



# cifri newsletter

Volume 4

January-April 1981

Number 1 & 2

## ANOTHER FEATHER IN CIFRI'S CAP KIDWAI AWARD FOR CIFRI SCIENTISTS



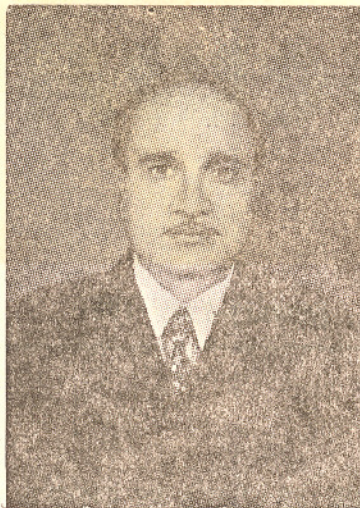
Mr. J. C. Malhotra receiving the Rafi Ahmed Kidwai Memorial Prize from Shri Rao Birendra Singh Union Minister for Agriculture.

The Rafi Ahmed Kidwai Memorial Prize for Agricultural Research for the biennium 1978-79 has been awarded jointly to Shri J. C. Malhotra, Shri S. N. Mehrotra and Dr. Peer Mohamed for their outstanding contribution in the field of Inland Fisheries. The team of these scientists under the leadership of Shri J. C. Malhotra successfully achieved the artificial propagation and culture of the Indian shad *Hilsa ilisha*, a commercially important riverine fish. The technologies of artificial fecundation, hatching, spawn rearing and culture of hilsa have since been perfected. These contributions have also helped in understanding the physiological aspects of hilsa breeding

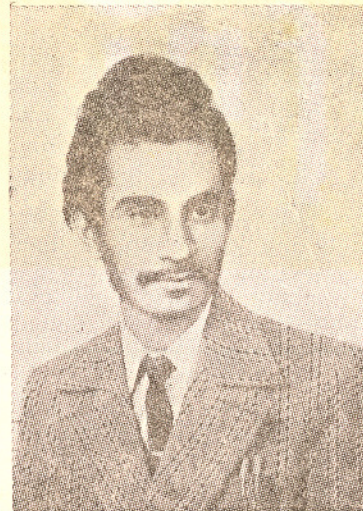


and rearing in controlled conditions. These technologies will go a long way in fostering recovery of the depleted hilsa fisheries of the riverine systems in the country.

Shri J. C. Malhotra was born in 1921 and he did his post-graduate research at the Government College, Lahore. He joined CIFRI in 1948. He has 42 scientific papers pertaining to different aspects of Inland Fisheries. Born on 28 August 1935 Shri S. N. Mehrotra joined CIFRI in 1958. His investigations in the Ganga and Jamuna river systems at Allahbad to determine the biological indications of water quality revealed that the discharge of city sewage in the rivers Ganga and Jamuna affected aquatic biomass primarily through up take of oxygen. He has also been associated with the physico-chemical studies of soil and water of Loni and Gularia reservoirs apart from his award winning work on *Hilsa*. Dr. M. Peer mohamed was born on 24 August 1944. He joined CIFRI on 26 December 1973. His major contribution in fisheries pertains to physiology of fishes.



Mr. S. N. Mehrotra



Dr. M. Peer Mohammed

*This is the third time in a span of eight years that CIFRI is honoured with this coveted prize. For the biennium 1972-73, this award went to Drs. V. G. Jhingran, H. L. Chaudhuri, and V. R. P. Sinha. Their outstanding work on induced breeding in fishes and composite fish culture brought a major breakthrough in aquaculture. It was the work of Dr. P. V. Dehadrai, Shri R. N. Pal, Dr. N. K. Thakur, Shri V. K. Murugesan and Shri S. C. Pathak that brought Kidwai Award to CIFRI for the biennium 1976-77. They had developed a low input high yielding technology for air-breathing fish culture, and now it is the outstanding work on our depleting hilsa fisheries that brought the coveted award to the Institute.*

