

Radiocarbon

An International Journal of Cosmogenic Isotope Research

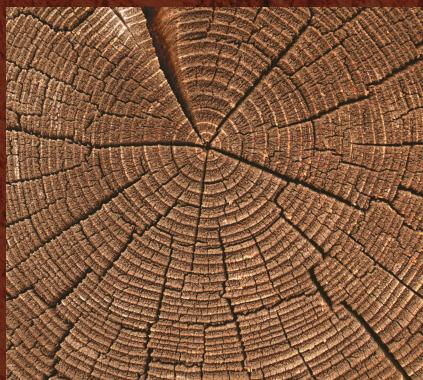
VOLUME 59 • NUMBER 6 • 2017



**8th International Symposium,
Edinburgh, 27 June - 1 July, 2016
Part 2 of 2**

**Guest Editors Gordon Cook &
Derek Hamilton**

14



Editor

A.J.T. Jull

CAMBRIDGE
UNIVERSITY PRESS

Radiocarbon

An International Journal of Cosmogenic Isotope Research

EDITOR

A. J. T. Jull · University of Arizona

MANAGING EDITOR

Kimberley Tanner Elliott · University of Arizona

ASSOCIATE EDITORS

Edouard Bard · Collège de France
Nancy Beavan · Cardiff University
Warren Beck · University of Arizona
Elisabetta Boaretto · Weizmann Institute
Christopher Bronk Ramsey · Oxford University
George S. Burr · University of Arizona
Owen K. Davis · University of Arizona
Ellen R. M. Druffel · University of California-Irvine
Pieter Grootes · Christian-Albrechts University
Irka Hajdas · ETH Zurich
Christine Hatté · Laboratoire des Sciences du Climat et l'Environnement
Gregory Hodgins · University of Arizona
Yaroslav Kuzmin · Russian Academy of Sciences

Steven W. Leavitt · University of Arizona
Ann P. McNichol · Woods Hole Oceanographic Institution
Toshio Nakamura · Nagoya University
Charlotte Pearson · University of Arizona
Pavel Povinec · Comenius University
Paula J. Reimer · Queen's University Belfast
E. Marian Scott · University of Glasgow
John R. Southon · University of California-Irvine
Jocelyn Turnbull · GNS Science
Johannes van der Plicht · Groningen University
Antoine Zazzo · Muséum national d'Histoire naturelle
Weijian Zhou · Institute of Earth Environment, Chinese Academy of Science

Radiocarbon (ISSN 0033-8222) is published quarterly by Cambridge University Press, One Liberty Plaza 20th Floor New York, NY 10006. © 2017 by the Arizona Board of Regents on behalf of the University of Arizona. All rights reserved.

Editorial Office

Communications should be addressed to the Managing Editor, *Radiocarbon*, Department of Geosciences, The University of Arizona, 4717 East Fort Lowell Road, Tucson, AZ 85712-1201 USA. Tel.: +1 (520) 621-0641; Fax: +1 (520) 621-0584; Email: kimelliott@email.arizona.edu. Contributors should consult the Instructions for Contributors, which is available on the journal's Web site: cambridge.org/rdc.

Subscriptions

Annual subscription rates for Volume 59, 2017: Institutional rate is (print and electronic) \$499 in the USA, Canada, and Mexico, £321 + VAT elsewhere. Institutional rate (electronic only) \$362 in the USA, Canada, and Mexico, £234 + VAT elsewhere. Individual rate is (print and electronic) \$163 in the USA, Canada, and Mexico, £105 + VAT elsewhere. Individual rate (electronic only) \$125 in the USA, Canada, and Mexico, £81 + VAT elsewhere. Please direct subscription inquiries and requests for back issues to Customer Services at Cambridge University Press, email: subscriptions_newyork@cambridge.org (USA, Canada, and Mexico) or journals@cambridge.org (outside of USA, Canada, and Mexico).

Advertising

To advertise in the journal email advertising@cambridge.org or telephone +1 (212) 337 5062 in the USA, Canada, or Mexico; email ad_sales@cambridge.org or telephone +44 (01223) 325898 in the rest of the world.

Abstracting and indexing

Radiocarbon is indexed and/or abstracted by the following sources: *Anthropological Index*; *Anthropological Literature*; *Art and Archaeology Technical Abstracts*; *Bibliography and Index of Geology* (GeoRef); *British Archaeological Bibliography*; *Chemical Abstracts*; *Chemistry Citation Index*; *Current Advances in Ecological and Environmental Sciences*; *Current Contents* (ISI); *FRANCIS* (Institut de l'Information Scientifique et Technique – CNRS); *Geographical Abstracts*; *Geological Abstracts*; *Oceanographic Literature Review*; *Science Citation Index*; *Social Sciences Citation Index*.

