

# newsletter

Volume 3

September—December, 1978

Nos. 1 & 2

## RESEARCH NEWS

### SUCCESSFUL ARTIFICIAL BREEDING OF HILSA

Scientists of the Bhagalpur Research Centre of the CIFRI have achieved success in breeding *Hilsa ilisha* by artificial fecundation at Farakka on the river Ganga. About one lakh hilsa hatchlings were produced in two sets of experiments conducted on October 21 and 29, 1978. The hilsa hatchlings in the size range of 3.5—4.0 mm were transported under oxygen packing from Farakka and were stocked @ 50,000 and 20,000 hatchlings in three nursery ponds at Rajoun Fish Farm near Bhagalpur.

Dr. J. S. Dutta Munshi, Professor and Head of Zoology Deptt., Bhagalpur University, visited Rajoun fish farm on 19.11.78. Netting demonstration was done in all the three ponds and the live young ones of hilsa were shown to him.

The hatchlings stocked on 1.11.78, have grown in the size range of 9.0—12.0 mm and those stocked on 24.10.78 have attained a size range of 23.0 to 25.0 mm.

### PROSPECT OF FISH CULTURE AT JALPAIGURI

The acidic nature of soil and water is considered to be a major impediment in raising production of fish. The CIFRI/IDRC Project on Rural Aquaculture, through its centre at Jalpaiguri (North Bengal), has been exploring the possibilities of obtaining sustained high fish yield from ponds, at and around Jalpaiguri, inheriting acidic soil. In the first set of experiment, the viability of composite fish culture technology, involving catla, rohu, mrigal and exotic silver carp as

components, was demonstrated and a maximum production of 4,800 kg/ha/yr was obtained which is comparable to those recorded in different States having favourable agro-climatic conditions. The achievements of such high production, despite the prevailing adverse hydrobiological conditions at Jalpaiguri, will play a great role in converting the traditional system of fish culture of the region to a totally controlled scientific fish farming in years to come.

### AIR BREATHING FISH CULTURE IN BURDWAN

Scientific culture of air-breathing fishes has been gaining popularity for its high potency to produce fish crop from fallow impoundments, unsuitable for carp culture, without involving additional inputs in terms of fertilizers and supplementary feed. To spread the modern techniques of air-breathing fish culture in the rural West Bengal, the CIFRI/IDRC Project on Rural

Aquaculture has convincingly demonstrated at its Burdwan Centre, noteworthy production of 7,274 kg/ha/6½ months of magur (*Clarias batrachus*) and 4,814.5 kg/ha/6¼ months of singhi (*H. fossilis*)—the catfishes of high commercial demand. The management measures in these experiments included only periodic replenishment of pond water which otherwise restricted the pro-

duction to the range of 4,015.3-3,361.0 kg/ha/5-6 months recorded in earlier experiments. The demonstration resulted in

generating interest among the local entrepreneurs to switch on to the modern method of controlled culture of air-brea-

thing fishes developed under the Co-ordinated Research Project of CIFRI.

#### EFFECT OF CHRONIC EXPOSURE OF *CLARIAS BATRACHUS* TO MALATHION

Increased use of agricultural pesticides has been a major hindrance in adopting paddy-cum-fish culture in the country. However, there has been little information on the effects of chronic exposure of fish to pesticides and their accumulation in fish body. Gas

chromatographic studies on *Clarias batrachus*, exposed to 0.5 ppm of malathion for 40 days, yielded interesting results. The residual accumulation occurred mostly in the gills whereas tissues from liver, kidney, intestine and body muscles neither indicated any trace of malathion

nor of its degraded products. It is suggested that magur, even when subjected to 0.5 ppm of malathion, is edible if gill portions of the fish are removed. Considerable possibilities of integrating air-breathing catfish culture with agriculture are projected.