**DHIRU MORARJI  
MEMORIAL  
AWARD FOR  
SHRI G. N. SAHA**

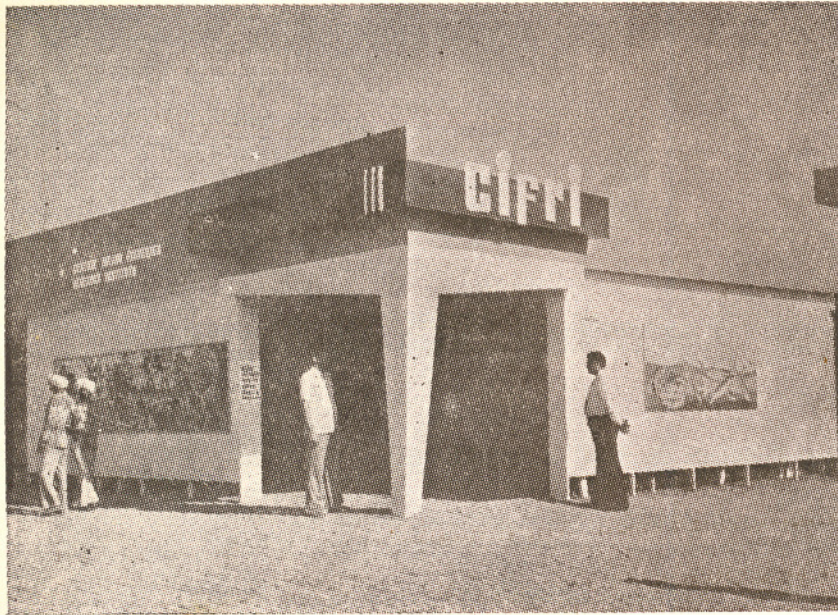
Shri G. N. Saha, Scientist of CIFRI has been awarded the Dhiru Morarji Memorial Award (Second prize of Rs. 1000/- and a citation) for his article entitled

“Techniques of Pond Fertilization and the Use of Fertilizers in Aquaculture for Increased Fish Production.” His prize winning article appeared in the November, 1979 issue of the ‘Fertilizer News’ and it presented a technology for fertilization of fish ponds with only specific chemical fertilizers taking into account the soil fertility.

judicious use of chemical fertilizers based on this technology has resulted in high fish production of 4,221 kg/ha/year (net) without supplementary feeding.



# CIFRI FARES WELL IN NATIONAL FAIR



The CIFRI Pavilion which bagged first prize at the National Agricultural Fair '81 at Ludhiana



Mr. B. K. Banerjee Scientist explaining the function of glass jar fish hatchery to farmers

The CIFRI pavilion was adjudged the best among Government of India stalls in the National Agricultural Fair-'81 at Ludhiana, Punjab. The fair was jointly organised by the Ministry of Agriculture, Government of India and the Punjab Agricultural University from April 2-13 1981.

CIFRI highlighted its achievements in the exhibition through charts, blow-up photographs, lighted panels, models, fishing aids etc.

The progressive farmers of Punjab made a beeline for the CIFRI stall to hear from the extension scientists about the advanced technologies developed at the Institute. An estimated stream of over a lakh people was attracted to the pavilion. His Excellency the Governor of Punjab; the Secretary (Agriculture), Government of India; the Vice Chancellor, Punjab Agricultural University and the Vice Chancellor, Lahore Agricultural University (Pakistan) were among the distinguished visitors. The CIFRI stall was also awarded a certificate of merit.

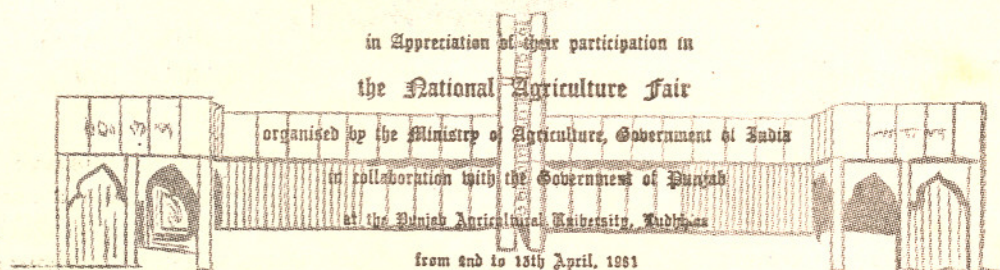




## National Agriculture Fair '81

This Certificate of Merit is awarded to

CENTRAL INLAND FISHERIES RESEARCH INSTITUTE, WEST BENGAL.