List of laboratories

Our comprehensive list of laboratories is published annually, and is also available at www.radiocarbon.org/Info/lablist.html. We ask all laboratory directors to provide their laboratory code designation, as well as current telephone and fax numbers, and email addresses. Changes in names or addresses, additions or deletions should be reported to the managing editor. Conventional and AMS laboratories are arranged in alphabetical order by country, and we include laboratories listed by code designation.

Permissions

No part of this publication may be reproduced, in any form or by any means, electronic, photocopying or otherwise, without permission in writing from Cambridge University Press. Policies, request forms and contacts are available at: <http://journals.cambridge.org/action/rightsAndPermissions>. Permission to copy (for users in the USA) is available from Copyright Clearance Center: <http://www.copyright.com>, email: info@copyright.com.

Postmaster: Send address changes to *Radiocarbon*, Cambridge University Press, One Liberty Plaza, New York, NY 10006, USA.

Proceedings of the 8th Radiocarbon & Archaeology International Symposium

Radiocarbon

Vol 59, Nr 6, 2017

Part 2 of 2

CONTENTS

Acknowledgments	v
APPLICATIONS	
Stable Isotope and Radiocarbon Analysis in Animal Bones from the Prehistoric Settlement of Dispilio, Kastoria Lake, Northern Greece <i>Paraskevi Chantzi, Elassavet Dotsika, Konstantinos Albanakis, Konstantinos Kotsakis.....</i>	1629
Unraveling the Occupation History of the Cremation Cemetery at Wijnegem/Blikstraat (Belgium) <i>Guy De Mulder, Mark Van Strydonck, Mathieu Boudin, Ignace Bourgeois.....</i>	1645
Time Framing Early Medieval Stone Building North of the Alps—A Discussion of Recent Challenging Results <i>Sophie Hueglin</i>	1657
Radiocarbon Evidence for the Pace of the M-/L-PPNB Transition in 8th Millennium BC Southwest Asia <i>Piotr Jacobsson</i>	1677
Investigating a Rock Art Site in Paraná State, South of Brazil <i>Fábio Lopes, Cláudia Parellada, Paulo Gomes, Carlos Appoloni, Kita Macario, Carla Carvalho, Roberto Linares, Luiz Pessenda.....</i>	1691
Radiocarbon Dating of Underwater Archaeological Objects from the Nevado de Toluca, Mexico <i>M A Martínez-Carrillo, C Solís, I Hernández Bautista, R Junco Sánchez, M Rodríguez-Ceja, M E Ortiz, E Chávez-Lomelí.....</i>	1705
The Chronology of the Neolithic Necropolis Bòbila Maduell-Can Gambús in the Northeast Iberian Peninsula: Dating the Pit Burials Cultural Horizon and Long-Range Raw Material Exchange Networks <i>Juan F Gibaja, Berta Morell, Juan Antonio Barceló Álvarez, Stéphanie Duboscq, Alba Masclans, Gerard Remolins, Jordi Roig, Araceli Martín, Paloma González, Javier Plasencia, Joan Manel Coll, M Eulàlia Subirà</i>	1713
Activity of the Funai Fault and Radiocarbon Age Offsets of Shell and Plant Pairs from the Latest Pleistocene to Holocene Sediments Beneath the Oita Plain, Western Japan <i>Toshimichi Nakanishi, Keiji Takemura, Hisanori Matsuyama, Shoichi Shimoyama, Wan Hong, Mitsuru Okuno</i>	1737
¹⁴ C Dating of an Old Wooden Building: Hikobe House in Gunma Prefecture, Japan <i>Nanae Nakao, Minoru Sakamoto, Mineo Imamura, Hiromasa Ozaki, Koichi Kobayashi.....</i>	1749
Population Fluctuation and the Adoption of Food Production in Prehistoric Korea: Using Radiocarbon Dates as a Proxy for Population Change <i>Yongje Oh, Matthew Conte, Seungho Kang, Jangsuk Kim, Jaehoon Hwang.....</i>	1761