#### WORKSHOP ORGANISED

##### FOURTH WORKSHOP ON ALL INDIA CO-ORDINATED RESEARCH PROJECT ON COMPOSITE FISH CULTURE AND FISH SEED PRODUCTION

The fourth workshop on All India Co-ordinated Research Project on Composite Fish Culture & Fish Seed Production was held at Raj Bhavan, Puri on 21—22 December, 1978. Dr. V.G. Jhingran, Director, Central Inland Fisheries Research Institute welcoming the guests and participants from different States of the country apprised the progress achieved and the role being played by the All India Co-ordinated Research Project in extensively extending the technology throughout India through adaptive research. Dr. Raghu Prasad, Assistant Director

General(F), ICAR, added that the project had not only achieved the objective and targets, but it had created substantial impact in certain States.

Progress reports of the work done during the period September, 1975 to September 1978 on the composite fish culture experiments and fish seed production at Institute based and centrally sponsored (State based) centres of the Project were presented and discussed in three technical sessions under the Chairmanship of Shri G. N. Mitra, Fisheries Advisor, Govt. of Orissa; Dr.

G. P. Dubey, Prof. of Life Science, University of Bhopal, M. P.; and Prof. S. K. Moitra, University of Burdwan, West Bengal.

Dr. V. R. P. Sinha, Project Co-ordinator reviewed the achievements of the project made during the last three years and enumerated in detail the remarkable fish productions of over 10,000 kg/ha/year achieved at Pune (Maharashtra) with fry as stocking material instead of fingerlings. Dr. Sinha also assessed in detail, the role of supplementary feed and fertilizers in composite fish culture;

nutrient status of soil and water of ponds, as well as nitrogen balance and nitrogen utilization efficiency in certain composite fish culture ponds; and expenditure pattern of the fish production under composite culture.

Dr. Sinha, while speaking about the salient achievements in fish seed production of cultivated Asiatic carps, said that fish seed production has significantly risen from about

112.8 lakhs during 1976 to about 339.2 lakhs in 1977 and 543 lakhs in 1978. He also spoke about the relation between the hydration of the female fish with hypophysation and successful induced breeding.

In addition, discussions on the development of composite fish culture and seed production in tribal regions of the country were held in the fifth technical session. It has been

stressed that there is an urgent need for improving the fish culture techniques in tribal regions to improve the income of poor folk.

Dr. C. V. Kulkarni, Retd. Director of Fisheries, Maharashtra Chairman of the sixth technical session congratulated the staff of the Co-ordinated Project, for the excellent work done and high productions achieved.

### THIRD WORKSHOP OF THE ALL INDIA CO-ORDINATED RESEARCH PROJECT ON BRACKISHWATER FISH FARMING

The third workshop of the All India Co-ordinated Research Project on Brackish-water Fish Farming, jointly organised by CIFRI and Kerala Agricultural University, was held at Central Institute of Fisheries Technology, Cochin during November 9-10, 1978.

Welcoming the Chief guest, Shri Kaleeswaran, Vice-Chancellor, Kerala Agricultural University and participants, Dr. V. G. Jhingran, Director, CIFRI stressed the need for developing brackish-water fish farming in the country. He said "there has been upsurge all over the world for aquaculture during the last decade" and discussed the factors which have contributed to the upsurge. Dr. Jhingran highlighted the achievements made by the project during the



Dr. V. G. Jhingran, ( third from left ), Director, CIFRI welcoming the delegates to the inaugural session of the 3rd Workshop of the All India Co-ordinated Project on Brackishwater Prawn and Fish Farming at CIFT Conference Hall, Cochin. Dr. M. V. Pylee ( extreme left, Chairman ) Vice-Chancellor, Cochin University, Shri N. Kaleeswaran ( Chief guest, seated next to Dr. Pylee ), Vice Chancellor, Kerala Agricultural University and Dr. E. G. Silas ( extreme right ) Director, Central Marine Fisheries Research Institute are also seen

last few years and said "it has done excellent work".

Dr. R. Raghu Prasad, Assistant Director General, ICAR speaking on the occasion invited the participants to examine the achievements made under the project and help in formulating the work programme for the next year.