It is hereby certified that CENTRAL INLAND FISHERIES RESEARCH INSTITUTE, WEST BENGAL.

has won the FIRST prize for GOVERNMENT OF INDIA STALLS.

*Sukhjit Singh*  
Fair Authority  
Punjab Land Development  
& Reclamation Corporation.

*M. Sankaranarayanan*  
M. SANKARANARAYANAN  
Extension Commissioner &  
Joint Secretary to the  
Govt. of India.



Certificate awarded to CIFRI stall at National Agricultural Fair-81 at Ludhiana



# RESEARCH HIGHLIGHTS

## Reservoir production reaches new heights

Fish production from Gularia Reservoir, U. P., India had touched an all time high figure of 100 kg/ha during 1979. This success story of CIFRI unmistakably demonstrates the use of scientific and ecology-oriented management techniques for the development of reservoirs. The reservoir fetched a revenue of Rs. 45,000/- from commercial fishing during 1978-79 against the annual lease of Rs. 8,000/- paid to the State Government.

## Pens to raise carp fingerlings

Nursery pens seem to be the answer to CIFRI's search for an appropriate technique to overcome the twin problems of acute shortage of ground nursery and mounting demand for stocking materials. Fry of *C. mrigala* and *L. fimbriatus* were raised to fingerling stage in a split bamboo pen (area 247.5 sq. m) strengthened with nylon netting of 1/32" mesh erected in Poongar Swamp adjoining Bhavanisagar Reservoir. The pen was fertilised with fresh cow dung @ 1 kg per sq. m. One kg of super phosphate was also used as fertiliser. Hatchlings were introduced at the rate of about 26 lakhs/ha (*C. mrigala*) and 20 lakhs/ha (*L. fimbriatus*).

The stock was thinned on the 30th day and rearing of the remaining seed continued for another 60 days duration. The initial harvesting of fry after 30 days gave a production of 7.85 lakhs/ha while that of fingerlings 4.96 lakhs/ha with an overall survival of 27.8%. A total of 260 kg of feed was used during the 90 days of experiment.

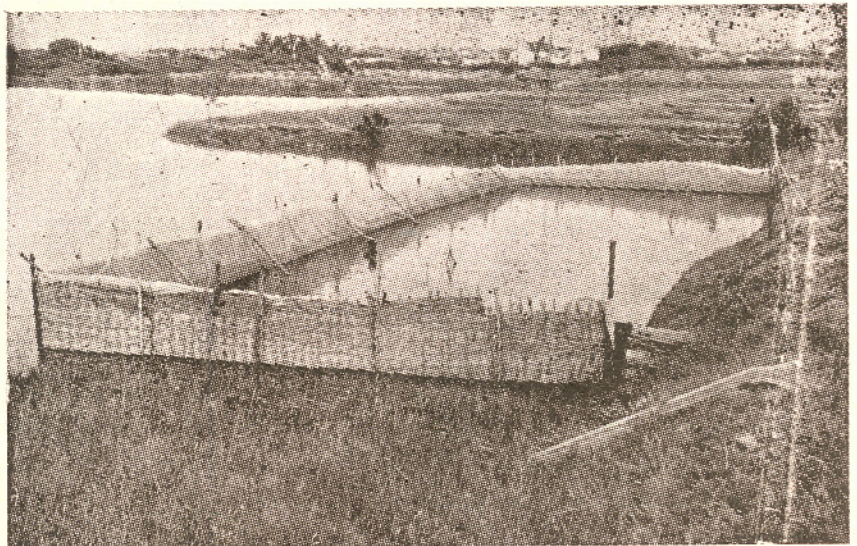
## Biogas Slurry – A fertiliser and a feed

Research investigations under CIFRI/IDRC Project indicated that biogas slurry could be used both as a fertiliser and as a component in fish feed with advantage. As fertilizer it has an ameliorating effect on total alkalinity.

It showed an edge over mustard oil cake when combined with rice bran as a feed. This combination gave four times as much growth as the combination of mustard oil cake and rice bran

## Successful production of hybrids

The successful production of 16,000 hybrids (*mrigala* ♀ × common carp ♂) has been reported for the first time from India. This feat was achieved by the Cuttack Station of CIFRI. Some of the hybrids, when reared in nursery ponds, have attained an average length of 128.3 mm (25.7g) in 3 1/2 months.



