

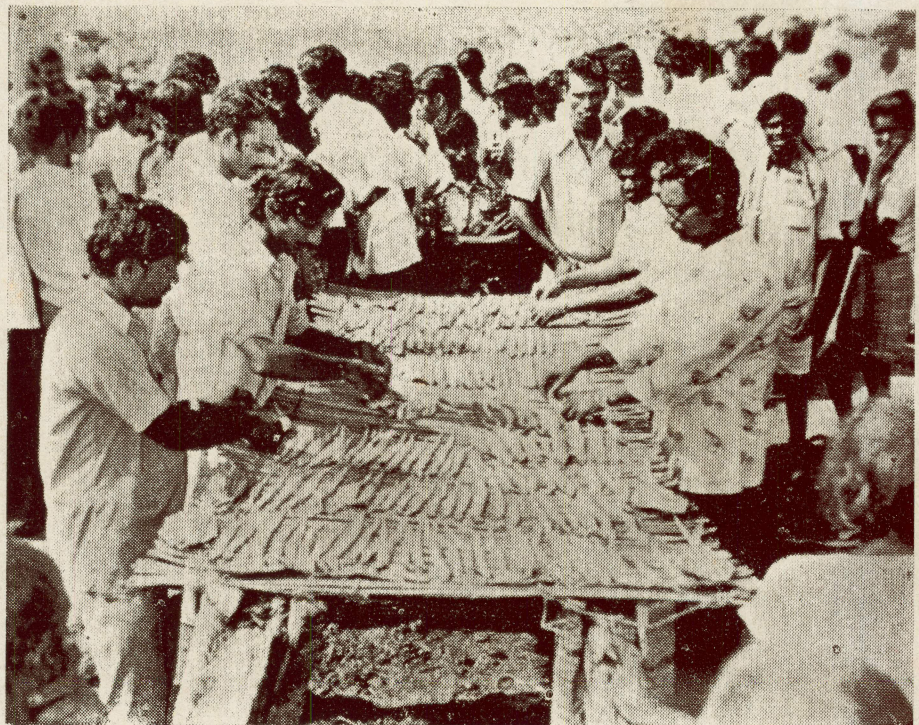
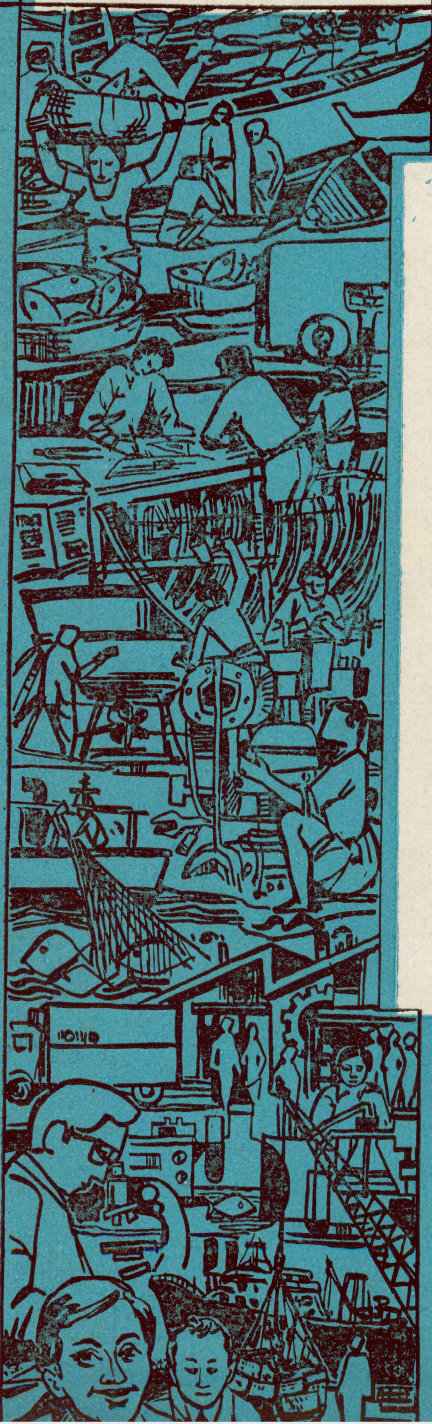


Fish Technology newsletter

Vol. II

No. 7

JANUARY-MARCH 1980



Improved method of drying fish. Demonstrations by CIFT Scientists at Kakinada, Andhra Pradesh (Report on page 4)

CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY

MATSYAPURI P. O.