Delivering the inaugural address, Shri N. Kaleeswaran stressed that proper utilisation of the water resources of the country under aquaculture programme was urgently needed as done for land resources and remarked that if malnutrition is to be erased, it is necessary to improve the fish production of the country and make it available to the poor people. He stressed that the land resources development through agriculture has received the attention of the country but the water resources await development as the green revolution in India started with the use of high yielding dwarf variety of wheat. He stressed that the aquaculture techniques developed by the CIFRI have suitability to revolutionise the fish production in India. Discovery of a new technology is essential to bring about a revolutionary development of a country. He further emphasised that the technology developed by the scientists should be transferred to the common farmers in understandable simple language. He also pointed that the high



Dr. R. Raghu Prasad ( Centre ) Assistant Director General ( Fisheries) addressing the inaugural session of the 3rd Workshop of the All India Co-ordinated Research Project on Brackishwater Prawn and Fish Farming at CIFT Conference Hall, Cochin. Shri K. H. Alikunhi (left), and Director of Fisheries Kerala are also seen.



Participants of the 3rd workshop of the All India Co-ordinated Research Project on Brackishwater Prawn and Fish Farming being shown culture of *Etroplus suratensis* at the Kerala Centre of the Project at Vytilla Research Station of Kerala Agricultural University.

cost sophisticated technology which can only be adopted by Government on large scale cannot be utilised by farmers because of capital constraints and therefore, low cost technology which takes into account the capital constraints in the society, should be developed. Earlier Dr. Pylee, Vice-chancellor, Cochin University, chairing the inaugural session pointed out the need for adoption of scientific aquaculture to cope up with the ever increasing demand of the country for fish. He was happy to know that the stage of experimentation was over and the scientific practices evolved are going to be implemented in the field.



Registration of participants of the 3rd Workshop of the All India Co-ordinated Research Project on Brackishwater Prawn and Fish Farming held at CIFT, Cochin.

#### FOURTH WORKSHOP OF THE ALL INDIA CO-ORDINATED RESEARCH PROJECT ON AIR-BREATHING FISH CULTURE

The fourth workshop of the All India Co-ordinated Research Project on Air-breathing Fish Culture was inaugurated by the Hon'ble Minister - in - Charge Fisheries, Government of West Bengal, Shri Bhakti Bhusan Mondal at the Central Inland Fisheries Research Institute, Barrackpore on December 12, 1978.

Dr. V.G. Jhingran, Director, Central Inland Fisheries Research Institute welcoming the Hon'ble

Minister and delegates highlighted the achievements under the Co-ordinated Research Project on Air-breathing Fish Culture and commented that since a totally new system of fish culture was developed with such non-traditional species, the task before the project was rather difficult and complex ; yet within a short span, the project developed techniques to breed and rear young one's of all the commercially important species of air-

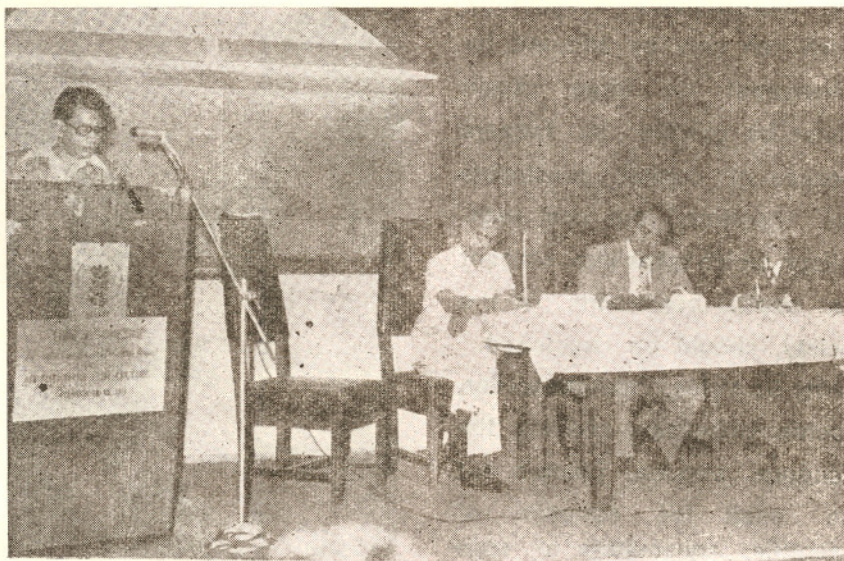
breathers and could conduct production demonstration with viable economics.

