

Paleobiology

(ISSN 0094-8373)

Volume 28

Number 3

Summer, 2002

CONTENTS

- Homage to Steve Gould* *Niles Eldredge* 301
- Conceptual Index Fossils: Number 3*
- A Renaissance victory for the dual Alessandro *Stephen Jay Gould* 304
- Articles*
- Testing for bias in the evolution of coloniality: a demonstration in
cyclostome bryozoans *Daniel W. McShea and Edward P. Venit* 308
- Inferring predation intensity in the marine fossil record
Lindsey R. Leighton 328
- Quantifying paleogeography using biogeography: a test case for the
Ordovician and Silurian of Avalonia based on brachiopods and
trilobites *David C. Lees, Richard A. Fortey, and L. Robin M. Cocks* 343
- Morphometric analysis of ontogeny and allometry of the Middle
Ordovician trilobite *Triarthrus becki*
Keonho Kim, H. David Sheets, Robert A. Haney, and Charles E. Mitchell 364
- New evidence for the lack of C₄ grassland expansions during the
early Pliocene at Langebaanweg, South Africa
Tamara A. Franz-Odenaal, Julia A. Lee-Thorp, and Anusuya Chinsamy 378
- Paleoecology of Dominican amber preservation: spider (Araneae)
inclusions demonstrate a bias for active, trunk-dwelling faunas
David Penney 389
- Estimation of low-latitude paleoclimates using fossil angiosperm
leaves: examples from the Miocene Tugen Hills, Kenya
Bonnie Fine Jacobs 399

A quarterly journal of The Paleontological Society
© 2002 The Paleontological Society. All rights reserved.

Mailing Date: September 11, 2002

CODEN PALBBM 28(3) 301-422 (2002)

Courier manuscripts and advertising to:

John M. Pandolfi and William A. DiMichele
PALEOBIOLOGY
Department of Paleobiology, NHB121
10th St. and Constitution Ave., NW
Smithsonian Institution
Washington, DC 20560

Electronic submission (PDF format) is requested: paleobiology.journal@nmnh.si.edu

Address all requests for **Permissions** to the Editorial Office.

You can view and download *Paleobiology* from the world wide web in four places. Volumes 1–22 are at <http://www.jstor.org>. (PDF only; requires library subscription to ecology journals within JSTOR.) Current issues back to volume 26(1) are at <http://www.bioone.org/> (with a library subscription to BioOne), and at <http://www.psjournals.org>. Titles and abstracts for volumes 22–27 are free at <http://apt.allenpress.com/>.

Source code for many programs published in PALEOBIOLOGY is available at <http://geosci.uchicago.edu/paleo/csource>.

CO-EDITORS: JOHN M. PANDOLFI and WILLIAM A. DIMICHELE
Smithsonian Institution

Matters of the Record EDITOR: HALLIE J. SIMS
Smithsonian Institution

EDITORIAL ASSISTANT: ALLEGRA M. JABO

COPYEDITOR: NATASHA ATKINS

FOUNDING EDITORS: THOMAS J. M. SCHOPF and RALPH G. JOHNSON

Address **ALL** matters regarding **SUBSCRIPTIONS** to:

Paleobiology Subscriptions
P.O. Box 1897
810 East 10th St.
Lawrence, KS 66044-8897

Although published by The Paleontological Society, a subscription to PALEOBIOLOGY is in addition to the society dues. There are five groups of subscribers. For 2002, subscriptions are:

- (1) \$35.00 for regular subscribers.
- (2) \$33.00 for members of The Paleontological Society or the Palaeontological Association.
- (3) \$23.00 for student subscribers.
- (4) \$20.00 for student members of The Paleontological Society or the Palaeontological Association.
- (5) \$65.00 for institutions.

Back issues: \$4.00 for members, \$16.00 for nonmembers. Price includes postage and handling.



PALEOBIOLOGY (ISSN 0094-8373) is published quarterly by The Paleontological Society, 810 East 10th St., Lawrence, KS 66044, USA. Price for institutional subscriptions, \$65; individual subscriptions, \$35. Periodicals postage paid at Lawrence, KS. POSTMASTER: Send address changes to PALEOBIOLOGY, P.O. Box 1897, 810 East 10th St., Lawrence, KS 66044-8897, USA. PALEOBIOLOGY is printed offset by Allen Press, Inc., Lawrence, KS 66044.

The Paleontological Society gratefully acknowledges Patrons of *Paleobiology* for 2002.

The Patrons Fund was established to broaden the basis of financial support for *Paleobiology* and thus to encourage paleontological publication.

\$50.00 to \$100.00,
at the discretion of the Contributor

For you, or your institution, to become a Patron, send a check payable to *Paleobiology* to:

Paleobiology
Department of Paleobiology, NHB121
Smithsonian Institution
Washington, DC 20560

PALEOBIOLOGY PATRONS FOR 2002

N. W. ARCHBOLD
NAN CRYSTAL ARENS
RICHARD K. BAMBACH
DAVID J. BOTTJER
J. DAVID BUKRY
LEO W. BUSS
WILLIAM A. CLEMENS
ROBERT E. DEMAR
DOUGLAS K. DEW
SAMUEL R. EDWARDS
DOUGLAS H. ERWIN
KARL W. FLESSA
MICHAEL J. FOOTE
STEPHEN J. GOULD
CAROLE S. HICKMAN
JOHN R. HORNER
FREDERICK H. C. HOTCHKISS
AUGUST ILG
IN MEMORY OF TOM SCHOPF
PAUL A. JOHNSTON
WANN LANGSTON
DAVID LAZARUS
DAVID R. LINDBERG
JERE H. LIPPS
ERNEST L. LUNDELIUS
HARUYOSHI MAEDA
GEORGE R. MCGHEE
FRANK K. MCKINNEY
P. MIERZEJEWSKI
ARNOLD I. MILLER
WILLIAM A. OLIVER
KEVIN PADIAN
JOHN M. RENSBERGER
SHERMAN SUTER
JOHN M. TATE
ROGER D. K. THOMAS
KEITH S. THOMSON
JAMES W. VALENTINE
BEN WAGGONER