Nursery Pen at Poongar swamp Bhavanisagar



## Cage culture of carps in fresh water tank

A new experiment to culture carps in cages was taken up in Sankey Tank, Bangalore under the Bangalore Centre of CIFRI. The tank has an area of 45 ha with an average depth of 4.5 m. As the first stage of the experiment, 40kg/cage (10·56sq.m.) of fingerlings were raised. The species to be cultured in cages are *Cyprinus carpio* and *Hypophthalmichthys molitrix* in the ratio 8 : 1. The work is in progress.



Cage Culture in Sankey Tank, Bangalore by the Bangalore centre of CIFRI

## Fish culture in jute-retted waters

CIFRI's fish culture investigations in jute-retted waters have once again yielded promising results. Experiments with four species combination (rohu, catla, mrigal and silver carp) in a 0.07 ha pond at village Patulia (Khardah, West Bengal) showed a spectacular growth of catla (310 mm) and silver carp (395 mm) in just five months without any feed or fertilizer. The natural plankton blooms that follow jute retting took care of the food requirements of these fishes. In view of the vast area available for adoption of this technology in rural West Bengal and neighbouring states, this result is a pointer to the immense possibilities for fish production with minimal inputs. This also conforms to the present need for effective utilization of waste waters.

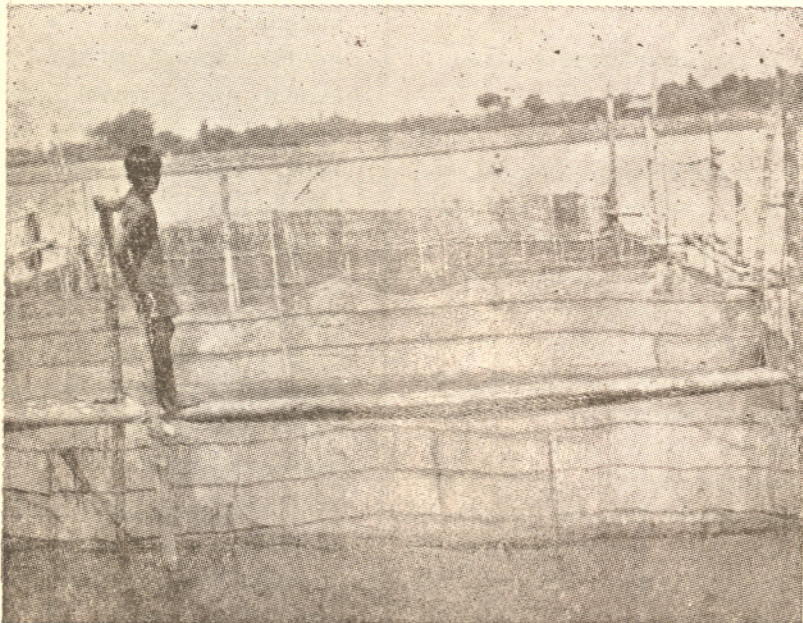


Shri Santosh Ghosh proudly holds his 310 mm Catla raised in his jute retted pond without any feed or fertilizer.





A haul of fish raised in jute-retted Pond at village Patulia, Khardah, W. Bengal



Pen culture of *P. monodon* at Chilka Lake

### A record production of fingerlings

Experimental ponds of CIFRI/IDRC project at Ahmadpur Centre achieved a record production of 5,400 kg/ha of catla and rohu fingerlings with a survival rate of 89%. The ponds were prepared with anhydrous ammonia and were stocked at the rate of 2 lakhs/ha.

### Pen culture of *Penaeus monodon*

Pen culture of *P. monodon* on a pilot scale was undertaken at Chilka Lake during February-June, 1980 by the Brackishwater Aquaculture Unit. Pens (25 and 50 sq.m.) made of split bamboo mats with an inner lining of 3 mm nylon mesh, were stocked with *P. monodon* @ 50 Nos./sq. m. An average growth increment of 31g. was achieved in two months. The production was estimated as 1000 kg/ha in two months with an average final weight of 40g and survival rate of 50%.



