## 16TH INTERNATIONAL RADIOCARBON CONFERENCE

## GRONINGEN, THE NETHERLANDS 16–20 JUNE 1997

The conference will focus on the natural and anthropogenic abundance and behavior of <sup>14</sup>C and related cosmogenic isotopes, and their impact on other fields of science. There will be no parallel sessions and ample time for poster presentations.

Participants must submit their abstracts by December 1996. Technical details will be given in an upcoming issue of *RADIOCARBON* and in the second circular to be distributed by September. A Scientific Advisory Committee will assist the organizers in program selection.

The conference will be held in the Conference Centre of Groningen, situated just outside the city center, along the main highways to the south and east and next to the main hotels. Also available are a limited number of cheaper hotels, which can be easily reached by a frequent bus service.

Groningen has a direct and frequent train connection to and from Schiphol, Amsterdam's international airport. Alternatively, a small commuter airline (Fairlines) runs five times a day between Eelde, the Groningen airport, and Amsterdam's Schiphol Airport.

The conference fee, including lunches and drinks and a copy of the proceedings, will be in the order of NLG. 500. Hotel prices range from NLG. 180 (single occupancy) and NLG. 120 (double occupancy) near the conference center to about NLG. 80 per person in the city.

Companions of the conference participants are invited to join a special sightseeing program. Midweek and some evenings there will be a social program for all participants.

The third and final circular will be mailed in December 1996.

The Organizing Committee:

Prof. W. G. Mook Dr. H. A. J. Meijer Dr. J. van der Plicht

Ms. H. E. Deenen (conference secretariat)

Centre for Isotope Research
Groningen University
Nijenborgh 4
9747 AG Groningen, the Netherlands

Tel: +31(0)50 3634760

Fax: +31(0)50 3634738

E-mail: C14@phys.rug.nl

www: http://CIO16.phys.rug.nl



**LSC 94** 

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE

Glasgow, Scotland, 8-12 August 1994

Liquid Scintillation Spectrometry 1994 continues the series of LSC Conference Proceedings published by RADIOCARBON. This volume features the papers presented at the international conference held in Glasgow, Scotland from 8–12 August 1994.

LSC 94 contains peer-reviewed articles covering a wide range of liquid scintillation topics. Chapters titles include: Advances in Instrumentation, Environmental Applications, Bioscience Applications, Advances in Liquid and Solid Scintillators, Alpha Counting, and Calibration, Optimization and Other Advances.

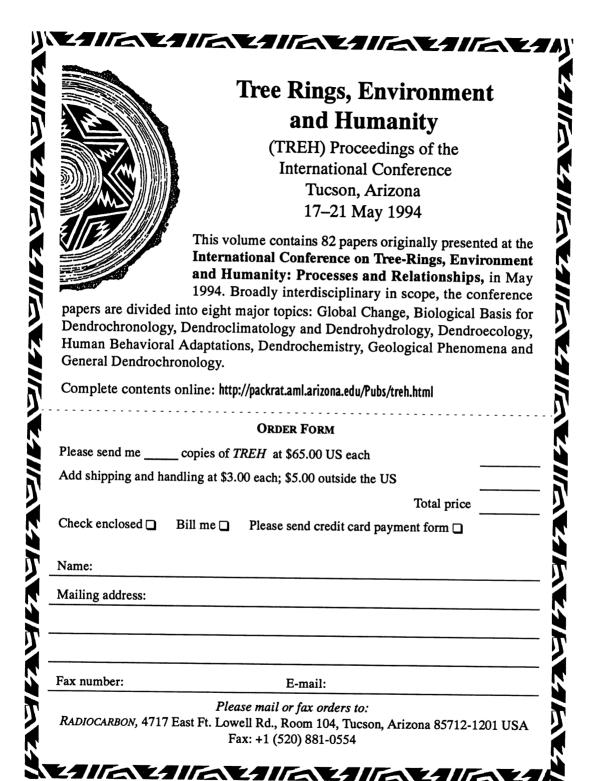
The hardbound volume was edited by Gordon T. Cook, Douglas D. Harkness, Angus B. MacKenzie, Brian F. Miller and E. Marian Scott. It includes author and subject indexes and a comprehensive directory of participants.

