

Thailand trawl fisheries, to an annual production of nearly half-a-million tons, it is evident from this review (and other work) that in the usual tropical situations – off river mouths, in gulfs and on other muddy shelf areas – high catches can be expected throughout the region. Recent FAO estimates suggest a potential in excess of 2.5 million tons in this area, compared with present production of less than one million. Management of tropical multi-species trawl fisheries is extremely difficult, and yet MENASVETA's data indicate how vital this has already become in the Gulf of Thailand. Practical and political problems unknown to high latitude fisheries administrators must be, but often are not, solved if such fisheries are to be placed on a sustained-yield basis.

We are promised a second and perhaps a third CSK Symposium: let us hope for rather more critical editing (difficult, admittedly, in this medium) if these are to be published, and for more skill from the publishers: the present volume is large, not very elegant, and weakly bound.

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R. LETACONNOUX and A. E. J. WENT (Eds.) "*Symposium sur les Ressources Vivantes du Plateau Continental Atlantique Africain du Detroit de Gibraltar au Cap Vert*".

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Upwelling regions have been singled out for especial attention in oceanographical studies, but although it is the closest geographically to Europe, the North-West African region has attracted much less attention than the other major upwelling regions. Very few hard facts have been readily available and one has generally been forced to draw analogies instead of using observed data, in discussions of the area.

It is a pleasure, therefore, to open this volume of papers and find presented together for the first time an unexpected amount of information on many aspects of the oceanography of this fertile stretch of ocean.

Interest in the seas off north-west Africa dates well back into history. The early Portuguese navigators, limited to coastal navigation, met repeated frustration in their efforts to sail southward by the great reefs and strong currents off Cape Bojador. However the great oceanographical expeditions of the 19th Century set their sights farther afield and barely touched upon this part of the African coast, while the growing activities of fishery scientists had perforce to be concentrated on waters nearer home and in the areas where the major fish stocks lay.

Now, however, this volume displays the rapid growth of interest in the north-west African area, the sudden realisation that here on the doorstep of Europe is an area of great fertility, by-passed for so long, but clearly worthy of close study.

The papers are grouped in seven chapters, according to the sections of the Symposium at which they were presented. It is only to be regretted, as is so often the case, that it has taken three years for these papers to appear in the press although a resumé and the reports of chairmen of the sections were published by FAO in 1969.

The first chapter deals with the general faunistic problems of the region with particular emphasis on fish and the development of fisheries in the area. The notable parts played by the south-west European investigators is illustrated by their major contribution to the literature.

The second chapter presents papers on physical oceanography paying special attention to the upwelling and the resultant effect on the nutrient chemistry of the upper layers. A number of comparatively recent observations emphasize the essential similarity of circulation with that in other upwelling regions, but clearly there is a need for many more observations and in particular for meteorological observations from coastal stations, for only with these can one hope to follow the cause and effect relationships between the circulation and the coastal wind system. Furthermore, observations since the Symposium, both off north-west Africa and in other upwelling areas are making scientists revise substantially the present concepts of the time scale of upwelling, and this area clearly offers potential for future studies of a more detailed nature, both in time and space.

The third chapter comprises only three papers on the plankton, but one of these, a comprehensive review by Mme. FURNESTIN, includes a very useful bibliography. The volume of literature is, however, little indication of the amount of knowledge concerning the plankton and clearly a great deal of work needs yet to be done.

The fourth chapter will appeal to both the fisherman and the gastronome for it deals with the Crustacea and Molluscs of the continental shelf. Of particular interest are the papers on squid, not only because they present interesting observations on their biology, but also because they show a potential of major commercial interest.

As one might perhaps expect, fish form the topic of the fifth and largest chapter of the volume and 15 papers covering topics from the distribution of eggs and larvae to exploratory fishing and fishing methods are included. The importance of the Moroccan sardine fishery, landings from which amounted to a quarter of a million metric tons in 1966, is noteworthy.

Chapter 6 is more directly concerned with the existing fisheries and here a word of caution is evident. With current landings from the north-west African area of about 1 million tons, a significant contribution is being made to the world catch. Nevertheless, the growing interest of adjacent countries, pressures from the traditional fishermen from south-west Europe and growing activity of the long range fleets from eastern Europe and Japan causes concern that uncontrolled development may well endanger the future.

Chapter 7 concludes the volume with an extensive bibliography which should be of great use to all who are interested in the region.

The production of the volume maintains the high standard of the *Rapports et Procès-verbaux*. A few comparatively insignificant typographical errors do not detract and the editors must be congratulated for integrating the diversity of subject matter into a readable presentation. It will be a most useful reference for the planners of the Cooperative Investigations in the north-eastern Central Atlantic.

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