

gested that South Atlantic herring and Yellow Sea demersal fish are underexploited; the first do not exist and the second have been reduced to very low levels. There is a sense in which the word "over-exploitation" is hard to define since the term embraces growth over-fishing, recruitment over-fishing and economic over-fishing. The authors do not distinguish between these, nor would I expect them to, but I am unable to perceive the criteria which they have used to make their misleading list.

The authors write: "unless some strict agreement is reached about the degree of utilization of the fishery commons, maximum utilization seems the best short range strategy" (p. 108). Either they do not know that the fisheries commissions exist or they believe that they are incompetent. But, salmon, herring, tuna and halibut are managed more or less successfully in the North Pacific, and in the North Atlantic all economically important demersal stocks are under international control. New commissions are being established by FAO for Atlantic tuna, south-east Atlantic fisheries, Indian Ocean fisheries and other stocks. It may not be the best management: the tuna have overshot their maximum sustainable yield in the eastern tropical Pacific; the stock of Pacific halibut has fully recovered since 1931 but at considerable economic expense. However, in the North Atlantic, all nations fishing there have combined to obtain the best yields and to enforce their common wishes. Because I would rather think the EHRlich's scholarly, my guess is that they believe the fisheries commissions to be incompetent.

The real purpose of this review is to say that the conservation of fisheries is perhaps the only branch of ecology in which governments have been persuaded to cooperate. The steps taken by fisheries biologists since 1902 (when the International Council for the Exploration of the Sea was founded) must be followed by advocates like the EHRlichS. The actions which they demand both implicitly and explicitly are in the main those which only governments can take. Therefore fisheries biology and the apparatus through which its ideas are put into effect should occupy a central part in any tract on ecology.

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- R. MALCOLM LOVE: "*The Chemical Biology of Fishes*". Academic Press, London, 1970, 547 pp., 140 s.

This book is a monumental synthesis of much that has been written on the factors which influence the composition of fish tissue and the chemical differences which distinguish one fish from another. Certainly the author, R. M.

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LOVE, is to be commended for overcoming what must have been a most difficult task.

The book is divided into three parts. Part I contains the text of the book. Part II is titled "Index of Chemical Substances" and provides a list of well over two hundred chemical substances in different tissues of a great many species. Many of the substances are introduced by a sentence or two on their role in the tissues in which they have been found. Actual values are not included because the enormity of the task would put the book, in the author's words, "hopelessly out of date before publication". In Part III over one thousand species are listed alphabetically and for each a reference list of chemical studies. While the reference list is not complete, at least for some species it certainly will provide most researchers with a wealth of information. The final one hundred pages of Part III of the book are devoted to an extensive bibliography of over fourteen hundred references.

Part I is divided into five chapters. In the first chapter, the reader is shown how anatomical heterogeneity and stress can in some cases lead to almost worthless results. The author is to be applauded for this chapter for only through constant reminders of this sort will adequate standardization of techniques be possible. Chapter II is titled "The Life Cycle". In this chapter the chemical composition of fish is examined from the early embryonic stages through maturity and finally death. The third chapter deals with chemical differences and similarities among and within species. The author includes in the chapter an interesting and constructive section on the diversity of chemical substances as related to phylogeny. Other sections in this chapter describe differences between fresh and saltwater species, alterations in chemical composition due to intrinsic activity of the species and finally chemical changes within the species themselves. Chapter four describes the influence of a number of important environmental factors, season, motion of the sea, oxygen, depth, illumination, salinity and temperature, as well as diet on body composition. In the final chapter, chemical alterations associated with depletion are discussed.

In the reviewers opinion this book is an excellent compendium of chemical studies on fishes and should find wide acceptance wherever there is an interest in the chemical biology of fishes.

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THOMAS H. LINEAWEAVER III and RICHARD H. BACKUS: "*The Natural History of Sharks*". Andre Deutsch Ltd., London, 1970, 256 pp., 55s.

Except for a few species, sharks are not commercially important and in consequence, the natural histories of these few species only are known in detail. Of the remainder, and as the authors record there are about 300 species of sharks, our knowledge is far from comprehensive. Thus any book on sharks tends to be a miscellany of information. Certainly these authors seem to have

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