

Preface

This Systematics Association Special Volume was prompted by the organisation and staging of a conference held at Royal Holloway, University of London, in September 2009: Southeast Asian Gateway Evolution (SAGE), 2009. The meeting was organised by geologists at Royal Holloway, University of London, and biologists (palaeontologists and neontologists) at the Natural History Museum, London, who shared an interest in Southeast Asia. The region is megadiverse biologically, and of unparalleled tectonic activity and complexity. The region is the focus of the highest levels of marine biodiversity globally, and in terms of terrestrial biota it is an almost continuous patchwork of 5 of the 35 or so global hotspots. The geological history of the region has undoubtedly had substantial impact on the biodiversity, and the distribution and evolutionary relationships of organisms in space and time has informed reconstructions of the geological history.

The meeting attracted 150 scientists, who together presented 85 talks and 50 posters, and it was a great success. Scientists today spend much of their time working in fairly narrowly focused topics or, even if conducting relatively broad studies, working within narrow paradigms and ways of communicating. The organisers hoped that delegates would benefit from scientific exchange beyond their areas of expertise, but scope for detailed interaction between biologists and geologists was patchy. The majority of the biologists attending were working in biogeography, systematics and evolution; the majority of the geologists in structural geology. The lexicons of each tribe were largely non-overlapping. The interest in geology for most of the biologists was restricted to a desire to see accurate reconstructions of the disposition of land masses through time in order to direct and/or test hypotheses of biotic evolution, and if the geologists had a professional interest in the biology, then this was largely in key fossils or historical biogeographic data that could similarly assist palaeogeographical reconstructions. Many delegates still benefited from the mixed attendance – if only to gain some insights into the language, working methods and outlook of relevant but distant disciplines. There were also several more obviously integrative or cross-disciplinary presentations.

This volume is not a conference proceedings in the usual sense, but instead a collection of chapters inspired by topics covered by and themes running through many of the more biological aspects of the meeting. Some of the authors of contributions included here were unable to attend the SAGE 2009 meeting, but were recruited because the editors were looking to assemble a collection of works that covered a range of topics that seemed to us to be particularly relevant. The contributions vary from substantial syntheses or reviews, to more tightly focused case studies that illustrate particular advances and/or approaches that will have a broader relevance. We draw attention to a parallel volume on the more geological aspects, published in 2011 as Special Publication 355 of the Geological Society of London and edited by Robert Hall, Mike Cottam and Moyra Wilson: *The SE Asian Gateway: History and Tectonics of Australia-Asia Collision*. Readers might also note that a SAGE 2013 meeting is planned for Berlin, Germany.

We are very grateful to our colleagues in the SE Asia Research Group at Royal Holloway for undertaking the majority of the SAGE 2009 meeting organisation, especially Mike Cottam, Robert Hall and Simon Suggate. Funding for the SAGE meeting was provided by Royal Holloway's Southeast Asia Research Group, The Geological Society of London, The Systematics Association, The Linnean Society and the Malacological Society of London. Help and advice in producing the volume was provided by several people, including Dominic Lewis, Zewdi Tsegai, Megan Waddington (all CUP) and Alan Warren (former Editor in Chief, the Systematics Association). The editors are extremely grateful to the expert reviewers of each chapter, those anonymous as well as Alexandre Antonelli, William Baker, Celine Becquet, Elizabeth Bennett, Ben Cook, Gathorne Cranbrook, Michael Crisp, Martin Haase, Bert Hoeksema, Hugh Kirkman, Robert Morley, Arne Nolte, Timothy Page, Toby Pennington, Dinarzade Raheem, David Reid, Isabel Sanmartín, Menno Schilthuizen, Matt Struebig, Richard Thomas, Harold Voris, Peter van Welzen, Clive Wilkinson and Henk Wösten. We thank Burt Jones and Maurine Sherlock for use of the cover image and Elena Perez for producing the index. Finally, we thank all 49 contributing authors to the book, several of whom also peer-reviewed other chapters. We encourage all readers to support the activities of the Systematics Association (www.systass.org).

Please note that the contributors have made abstracts (in English and in Bahasa Indonesia) of chapters freely available on the internet at:

www.cambridge.org/9781107001305

Translations of abstracts were produced by Evy Arida, Museum Zoologicum Bogoriense, Java, Indonesia, with help from Fauzie Hasibuan, Geological Agency of Indonesia, Bandung, Java, Indonesia.

Cover image

The cover image encapsulates some of the diverse topics of our original meeting and this volume. The photograph was taken off Wagmab Island, Southeast Misool, Raja Ampat, Papua, Indonesia. The bommie of the fringing reef flat in the foreground comprises several corals, including species of *Pocillopora*, *Acropora*, *Favia*, *Goniastrea* and massive and finger forms of *Porites*. Other animals here include the damselfish *Dascyllus melanurus* and *Chrysiptera cyanea*, the starfish *Linckia laevigata* and giant clam *Hippopus hippopus*. In the background is typical coastal limestone vegetation of northern New Guinea, likely including species of common genera such as *Diospyros*, *Syzygium* and *Ficus*. The exposed rocks are Eocene–Oligocene limestones of the Zaag Limestone Formation, part of the largely undeformed Australian passive margin in the Bird's Head of western New Guinea that borders the Banda region of eastern Indonesia.