The Hon'ble Minister for Fisheries, Government of West Bengal, in his inaugural address expressed happiness over the reported achievements under the Co-ordinated Research Project on Air-breathing Fish Culture and commended those who have made it possible to culture these species to achieve yields upto 5.2 tons/ha/6

months and 55 tons/ha/6 months under semi-intensive and intensive operations respectively. The Hon'ble Minister also mentioned that culture of air-breathing fishes may play a dominant role in utilising small backyard ponds in village and for the purpose Government of West Bengal has planned to set up demonstration centres in various blocks of the State.

Dr. C. V. Kulkarni, as a Chairman of the inaugural session, suggested that reports of successful demonstrations of semi-intensive and intensive culture techniques in farmers' ponds render the necessary credibility to the technology developed at the Central Inland Fisheries Research Institute.

The workshop was conducted through three different sessions under the Chairmanships of Shri K. M. Mondal, Director of Fisheries, West Bengal; Shri P. Basu, Commissioner, Fisheries, Government of Gujarat; and Shri R. B. Rajjada, Chief Warden Fisheries, Delhi Territory when progress reports of the project centres were discussed. It was suggested that the proposed



Dr. P. V. Dehadrai, Project Co-ordinator, All India Co-ordinated Research Project on Air-breathing Fish Culture presenting his report during the 4th Workshop of the project held at CIFRI, Barrackpore, West Bengal.

air-breathing fish culture programmes in tribal areas of Tripura, Gujarat, South Bihar and Andhra Pradesh may be considered urgently.

Dr. P. V. Dehadrai, Project Co-ordinator reviewing the project's achievements informed that the production potential of air-breathing fishes is by and large commensurate with inputs and magnitude of operational management. Dr. Dehadrai informed the workshop that

research on nutritional and reproduction aspects has brought about measurable breakthrough and the results will soon be ready for field application to bring down the operational cost and to ensure abundant availability of seed.

Culture of air-breathing catfishes, he pointed out, is of rural relevance with low inputs as well as adaptable on factory farm basis with intensive operation.

---

## EXTENSION SERVICE

### PILOT PROJECT ON CONTROL OF WATER HYACINTH

A pilot project initiated in March 1978, sponsored by the North Eastern Council in collaboration with the Manipur

Fishery Department under technical guidance of Shri V. Ramachandran, Fishery Scientist of the Institute, on the control of 400 ha of dense water hyacinth (*Eichhornia*)

infestation in 500 ha Takmu Fishery Lake in Manipur has progressed well to cover 200 ha so far. Complete kill and disintegration of the weed have been demonstrated by adopting

( See page 7 col. 1 )

## TRAINING IN BRACKISHWATER PRAWN AND FISH FARMING

A field-oriented two-month training course in brackish-water prawn and fish farming was organised by the Extension Section of the Institute during August 1, to September 30, 1978 and was held at the brackishwater fish farm of the Kakdwip Research Centre of the Institute at Kakdwip, West Bengal.

