

VOLUME 37 / NUMBER 3 / 1995

Radiocarbon

An International Journal of Cosmogenic Isotope Research



Editor
AUSTIN LONG

Consulting Editor
A. J. T. JULL

Managing Editor
RENEE S. KRA

Assistant Editors
DAVID R. SEWELL
KIMBERLEY TANNER ELLIOTT

Department of Geosciences
University of Arizona
7 East Ft. Lowell Road
Tucson, Arizona 85712-1201 USA

ISSN: 0033-8222

ent
nal

RADIOCARBON

An International Journal of Cosmogenic Isotope Research

Editor: AUSTIN LONG

Consulting Editor: A. J. T. JULL

Managing Editor: RENEE S. KRA

Assistant Editors: DAVID R. SEWELL, KIMBERLEY TANNER ELLIOTT

Published by

Department of Geosciences

The University of Arizona

Published three times a year at The University of Arizona, Tucson, AZ 85712-1201 USA. © 1996 by the Department of Geosciences, The University of Arizona.

Subscription rate (1996): \$115.00 (for institutions), \$85.00 (for individuals), \$42.50 (for students with proper identification). Foreign postage is extra. A complete price list, including Proceedings of International Conferences, special publications and 1996 subscription categories, appears in the back of this issue. Back issues may be obtained by contacting *RADIOCARBON*.

All correspondence and manuscripts should be addressed to the Managing Editor, *RADIOCARBON*, Department of Geosciences, The University of Arizona, 4717 East Ft. Lowell Road, Tucson, AZ 85712-1201 USA. Tel: (520) 881-0857; Fax: (520) 881-0554; Internet: c14@packrat.arizona.edu

Offprints. The minimum offprint order for each article will be 50 copies without covers. *No offprints will be furnished free of charge unless page charges are paid (see below).* Covers are also available.

Page charges. For 1996, each institution sponsoring research reported in a technical paper or a date list will be asked to pay a charge of \$50.00 per printed page. Institutions or authors paying such charges will be entitled to 50 free offprints without covers. *No charges will be made if the author indicates that the author's institution is unable to pay, and payment of page charges for an article will, in no case, be a condition for its acceptance.*

Missing issues will be replaced without charge only if claim is made within three months (six months for India, New Zealand and Australia) after the publication date. Claims for missing issues will not be honored if non-delivery results from failure by the subscriber to notify the Journal of an address change.

Illustrations should include explanation of symbols used. Copy that cannot be reproduced cannot be accepted. Whenever possible, reduce figures for direct publication. Line drawings should be in black India ink on white drawing board, tracing cloth, or coordinate paper printed in blue and should be accompanied by clear ozalids or reduced photographs for use by the reviewers. Photographs should be positive prints. We can also print from many computer graphics file formats; please request our guide to graphics files for details. Figures (photographs and line drawings) should be numbered consecutively through each article, using Arabic numerals. Tables may be accepted as camera-ready copy.

Citations. A number of radiocarbon dates appear in publications without laboratory citation or reference to published date lists. We ask authors of research articles and date lists to include proper citation (laboratory number and date-list citation) in all publications in which radiocarbon dates appear.

List of laboratories. Our comprehensive list of laboratories is available upon request. We are expanding the list to include additional laboratories and scientific agencies with whom we have established contacts. The editors welcome information on these or other scientific organizations. We ask all laboratory directors to provide their laboratory code designation, as well as current telephone and fax numbers, and e-mail addresses. Changes in names or addresses, additions or deletions should be reported to the Managing Editor. Conventional and AMS laboratories are now arranged in alphabetical order by country and we include laboratories listed by code designation.

