



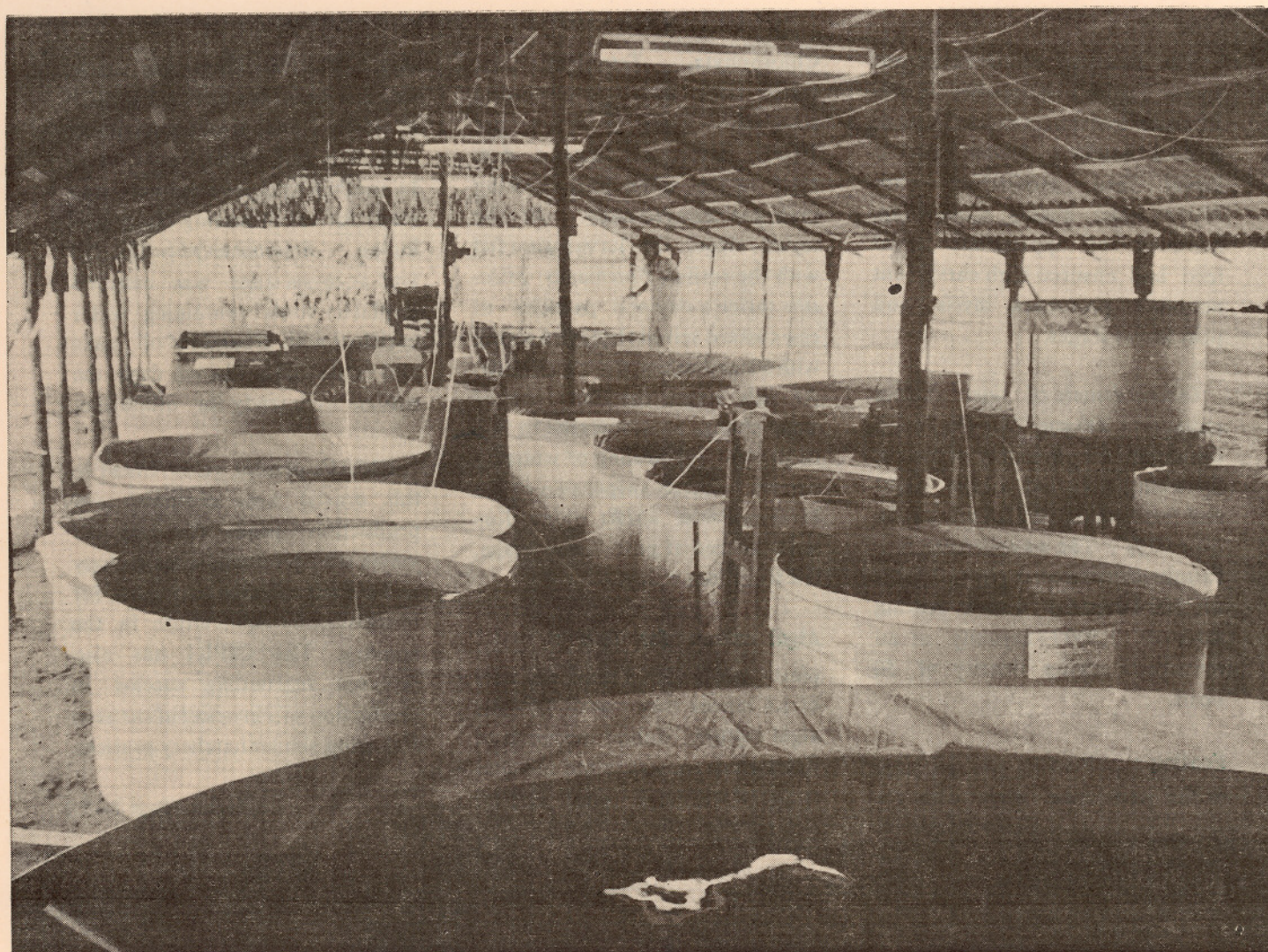
CIFRI NEWSLETTER

Volume 7

September-October 1984

Number 5

MAJOR BREAKTHROUGH IN SEED PRODUCTION OF TIGER PRAWN



CIFRI'S TIGER PRAWN HATCHERY AT ENNORE, MADRAS.

