BOOK REVIEW


The theme of the book "Harvesting Polluted Waters: Waste heat and nutrient-loaded effluents", edited by Dr. Ole Devik is that polluted waters can be successfully used for generating extra food resources by aquaculture. Several authors have contributed towards the same theme and the book, which is the 8th Volume of Environmental Science Research, is the Proceedings of a Workshop sponsored by the Special Panel on Eco-Sciences of the NATO Science Committee.

The 15 papers, presented in this workshop have been grouped under 4 chapters. In his introductory chapter, the editor outlines the objective of this workshop which is "to assess the possibility that we can achieve improvements in the present efficiency of recycling of materials through a judicious use of the photosynthetic process in combination with the heat produced in the course of the electricity generation". Some of the points which would impress the readers are as follows:

In the first chapter, the paper of Curt Forsberg on "Nitrogen and phosphorus as algal growth-limiting nutrients in waste-receiving waters" needs a special mention. The author draws the attention of the readers on how these two key elements in eutrophication will become growth-limiting factors in waste-receiving waters and stresses the need for a proper assessment of these elements for a successful aquaculture. The role of filter feeders in stabilizing phytoplankton communities should be looked into with greater attention before attempting to make use of the increased nutrients and high temperature to achieve higher yield in aquaculture, says R. J. Conover. Otherwise "unwanted species will be a necessary by-product, if gross instabilities are to be avoided," cautions the author.

Torkild Carstens's paper on "Salient features of coastal waters on aquaculture" in the second chapter "Large scale culturing systems" may appear to be somewhat out of place in the context of aquaculture, but in his impressively prepared paper he stresses the need for a careful evaluation of some of the essential features for the success of aquaculture with reference to pollution. He rightly points out that "it would be ideal to select sheltered inshore localities with their complex flushing regime for mariculture after evaluating the environmental stresses".

The third chapter in the book appears to be the most important one. All the 4 papers of this chapter throw much light on the different aspects of "Food chains and their use" with reference to pollution. Through "Integrated systems of mollusks culture", the authors draw attention of the readers to the various advantages and disadvantages of site selection in the vicinity of pollutant discharge systems for shell culture and also to the legal and hygienic aspects
of culture in such localities. While suggesting methods to overcome these hazards the authors advise the culturists to monitor the environment by checking the thermal heat and excess nutrients to optimal level for enhancing the yield. The quality of food available and its conversion efficiency play a vital role in determining the quality of meat of the cultured organisms. Stressing this point Walne says that a thorough knowledge of the effects of physical factors on the conversion efficiency for a desired species is very essential, otherwise "the increase in temperature will hasten growth but it may divert energy from somatic growth to gonadal growth". A novel idea has been presented by Raymont which should be given a serious thought. He asks, when an accidental colonisation of the warm water animals, which are harmful, occurs in cold temperate waters where cooling water is being discharged, why not the same be practised for commercial species also? In his well written paper the author analyses the possibilities for introducing "foreign warm water species" in cold waters receiving warm water discharges. A very important aspect which has not been properly emphasised by any of the previous authors has been dealt with by Korringa. In his paper on "Safeguards in the exploitation of domestic effluents in aquaculture", he makes the reader aware of the deleterious effects of indiscriminate use of pollutants for aquaculture and also assesses the techniques employed by mariculturists of different countries to overcome these hazards.

In the fourth chapter, Oppenheimer and Brogden describe "some of the major ecological features of a temperate/tropical estuarine environment suitable for northern warm water effluent mariculture". They indicate the significance of such a study in initiating mariculture in a convincing fashion.

After going through the entire book one wonders whether all types of pollutants can really be utilized and if so whether such an attempt will really be profitable. Of course in some cases one gets convinced of the benefits of pollutants while in others some more details seem to be necessary. Nevertheless, the attempt to produce a book on this much-needed subject deserves high appreciation. Certainly, the contents of this book make the readers fully aware of the problems of aquaculture in polluted environment. We hope that the NATO Science Committee will extend its support to some projects related to aquaculture to provide an answer to many questions which have been raised in the book. The book is very useful for those who are involved in aquaculture. It is a valuable addition to all scientific libraries.

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