COCHIN - 682 029

CONTENTS

	Page
1. Foreword	3
2. Lab - to - Land Programme of CIFT	4
3. Giant Ray Fish netted	7
4. New Trawl Resources off Veraval-II Ribbon fishes	7
5. Fish Dehydration Plant Commissioned	8
6. Problems and Prospects of Mechanised Fishing in Kerala	9
7. Marine Paints Plant Commissioned	10
8. Let's Talk it over	11
9. Gleanings from other Journals	12
10. Meet Our Scientists	13

Foreword

EDITORIAL COMMITTEE

Shri R. BALASUBRAMANYAN
Chairman

Shri K. C. PURUSHOTHAMAN
Secretary

Shri P. MADHAVAN
Member

Dr. P. N. KAUL
Member

Photography Shri K. BHASKARAN

Art Shri G. MOHANAN

Fish Technology Newsletter issued every month is intended to bring the fishery industry in India in touch with some of the important developments in fisheries technology resulting from investigations carried out at this Institute and elsewhere. It is not a research publication. Every effort has been earnestly made to express the ideas in non-scientific language. Its ultimate aim is the application of the results of contemporary research for the advancement of our fishery industry.

Fish Technology Newsletter does not owe allegiance to any manufacturer, patent, product or development agency unless otherwise specified. Its purpose is to open up a communication channel through which useful ideas can be exchanged, problems discussed and success shared. The process of exchanging views and opinions makes it easier to identify the real issues and that is where problem-solving begins.

We welcome contributions from any source which will help to achieve our above-mentioned aim. The sources of all such contributions will be acknowledged. We sincerely hope that the current events and informations contained in the columns "GLEANINGS FROM OTHER JOURNALS" and "LET'S TALK IT OVER" will be of interest to the Indian fishing and fish processing industries.

We also welcome suggestions from our readers for improvement in the contents and get-up of Newsletter. Any part of this publication may be reprinted in any language if the translation is true and the source is acknowledged.

LAB - TO LAND PROGRAMME OF CIFT - 9

One of the highlights of the Golden Jubilee celebrations of the Indian Council of Agricultural Research observed last year was a country-wide programme of transfer of Technology known as the Lab-to-Land programme to which CIFT is also contributing in a humble way. In the previous issues we published reports on such programme held at Mangalore, Bombay, Kumarakom, Calicut, Kumbalam, Vaikom, Veraval, Madras and Cochin. In this issue we present a report on programmes taken up at Kakinada, Andhra Pradesh.



Dr. C. C. Panduranga Rao, Scientist-in-Charge, Kakinada Research Centre welcomes the gathering. Next to him (sitting) is Shri V. S. Dovara, General Manager, Boat Building Yard, Andhra Pradesh Fisheries Corporation.

On the recommendation of the State Fisheries Dept, Nemamm, a village 14 km away from Kakinada was selected for implementation of the Institute's Lab-to-Land Programmes.

About 100 fishermen families inhabit this village. Almost all houses are thatched huts situated near the sea-shore. Only two of the houses are

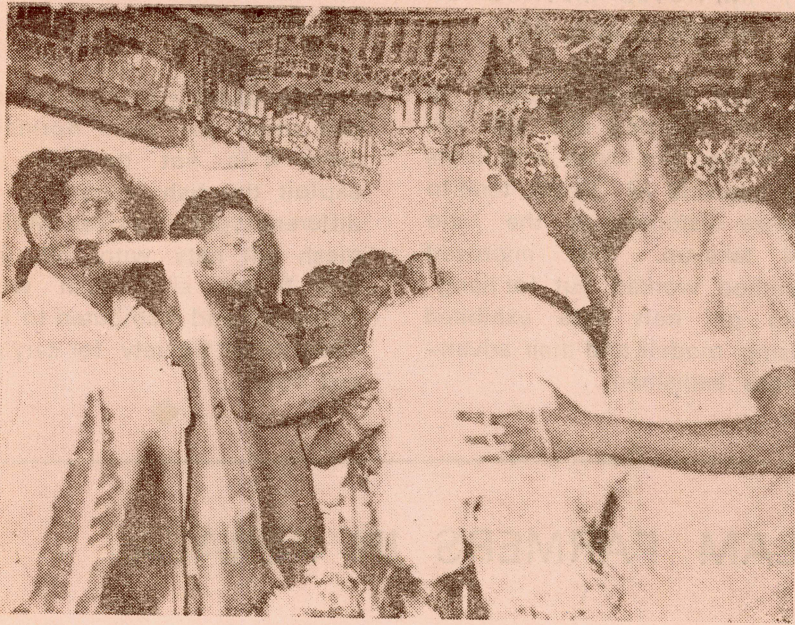
electrified and for the entire village, one tube well serves as the source of drinking water. The village has got a Fishermen's Co. operative Society for the benefit of the local fishermen. The only type of craft being used is the traditional catamaran (12' - 15' long), built of four logs of "Nidraganneru" wood and employing nylon gill nets, cast nets or cotton seine nets.