RESEARCH HIGHLIGHTS

A Major Breakthrough in Seed Production of Estuarine Tiger Shrimp, *Penaeus monodon*

CIFRI has achieved a major breakthrough in mass seed production of tiger shrimp, P. monodon. Large-scale breeding and larval rearing of this prized prawn were successfully achieved in a hatchery model designed and developed by CIFRI and installed at Ennore, Madras. Over 54,000 prawn larvae at stage PL-12 were handed over to the State Fisheries Department at a formal function for stocking in culture ponds.

The hatchery model developed by the Institute comprises *in situ* filtration system, aeration system, a core hatchery facility and a larval feed production unit. Proper water quality monitoring, handling and appropriate larval feed had ensured high survival at nauplius, protozoa, mysis and post larval stages.

Gravid female of tiger shrimp measuring 200 mm/120g was found optimum for breeding purposes. Spawning occurred in the night and fertilisation was found to be over 90%. The nauplii were uniformly distributed in plastic pools of 500 l capacity and a rearing tank of 1,500 l capacity at an average stocking density of 50 nos/l.

Feeding : Feeding was initiated at the protozoal stage with the

Chlorophyta, *Tetraselmis* sp. thrice daily and egg custard in suspension form @ 1.5 g per 10,000 larvae, six times a day. Half of the water in the rearing tank was changed daily. At the mysis stage, the larvae were fed with the rotifer, *Brachionus plicatilis* thrice a day and particles of egg custard sieved through a screen with 60 meshes/cm, five times daily. At this stage, the daily rate of water change was increased to 80% to prevent any fouling of water by ciliates. Tissue suspension of the bivalve, *Perna viridis* alone formed the feed at post larval stage, fed five times a day.

Algal culture for feed : Four plastic pools with a total capacity of 1.4 tonnes were used for the algal culture. Initial inoculum of *Tetraselmis* sp. was raised in water enriched with crab meat suspen-

sion. The inoculum was ready within a week. It was then cultured in plastic pools, in water fertilised with urea and super phosphate. In another week, the culture was ready for use in rearing the prawn larvae. *Brachionus plicatilis*, the feed at mysis stage was cultured in plastic pools containing water enriched with groundnut oil cake and cattle dung. In ten days the rotifers were ready for utilisation.

CIFRI's present achievement in this crucial area of shrimp seed production paves the way for viable seed production technology and assures a better tomorrow for brackishwater aquaculture in the country. The CIFRI has also achieved resounding success in production of *Penaeus indicus* seed following similar hatchery practices.

(Pictures Page 8—9)

Breeding and larval rearing of estuarine edible crab *Portunus pelagicus*

Investigations on breeding and larval rearing of the edible crab *Portunus pelagicus* at the Madras Research Centre gave encouraging results. Berried specimen collected from the sea was reared in aerated saline water (salinity, 33.4 ppt) in an improvised hatchery developed by the Institute at Ennore. The eggs hatched out into zoea within a week. Larval rearing was done in plastic pools in filtered aerated water employing different feeds like the chlorophyte *Tetraselmis* sp., diatom *Brachionus* sp., egg custard and green mussel (*Perna viridis*) suspension at different stages. Out of 36,000 zoea, over 1,000 moulted into megalopae in 15 days.

In another four days the megalopae moulted into first post larval instar, a stage suitable for stocking in crab culture operations.

A hatchery with *in situ* aeration and filtration system, constant monitoring of water quality and provision of highly selective feed have led to the present success.

The successful breeding and larval rearing of economic variety of crab is a very significant step in the direction of seed production and culture technology of edible crab in the country. Work is in progress to further improve the technology of crab seed production.

A New Aeration device for Hatcheries

With a view to augmenting dissolved oxygen in fish culture waters as well as aeration in hatchery system, a new inexpensive method has been developed at CIFRI. The apparatus used is a simple aspirator commonly used chemical laboratories for creating vacuum. The aspirator is fitted at the end of the delivery tube which is connected to overhead tank or water pipes. With the flow of water, vacuum is created inside the tube of the aspirator. Air is sucked in and gets mixed with the flowing water under pressure thus aerating it. The outgoing water is directly released in hatchery pools or cistern. □

Hilsa Seed Production—Institute's resounding success

The Institute has made further headway in the refinement of technique of artificial fecundation of hilsa and raising seed. The migratory variety of the Indian shad, *Hilsa ilisha* was once again successfully subjected to artificial breeding, and the seed thus obtained are being reared at the Institute's farm. The artificial fecundation was done at the Baniagram-Nimtita stretch of the Ganga River System near Farakka in West Bengal in the latter half of October, 1984.

