This article was downloaded by: [University of Bath]

On: 13 February 2014, At: 17:35

Publisher: Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK

Journal of Natural History

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tnah20>

The Brain and Lives of Cephalopods. By Marion Nixon and John Z. Young, 2003 (Oxford: Oxford University Press) [xiv + 392p with numerous bw photographs, photomicrographs and line drawings]. Price £175 (hbk). ISBN 0-19-852761-6.

Paul F. Brain

Published online: 21 Feb 2007.

To cite this article: Paul F. Brain (2005) The Brain and Lives of Cephalopods. By Marion Nixon and John Z. Young, 2003 (Oxford: Oxford University Press) [xiv + 392p with numerous bw photographs, photomicrographs and line drawings]. Price £175 (hbk). ISBN 0-19-852761-6., Journal of Natural History, 39:11, 863-863, DOI: [10.1080/00222930400002606](http://dx.doi.org/10.1080/00222930400002606)

To link to this article: <http://dx.doi.org/10.1080/00222930400002606>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms &

Book review

The Brain and Lives of Cephalopods. By Marion Nixon and John Z. Young, 2003 (Oxford: Oxford University Press) [xiv + 392 p with numerous bw photographs, photomicrographs and line drawings]. Price £175 (hbk). ISBN 0-19-852761-6.

This volume by Marion Nixon and the late J. Z. Young (author of the textbooks of my youth) claims to combine available information about the distribution, ecology, behaviour, and life histories of living cephalopods with “descriptions of the anatomy and functional organisation of the brains and sense organs at the level of the light microscope (largely based on Young’s extensive collection of silver stained samples accumulated over a long working life) in an attempt to give the reader some idea of the lives of many members of forty-four of the families [the book actually has descriptions for 57 of the 139 genera] of the class.” This is a laudable and original aim that might have been expected to link brain anatomy and behaviour in new ways. It is an approach that is possibly only feasible in this fascinating group of invertebrates.

The Introductory Chapter provides an overview of the characteristics of the Class Cephalopoda including their use of marine environments, distribution, life histories and reproduction, chromatophores, body patterns and photophores, central nervous system and receptors, behaviour and learning, as well as identification, orientation, terminology, and measurements of cephalopods and their brains. The separately referenced Table 1.1 provides a very detailed classification of Recent cephalopods that includes the etymology or derivation of each of their names. Chapter 2 (“Central Nervous System and Sensory Systems: An Outline”) deals with the very distinctive brains of these molluscs. It includes sections on particular neural regions such as the Supraoesophageal mass (dealing with a number of sensory inputs in a range of species) and the Vertical Lobe System (implicated in visual and tactile memory in *Octopus vulgaris*). This chapter also has sections on eyes and extraocular photoreceptors as well as statocysts that are so important to these animals, so often actively swimming in their three-dimensional world. The remaining 33 chapters are each devoted to material relating to an extant group, e.g. Nautilidae, Spirulidae, Sepiidae, Sepiolidae, etc. Obviously, some of the orders and families have many more members than others, resulting in the information being limited to a single species in some cases and in others being based on animals that are not at all well documented.

The volume is clearly a very valuable (albeit very expensive!) repository of information on the brains of cephalopods. Many of the photomicrographs and the drawings are both beautiful and intriguing. I couldn’t help but feel, however, that many of the connections made between these anatomical structures and their presumed functions (based, as they are, on distinctly fragmentary evidence) were generally tentative and might well have to be much modified as new information becomes available. I am not sure that the intentions of the authors are actually fulfilled in this volume.

Paul F. Brain