Fishing season extends from September to March and catch comprises mostly of mackerel, seer, cat fish, prawns, sciaenids, crabs etc. Nearby canals and ponds are also used for fishing and during non-fishing season, the fishermen work as labourers in the field.

The lab-to-Land programmes of this Institute proved to be the first source of assistance for the village both technological as well as monetary. The first part of the programme was inaugurated on Nov. 21, 1979 by Shri V. S. Dovara, General Manager, Boat Building Yard, Andhra Pradesh Fisheries Corporation, Kakinada. Under this programme, the following demonstrations were held.

- 1) PACKING OF FRESH FISH IN IMPROVED CONTAINERS FOR LONG DISTANCE TRANSPORTATION

The indigenous methods of transportation do not ensure safe delivery of fish in a



A Fisherman receives multi-mesh gillnet.

proper condition. The improved method of packing fish and ice in thermocole insulated plywood containers was demonstrated and few containers distributed to members of the Fishermen Co-operative Society for trials.

2) IMPROVED METHOD OF PRESERVATION OF NET

The treatment normally given to cotton nets requires repetition very often for satisfactory results. The improved method of preservation using 5% cutch solution, copper sulphate and ammonia was therefore demonstrated.

3) The importance of utilisation of un-economical varieties of fish for preparation of speciality products like fish diamond cuts was explained to the fishermen and samples distributed.

The second part was inaugurated on November 28, 1979 by Shri C. Lakshmana Rao, Dy. Director of Fisheries, Kakinada. Shri J. V. H. Dixitulu Ex-Dy. Commissioner (Fisheries), Govt. of India, presided



Packing of fresh fish in thermocole insulated plywood containers.

over the function. Under this programme, the following demonstrations were held.

1) IMPROVED METHOD OF CURING AND DRYING FISH.

Normally the fish on landing, were being sold to middle men for nominal price who then sold the fish on profit after curing and drying. The fishermen were not aware of the proper method of curing. The hygienic methods of curing and drying fish worked out by the institute were therefore demonstrated for the benefit of the fishermen. The cement tubs which were used in the curing demonstrations were later handed over to the fishermen's Co.op. Society for their future use.

2) EXTRACTION OF SHARK FIN RAYS

The normal practice among fishermen is to sell shark fins as such to the middlemen who arrange for their export. Since the rays fetch better price, the method of extracting the rays was demonstrated.

3) IMPROVED METHOD OF HANGING GILL NET

The normal practice of loosely hanging the gill net webbings on ropes with knots at intervals of 30 cm. tend to cause distortion to the ratio of take-up. The improved method worked out for hanging gill nets was exhibited using models and their advantages explained.

4) IMPROVED DESIGNS OF GILL NETS

By using gill nets of just one mesh size as is normally done, it is not possible to exploit the fish resources of different types and sizes. Multi-mesh gill nets with 30, 40, and 55mm. size mesh were fabricated and distributed to the Fishermens' Society for carrying out trials.

BOON TO CLAM FARMERS IN KERALA

For the first time in the country a private sector firm at Kundara in Quilon District has started manufacturing of protein-rich clam meat pickles. It will give a boost to the earnings

of about 30,000 people of the weaker section engaged traditionally in clam meat collection from Vembanad lake. This venture is as a direct result of Transfer of Technology or other

wise known as Lab-to-Land Programme of the Central Institute of Fisheries Technology (CIFT), Cochin.