Live male and female hilsa in 'running condition' were collected from the River Ganga from gill net catches. Wet Stripping was resorted to. In four attempts, the rate of fertilisation ranged from 30 to 50%. Incubation of the developing embryo was done in the field laboratory under semi-controlled conditions. The ambient water temperature ranged from 22-29°C, DO, 6.5-8.2 ppm and the pH, 7.6-7.8. Hatching took place in 16-20 hrs and altogether 0.265 million hatchlings were obtained from these attempts.

About 49,000 hatchlings of the size 3.62-4.12 mm were transported to the farm at Rahara Centre, Khardah in open containers without oxygenation at a density of 1,000 nos/litre of settled river water. When the seed arrived at the farm after 12-16 hrs, the mortality was observed to be only 5-10%.

The seed are being reared in nursery ponds since then. The stock recorded an average size of 30 mm after 27 days. The rearing is in progress.

STAFF NEWS

PROMOTION : On recommendation of the assessment committee the following personnel working at FARTC Dhauli are promoted as mentioned below :

Name	Present grade	Promoted to	W. e. f.
Shri M. D. Mantri	T-4	T-5	1.7.84
„ C. D. Sahoo	T-4	T-5	„
„ N. C. Guin	T-2	T-I-3	„
„ B. Kahali	T-1	T-2	1.1.84

TRANSFER :

Name	Designation	From	To
Shri D. Kapoor	S-1	Muzaffarpur	Allahabad
„ D. R. Kanaujia	S-1	Muzaffarpur	Buxar
„ G. B. Das	Sr. Clerk	Kakdwip	Kalyani
„ B. Balmiki	Jr. Clerk	Dhauli	Kakdwip
„ G. S. Rao	Jr. Clerk	Muzaffarpur	Badampudi
„ S. S. Burman	Fisherman	Bakkhali	Lalgola

- Dr. (Mrs.) S. Sivakami, Scientist—2 at Bangalore Centre of CIFRI is transferred to Central Marine Fisheries Research Institute, Cochin.
- Shri Samar Kumar Ghosh Jr. Clerk is relieved of his duties under this Institute w.e.f. 1st October 1984, at his own request.

Centre Shifted : The Bhavani-sagar Centre of All India Coordinated Research Project on Composite Fish Culture and Fish Seed Production is shifted to Pollachi w.e.f. 3.11.1984. This Centre along with the Centre of AICRP on Reservoir Fisheries already located at Pollachi will constitute one single composite centre. The address will be :

Central Inland Fisheries
Research Centre,
No. 10, Chakrapani Iyer Street,
Venkatesha Colony,
Pollachi-642001,
Tamil Nadu.

Seminar/Symposium

Dr. V.R.P. Sinha, Head, FARTC, Dhauli participated in the *International Conference on Rainfed Lowland Rice* held at Bhubaneswar during 15-20 October, 1984. The seminar was jointly sponsored by ICAR, DARE (Govt. of India) and IRRI, Manila.

Dr K. L. Sehgal and Shri Dhirendra Kumar, Scientists participated in the *National Seminar on Conservation and Management of Fish Resources*, 27-30 October, '84 held at Dept. of Biosciences, University of Jammu.

Dr. V. R. Desai, Dr. H. C. Joshi and Mr. D. N. Singh participated in the *Fifth All India Seminar on Ichthyology* held at Govt. Post graduate College, Mhow, M. P. during 13-17 October 1984.

M/S R. N. Pal, R. K. Dey and Dilip Kumar scientists attended the *Seminar on LKB Ultramicrotome* sponsored by the Scientific Instruments Co. Ltd. and held in September, '84 at Bose Research Institute, Calcutta.

Fourth ICAR East Zone Sports Meet 1984



Scaling new heights—CIFRI'S Biswanath Halder at pole vault.

The Fourth ICAR East Zone Sports Meet was conducted at CIFRI during 17-24 September, 1984. Over 250 athletes from six Institutes participated in the competition which included ten track events and six team events. Lively competitive thrill and enthusiasm prevailed in the campus during those days. For the athletes and officials gathered at CIFRI, this was also an opportunity to strengthen further the interinstitutional brotherhood, good will and co-operation among the ICAR Institutes.

The ICAR East Zone Sports (Zone VI) comprises the following Institutes.