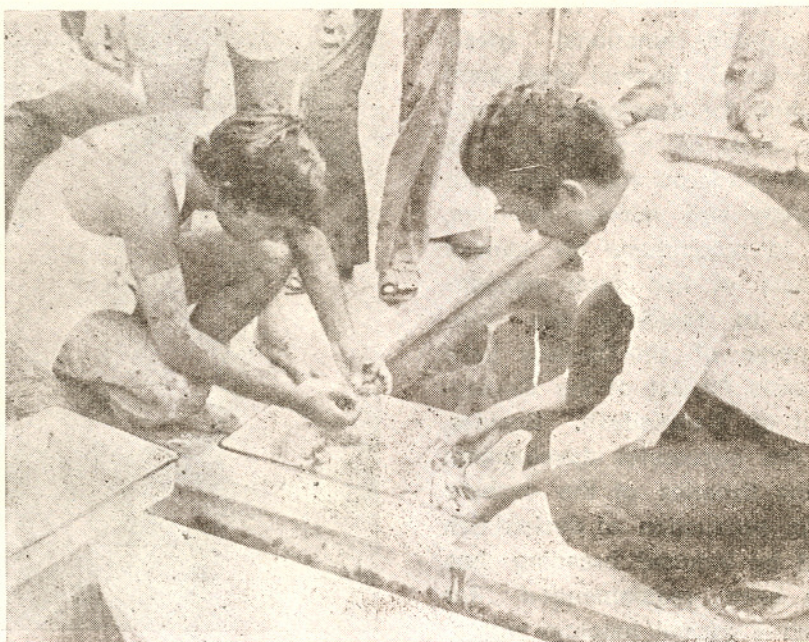
The training course comprised lectures and practicals on the package of practices on brackishwater prawn and fish farming right from the collection of seed to the production of marketable prawn and fish. The economic viability of the various techniques was demonstrated through the active participation of the trainees in actual farming operations.

30 enterprising fish farmers and officials from State Fisheries Development Corporation, Wilson and Associates and Neogi Sea-Food, Calcutta; Marine Products Export Development Authority, Cochin, Cifoods Ltd., Orissa; and Mathoor Marine, Puri, Orissa received the training.

---

(Continued from page 6)

dosage computation and treatment techniques evolved by the Institute. No adverse effect on fish fauna is likely or reported so far. The overall cost of clearance in this case is expected not to exceed Rs. 700/- per hectare which is one half of the usual cost by manual clearance.



Trainees of the brackishwater prawn and fish farming course sorting-out sample collections at the farm pond of the Kakdwip Research Centre, Kakdwip, W. Bengal

## PARTICIPATION IN KISHAN MELA

The Patna Centre of the Institute based All India Co-ordinated Research Project on Air-breathing Fish Culture participated in the Kishan Mela held at Ranchi Agricultural University, Kanke (Ranchi), Bihar, during September 19-21, 1978. The centre installed a demonstration stall in the exhibition. Live as well as preserved specimens of culturable varieties of air-breathing fishes, posters and charts—depicting the techniques of magur breeding in paddy fields, cage culture, food habits of magur, etc.—were the important exhibits displayed at the stall. An informative hand-out in Hindi was brought out on this occasion for distribution to the fish farmers. The stall attracted a large number of enthusiastic fish farmers who were apprised of modern techniques of magur culture through demonstration at Doranda Fish Farm, Ranchi.

---

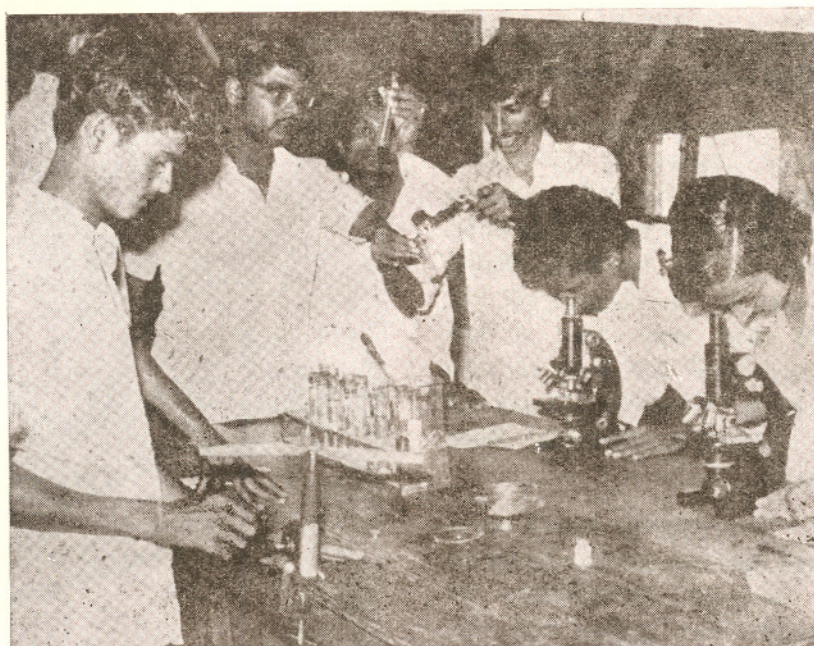
## Dr. Sinha Completes Consultancy Assignments