Complete description, contents and abstracts available at http://packrat.aml.arizona.edu/LSC94/lsc94.html

ORDER FORM				
Please send me copies of LSC 94 at \$90.00 US each				
Add shipping and handling at \$3.00 each; \$5.00 outside the US				
		Total price		
Check enclosed	Bill me 🗖	Please send credit card payment form		
Name:				
Mailing address:				
Fax number:		E-mail:		

Please mail or fax orders to:

RADIOCARBON, 4717 East Ft. Lowell Rd., Room 104, Tucson, Arizona 85712-1201 USA Fax: +1 (520) 881-0554





Proceedings of the 15th International R	Radiocarbon Conference (Vol. 37, No. 2, 1995)	\$75.00*			
Liquid Scintillation Spectrometry 1994 (\$75.00 for RADIOCARBON Subscribers; 1990)	(Proceedings of 1994 Glasgow Conference) 6)	90.00			
Liquid Scintillation Spectrometry 1992 (\$75.00 for RADIOCARBON Subscribers; ISBN	(Proceedings of 1992 Vienna Conference) :: 0-9638314-0-2; 1993)	90.00			
Special combination offer—LSC 92 and LSC 94—save \$30.00					
Late Quaternary Chronology and Pale (\$50 for Radiocarbon subscribers; ISBN: 0-	oclimates of the Eastern Mediterranean -9638314-1-0; 1994)	55.00			
Calibration 1993 (Vol. 35, No. 1, 1993; includes CALIB 3.0.3C program)					
Radiocarbon After Four Decades (Publ (Payable to Springer-Verlag; \$73.50 for I	lished with Springer-Verlag) RADIOCARBON subscribers; ISBN: 0-387-97714; 1992)	98.00			
Proceedings of the International Tree-R (Tree Rings, Environment and Humanity)	Ring Conference ) (Payable to ICTREH/Tree-Ring Society; 1996)	65.00			
SUBSCRIPTION RATES VOLUME 39, N	los. 1–3, 1997				
Institution Individual		115.00† 55.00			
Laboratory Package #1	Subscription, datelists online + diskette, 3 free pag	es 300.00			
Laboratory Package #2	Datelists online + diskette, 3 free pages	200.00			
Individual Package	Subscription, datelists online + on diskette	100.00			
RADIOCARBON 1996 Datelists	Via e-mail	30.00			
RADIOCARBON 1996 Datelists	Annual, on diskette; specify IBM or Mac format	40.00			
Printed copy	Available annually; add to base subscription price	10.00			
Lifetime Subscription—Institutional		2000.00			
Lifetime Subscription—Individual		700.00			
SINGLE ISSUES (except conference proc	eedings and special issues)	35.00			
Volumes 1–9 each volume					
Volumes 10-21 each volume					
	Volumes 22–38 each volume				
Volumes 22–38 each volume					
Volumes 22-38 each volume Radiocarbon Conference Proceedings (b	pack issues only)	50.00			
Radiocarbon Conference Proceedings (b SPECIAL FULL-SET OFFER—Volumes 1	1–37 (1959–1995)	800.00			
Radiocarbon Conference Proceedings (b SPECIAL FULL-SET OFFER—Volumes 1	1–37 (1959–1995) es and 1995 <sup>14</sup> C Proceedings. \$50 discount on each ac	800.00			

\*Surface postage and handling charges will be added to book orders and back issues. For airmail delivery, please contact RADIOCARBON for rates. Payment accepted in U.S.\$ only by check, money order, VISA or MasterCard.

Prices effective 13 January 1997

## NOTICE TO READERS AND CONTRIBUTORS

The purpose of RADIOCARBON is to publish technical and interpretive articles on all aspects of <sup>14</sup>C and other cosmogenic isotopes. In addition, we present regional compilations of published and unpublished dates along with interpretive text. Besides the triennial Proceedings of Radiocarbon Conferences, we publish Proceedings of conferences in related fields and Special Issues that focus on particular themes. Organizers interested in such arrangements should contact the Managing Editor for information.

Our regular issues include NOTES AND COMMENTS, LETTERS TO THE EDITOR, RADIOCARBON UPDATES and BOOK REVIEWS. Authors are invited to extend discussions or raise pertinent questions regarding the results of investigations that have appeared on our pages. These sections also include short technical notes to disseminate information concerning innovative sample preparation procedures. Laboratories may also seek assistance in technical aspects of radiocarbon dating. We include a list of laboratories and a general index for each volume.