- 1 Central Agricultural Research Institute, Port Blair
- 2 Central Inland Fisheries Research Institute, Barrackpore
- 3 Central Rice Research Institute, Cuttack
- 4 Jute Agricultural Research Institute, Barrackpore
- 5 Jute Technological Research Laboratory, Calcutta
- 6 Indian Lac Research Institute, Ranchi
- 7 North Eastern Hill Complex, Shillong.

Of these, CARI, Port Blair could not participate in the present Meet.

OPENING : Following the march-past by the sports participants, Shri J. C. Sengupta (IAS Retd.), Vice-Chancellor, Bidhan Chandra Krishi Viswa Vidyalaya, Kalyani, West Bengal inaugurated the meet. Shri Sengupta welcomed the idea of incorporating activities like sports in the research institutes. It was a good diversion from the routine activities. A healthy mind in a healthy body could be more productive. Moreover sports was an occasion to bring together the cross sections of the staff in the Institute as well as in various Institutes with a feeling of belonging to the same family. Thus the utility of sports was supreme, he observed.

Earlier, Dr. A. V. Natarajan, Director, CIFRI welcomed the athletes, officials, chief guest and all others associated with the meet. He hoped the sports meet would promote the understanding, good will and cooperation among the participating Institutes. He added that it was a privilege for CIFRI to hold the meet at its campus. He looked forward to a week of exciting competitions and requested all concerned, to contribute to its success and hold high the spirit and enthusiasm throughout the meet.

SPORTS

Dr. Natarajan had a word of praise for the ICAR Institutes in the zone especially JARI for the allout cooperation extended to CIFRI to hold the meet.

Dr. N. K. Chakraborty, Director, Jute Agricultural Research Institute, Nilganj, Barrackpore presided over the function. In his presidential remarks, Dr. Chakraborty requested all the participants to consider themselves belonging to the same family and to exhibit discipline in thoughts and action. He also appreciated the decision of the Council to conduct sports meet which was in confirmation to the recent attitude of the country and the government towards sports.

Dr. M. Y. Kamal, Chairman, Organising Committee extended vote of thanks to the Chief Guest, President, local authorities and all participants and officials who helped liberally to make this venture a success.

CLOSING :

The meet concluded in the evening of 24 September with a closing ceremony. Dr. N. K.

HISTORY :

Inter-institutional tournaments of ICAR were started as a part of Golden Jubilee celebrations of the ICAR in 1979. Keeping up the spirit and enthusiasm derived from these tournaments Council decided to conduct it annually. At present all the 39 Institutes including Headquarters have been grouped into six zones. In zonal competitions, the winner of each team event will represent the zone and the winners or runners up from each zone in athletic events who attain the prescribed standards for finals will participate in the interzone finals. Trophies will be given to the winning teams and shields for runners up. Winning individual athletes are given medals.

The last three zonal meet in the eastern regions were conducted at JARI, CRRI and ILRI respectively.

Chakraborty, Director, JARI distributed the merit and souvenir certificates to winners and participants. Dr. Gangopadhyay, Manager, CRRI Team spoke on behalf of officials and participants. He praised CIFRI in conducting the zone meet in an excellent way in face of heavy odds, especially the weather. He had a word of appreciation for the cooperation received from all quarters. Dr. A. V. Natarajan, Chairman, Zonal Committee declared the Meet closed.

MEMBERS, ORGANISING COMMITTEE, IV ICAR EAST ZONE SPORTS MEET

Dr. A. V. Natarajan, Director, CIFRI, Chairman, Zonal Committee

Dr. M. Y. Kamal, CIFRI, Chairman, Organising Committee

Shri L. M. Nandi, CIFRI, Member „

Shri D. Roy JTRL „ „

Shri K. K. Prasad, ILRI „ „

Dr. S. K. Laha, JARI „ „

Mr. K. V. Sharma, CRRI „ „

Dr. K. Dhiman, NEH Complex Member „

Dr. Amitabha Ghosh, CIFRI Member Secretary „

OVERALL POSITION OF INSTITUTES

	Ist prizes	2nd prizes	Total points
CRRI, Cuttack	6	6	30
CIFRI, Barrackpore	3	6	21
NEH, Complex, Shillong	3	2	13
JTRL, Calcutta	2	1	8
ILRI, Ranchi	2	1	8