Dr. V. R., P. Sinha, Project Co-ordinator, CIFRI recently completed two successive consultancy assignments—one with the World Bank, Washing-

ton during 13 March—2 May, 1978 and the other with the FAO from 3 May—31 July, 1978. Dr. Sinha, was deputed during March 13—May 2, 1978 to

Bangladesh by the World Bank to provide functional specifications of physical investment required for developing the ox-bow lakes of the country into viable fish farms and for the carp hatchery and nursery facilities, and to recommend on various aspects of fish farm management to facilitate the programmes of the Ox-bow Lake Fisheries Project of the Government of Bangladesh. Besides, for the successful development of the fisheries of the ox-bow lakes, production of desired fish seed by induced breeding has also been recommended for which a central hatchery with a capacity of 20 million fry at one of the major lakes has been proposed.

The Food & Agriculture Organisation of the United Nations nominated Dr. Sinha



A group of enterprising fish farmers, undergoing training in brackishwater prawn and fish farming, examining plankton samples in the laboratory at the Kakdwip Research Centre, Kakdwip, West Bengal.

during May 3 — July 31, 1978 to render expertise to Hungary to strengthen the research capability and facilities for

implementing an integrated research programme on fish culture at Fisheries Research Institute at Szarvas, Hungary.

## STAFF NEWS

### FELLOWSHIP OF THE NATIONAL ACADEMY OF SCIENCES

Dr. A. V. Natarajan, Scientist-3, Project Co-ordinator, All India Co-ordinated Research Project on Reservoir Fisheries has been elected Fellow of the National Academy of Sciences, Allahabad, India, in November, 1978.

### Agricultural Research Service

The under mentioned staff have been appointed to the post

of Scientist-1 through competitive examination of the Agricultural Scientist Recruitment Board (ASRB), New Delhi and are presently undergoing training in the Institute.

Name	Discipline	Date of joining
Shri George John	Fish & Fishery Science	7.9.78
" S. Ayyappan	do	11.9.78
" N. A. Reddy	do	11.9.78
" K. Suresh	do	11.9.78
" V. K. Unnithan	do	6.9.78
" P. K. Pandit	do	8.8.78
" D. Kumar	do	8.8.78
" C. S. Purushothaman	do	18.8.78
" S. K. Mandal	Agricultural Statistics	18.9.78
" K. R. Naskar	Economic Botany	25.8.78



## SCIENTISTS ON FOREIGN DEPUTATION

Shri R. N. Pal, Scientist-2, was deputed to U. S. A. for undergoing training in Fish Health Programme organised by the Fisheries Academy and National Fish Health Research Laboratory of the United States under CIFRI/IDRC Project on Rural Agriculture. Shri Pal left India on 4th September, 1978.

Sarvashri N. C. Basu, T-6 and P. Ravichandran, Scientist-1 left India on November 27, 1978 on deputation to Philippines for a period of 12 weeks for undergoing training on Prawn Breeding and Culture under Collaboration Work Plan for scientific and technical co-operation between the ICAR and the SEAFDEC Aquaculture Department, Manila, Philippines.