Manuscripts. When submitting a manuscript, include three printed copies, double-spaced, and a floppy diskette, single-spaced. We will accept, in order of preference, FrameMaker, WordPerfect 6.0 or 5.1, Microsoft Word, Wordstar or any standard IBM word-processing software program on 3½" or 5½" IBM disks, or high-density Macintosh diskettes. ASCII files are also acceptable. We also accept e-mail and ftp transmissions of manuscripts. Papers should follow the recommendations in INSTRUCTIONS TO AUTHORS (1994, Vol. 36, No. 1). Offprints of these guidelines are available upon request. Our deadlines for submitting manuscripts are:

For	Date
Vol. 39, No. 2, 1997	January 1, 1997
Vol. 39, No. 3, 1997	May 1, 1997
Vol. 40, No. 1, 1998	September 1, 1997

Half-life of <sup>14</sup>C. In accordance with the decision of the Fifth Radiocarbon Dating Conference, Cambridge, England, 1962, all dates published in this volume (as in previous volumes) are based on the Libby value, 5568 yr, for the half-life. This decision was reaffirmed at the 11th International Radiocarbon Conference in Seattle, Washington, 1982. Because of various uncertainties, when <sup>14</sup>C measurements are expressed as dates in years BP, the accuracy of the dates is limited, and refinements that take some but not all uncertainties into account may be misleading. The mean of three recent determinations of the half-life, 5730 ± 40 yr, (Nature, 1962, Vol. 195, No. 4845, p. 984), is regarded as the best value presently available. Published dates in years BP can be converted to this basis by multiplying them by 1.03.

AD/BC Dates. In accordance with the decision of the Ninth International Radiocarbon Conference, Los Angeles and San Diego, California, 1976, the designation of AD/BC, obtained by subtracting AD 1950 from conventional BP determinations is discontinued in RADIOCARBON. Authors or submitters may include calendar estimates as a comment, and report these estimates as cal AD/BC, citing the specific calibration curve used to obtain the estimate. Calibrated dates should be reported as "cal BP" or "cal AD/BC" according to the consensus of the Twelfth International Radiocarbon Conference, Trondheim, Norway, 1985.

Measuring <sup>14</sup>C. In Volume 3, 1961, we endorsed the notation  $\Delta$ , (Lamont VIII, 1961), for geochemical measurements of <sup>14</sup>C activity, corrected for isotopic fractionation in samples and in the NBS oxalic-acid standard. The value of  $\delta^{14}$ C that entered the calculation of  $\Delta$  was defined by reference to Lamont VI, 1959, and was corrected for age. This fact has been lost sight of, by editors as well as by authors, and recent papers have used  $\delta^{14}$ C as the observed deviation from the standard. At the New Zealand Radiocarbon Dating Conference it was recommended to use  $\delta^{14}$ C only for age-corrected samples. Without an age correction, the value should then be reported as percent of modern relative to 0.95 NBS oxalic acid (Proceedings of the 8th Conference on Radiocarbon Dating, Wellington, New Zealand, 1972). The Ninth International Radiocarbon Conference, Los Angeles and San Diego, California, 1976, recommended that the reference standard, 0.95 NBS oxalic acid activity, be normalized to  $\delta^{13}$ C = -19%6.

In several fields, however, age corrections are not possible.  $\delta^{14}C$  and  $\Delta$ , uncorrected for age, have been used extensively in oceanography, and are an integral part of models and theories. Thus, for the present, we continue the editorial policy of using  $\Delta$  notations for samples not corrected for age.

## **ASSOCIATE EDITORS**

EDOUARD BARD

J. WARREN BECK

OWEN'K. DAVIS

ELLEN R. M. DRUFFEL

DOUGLAS D. HARKNESS

CALVIN J. HEUSSER

STEVEN W. LEAVITT

ANN P. McNICHOL

D. ERLE NELSON

ANDREW M. T. MOORE

PAVEL POVINEC

MICHAEL B. SCHIFFER

E. MARIAN SCOTT

JOHANNES VAN DER PLICHT

JOHN S. VOGEL

Aix-en-Provence, France

Tucson, Arizona, USA

Tucson, Arizona, USA

Irvine, California, USA

East Kilbride, Scotland

Tuxedo, New York, USA

Tucson, Arizona, USA

Woods Hole, Massachusetts, USA

Burnaby, British Columbia, Canada

New Haven, Connecticut, USA

Bratislava, Slovakia

Monaco

Tucson, Arizona, USA

Glasgow, Scotland

Groningen, The Netherlads

Livermore, California, USA