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# RADIOCARBON

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Editors

RICHARD FOSTER FLINT - J. GORDON OGDEN, III  
IRVING ROUSE - MINZE STUIVER

Managing Editor

RENEE S. KRA

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NEW HAVEN, CONNECTICUT

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## THE AMERICAN JOURNAL OF SCIENCE

Editors: JOHN RODGERS, JOHN H. OSTROM, AND PHILIP M. ORVILLE

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All correspondence and manuscripts should be addressed to the Managing Editor, RADIOCARBON, Box 2161, Yale Station, New Haven, Connecticut 06520.

### INSTRUCTIONS TO CONTRIBUTORS

Manuscripts of radiocarbon papers should follow the recommendations in *Suggestions to Authors*, 5th ed.\* All copy must be typewritten in *double space* (including the bibliography): manuscripts for vol. 15, no. 2 must be submitted in *duplicate* by October 1, 1972. Vol. 15, no. 1 will appear in December, 1972.

*Description of samples*, in date lists, should follow as closely as possible the style shown in this volume. Each separate entry (date or series) in a date list should be considered an *abstract*, prepared in such a way that descriptive material is distinguished from geologic or archaeological interpretation, but description and interpretation must be both brief and informative, emphasis placed on significant comments. Date lists should therefore not be preceded by abstracts, but abstracts of the more usual form should accompany all papers (e.g. geochemical contributions) that are directed to specific problems.

Each description should include the following data, if possible in the order given:

1. Laboratory number, descriptive name (ordinarily that of the locality of collection), and the date expressed in years B.P. (before present, *i.e.*, before A.D. 1950) and, for finite dates, in years A.D./B.C. The standard error following the date should express, within limits of  $\pm 1\sigma$ , the laboratory's estimate of the accuracy of the radiocarbon measurement, as judged on *physicochemical (not geologic or archaeological) grounds*.

2. Substance of which the sample is composed; if a plant or animal fossil, the scientific name if possible; otherwise the popular name; but not both. Also, where pertinent, the name of the person identifying the specimen.

3. Precise geographic location, *including latitude-longitude coordinates*.

4. Occurrence and stratigraphic position in precise terms; use of metric system exclusively. Stratigraphic sequences should *not* be included. However, references that contain them can be cited.

5. Reference to relevant publications. Citations within a description should be to author and year, with specific pages wherever appropriate. References to published date lists should cite the sample no., journal (R. for Radiocarbon), year, vol., and specific page (e.g., M-1832, R., 1968, v. 10, p. 97). Full bibliographic references are listed alphabetically at the end of the manuscript, in the form recommended in *Suggestions to Authors*.

6. Date of collection and name of collector.

7. Name of person submitting the sample to the laboratory, and name and address of institution or organization with which submitter is affiliated.

8. Comment, usually comparing the date with other relevant dates, for each of which sample numbers and references must be quoted, as prescribed above. Interpretive material, summarizing the significance and implicitly showing that the radiocarbon measurement was worth making, belongs here, as do technical matters, e.g., chemical pretreatment, special laboratory difficulties, etc.

*Illustrations* should not be included unless absolutely essential. They should be original drawings, although photographic reproductions of line drawings are sometimes acceptable, and should accompany the manuscript in any case, if the originals exceed 9 to 12 inches in size.

*Reprints*. Thirty copies of each article, without covers, will be furnished without cost. Additional copies and printed covers can be specially ordered.

*Back issues*. Back issues (vols. 1-9) are available at a reduced rate to subscribers at \$52.00 a set, includes postage; vol. 10 and subsequent volumes are \$20.00 for individual subscribers and \$30.00 for institutions; single back issues \$10.00 each; comprehensive index \$10.00 each.

\* Suggestions to authors of the reports of the United States Geological Survey, 5th ed., Washington, D. C., 1958 (Government Printing Office, \$1.75).

## NOTICE TO READERS

**Half life of C<sup>14</sup>.** In accordance with the decision of the Fifth Radiocarbon Dating Conference, Cambridge, 1962, **all dates published in this volume (as in previous volumes) are based on the Libby value, 5570 ± 30 yr**, for the half life. This decision was reaffirmed at the H<sup>3</sup> and C<sup>14</sup> Conference, Pullman, Washington, 1965. Because of various uncertainties, when C<sup>14</sup> measurements are expressed as dates in years B.P. the dates are arbitrary, and refinements that take some but not all uncertainties into account may be misleading. As stated in Professor Harry Godwin's letter to *Nature* (v. 195, no. 4845, p. 984, September 8, 1962), the mean of three new determinations of the half life, 5730 ± 40 yr, is regarded as the best value now obtainable. Published dates can be converted to this basis by multiplying them by 1.03.

**A.D./B.C. dates.** As agreed at the Cambridge Conference in 1962, A.D. 1950 is accepted as the standard year of reference for all dates, whether B.P. or in the A.D./B.C. system.

**Meaning of δC<sup>14</sup>.** In Volume 3, 1961, we indorsed the notation Δ (Lamont VIII, 1961) for geochemically interesting measurements of C<sup>14</sup> activity, corrected for isotopic fractionation in samples and in the NBS oxalic-acid standard. The value of δC<sup>14</sup> that entered the calculation of Δ was defined by reference to Lamont VI, 1959, and **was corrected for age**. This fact has been lost sight of, by the editors as well as by authors, and recent papers have used δC<sup>14</sup> as the **observed** deviation from the standard. This is of course the more logical and self-explanatory meaning, and cannot be abandoned now without confusion; moreover, except in tree-ring-dated material, it is rarely possible to make an age correction that is independent of the C<sup>14</sup> age. In the rare instances where Δ or δC<sup>14</sup> are used for samples whose age is both appreciable and known, we assume that authors will take special care to make their meaning clear; reference merely to "Δ as defined by Broecker and Olson (Lamont VIII)" is not adequate.

**Radiocarbon Measurements: Comprehensive Index, 1950-1965.** This index, covering all published C<sup>14</sup> measurements through Volume 7 of *RADIOCARBON*, and incorporating revisions made by all laboratories, has been published. It is available to all subscribers to *RADIOCARBON* at ten dollars U.S. per copy.

**Publication schedule.** Volume 10 and subsequent volumes are published in two semi-annual issues, in Winter and in Summer. Because of the recent rise in the number of manuscripts and laboratories, our publication schedule will be accelerated in 1972, to accommodate our contributors. The next deadline is October 1, 1972. Contributors who meet our deadlines will be given priority but not guaranteed publication in the following issue.

**List of laboratories.** The comprehensive list of laboratories that has appeared hitherto at the end of each issue will now appear only once a year, in the second number of each volume.

**Index.** Beginning with Volume 11, all dated samples now appear in index form at the end of the second number of each volume.

**New Member.** Minze Stuiver, University of Washington, has officially joined the editorial staff.

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