## ON THE ANVIL—1

### Seed production and culture of freshwater prawns

The freshwater prawn culture is gaining importance in view of the higher price the prawn fetches in market. Yet, even today the commercial freshwater prawn

culture is in its infancy. Many species of the genus *Macrobrachium* are encountered in the commercial catches from our inland waters. Of these *M. rosenbergii* is acclaimed as the most suitable species for culture. In addition, two more species, viz., *M. malcolmsonii* and *M.*

*tiramicus choprai* have been taken up by CIFRI to evaluate their suitability in freshwater aquaculture practices. The work already done at the Cuttack, Kakinada, Badampudi and Buxar/Muzaffarpur centres of CIFRI has paved the way for perfecting the freshwater prawn culture technology.

The ongoing research work on these lines are distributed in three main problems coming under the Institute's Project "Freshwater Prawn Culture".

Since the natural seed grounds are little known to us, unavailability of seed is the major handicap in popularising prawn culture. Establishing an ideal feed is one challenge in rearing prawn larvae to juveniles. The research project at CIFRI stresses on rearing the larvae with cheap indigenous food. Under this project, various greens, feeds of animal origin, plant products, freshwater fairy shrimp etc are tried. Already a breakthrough has been achieved by employing some slaughter house products. At present, larval rearing of *M. rosenbergii* and *M. malcolmsonii*, both in indoor and outdoor conditions, is under progress to refine the technology for mass scale seed production.

The methodology for the maintenance of brood stock is perfected. A procedure for the continuous supply of berried females was also developed by stocking juvenile prawns from

## NEWS AND VIEWS

### Cichlid information

Are you in need of information on Cichlids? Precise information in specific research areas (not just titles of relevant papers) are available from Cichlid Reference Service, Parkstrasse 15, D-5176 Inden Luchberg, FRG.

—ICLARM Newsletter.

### Important observation on

#### *Microcystis*

Using  $^{15}\text{N}$  as tracer Dr. T. Preston, W. D. P. Stewart and C. S. Reynolds correlated the appearance of *Microcystis aeruginosa* directly with the presence of particulate  $^{15}\text{N}$  which could only have been sediment-derived and which originated mainly from *Microcystis* cells deposited on the sediment surface the previous year. According to them, the most plausible explanation is that *Microcystis* overwinters on the sediment surface and thereby provides an inoculum of colonies from which the epilimnetic population develops the following summer.

—Nature

### Ramkrishna mission applauds CIFRI'S Work

Impressed by the services rendered by CIFRI under the Lab to Land programme, His Holiness Swami Atmasthananda of Belur Math writes to the Director of CIFRI for conducting a training course in fish breeding during the coming season.

### A farmer's confidence in CIFRI technology

Encouraged by the initial success of brackishwater fish and prawn farming with underground saline water, Shri G. B. V. Krishna Rao, a progressive fish farmer of Kakinada (AP) has expanded his culture venture in eight acres of ponds. He stocked the ponds with 16,000 *Chanos chanos* and 70,000 *P. monodon* and *P. indicus* seed. He reports that the growth of these fish and prawn in his farm is highly satisfactory. He unhesitatingly thanks CIFRI for the guidance being given to him in his venture.



time to time and removing older females. Experiments are under way to develop a technique for producing baby worms to feed advanced larvae in a patch of worm bed applying different types of nutritive substances. Investigations are in progress to ascertain the economic aspects of freshwater prawn seed production.

Raising the rate of production to 1,000-1,500 kg/ha, better understanding of its role in polyculture with fishes (catla, silver carp, grass carp etc.) and popularisation of culture techniques among farmers are also envisaged in this project.

At Muzaffarpur Centre, experiments are underway to establish reliable culture methodology for *M. choproai* with regards to its breeding, larval rearing and rearing of juveniles to marketable size. Ascertaining proper pond environment and determination of suitable feed with its particle size are also under the purview of this project. Natural food of larvae and juveniles of this prawn is also being determined. A survey is underway to assess the natural seed resources in U. P. and Bihar.

It is expected that a refined technology for freshwater prawn culture could be suggested in a couple of years.

Scientific personnel working at present in this project are :

Dr. M. Subrahmanyam, Mr. A.V. P. Rao, Mr. L. H. Rao, Mr. D. R. Rao, Dr. Janaki Ram, Mr. P. S. C. Bose, Mr. J. C. Malhotra and Mr. S.R. Kanaujia.

## STAFF NEWS

### UN consultancy assignment for Dr. Subrahmanyam

Dr. M. Subrahmanyam, our expert in prawn culture has just completed his mission to the Socialistic Republic of Vietnam. He offered his expertise as a prawn hatchery consultant under ESCAP Programme for two months from 29-1-'81.

