CURRENT SCIENCE — 50 YEARS AGO

MADRAS FISHERIES DEPARTMENT*

THE rising wave of prosperity after the worst depression of 1931–32 is recorded in the Director's Administration Report of the Madras Fisheries Department for the year 1935–36, wherein he notes that the year witnessed the revival of important activities which had been suspended. It is indeed a matter of great satisfaction that the Department will now be in a position to demonstrate to the local fishermen the suitable type of craft and tackle to exploit the off-shore fishing grounds, some of which had been discovered by the trawler "*Lady Goshen*" as long ago as 1931. For this experiment a Yorkshire Motor Coble will be used under the direction of Mr. Ritchie as the Master Fisherman in charge. Trials will also be made with the drift, Danish Seine, and American Purse or Ring nets, and their relative utility under Indian conditions assessed. The results of these experiments will be watched with the greatest interest, not only by Madras but also by all other provinces which possess a coast line.

The proposed improvement in the Marine Aquarium at Madras will also give satisfaction to all lovers of nature, and also to those who appreciate the value of such public places as institutions of education in the real sense of the word.

We share the regret of the Director that the value of contributions that Fisheries can make as a source of food supply and wealth to the economic life of the country is not yet realised by the Government of any province. On several occasions we have urged the desirability of creating a Central Bureau of Fisheries Research for the proper conservation and scientific exploitation of the fisheries resources of the country, but no attention seems to have been paid to this problem so far, though an investigation into the whole question of Indian fisheries was promised in one of the meetings of the Advisory Board of the Imperial Council of Agricultural Research, a number of years ago.

A very creditable record of the biological research carried out by the Department is contained in the Report. The presence of animal growth ring in Mackerel scales is now definitely confirmed and it will now enable the assessment of the age of the fish in different catches. Though such investigations are common in Western countries, probably it is for the first time that in an Indian fish an annual growth ring has been definitely demonstrated. The continued research on Oil-Sardine has yielded valuable results which shall have great bearing in forecasting the Fishery of this commercial species in future years. Here again, the results obtained are comparable to those already known in the case of Herring Fisheries of the Norwegian waters. By far the most creditable piece of research accomplished is to trace the life-history of the most valuable anadromous fish of India, the well-known *Hilsa* of Bengal and the *Palla* of Sind. These researches will no doubt enable in years to come the propagation of the species artificially as is being done in the case of the American Shad.

Through technological research considerable advances have been made in the methods of fish-curing and preservation; in increasing the manurial value of sea-weed compositions and in devising means of wood preservation.

Other research items include plankton investigation, fish-marking experiments, hydrographical investigations, pearl fisheries, research on *Gourami*, *Catla*, *Chanos*, and *Etroplus*, etc.

Attention is also directed in the Report to such activities as the supply of Biological Specimens, Anti-Malaria Work, Socio-Economic Work, Propaganda, Fishery Legislation and Publications of the Department. Among publications are mentioned Fish Statistics, Fishing Methods on the Malabar Coast, Bulletin on Pearl Fisheries, Bulletin on Marketable Fish, Trawlers' Report and a report on the brackish water perch *Therapon jarbua*.

In Part II of the Report reference is made to the sound financial stability of the Department which showed a surplus of one lakh of rupees of income over expenditure. In the final part, the Director deals with the Staff and equipment of the Department.

On the whole, the Report, as in the previous years, marks a distinct advance in the development of fisheries in the Presidency of Madras and for this achievement great credit is due to Dr. B. Sundara Raj, the Head of the Department. The working of the Department under great limitations and severe

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handicaps has demonstrated all the same that fisheries can pay well in this country provided they are properly organised and have a scientific staff to direct and guide the working of the fisheries.

NEWS

MASS-PRODUCED NEMATODES FOR BIOCONTROL: JUST ADD WATER

..."Scientists have long known that while most varieties of [the nematode, a] microscopic underground worm harm many major crops, a handful of nematode strains vigorously attack other underground pests and are innocuous to humans and plants. The helpful nematodes, however, aren't naturally plentiful enough to make much inroad against farm pests. An until the worms can be produced and applied in large quantities, they will be too expensive to compete with chemical pesticides. Biosis, a Palo Alto, California, biotechnology company, is using both low and high technology in trying to hurdle these barriers. It has developed a stinking broth of enzymes and ground-up pig kidneys that fosters the nematodes in great abundance and at less expense than previous efforts to mass produce the worms. Biosis is propagating the worms by the billions in stoppered three-foot plastic tubes about six inches in diameter. But the nematodes are voracious bug killers only during their juvenile life cycle. Biosis found a low-cost way to ensure that all the nematodes are at that stage: It runs them through detergent in a Whirlpool washing machine, and the detergent kills all forms of the bug except the durable juveniles. Biosis also faced another major hurdle: how to package the worms in large quantities that can easily be transported, stored and applied. Although the worms can be kept in liquid, the containers have to be aerated. Instead, Biosis took an opposite tack that is simpler and less expensive—it dries the worms and stores them in a state of suspended animation. To use the nematodes, farmers will only have to drop a pack of dried worms into a sprayer, add water to revive the organisms, and apply to fields or orchards." [(James P. Miller in *Wall Street Journal*, 28 August 1987, p. 19.) Reproduced with permission from Press Digest, *Current Contents*®, No. 42, October 19, 1987, p. 10, (Published by the Institute for Scientific Information®, Philadelphia, PA, USA)].