसर पर एक सांस्कृतिक कार्यक्रम का आयोजन भी किया गया।
- संस्थान में दो वरिष्ठ वैज्ञानिकों डा. मुकुन्दा गोस्वामी तथा डा. पी.के. प्रधान तथा श्री संजय कुमार, एसएसजी-। ने पदभार ग्रहण किया।
- संस्थान के तीन वरिष्ठ वैज्ञानिकों डा. रेहाना आबिदी, डा. ए. गोपालकृष्णन तथा डा. एस.पी. सिंह को प्रधान वैज्ञानिक के पद पर प्रोन्नति प्रदान की गई।
- संस्थान के 11 तकनीकी कर्मचारियों को भी प्रोन्नति प्रदान की गई।
- संस्थान की वैज्ञानिक श्रीमती दिव्या, पी.आर. को संस्थान की कोचि इकाई स्थानान्तरित किया गया।
- संस्थान के दो प्रधान वैज्ञानिक डा.आर. सौन्दरराजन तथा डा. डी. कपूर, भा.कृ.अ.प. से सेवानिवृत्त हुए।
- संस्थान के सदस्य श्री देशराज, एसएसजी-III का आकस्मिक निधन होने पर ब्यूरो परिवार शोकाकुल हुआ।
- इस दौरान 15 विशिष्ट अतिथियों ने संस्थान का भ्रमण किया।

## PRICED PUBLICATIONS OF NBFGR

S.No.	Title of Publication	Price
1.	Fishes of North East India	Rs. 950/- US \$ 50
2.	Ornamental Fishes of North East India: An Atlas	Rs. 750/- US \$ 50
3.	Freshwater Fish Diversity of Central India	Rs.500/- US \$ 50
4.	Ornamental Fishes of the Western Ghats of India	Rs.900/-
5.	Fish Introductions and Quarantine: Indian Perspective	Rs. 200/-
6.	Uttar Parvatiya Rajyon ki Matsya Vividhta: Sarankshan evam Prabandhan (in Hindi)	Rs. 500/-
7.	Matsya Palan Darshika (in Hindi)	Rs. 150/-
8.	Lucrative Alien Ornamental Fish Species for Aquarium Trade of India	Rs.300/-
9.	Fish Biodiversity of India	Rs. 750 US \$ 100
10.	Fish Pathogens and Diseases in India: A Bibliography	Rs. 500 (Discount 30%) US \$ 50
11.	Participatory Approach for Fish Biodiversity Conservation in North East India	Rs. 500 (Discount 20%) US \$ 50
12.	Indian Fish Pathologists Directory	Rs.300 (Discount 30%) US \$ 50
13.	Endemic Fish Diversity of Western Ghats	Rs. 350 (Discount 30%) US \$ 50
14.	Fish Biodiversity of North East India	Rs. 250 (Discount 30%) US \$ 50
15.	Fish Chromosome Atlas	Rs. 750 (Discount 50%) US \$ 50

Requests for purchase may be sent to the Director, National Bureau of Fish Genetic Resources, Lucknow.

### Forthcoming Events

- Training Course on "Recent Advances in Molecular Markers and Their Applications", January 12-23, 2009.
- Brainstorming on "Aquatic Exotics and Quarantine", February 14-15, 2009.
- Training Programme on "DNA markers" at NBFGR, Kochi Unit, February 17-28, 2009.
- Training Course on "Current Tools for Genotoxicity Assessment in Fishes", February 19-26, 2009

**Direction and Guidance:** Dr. W.S. Lakra, Director

**Compilation, Editing and Hindi Translation:** Dr. L.K. Tyagi, Scientist (SS) and OIC, Extn. & Training Cell

**Assistance:** Shri A.S. Bisht, T-4

**Published by:** Director, National Bureau of Fish Genetic Resources

(Indian Council of Agricultural Research),

Canal Ring Road, P.O. Dilkusha, Lucknow 226 002, UP, INDIA

**Gram :** Germplasm; **Tel:** 0522-2442441, 2442440, 2441735; **Fax:** 0522-2442403

**E-mail:** nbfg@sancharnet.in; director@nbfg.res.in

**Website :** http://www.nbfg.res.in