### CIFRI Scientists at NAARM

Shri V. R. Desai, Shri R. M. Rao, Dr. M. L. Bhowmick and Dr. C. R. Das have completed the one month Orientation Course in Agricultural Research Management, conducted for the S-1 scientists at NAARM, Hyderabad, on 17th March, 1981. In the second batch S/shri S. P. Singh, S. K. Wishard, K. N. Krishnamoorthy and Dr. S. K. Mukhopadhyay are currently participating in this course which will come to an end on 6th May 1981.

### Wedding bells.....



CIFRI Newsletter wishes the young couples a happy married life—Baburao and Maya Shirsat, Purushothaman and Seethalekshmi, Mrinalini and Nityananda Banerji, Rabi and Sarala Sardar, A. K Sahu and Pusalata.



Shri G. N. Saha receiving Dhiru Morarji Memorial Award from Shri P. C. Sethi, Union Minister for Petroleum, Chemicals and Fertilizers. (News in page 2)



## Personalia

Smt. Anjali De, Senior Librarian, CIFRI obtained the degree of Master of Arts from the Calcutta University in April 1981.

Shri V. Pathak, Scientist participated in the National Symposium

on Aquatic and Environmental Sciences organised by the Bhopal University, Bhopal on 27 and 28 February 1981. His paper presented at the symposium was "Energy transformations within the aquatic ecosystems".

## Retirement

Shri. S. C. Banerjee, S-1 and Shri. A. K. Nath, Sample Sorter have retired from their services on 28-2-81 and 31-3-81 respectively.

## Promotions

Name	With effect from	From	To
Shri. B. K. Sharma	1-7-1977	S-1	S-2
„ P. N. Bhattacharjee	1-7-1980	T-4	T-5
Smt. Sukla Das	„	T-II-3	T-4
Shri. T. P. Ghosh	„	T-2	T-II-3
„ B. B. Roy	„	T-1	Two advance increments
„ K. R. Deb	„	T-1	T-2
„ B. L. Singh	„	T-1	T-2
„ R. L. Balmiki	„	T-1	Two advance increments
„ J. P. Mishra	„	T-1	T-2
„ K. P. Singh	„	T-1	T-2

## Transfers

The following transfers were made during the period 1-1-81 to 30-4-81.

Name	Designation	From	To
Shri. P. R. Sen	S2	Cuttack	Barrackpore
„ A. C. Nandy	S1	Barrackpore	Calcutta
„ P. K. Chakraborty	S1	Lalgola	Port Canning
„ V. V. Sugunan	S1	Nagarjunasagar	Barrackpore
„ I. G. Chatterjee	S1	Barrackpore	Kakdwip
„ D. K. Chatterjee	S1	Cuttack	Bhubaneswar
„ D. Narayanaswamy	S1	Calcutta	Dhuli
„ N. A. Reddy	S1	Barrackpore	Kakdwip
„ S. M. Pillai	S1	„	„
„ M. Rout	S1	Cuttack	Bhubaneswar
Smt. G. K. Vinci	S1	Nagarjunasagar	Barrackpore
Dr. H. C. Joshi	S1	Bilaspur	Muzaffarpur
Shri. N. C. Guin	T2	Cuttack	Bhubaneswar
„ B. K. Behara	T1	„	„
„ R. K. Panda	Jr. Clerk	„	„

## LIBRARY

### New arrivals :

#### BOOKS :

Winberg, G. G. *ed.*

Methods for the estimation of production of aquatic animal.

Zajic, J. E.

Water pollution : Disposal and reuse Vols. 1&2.

Roberts, Ronald J. *ed.*

Fish pathology

Thorpe, J. E. *ed.*

Rhythmic activity of fishes

Weatherley, A. H.

Growth and ecology of fish populations

Mostofsky, David I. *ed.*

The behaviour of fish and other aquatic animals

Audus, L. J. *ed.*

Herbicides : Physiology, biochemistry, ecology 2nd Edition Vol. 2

## OBITUARY

We report with grief the sad demise of our colleague Shri M. Sivaraj of Madras Research Centre, who left for his heavenly abode on 4.3.81. Members of CIFRI Staff express their deep condolence to the bereaved family.