CIFT had organised a massive training programme of preparation of pickles from clam meat and its canning at Kundara in the middle of July this year and the owner of the present firm was a recipient of this technology.

It is estimated that about 2,400 tonnes of clam meat can be made available from the Vembanad lake every year.

The product is marketed in 360 gram bottles and it is expected that it will catch the home market quickly and the day may not be far off when this commodity could be exported also.

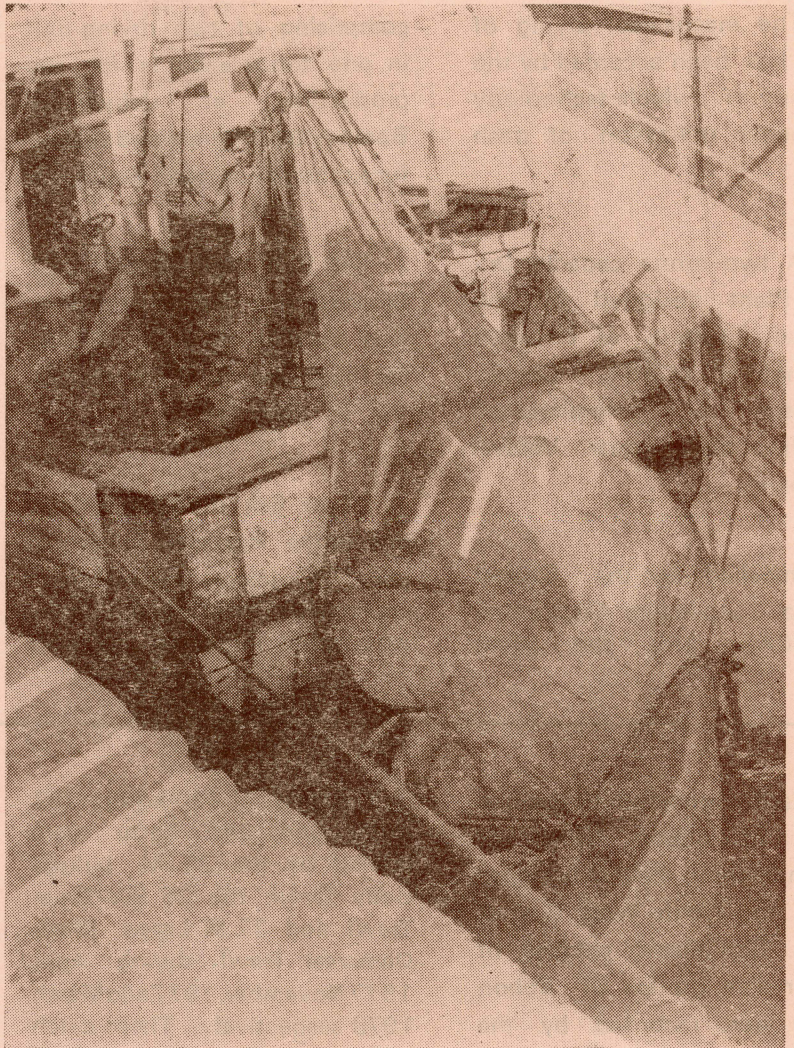
Many more entrepreneurs are expected to come forward in various regions where clams are available; with this, the change for the better for clam farmers seems on the way.



Clam pickles are ready to market.

The investigation Vessel. Fishtech No. 8, of Veraval Research Centre of CIFT caught a giant size Ray Fish from a depth of 40 metres off Veraval (North West Coast of India) The huge specimen measuring about seven metres width across the disk weighed about two tons, its liver alone weighed 160 Kgs The fish has been identified as *Manta biroris* (Wakbaum) described as Devilray or Devil fish. It appears to be the largest ray fish to be reported from Indian waters. The pectoral fin of the mouth was 1.0 metre.

The fish was cuaght in the 25 M high opening trawl during mid-water trawling operation.



NEW TRAWL RESOURCES OFF VERAVAL - II

RIBBON FISHES

Ribbon fishes locally known as "Baga" in Gujarat State are composed of two species namely, *Trichiurus lepturus* des-

cribed as 'large-head-hair-tail' and *Trichiurus Savala* described as 'small-head-hair-tail'. Bigger size groups of ribbon fishes

form an important constituent of the bottom trawl catches off Veraval, North West Cost of India during the last three years.