CONTENTS

FROM THE EDITOR

<i>Austin Long</i>	iii
--------------------------	-----

ERRATA	iv
--------------	----

ARTICLES

Improved Radiocarbon Age Estimation Using the Bootstrap <i>Amir D. Aczel</i>	845
---	-----

Comparing ^{14}C Histograms: An Approach Based on Approximate Randomization Techniques <i>Tom Dye</i>	851
---	-----

Extraction of ^{14}C from Pore Water in Unsaturated Rock Using Vacuum Distillation <i>G. R. Davidson, E. L. Hardin and R. L. Bassett</i>	861
--	-----

Recent Reservoir Ages for Danish Fjords and Marine Waters <i>Susanne Heier-Nielsen, Jan Heinemeier, H. L. Nielsen and Niels Rud</i>	875
--	-----

Radiocarbon in Tropospheric CO_2 and Organic Materials from Selected Northern Hemisphere Sites <i>Ellen R. M. Druffel and Sheila Griffin</i>	883
--	-----

On Cosmic-Ray Exposure Ages of Terrestrial Rocks: A Suggestion <i>Devendra Lal</i>	889
---	-----

Palynological and Sedimentological Evidence for a Radiocarbon Chronology of Environmental Change and Polynesian Deforestation from Lake Taumatawhana, Northland, New Zealand <i>M. B. Elliot, B. Striewski, J. R. Flenley and D. G. Sutton</i>	899
---	-----

A Radiocarbon Chronology for Prehistoric Agriculture in the Society Islands, French Polynesia <i>Dana Lepofsky</i>	917
---	-----

Locating Archaeological Horizons with ^{14}C Sediment Dating: The Case of the Lost City of Helike <i>Yannis Maniatis, Yorgos Facorellis, Steven Soter, Dora Katsonopoulou and Bernd Kromer</i>	931
--	-----

Spatial and Temporal Dependence of the ^{13}C and ^{14}C Isotopes of Wine Ethanols <i>Gérard J. Martin and Jean-Noël Thibault</i>	943
--	-----

NOTES

Note Concerning "Intercomparison of High-Precision ^{14}C Measurements at the University of Arizona and The Queen's University of Belfast Radiocarbon Laboratories" by Kalin <i>et al.</i> (1995) and the Regional Effect <i>Paul Damon</i>	955
---	-----

Further Evidence of Changing Stability of the Atmosphere <i>Sylvius Hartwig</i>	961
--	-----

A Note on Calibration Curves <i>J. van der Plicht and F. G. McCormac</i>	963
---	-----

The "Amsterdam Castle": A Case Study of Wiggle Matching and the Proper Calibration Curve <i>J. van der Plicht, E. Jansma and H. Kars</i>	965
---	-----

RADIOCARBON UPDATES	969
---------------------------	-----

LABORATORIES	971
--------------------	-----

AUTHOR INDEX	997
--------------------	-----

SUBJECT INDEX	999
---------------------	-----

ASSOCIATE EDITORS

EDOUARD BARD	<i>Aix-en-Provence, France</i>
J. WARREN BECK	<i>Tucson, Arizona, USA</i>
OWEN K. DAVIS	<i>Tucson, Arizona, USA</i>
ELLEN R. M. DRUFFEL	<i>Irvine, California, USA</i>
DOUGLAS D. HARKNESS	<i>East Kilbride, Scotland</i>
CALVIN J. HEUSSER	<i>Tuxedo, New York, USA</i>
G. E. KOCHAROV	<i>St. Petersburg, Russia</i>
STEPHEN W. LEAVITT	<i>Tucson, Arizona, USA</i>
ANN P. McNICHOL	<i>Woods Hole, Massachusetts, USA</i>
D. ERLE NELSON	<i>Burnaby, British Columbia, Canada</i>
ANDREW M. T. MOORE	<i>New Haven, Connecticut, USA</i>
PAVEL POVINEC	<i>Bratislava, Slovakia</i> <i>Monaco</i>
MICHAEL B. SCHIFFER	<i>Tucson, Arizona, USA</i>
E. MARIAN SCOTT	<i>Glasgow, Scotland</i>
JOHN S. VOGEL	<i>Livermore, California, USA</i>