(Continued in page 12)



# SPORTS



The Longest Leap of Eastern zone.



CIFRI'S Kabadi team in action.

## Zonal meet at Cuttack

A 47 member CIFRI team participated in the Zonal Sports Meet of ICAR at CRRI, Cuttack from 2-7 February, 1981 under the managership of Shri K. K. Ghosh, S-2. CIFRI finished up as the overall runners up in team championship among the seven ICAR Institutes participated in the events. Shri W. Guria and Shri N. A. Reddy bagged first prizes for Javelin throw and Hop-step-jump respectively. The other positions were 100m race-2nd ( Shri P. K. Saha ), 4×100m relay-2nd ( S/Shri P. K. Saha, A. K. Banerjee, M. K. Bala and S. C. Halder ). Hammer throw-2nd ( Shri W. Guria ), 200m race 3rd ( Shri M. K. Bala ) and 400m race 3rd ( Shri S. C. Halder ). In the team events CIFRI was the runners up in Football, Kabadi and Volley ball ( Shooting ).

## National meet at Cochin

Shri W. Guria and Shri N. A. Reddy represented CIFRI in All India ICAR Athletic Meet at Cochin from March 6-7, 1981. Shri Guria secured 2nd place in Javelin throw.



(continued from page 10)

Neuhaus, Otto W. and John E. Halver *ed.*

Fish in research

Hart, C. W. and Samuel, L. H.

Fuller *ed.*

Pollution ecology of freshwater invertebrates

Lewin, Ralph A. *ed.*

Physiology and biochemistry of algae

Agee, Warren K., Phillip H. Ault and Edwin Emery

Introduction to mass communications, Sixth Edition

Dahama, O. P. and O. P. Bhatnagar

Education and communication for development

Dodge, John D.

The fine structure of algal cells

Tavolga, William N. *ed.*

Sound reception in fishes : Benchmark papers in animal behaviour, Vol. 7

Tavolga, William N.

Sound production in fishes : Benchmark papers in animal behaviour, Vol. 9

Martin, Arthur W. *ed.*

Comparative physiology of carbohydrate metabolism in heterothermic animals

Sharma, Hari Shanker

The physiography of the lower Chambal Valley and its agricultural development : A study in applied geomorphology

Day, Francis

Fisheries and botany of Eastern India.

Meyer, Victor *ed.*

Atlas of anatomy and morphology of food fishes for practical use in science and industry, Vol. 3: *Salmo gairdneri* Vol. 5 : *Cyprinus carpio*

Compiled by CAB

Perspectives in world agriculture.

Nikolskii, George V.

Theory of fish population dynamics—as the biological background for rational exploitation and management of fishery resources.

Anon.

Report of National Commission on Floods, Vol. 1 & 2 March 1980.

### Journals

1. Agricultural Wastes
2. Aquaculture Digest
3. Environmental Biology of Fishes
4. Environment International
5. Water Research
6. Genetics Abstracts
7. Genetical Research
8. Heredity
9. International Agricultural Development
10. Journal of Fish Diseases
11. The Journal of Heredity
12. Journal of Nutrition
13. Pesticide Biochemistry & Physiology
14. Scientific American
15. Fisheries Research
16. Journal of Experimental Marine Biology & Ecology
17. Institution Membership to Environmental Sanitation

Information Centre (ENSIC) for receiving :

- i) Annual Technology
  - ii) Quarterly Newsletter
  - iii) Bibliographic Bulletin
18. Fertilizer Technology
  19. A Guide to Current Literature in Environmental Health Engineering and Science
  20. Indian Journal of Extension Education
  21. Indian Journal of Marine Science
  22. International Journal of Ecology and Environmental Science
  23. Fishing Chimes

Dear Reader,

CIFRI Newsletter is back to you. On account of certain unavoidable reasons, we could not bring out our issues after Vol. 3 No. 4. Please note the change in the periodicity of CIFRI Newsletter which will appear as a bimonthly publication, henceforth. We introduce some new features. More are in the offing. You are requested to lend your valuable suggestions for the improvement of this Journal. Brief writeups about events, personalities etc. which may be of interest to our fisheries fraternity are welcome.

Editors—

Compiled and edited by : B. N. Saigal, V. V. Sugunan, M. J. Bhagat, G. K. Vinci (Smt.) and V. K. Unnithan.

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