FISH DEHYDRATION PLANT COMMISSIONED

The mechanical drying of Fish has been accepted by the industry as a viable technology for better utilization of trash fish

A two-tonne capacity Dry Fish Plant designed by the Central Institute of Fisheries Technology (CIFT), Cochin has been recently commissioned at Navabunder near Veraval (Gujarat).

Installed by the Gujarat Central Cooperative Association (GFCCA), Ltd, the plant

comprising of two drying unit in one tonne each is for the production of dehydrated Bombay Duck (laminated, mainly for export to European countries.

Shri P. K. Chakraborty, CIFT Scientist who designed the dryer was associated with GFCCA for installation and Commissioning of the plant.

Two fish drying plants of one-tonne capacity each as per CIFT design and technical supervision have already been installed by Integrated Fisheries

Project (IFP), Cochin and M/s. Vee Luck Food Processions Ltd, Aroor near Cochin. A few more plants are to come up soon in the country.

CIFT will supply complete technology for installing of fish drying plant to interested parties. The tunnel dryer designed by CIFT is simple in design without any imported components and can be fabricated in any good workshop in the country. □

Earlier reports indicated the catch of ribbon fishes as insignificant in the trawl catches along the North West Coast of India. Significant catches of bigger size groups of ribbon fishes were recorded by the experimental bottom trawls operated by the Veraval Research Centre of CIFT during 1977-1979. A range of monthly average catch per unit effort of 1.4 Kg/hr. to 59.1 Kg/hr. with an average percentage composition of 2.20% to 49.90% were obtained during this period. The maximum catch was obtained during March-May, 1977 and the lowest in December, 1978. Highest catch per

unit efforts of 470 kg/hr., 282 Kg/hr and 240 Kg/hr were landed by the 25 M bulged Belly Trawl, the 25 Six-Seam Trawl and 32 M Large Mesh Demersal Trawl, during April 1977, November, 1977 and March 1978 respectively. These catch indices and the average catch Per unit efforts are quite comparable with that of the catch of ribbon fishes obtained by such larger trawl like M. T. MURENA along the North West Coast during 1977.

Bigger size groups ranging from 550 mm and above in total length and weighing 225 gms and above are only accounted in this fishery as they only will be counted and marketed in

numbers, while the smaller size groups are being unaccounted as they are being disposed off along with the small miscellaneous 'mix' generally known as "Dhona". The important size groups forming the fishery of commerce of Ribbon fishes are of the sizes ranging from 820 mm to 950 mm in total length and weighing 450 gms to 800 gms.

Ribbon fishes are being valued at a lower rate. Prices offered varied only from 12 paise to 25 paise per fish during 1977-1979. Ribbon fishes are being sun dried and sent to various internal markets. □

'Problems and Prospects of Mechanised Fishing in Kerala'

The First Seminar

A REPORT

All Kerala Federation of Mechanised Fishing Boat owners Association organised a seminar on the "Problems and Prospects of Mechanised Fishing Industry in Kerala" on February 29 this year at the CIFT Conference Hall, Cochin. Shri S. Krishnakumar I. A. S., Special Secretary to the Govt (Fisheries, Ports, Social Welfare) inaugurated the seminar which was presided over by Shri R. Gopalan, President of the Federation. Shri R. C. Choudury I. A. S., Chairman, MPEDA and Shri G. K. Kuriyan, Director,

CIFT were the moderators. Among the dignitaries who participated in the Seminar were Shri U. Mahabalarao, Chairman, Cochin Port Trust, Shri. S. N. Rao, Director of Fisheries and presently the Director, MPEDA, and Shri. A. G. Vasavan the then Managing Director, Kerala Fishermen Welfare Corporation Limited and presently the Director of Fisheries. The Senior Scientists of MPEDA, CIFT and CMFRI who presented papers at the Seminar include Dr. M. J. George and M/s. R. Balasubra-

manian, C. Ramakrishnan, K. N. Kartha, N. Subramania Pillai, Dr. K. Ravindran, N. Unnikrishnan Nair, A. G. Gopala-krishnan Pillai, S. Ayyappan Pillai, P. A. Panicker, N. A. George and T. M. Sivan. Shri C. N. Ravi, Divisional Manager New India Assurance Company also took part in the discussions at the seminar. Over a hundred fishing boat owners representing their associations at Calicut, Munambam, Vypeen, Cochin, Alleppey and Quilon actively participated in the Seminar.

