OTOLITHS OF COMMON AUSTRALIAN TEMPERATE FISH: A PHOTOGRAPHIC GUIDE

Furlani, D., Gales, R. & Pemberton, D. 2007. Collingwood, Australia: CSIRO Publishing. 216 pp. Hard cover. ISBN 978-0-643-09255-6. AU$140.

Otoliths of Common Australian Temperate Fish is targeted at researchers seeking to identify fish eaten by marine predators, in a bid to understand, quantify and model predator–prey interactions that occur far from land, often at great depths or at night. The once-shimmering prey lose their glamour when taken partly digested from the stomachs of fish or rotting whales, the feces of seals or the regurgitates of seabirds. In the laboratory, hardy researchers pour over defrosted samples in their quest for otoliths—"white gold" nuggets amid the obnoxious sludge. Cleaned and dried, otoliths in varying states of erosion must be identified, and it is during this tiresome stage that the target audience of this book begins to appreciate the efforts of Diane Furlani and her co-authors.

The otoliths used in this book were taken from fish in southeastern Australia, but the broad similarities in the fish assemblages ensure that this guide will also be a useful reference for researchers in New Zealand. The guide illustrates and describes the otoliths of 141 fish species that may be taken by predators in this region. Regressions of otolith size versus fish size are provided for about 70% of the species, which facilitates estimation of the size of individual prey. The guide also provides brief supplementary details on each species' distribution and ecology, which serves mainly to highlight our lack of understanding of the trophic position of most fish in southern Australia. This otolith guidebook more than holds its own alongside other similar guides developed for other regions of the world (e.g. Southern Ocean: Williams & McEldowney 1990, Reid 1996; South Africa: Smale *et al.* 1995).

The otoliths of many juvenile fish differ from those of mature individuals, and in many cases, these ontogenetic differences are more profound than are the differences between some closely-related fish species. Furlani and co-authors incorporated ontogenetic differences for 16 of the fish species in this guide, which is a useful addition.

Guides such as these could better serve their target audience by incorporating pictures of otoliths in increasing states of erosion. Otoliths recovered from the digestive systems of predators are rarely pristine, but most otoliths show species-specific patterns of degradation, which can be replicated in the laboratory (e.g. Caines 2005).

The authors indicate that the otoliths were removed from fish, soaked in distilled water and cleaned with a soft brush. It is a shame that greater care was not taken during these stages, because several of the otoliths pictured are broken and a few appear to have relatively short rostrums, which may be a result of damage or ontogeny. In two of these cases, *Emmelichthys nitidus* and *Scomber australasicus,* descriptions of the otoliths would have been improved if the extent of damage was noted in the captions. These prey are common in southern Australia, and a clear understanding of otolith morphology is required to distinguish *E. nitidus* from other common prey.

Given its narrow geographic focus, *Otoliths of Common Australian Temperate Fish* will not find its place on the shelves of all seabird researchers, seabird managers or fisheries researchers, but it will be a tightly-held, dog-eared addition to the bookshelves of researchers who are investigating the diets of marine predators in southern Australia and New Zealand.

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