VOLUME 207

SCIENTIFIC RESULTS

DEMERARIA RISE: EQUATORIAL CRETACEOUS AND PALEogene PALEOCEANOGRAPHIC TRANSECT, WESTERN ATLANTIC SITES 1257–1261

PROCEEDINGS OF THE OCEAN DRILLING PROGRAM

Prepared by the OCEAN DRILLING PROGRAM, TEXAS A&M UNIVERSITY, in cooperation with the NATIONAL SCIENCE FOUNDATION and JOINT OCEANOGRAPHIC INSTITUTIONS, INC.
PROCEEDINGS
OF THE
OCEAN DRILLING PROGRAM

Volume 207
Scientific Results
Demerara Rise: Equatorial Cretaceous and Paleogene
Paleoceanographic Transect, Western Atlantic

Covering Leg 207 of the cruises of the Drilling Vessel *JOIDES Resolution*
Bridgetown, Barbados, to Rio de Janeiro, Brazil
Sites 1257–1261
11 January–6 March 2003

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Effective publication dates of ODP Proceedings

According to the International Code of Zoological Nomenclature, the date of publication of a work and of a contained name or statement affecting nomenclature is the date on which the publication was mailed to subscribers, placed on sale, or when the whole edition is distributed free of charge, mailed to institutions and individuals to whom free copies are distributed. The mailing date, not the printing date, is the correct one.

The printing date of this volume: June 2007

The mailing dates of recent Proceedings of the Ocean Drilling Program:
- Volume 208 (Initial Reports): May 2004
- Volume 209 (Initial Reports): June 2004
- Volume 210 (Initial Reports): October 2004
- Volume 193 (Scientific Results): March 2007
- Volume 202 (Scientific Results): May 2007
- Volume 208 (Scientific Results): May 2007

Copies of this publication may be obtained from Publications Distribution Center, Integrated Ocean Drilling Program, Texas A&M University, 1000 Discovery Drive, College Station TX 77845-9547, USA. See the ODP publication list at www-odp.tamu.edu/publications or contact IODP for prices and ordering information. Orders for copies require advance payment.

ISSN
Book: 0884-5891; CD-ROM: 1096-2514; World Wide Web: 1096-7451
Library of Congress 87-642-462
Publisher’s Notes

This volume also appears on the World Wide Web. Any scientific corrections, revisions, or additions will be noted in the chapter (see “Chapter Notes”) at www-odp.tamu.edu/publications.

This publication was prepared by the Integrated Ocean Drilling Program, Texas A&M University, as an account of work performed under the international Ocean Drilling Program, which is managed by Joint Oceanographic Institutions, Inc., under contract with the National Science Foundation. Funding for the program was provided by the following agencies at the time of this cruise:

- Australia/Canada/Chinese Taipei/Korea Consortium for Ocean Drilling, Department of Primary Industries and Energy (Australia), Natural Resources Canada, National Taiwan University in Taipei, and Korean Institute for Geology, Mining and Minerals
- Deutsche Forschungsgemeinschaft (Federal Republic of Germany)
- European Science Foundation Consortium for Ocean Drilling (Belgium, Denmark, Finland, Iceland, Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland)
- Institut National des Sciences de l’Univers–Centre National de la Recherche Scientifique (INSU-CNRS) (France)
- Marine High-Technology Bureau of the State Science and Technology Commission of the People’s Republic of China
- National Science Foundation (United States)
- Natural Environment Research Council (United Kingdom)
- University of Tokyo, Ocean Research Institute (Japan)

Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the National Science Foundation, the participating agencies, Joint Oceanographic Institutions, Inc., Texas A&M University, or Texas A&M Research Foundation.

Current policy requires that all figures published in Scientific Results volumes of the Proceedings of the Ocean Drilling Program be provided by the authors.

Abbreviations for names of organizations and publications in ODP reference lists follow the style given in Chemical Abstracts Service Source Index (published by American Chemical Society).

The map at the front of this volume was produced using Generic Mapping Tools (GMT) of Paul Wessel and Walter H.R. Smith (gmt.soest.hawaii.edu). A site map showing the drilling locations for this leg and maps showing the drilling locations of all Ocean Drilling Program (ODP) and Deep Sea Drilling Project (DSDP) drilling sites are available on the volume CD-ROM in PDF format.

Cover photograph (interval 207-1258B-53R-1, 8–28 cm) shows a Cretaceous black shale with concentrations of preserved fish debris and phosphoritic nodules (coproliths). The photograph was taken by ODP Photographer Cindi Prince.
FOREWORD

BY JOINT OCEANOGRAPHIC INSTITUTIONS, INC.

This volume presents scientific and engineering results from the Ocean Drilling Program (ODP). These results address the scientific and technical goals of the program, which are focused on the study of the dynamics of Earth’s interior and environment, the evolution of oceanic crust, the fluctuations of climate, and the study of the Earth’s deep biosphere.

Although ODP ended operations in 2003, science results from ODP’s expeditions on the JOIDES Resolution continue to emerge. The results represent the contributions of scientists and research institutions from 22 ODP member countries. International oversight and coordination of the program was provided by the ODP Council, which was made up of representatives from the member countries. Scientific and management guidance was provided by representatives from the Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES).