FAO ASSIGNMENT FOR CIFT SCIENTIST

The Central Institute of Fisheries Technology (CIFT) Cochin has rendered the services of its Chemical Engineering Scientist, Shri P. K. Chakraborty to FAO for technical Consultancy service on Fish drying technology.

Shri Chakraborty was sent to FAO/SIDA Project on small

scale Fisheries in Bay of Bengal at Madras during February-March this year with an assignment to review the Fish drying practices in the Project area and suggest improvements and to prepare detailed plans of initial activity to be taken up by FAO.

Following an extensive field study Shri Chakraborty recommended for a complete change over from unhygienic sun drying on the ground to drying on raised platform, solar tent dryer and also adoption of modern mechanical fish drying, a technology developed by CIFT for immediate implementation by FAO.

MARINE PAINTS PLANT COMMISSIONED



Shri G. K. Kuriyan (extreme right) Director, CIFT, Cochin, Commissioning the Plant by pressing a button.

The new plants set up by M/s Synthetics & Isolates for production of marine paints has been commissioned at Aroor, in Alleppy District.

Besides the production of Anticorrosive and antifauling paints which are indispensable for the protection of fixed off shore structures, jetties, marine

installations, ocean-going ships and numerous fishing vessels, the organisers have embarked on a phased programme which includes the manufacture of synthetic resins, intermediates and polymers.

While commissioning the plant on March 19, 1980, Shri G. K. Kuriyan, Director, CIFT emphasised the need for optimum use of raw materials since the paint industry was raw material intensive.

He pointed out that petrochemical based solvents were not only becoming dear but were in addition difficult to procure. The rising cost of paints must be a matter of concern to all. Therefore, "Optimising the quality of paints, bearing in mind the actual service requirements, is a matter of utmost importance" he said.



MARINE APPLICATIONS OF FERROCEMENT

The Journal of Ferrocement is published quarterly by the International Ferrocement Information Centre (IFIC) at the Asian Institute of Technology (AIT) in collaboration with the New Zealand Ferro Cement

Marine Association (NZFCMA). The objective of the journal is to disseminate the latest research findings on ferrocement especially in the developing countries.

Further details from
The Editor
Journal of Ferrocement,
International Ferrocement
Information Centre,
Asian Institute of Technology,
P. O. Box No. 2754,
Nangkok, THAILAND.

LET'S TALK IT OVER

M/s. GECO Engineering Company Pvt. Ltd. Mangalore.

What types of nets are popular at present in India?

What are the twines, twine size and mesh size for different nets?

CIFT: The types of nets popularly in use at present are trawl nets, gill nets and purse seines. Particulars of the recommended twines, twine size and mesh size for the different nets are given below.

It is always better to fabricate webbings of standard design rather than going for ready-made nets. The depth or width of net webbing usually depends on the type of machine used for fabricating the webbings, i.e.; whether it is 1000 meshes, 750 meshes or 500 meshes etc that can be fabricated in one row. The length of the webbing is indefinite, i.e.; webbings of any length can be prepared within the available width (Meshes).

Details of webbing

Nylon twines of 210/1/2, 210/1/3, 210/2/2, 210/2/3
in mesh size of 100-220 mm

Nylone twines of 210/2/3, 210/3/3, 210/6/3, 219/9/3
in mesh sizes 30-150 mm

Nylone yarns of 100, 210, 420 as knotless
Nylone twines of 210/2/2 nets in mesh
sizes 16 2 mm

Nylone twine of 210/2/3 to 210/6/3 in mesh size 20-70 mm

Polythlene twines of 0.75, 1.0, 1.25, 1.5, 2.0 and 2.5 mm dia. of 25-130 mm mesh

Used for

In land gill nets.

Marine gill nets for Sardine, Mackerel, Pom Fret, Seer, Lobster, etc.

Purse seine for sardine and mackerel

Tuna
Purse seine

Trawl nets.

G. Vijayaraghavan,
Naudyal Bone Mill,
Gangavaram, A. P.

Crude protein	: 40%
Ash	: 31%
Chitin	: 23%
Fat	: 6%

We shall be highly obliged if you can kindly arrange to advise us the analysis of prawn Shell Powder and about its application in Poultry Feeds.