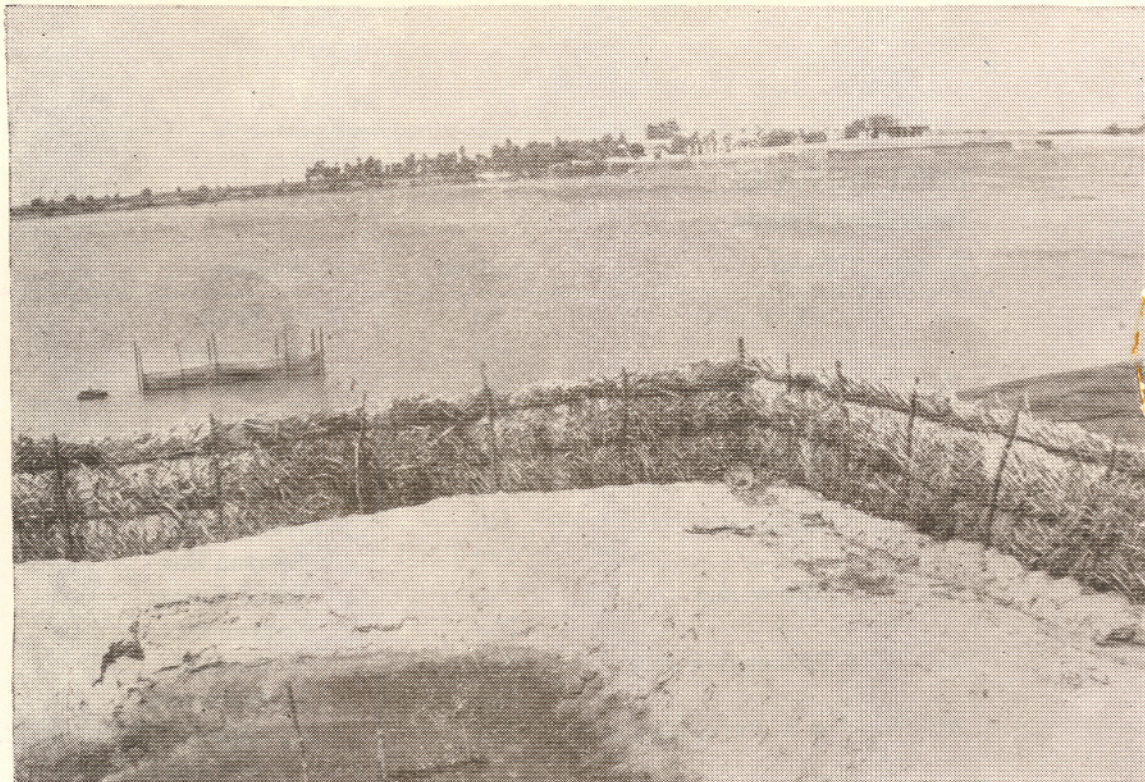
MEET RESULTS

Individual Events

Sl No.	Event	Position	Winners	Institute
1.	100 m race	1st	Shri S. Baral	CRRI, Cuttack
		2nd	„ K. C. Das	—do—
2.	200 m race	1st.	„ S. Baral	CRRI, Cuttack
		2nd	„ G. Dorji,	NEH,Complex, Shillong
3	400 m race	1st.	„ Swapan Das	CIFRI, Barrackpore
		2nd	„ D. W. Runda	ILRI, Ranchi
4.	800 m race	1st.	„ Gopal Dorji	NEH, Shillong
		2nd	„ Swapan Das	CIFRI, Barrackpore
5.	1500 m race	1st.	„ Binod Kumar	ILRI, Ranchi
		2nd	„ Swapan Das	CIFRI, Barrackpore
6.	5000 m cycle race	1st.	„ C. Kachhap	ILRI, Ranchi
		2nd	„ H. Maharana	CRRI, Cuttack.
7.	4 × 100 m relay race	1st.	CRRI, Cuttack (S/Shri K. C. Das, P. K. Das, N. Das and S. Baral)	
		2nd	CIFRI, Barrackpore (S/Shri P.K. Saha, S Das, D. Behra & Biswanath Halder)	
8.	High jump	1st.	Shri B. Halder	CIFRI, Barrackpore
		2nd	„ P. Ravichandran	CIFRI, Barrackpore.
9.	Pole vault	1st	„ A. Kulu	CRRI, Cuttack
		2nd	„ B. Halder	CIFRI, Barrackpore
10.	Long jump	1st.	„ B. Halder	CIFRI, Barrackpore
		2nd	„ K. C. Das	CRRI, Cuttack