## PERSONALIA

Shri Nirmal Kumar Thakur, Scientist-1, Patna Centre of the CIFRI/All India Co-ordinated Research Project on Air-breathing Fish Culture was awarded Ph. D. degree by the Bihar University during the period.

Smt. Sukla Das, T-II-3 (Library), Library & Documentation Section, obtained the Masters' Degree in Arts of the Calcutta University in September, 1978.

Mr. K. H. Ibrahim, Scientist-2, was awarded Ph.D. degree by

## Appointment

The following appointments were made during the period July—December, 1978.

Name	Post	Place of posting
Shri Bhaskar Chandra Sardar	Khansama	Barrackpore
" J Paia	Watchman	Kalyani
" G. C. Mallick	Watchman	Kalyani
" H. C. Banick	Watchman	Barrackpore
" N. K. Das	Watchman	Barrackpore
" R. K. Bhoi	Watchman	Dhauri
" Yusuf Dar	Fisherman	Harwan
" M. C. Das	Fisherman	Gauhati
" S. K. Venkatachalan	Fisherman	Pune
" K. P. Ram	Fisherman	Ranchi
" Govind Lal	Fisherman	Allahabad
" Sudama Behara	Fisherman	Dhauri
" Ramesh Ghadei	Fisherman	Dhauri
" N. Jena	Fisherman	Dhauri
" B. Patnaik	Fisherman	Dhauri
" P. K. Nayak	Fisherman	Dhauri
" Rajan Swain	Fisherman	Dhauri
" Pitamber Swain	Fisherman	Dhauri
" Dhanu Behara	Fisherman	Dhauri
" Shripati Nayak	Fisherman	Dhauri
" Chaki Behara	Mali	Cuttack
" Pasupati Ghosh	Mali	Barrackpore
" P. Nageswar Rao	Safaiwala	Tadepalligudem
" J. Balmiki	Safaiwala	Allahabad

## Transfer

Following transfers were made during the period July—December, 1978.

Name & Designation	From	To
Shri C. B. Joshi, S-1	Uttar Kashi	Dehradun
" V. R. Chitransi, S-1	Buxar	Muzaffarpur
" A. K. Laal, S-1	Barrackpore	Bhagalpur
" Kuldip Singh, S-1	Barrackpore	Kakdwip
" P. K. Chakraborty, S-1	Barrackpore	Kakdwip
" V. K. Bali, S-1	Barrackpore	Harwan
" B. R. Sirsat, S-1	Barrackpore	Bhubaneswar
Smt. G. K. Vinci, S-1	Barrackpore	Nagarjunasagar
Shri P. M. Sherief S-1	Barrackpore	Allahabad
" D. Narayanswami, S-1	Kakinada	Barrackpore
" C. K. Pandey, Lab. Boy	Allahabad	Bhagalpur
" Bhim Bahadur	Cuttack	Barrackpore

the Utkal University during the period. Dr. Ibrahim voluntarily

retired from the services of the Institute on 31.10.78.

**Appointment of Scientists to higher grade of Agricultural Research Service**

On the recommendation of the Agricultural Scientists Recruitment Board, the following scientists of the Institute have been appointed to the next higher grade of the Agricultural Research Service as indicated :

*From Grade S ( Rs. 550-900 ) to Grade S-1 ( Rs. 700-1300 )  
with effect from 1st July, 1976.*