Poultry feed is usually prepared by mixing the following items in proportion as indicated.

CIFT: The general composition of prawn shell powder on dry weight basis is given below:

Prawn shell Powder	: 26%
Fish meal	: 11%
Tapioca starch	: 36%
Rice Bran	: 25%
Molasses	: 2%

OBITUARY

Shri Chandu Lal Govindji Tank, Senior Field Assistant, of the Veraval Research Centre of CIFT passed away on Jan-

uary 13th 1980 following a short illness. He was 42.

He joined the Veraval

Research Centre as Lab-Assistant in 1962. In November, 1979 he was appointed as Senior Field Assistant. □

Development of Fish Culture in Palghat District

The Fish Farming Development Agency has launched a programme for developing fish culture in rivers, ponds, etc. in the villages in Palghat District.

This Centrally sponsored scheme with its headquarters at Keenkara will impart training to interested farmers in all stages of fish culture from digging ponds to selling fish.

Loans worth Rs. 10,000/- for digging ponds and Rs. 1,250/- towards purchasing and rearing of fingerlings will be made available by the agency.

— HINDU

Consultation on Fish Identification ends

The expert consultation on field identification of economically-important fishes of the western - Indian Ocean concluded in Cochin.

Thirty three experts from 17 countries including India participated in the month-long consultation programme held

at the Central Marine Fisheries Research Institute, Cochin, under Food and Agriculture Organisation and Danish international development agency.

Addressing the valedictory function, Dr. W. Fischer, FAO convener of the expert consultation, said the Scientists, who

participated in the programme, had completed identification of commercial aquatic organisms in the western Indian Ocean and hoped this would help the countries in the region-

— INDIAN EXPRESS

Counting Krill

Professpr Gothilf Hempel arrived in Buenos Aires recently to start preparations for the largest census ever taken. He and colleagues from the USA, the Soviet Union, Argentina, Chile, and South Africa will be estimating the Krill stocks in the Antarctic.

The small polar crab is

considered by many scientists to be the Potentially biggest source of protein for mankind.

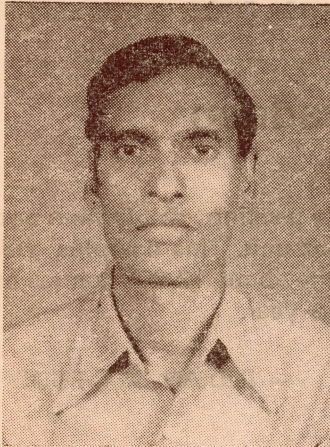
Bonn has pumped large amounts of money into research on the Krill in recent years.

Norwegian Scientists have found high amounts of fluoride in the krill.

According to research at the National Fishery Research Centre in Hamburg, it would be unadvisable therefore to eat krill unprocessed.

However, once processed into pastes and similar products, the krill would not represent any danger to the health of those who eat it.

V. C. GEORGE



Shri Valiaveetil Chacko George, born and brought up in Narakkal, Ernakulam Dist, Kerala State had his M.Sc. (Marine Biology and Oceanography) from Kerala University. He had his technical education and training in fishing gear tech-

nology in India and abroad under F. A. O. Fellowship. He has also specialised in instrumentation and methodology in fishing gear technology.

Joining the Central Institute of Fisheries Technology in 1958 he had widely travelled in India in connection with small scale fisheries both marine and inland. Shri George had the opportunity to work in many research centres situated along both the coasts and interior.

In his professional field he has pioneered many ventures. This includes introduction of trawling in Indian reservoirs and standardisation of the technique for the estimation of fish production from reservoirs. Apart from this Shri George has also

worked on small boat trawls in marine waters, mesh regulation in backwaters, prawn fishing gear, optimisation of fishing gear in reservoirs including control and eradication of unwanted fishes.

At present Shri George is working as Scientist-S2 at Burla Research Centre of CIFT. He is also the Scientist-in-Charge of the above Research Centre since 1975.

Shri George has more than a dozen publications to his credit, in addition to two monographs on Indian Fishing Technique. He has also contributed to the F. A. O. Catalogue of Small Scale Fishing Gear. He is also a guest lecturer to Cochin and Sambalpur Universities on Fishing Gear Technology.

At the end of the year ten research ships, including the Walter Herwing and the Meteor from Federal Republic of Germany, will set off for the huge krill Census.