Joint Oceanographic Institutions, Inc. (JOI), a nonprofit consortium of 29 U.S. oceanographic institutions, serves as the National Science Foundation’s prime contractor for ODP. JOI implemented scientific objectives, plans, and recommendations of the JOIDES committees through subcontracts to Texas A&M University (TAMU) for science operations and to Lamont-Doherty Earth Observatory (LDEO) of Columbia University for geochemical and geophysical well-logging services.

JOI, TAMU, and LDEO worked together successfully for many years to manage the Ocean Drilling Program. We look forward to many exciting discoveries and continued international collaboration on the Integrated Ocean Drilling Program as we further our scientific mission.

Steven R. Bohlen
President of the Joint Oceanographic Institutions and Executive Director of the Ocean Drilling Programs
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PREFACE

THE VOYAGES OF DISCOVERY

The Scientific Results volumes of the Proceedings of the Ocean Drilling Program are about Earth and her oceans. These volumes contribute contents to a better understanding of the history of our planet through time. This exploration of Earth’s past is based on scientific analyses of layers of strata sampled by the JOIDES Resolution at key locations throughout the global ocean. These volumes are a tribute to the scientific exploration carried out by the men and women who contributed to these voyages of discovery. Like the pioneering exploration and research of Captain Cook aboard the first Resolution, these volumes are a credit to the human spirit, which sees no boundaries.

The papers in this volume are published in a new online format that will be archived on CD-ROM. The Proceedings contents are available to students, scientists, and the public throughout the world. Volumes, once housed in the libraries of the member nations of the Ocean Drilling Program (ODP), are now published on the Internet for a worldwide audience and are also available in CD-ROM format. This electronic publication enables future investigators to gain easier access to the results of ocean drilling research. I acknowledge and thank the authors for their contributions and willingness to participate in this new venture in our successful transition to electronic publications.

Each Scientific Results volume has an Editorial Review Board that is responsible for obtaining peer reviews of papers submitted to the volume. This board usually is made up of the two co-chief scientists for the cruise, the ODP staff scientist for the cruise, and one external specialist who is familiar with the geology of the investigated area. ODP staff coordinate the peer-review process and also edit and produce each paper.

Each Scientific Results volume contains one leg synthesis paper and other peer-reviewed papers that present the results of extensive research in various aspects of scientific ocean drilling related to each leg. Each paper submitted to a Scientific Results volume undergoes rigorous peer review by at least two specialists in the author’s research field. Volumes may also contain short reports of useful data. These Data Reports do not include interpretation of results and are peer-reviewed by at least one specialist. We seek to maintain a peer-review system comparable to those of the most highly regarded journals in the geological sciences.

To acknowledge the contributions made by this volume’s Editorial Review Board, the Board members are designated Editors of the volume. Reviewers of manuscripts for this volume, whose efforts are so essential to the success of the publication, are listed without attribution to any particular manuscript.

On behalf of ODP and now the Integrated Ocean Drilling Program, the successor to ODP, I extend sincere appreciation to the members of the Editorial Review Board and to the reviewers for generously contributing their time and effort. This process ensures that only papers of high scientific quality are published in the Scientific Results volumes.

Paul J. Fox
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*At time of completion of ODP cruises in September 2003. See Publisher’s Notes, p. 4, for list of funding agencies at time of cruise.
Federal Republic of Germany, Bundesanstalt für Geowissenschaften und Rohstoffe
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3. Campanian through Eocene Magnetostratigraphy of Sites 1257–1261, ODP Leg 207, Demerara Rise (Western Equatorial Atlantic)
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doi:10.2973/odp.proc.sr.207.102.2006

4. Data Report: Silicoflagellates Recovered from Ocean Drilling Program Leg 207 Sites 1257 and 1258
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doi:10.2973/odp.proc.sr.207.111.2007

5. Data Report: Survey of Diatoms in Ocean Drilling Program Leg 207 Sites 1257 and 1258, Demerara Rise, Western Atlantic
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doi:10.2973/odp.proc.sr.207.115.2007
Karen L. Bice and Richard D. Norris
doi:10.2973/odp.proc.sr.207.104.2005

7. Data Report: Stable Isotopic Ratios in Bulk Carbonate from Upper Campanian and Maastrichtian Samples (Demerara Rise, Western Tropical North Atlantic)
Kenneth G. MacLeod
doi:10.2973/odp.proc.sr.207.110.2006

8. Inorganic Geochemical Characterization of Lithologic Units Recovered during ODP Leg 207 (Demerara Rise)
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Michael E. Böttcher, Almut Hetzel, Hans-Jürgen Brumsack, and Andrea Schipper
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Philip A. Meyers and Stefano M. Bernasconi
doi:10.2973/odp.proc.sr.207.106.2006

MICROBIOLOGY

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   Matt O’Regan and Kate Moran
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A site map showing the drilling locations for this leg and maps showing the drilling locations of all Ocean Drilling Program (ODP) and Deep Sea Drilling Project (DSDP) drilling sites are available in PDF format.

ODP Leg 207 Site Map
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The index covers both the Initial Reports and Scientific Results portions of Volume 207 of the Proceedings of the Ocean Drilling Program. The index contains a subject and taxonomic index.

Index to Leg 207

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