1. Shri M. K. Mukhopadhyaya	Fish & Fishery Science	17. " Bimalendu Roy	Fish & Fishery Science
2. " G. N. Srivastava	"	18. " K. V. Rao	"
3. " Anup Kumar Datta	"	19. " Ardhendu Mukherjee	"
4. " Dina Nath Singh	"	20. Smt. K. K. Bhanot	"
5. " Dharendra Kumar	"	21. Shri P. M. Mitra	Agricultural Statistics
6. " Kusamadhav Das	"	22. " R. A. Gupta	"
7. " P. Kumaraiah	"	23. " B. C. Jha	Genetic & Cytogenetics
8. " V. K. Murugesan	"	24. Dr. Brijhata Prasad Gupta	Agricultural Chemistry
9. Dr. Harbhajan Singh	"	25. Shri Dibakar Nath	"
10. Shri V. V. Sugunan	"	26. " S. K. Saha	"
11. " K. Gopinathan	"	27. " Hansila Prasad Singh	Soil Science
12. " Dilip Kumar	"	28. " G. N. Chatterjee	"
13. " B. K. Mishra	"	29. " R. K. Das	"
14. Dr. Mathew Abraham	"	30. Dr. Prakash Rai	"
15. Smt. G. K. Vinci	"	31. Shri P. K. Mukhopadhyay	Bio-Chemistry
16. Shri P. K. Chakraborti	"	32. " M. M. Bagchi	Agricultural Chemistry

*From Grade S-1 ( Rs. 700-1300 ) to Grade S-2 ( Rs. 1100-1600 )*

**( With effect from 1st July, 1976 )**

1. Shri M. Ranadhir	Agricultural Economics
2. Dr. G. N. Mukherjee	Fish & Fishery Science
3. Shri Ch. Gopalakrishnayya	"
4. Shri G. K. Bhatnagar	"

**( With effect from 1st July, 1977 )**

1. Shri M. Y. Kamal	Fish & Fishery Science
2. Shri K. V. Ramakrishna	"
3. Shri Chandidas Saha	"
4. Dr. R. S. Panwar	"

**Grant of Advance increments**

The undermentioned scientists of the Institute have been granted advance increments as mentioned against their names :

Name	Designation & Grade	Incremen
1. Shri D. R. Kanaujia	S (550-900)	Three
2. " Radha Kanta Dey	S (550-900)	Three
3. " S. K. Majumdar	S (550-900)	Two
4. " B. K. Singh	S (550-900)	Two
5. " Narbada Prasad Srtvastava	S (550-900)	Two
6. " Surendra Narain Singh	S (550-900)	One
7. " M. P. Singh Kohli	S (550-900)	Three
8. " P. C. Mahant	S (550-900)	Two
9. " D. K. Kaushal	S (550-900)	One
10. " Vijay Kumar Sharma	S (550-900)	Two
11. " Vijay Kolekar	S (550-900)	Two

**Grant of advance increments ( contd. )**

	<i>Name</i>	<i>Designation &amp; Grade</i>	<i>Increments</i>
12.	„ P. K. Sukumaran	S (550—900)	Two
13.	„ P. K. Ghosh	S (550—900)	Two
14.	„ N. M. Chakraborty	S (550—900)	Two
15.	„ Amitabha Ghosh	S (550—900)	Three
16.	„ R. Ganapathy	S (550—900)	Two
17.	„ B. K. Banerjee	S (550—900)	One
18.	„ R. K. Dwivedi	S (550—900)	Three
19.	„ Dilip Kumar De	S (550—900)	Three

**OBITUARY**

Dr. A. David, ex-scientist of this institute breathed his last on July 8, 1978. Dr. David joined CIFRI during its formative stage on 12th December, 1947 as Research Assistant and retired from the services of the Institute on February 2, 1975 as Fishery Scientist. During his tenure, Dr. David made outstanding contributions in the field of inland fisheries of India, particularly related to fish and fisheries resources survey of river system, and management and development of tank fisheries resources of the peninsular India.

Shri Lalit Bahadur ( 41 years ), Peon at headquarters expired on 24th August, 1978. Shri Bahadur joined this Institute on November 1, 1962.

The members of the staff of CIFRI express their deep sense of sorrow at the untimely and sad demise of Dr. A. David and Shri Lalit Bahadur. May God grant peace to the departed souls.

Edited & compiled by Shri B. N. Saigal

Published by the Director, Central Inland Fisheries Research Institute, Barrackpore-743101 (W. B.)

and Printed at **usha** a house for printing, Abakash, port blair lines, Barrackpore