This action is the beginning of a joint research project from which the six countries involved hope to gather new information and insights on the ecological system of the Antarctic.

— GERMAN FEATURE

Rich Prawn Grounds Located

Rich prawn grounds off Kerala, Orissa and West Bengal have been located by the Exploratory Fisheries project, under the Union Ministry of Agriculture, it is officially learnt.

The project vessels have surveyed 90 percent of the depth zone 10-40 fathoms

(beyond the fishing zone of fishermen) of the entire Indian coast for bottom fish (demersal fish including shrimps). With the extension of the economic zone up to 200 miles from the coast, the project is employing larger fishing vessels for exploratory fishing and exploitation of the resources of this zone.

— HINDU

Future Fish Demand

According to recent FAO projections, food fish demand will increase to about 70 million tons in 1985 and 110 million tons by 2000, compared with 50 million tons consumed

in 1972/74. The share of developing countries in worked food fish consumption is expected to increase from 25% in 1972/74 to 35% in 2000. The potential of marine fish

production is estimated at around 110 million tons with a likely harvest of only 80-90 million tons.

— SEA FOOD NEWS LETTER

Fish Processing Complex at Paradeep

Construction of the fish processing factory complex of the Orissa Maritime and Chilka Area Development Corporation has started on January 4, 1980. The project with an estimated

cost of US \$ 1.73 millions envisages the deployment of six deepsea trawlers and the setting up of a cold storage, an ice plant, a processing unit, a fish meal plant, a fish drying unit

and a packing, distribution and export unit. This complex will handle about 12,000 tonnes of fish a year.

— INDIAN SEA FOODS

CIFT Appointments, Promotion & Transfers

Appointments:

1. Kumari K. Chandini - Junior Clerk (Hindi Typist-Headquarters)
2. Shri P. Joseph Paul - Technician - 1 (Carpenter - Headquarters)
3. Shri T. Gangadharan - Technician III (Sr. Lab. Asst. (Veraval Research Centre))
4. Shri Baiakrishna Bhoi - Tech-1 Mechanic (Burla Research Centre)
5. Shri Thomas J. Mamootil - Tech-II (Head quarters)
6. Shri M. K. Sasidharan - Technician-II (Head quarters)
7. Shri V. Gopalakrishnapillai - Technician-II (Calicut Research Centre)
8. Shri T. John - Technician-II (Calicut Research Centre)
9. Shri A. Verranjaneyulu - Technician II (Kakinada Research Centre)
10. Shri V. V. Ramakrishna - Technician II (Kakinada Research Centre)
11. Shri G. P. Vaghela - Technician II (Veraval Research Centre)
12. Shri P. T. Sebastian - Technician II - Headquarters
13. Shri V. Gasper - Technician II - Headquarters

14. Shri Padmanava Badhai - SS Grade-I (Burla Research Centre)
15. Shri S. Sadanadan, Supdt CIFT-Asst, A. O. ICAR Research Complex, Shillong.

Promotion:

1. Shri P. S. Alias, Technician I, Promoted as Technician II-3 at Headquarters.

Transfers:

1. Shri Satrugan Seth SS Grade-II was transferred from Burla Research Centre to Kakinadha Research Centre.

Statement relating to ownership and other particulars about the
periodical, Fishtechnology Newsletter, as required by
the Registrar of Newspapers of India

Form IV (See Rule 8)

1. Place of Publication : Central Institute of Fisheries Technology,
W/Island, Cochin—29
2. Periodicity of Publication : Monthly
3. Printer's Name : K. C. Purushothaman
Whether citizen of India : Indian
Address : Central Institute of Fisheries Technology,
W/Island, Cochin—29
4. Publisher's Name : K. C. Purushothaman
Whether citizen of India : Indian
Address : Central Institute of Fisheries Technology,
W/Island, Cochin—29
5. Editor's Name : K. C. Purushothaman
Whether citizen of India : Indian
Address : Central Institute of Fisheries Technology,
W/Island, Cochin—29
6. Name and address of individuals
who own the newspaper and
partners or share holders holding
more than one % of total capital : Central Institute of Fisheries Technology,
W/Island, Cochin—29

I, K. C. Purushothaman, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-

(K. C. PURUSHOTHAMAN)

Signature of Publisher

Date: 15-2-1980