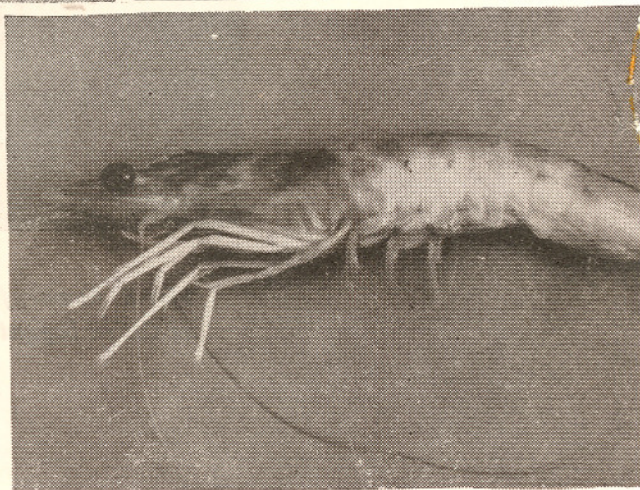


Shri B. Kumar of ILRI winning 1,500 m race. Biswanath Halder of CIFRI bagged the II place.

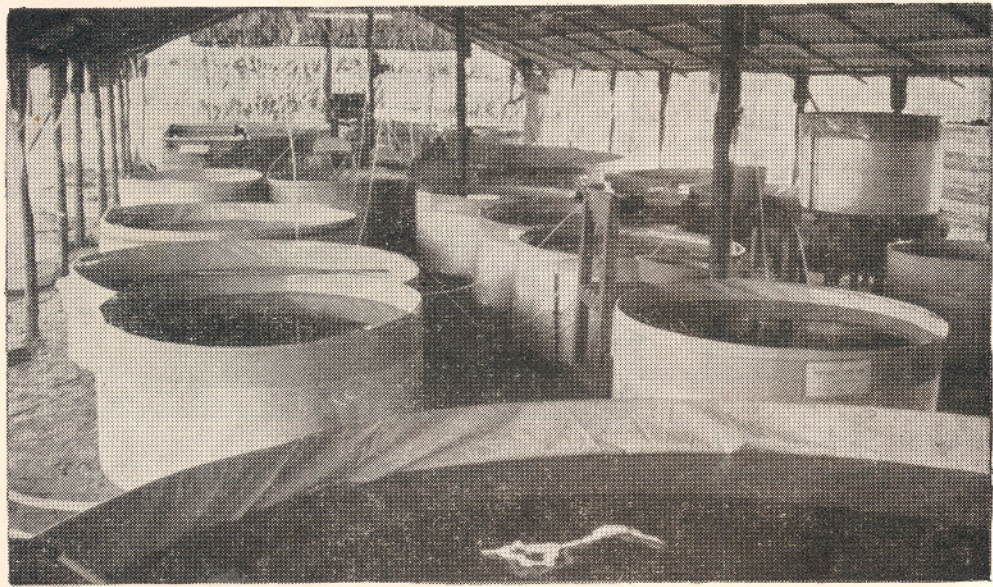


Anticlockwise from top :

1. A Panoramic view of Ennore backwaters.
2. The Sump with filter box exposed. We is also seen in the picture.
3. An adult *P. monodon*.
4. Inside of Ennore hatchery.
5. Post larvae produced at Ennore hatchery.



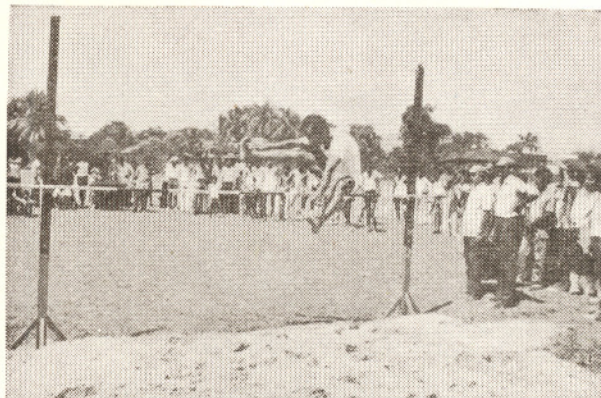
A black and white photograph of a coastal landscape. In the foreground, there is a grassy slope with a fence line. The middle ground shows a body of water, possibly a bay or harbor, with a small boat visible. The background features a distant shoreline with buildings and a lighthouse.



