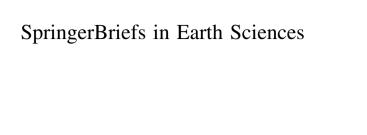
Rituparna Bose

# Devonian Paleoenvironments of Ohio





For further volumes: http://www.springer.com/series/8897

# Rituparna Bose

# Devonian Paleoenvironments of Ohio

With Foreword by Prof. David Harper (Chairman of the International Subcommission on Ordovician Stratigraphy and President of International Palaeontological Association)



Rituparna Bose City University of New York New York USA

ISSN 2191-5369 ISSN 2191-5377 (electronic)
ISBN 978-3-642-34853-2 ISBN 978-3-642-34854-9 (eBook)
DOI 10.1007/978-3-642-34854-9
Springer Heidelberg New York Dordrecht London

Library of Congress Control Number: 2012953465

### © The Author(s) 2013

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

## Parts of this monograph has been published in journal PALAIOS:

Bose, R., Schneider, C., Polly, P. D., and Yacobucci, M., 2010. Ecological interactions between Rhipidomella (Orthides, Brachiopoda) and its endoskeletobionts and predators from the Middle Devonian Dundee Formation of Ohio, United states. Palaios 25:196–208.

This book is dedicated to Emeritus Prof.
Richard D. Hoare (Department of Geology,
Bowling Green State University, Ohio) who
was awarded the William W. Mather Medal
in 2002 by the Ohio Department of Natural
Resources for his significant contributions in
Ohio geology. I also want to dedicate this to
my former supervisor, Prof. Margaret M.
Yacobucci (Department of Geology, Bowling
Green State University, Ohio) who was a
constant source of inspiration in my graduate
career

# **Foreword**

It is now over 50 years since publication of Derek Ager's classic paper on the epifauna of a Devonian spiriferid vet there have been relatively few comprehensive studies on the biological and environmental aspects of these critical ecological indicators. Rituparna Bose has targeted in some detail the rich brachiopod fauna of the carbonate rocks of the Middle Devonian Dundee Formation of Ohio including taxa of the key orders of Strophomenida, Orthida, Rhynchonellida, Atrypida and Spiriferida. Some 300 specimens have been carefully examined and many, beautifully illustrated. Remarkably, epibiont activity has been almost exclusively restricted to the punctuate orthide Rhipidomella in contrast to the distribution of such activity across a wide range of brachiopod taxa in the overlying siliciclastic facies of the Silica Formation. The taphonomy of the brachiopod shells is examined and a wide range of structures ranging from boreholes to encrustations are identified, described, and illustrated. Clearly, there are strong environmental and taphonomic controls on the scale and variation of epifaunal development in such benthic communities and Ager's studies too alerted us to the functional significance of the mode and position of borings and encrusters. This work is a rich source of data, significantly expanding our understanding of the ecological interactions between commensal taxa and their brachiopod hosts and substrates. The data and analyses presented here provide much encouragement for further research on this key area of brachiopod paleoecology.

David A. T. Harper
Professor of Palaeontology
Department of Earth Sciences
Durham University
Chairman, International Subcommission on Ordovician Stratigraphy
President of International Palaeontological Association