AMS Radiocarbon Dates on Peat Section Related with Tephra and Archaeological Sites in Carlisle Island, the Islands of Four Mountains, Alaska <i>Mitsuru Okuno, Pavel Izbekov, Kirsten P Nicolaysen, Eiichi Sato, Toshio Nakamura, Arkady B Savinetsky, Dmitrii Vasyukov, Olga A Krylovich, Bulat Khasanov, Jonathan Miranda, Lyman Persico, Virginia Hatfield, Dixie L West, Kale M Bruner</i>	1771
Change in Settlement Distribution and the Emergence of an Early State: A Spatial Analysis of Radiocarbon Dates from Southwestern Korea <i>Jiyoung Park, David K Wright, Jangsuk Kim.....</i>	1779
METHOD DEVELOPMENT	
Cross-Flow Nanofiltration of Contaminated Protein-Containing Material: State of the Art <i>Mathieu Boudin, Marco Bonafini, Tess van den Brande, Ina Vanden Berghe.....</i>	1793
Methods for Summarizing Radiocarbon Datasets <i>Christopher Bronk Ramsey.....</i>	1809
Comparison of Two Bone-Preparation Methods for Radiocarbon Dating: Modified Longin and Ninhhydrin <i>J-P Dumoulin, C Messager, H Valladas, L Beck, I Caffy, E Delqué-Količ, C Moreau, M Lebon</i>	1835
Preparation and Dating of Mortar Samples—Mortar Dating Inter-Comparison Study (MODIS) <i>Irka Hajdas, Alf Lindroos, Jan Heinemeier, Åsa Ringbom, Fabio Marzaioli, Filippo Terrasi, Isabella Passariello, Manuela Capano, Gilberto Artioli, Anna Addis, Michele Secco, Danuta Michalska, Justyna Czernik, Tomasz Goslar, Roald Hayen, Mark Van Strydonck, Laurent Fontaine, Mathieu Boudin, Francesco Maspero, Laura Panzeri, Anna Galli, Petra Urbanová, Pierre Guibert</i>	1845
Mortar Dating Methodology: Assessing Recurrent Issues and Needs for Further Research <i>Roald Hayen, Mark Van Strydonck, Laurent Fontaine, Mathieu Boudin, Alf Lindroos, Jan Heinemeier, Åsa Ringbom, Danuta Michalska, Irka Hajdas, Sophie Hueglin, Fabio Marzaioli, Filippo Terrasi, Isabella Passariello, Manuela Capano, Francesco Maspero, Laura Panzeri, Anna Galli, Gilberto Artioli, Anna Addis, Michele Secco, Elisabetta Boaretto, Christophe Moreau, Pierre Guibert, Petra Urbanova, Justyna Czernik, Tomasz Goslar, Marta Caroselli</i>	1859
Radiocarbon Dating of a Speleothem Record of Paleoclimate for Angkor, Cambodia <i>Quan Hua, Duncan Cook, Jens Fohlmeister, Dan Penny, Paul Bishop, Solomon Buckman.....</i>	1873
Methodological Aspect of Mortars Dating (Poznań, Poland, MODIS) <i>Danuta Michalska, Justyna Czernik, Tomasz Goslar</i>	1891
Fine Structure and Reproducibility of Radiocarbon Ages of Middle to Early Modern Japanese Tree Rings <i>Minoru Sakamoto, Masataka Hakozaiki, Nanae Nakao, Takeshi Nakatsuka</i>	1907
Strategies for Sampling Difficult Archaeological Contexts and Improving the Quality of Radiocarbon Data: The Case of Erimi Laonin Tou Porakou, Cyprus <i>C Scirè Calabrisotto, M Amadio, M E Fedi, L Liccioli, L Bombardieri.....</i>	1919

Organic Matter of Cultural Layers as a Material for Radiocarbon Dating <i>E Zazovskaya, V Shishkov, A Dolgikh, A Alexandrovskiy, V Skripkin, O Chichagova</i>	1931
AMS ^{14}C Dating of Bones from Archaeological Sites in Mexico <i>C Solis, G Pérez-Andrade, M Rodríguez-Ceja, E Solís-Meza, T Méndez, E Chávez-Lomelí, M A Martínez-Carrillo, M A Mondragón.....</i>	1945
U/Th and ^{14}C Crossdating of Parietal Calcite Deposits: Application to Nerja Cave (Andalusia, Spain) and Future Perspectives <i>Hélène Valladas, Edwige Pons-Branchu, Jean Pascal Dumoulin, Anita Quiles, José L Sanchidrián, María Ángeles Medina-Alcaide</i>	1955
CORRIGENDUM Stable Isotope and Radiocarbon Analysis in Animal Bones from the Prehistoric Settlement of Dispilio, Kastoria Lake, Northern Greece – CORRIGENDUM <i>Paraskevi Chantzī, Elissavet Dotsikā, Konstantinos Albañakīs, Konstantinos Kotsakis</i>	1969