SPORTS

Team Events

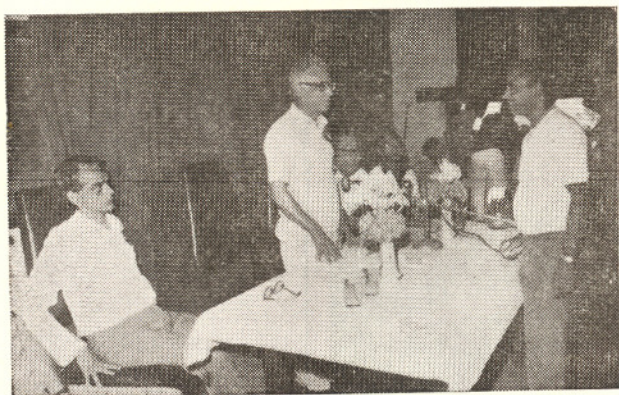
1. Football Champion : CRRI, Cuttack
(S/Shri N. Das, S. Baral, N. Panda, K. C. Das, Kusha Panda, S. R. Sahu, A. Majhi, H. Maharana S. Tutti, B. Naik, B. N. Naik, S. Bandopadhyay, P. K. Das and M. N. Panda)
2. Badminton Champion : NEH Complex, Shillong
(S/Shri Junga Bassar, G. Sinha and M. Dkhar)
3. Volleyball (Smashing) Champion : CRRI, Cuttack
(S/Shri N. C. Das, K. C. Das, S. K. Das, Bulu Naik, A. B. Dash, N. Bhattacharjee, B. Padhi and K. V. Sharma)
4. Volleyball (Shooting) Champion : JTRL, Calcutta
(S/Shri D. Mukherjee, S. C. Shil, S. Saha, K. Majumder, G.C. Das, Swapan Chakraborty, N. Naskar, B. Chakraborty, B. Kabi and M. M. Pal)
5. Kabbadi Champion : JTRL, Calcutta
(S/Shri B. Sardar, G. Sarde, G. Das, R.R. Naskar, P. N. Koyal, G. Guchait, J. Mondal, K. Majumder, N. Mullick and D. N. Mondal)
6. Table Tennis Champion : NEH Complex, Shillong
(S/Shri Moloy Sarma, S. Karangi and Amitabha Basu)



High jump.



CIFRI making inroads into CRRI's defence—Football match.



Dr. K. K. Prasad, Team Manager of ILRI being introduced to the Chief Guest at the inaugural function.



Dr. A.V. Natarajan talking at the concluding Session.



Football finalists CRRI (Standing) and NEH Complex (Sitting) with Dr. A. V. Natarajan, Director, CIFRI.

EXTENSION

Fish Farmers at CIFRI : A group of 44 fish farmers from the District Howrah paid a visit to this Institute in October, 1984. The farmers were told about the scientific methods of inland and brackishwater fish culture aided by posters, charts, films etc. They also had a discussion on various problems encountered in fish culture with the extension scientists of CIFRI. A talk on 'Activities of CIFRI' was delivered on the occasion by Shri P. K. Pandit, Scientist.

Advisory services : Advisory services were rendered to a number of fish farmers at the Institute as well as at farm sites. Twenty fish farmers participated in a group discussion at Charuhat village (Nilgung, W. Bengal) in which they were told about the use of



A four member NACA (Network of Agriculture Centres in Asia) evaluation mission visited CIFRI on 23. 10. 84. S/Shri P. C. Choudhury (left), F. Y. Chen (second from left) and D. M. Thorup (third from left) visiting the Rahara Research Centre of CIFRI.

organic manure and supplementary feed in carp culture.

Dr. P. Das, talked to the farmers on CIFRI activities and role of

aquaculture in rural development in a discussion held at Diamond Harbour, organised by the Rural Welfare Society of the area on 22.9.84.

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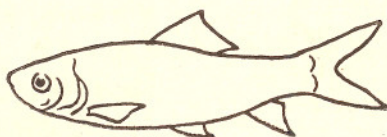
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Published by :

D. D. Halder, on behalf of The Director, Central Inland Fisheries Research Institute, Barrackpore.

Printed by :

ROMAN PRINTERS (S. S. I. Regd. Unit) 37 Andul Road Howrah 711 109 West Bengal.