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FROM THE EDITOR
SUMMARY OF THE INTERNATIONAL WORKSHOP ON INTERCOMPARISON OF ^{14}C LABORATORIES

[*Editors' note: The full proceedings of this workshop, including transcriptions of general discussions, will appear in RADIOCARBON, vol 32 (3).*]

On a bright September day in Scotland, 50 producers, consumers and analysts of ^{14}C dates began a workshop to ponder a darker topic: the results of a series of intercomparisons among radiocarbon laboratories. This was the "International Workshop on Intercomparison of ^{14}C Laboratories" held at the Scottish Universities Reactor Center, East Kilbride, near Glasgow, 12–15 Sept 1989, and hosted by E M Scott, T C Aitchison, D D Harkness, B F Miller, G T Cook, and M S Baxter. Beginning in 1982, Marian Scott and colleagues distributed a series of samples to willingly participating ^{14}C labs. The ^{14}C activities of these samples were unknown to the labs. The purpose of the study was to obtain a quantitative appraisal of how reliable ^{14}C dates are throughout the world, and if inaccuracies exist, what are the causes. Dr Scott and colleagues collected and summarized the results at intervals throughout the study and revealed the summaries to each participating lab without associating laboratories with specific results. Indeed the study did reveal significant discrepancies among labs, and it became apparent that some action was needed.

The recent workshop accomplished its three primary goals. The first was to assess the extent of the inaccuracy problem, the second was to agree on what, if any, remedial action should be taken, and the third was to decide on future similar intercomparison studies. It should be noted that only 50 of the 131 active ^{14}C labs participated. All classes of counting technologies (gas counting, liquid scintillation and accelerator ion counting) participated in the intercomparison, as did well-established and newer labs. Representatives of all of the above attended the workshop.

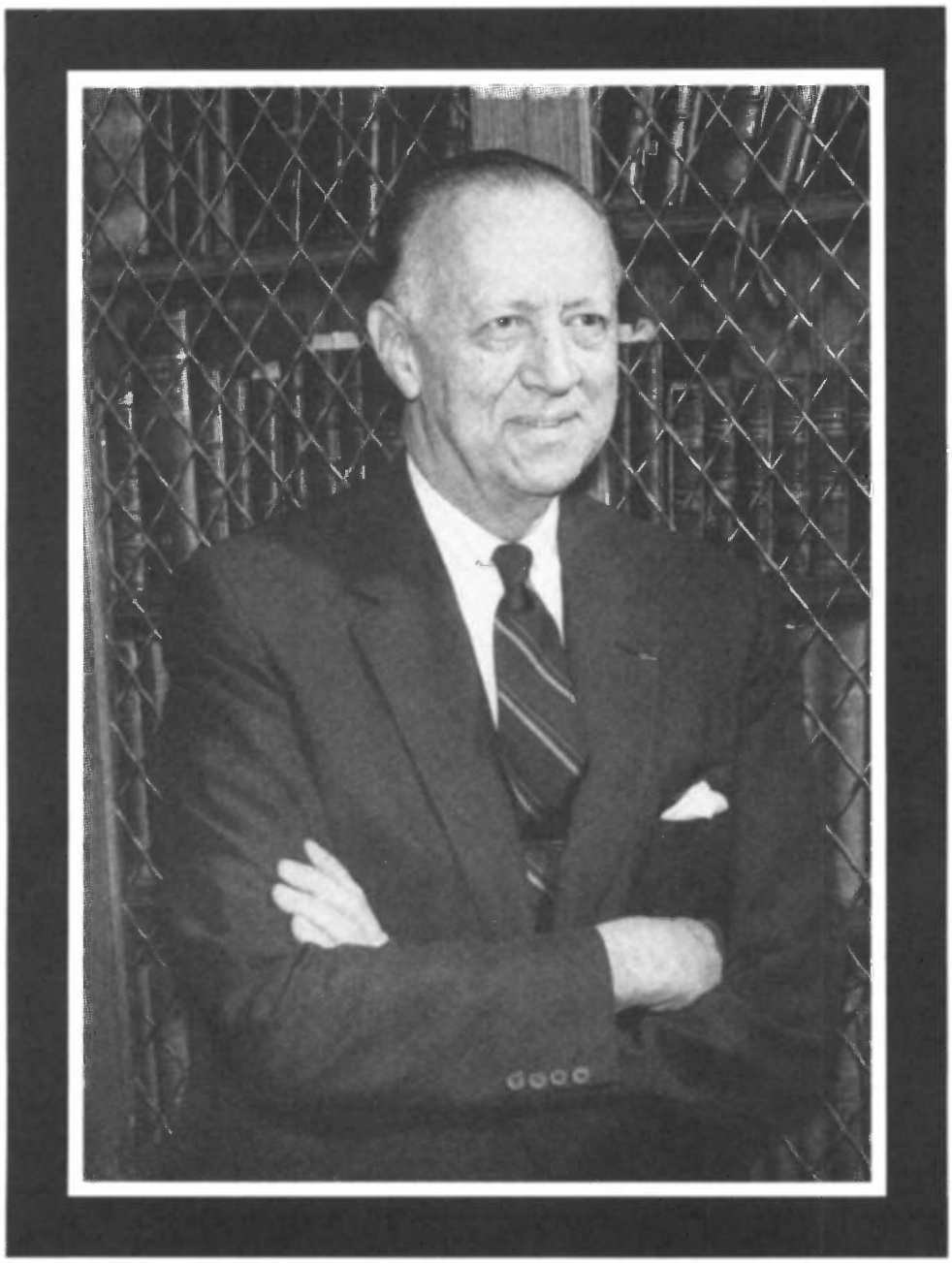
It is clear that an accuracy problem pervades all technological classes of ^{14}C labs. Many laboratories' data were in excellent agreement, but a few showed alarming divergences from the most likely values. Occasional inaccurate dates from a few laboratories can erode confidence in radiocarbon dating in general. Consumers of ^{14}C dates are anxious about value for their limited resources for dates; laboratory directors are worried about releasing bad data; and many of us are concerned about the image of the radiocarbon dating community. Workshop participants agreed that to help laboratories assure themselves they are producing accurate data, or to alert them when problems occur, we should establish a series of standard materials of "typical sample" composition and known ^{14}C activities. Samples of these materials would be available from the IAEA to laboratories wishing to make use of them for quality assurance. A recommended quality assurance protocol will be forthcoming, which will reflect the consensus of workshop participants.

To me, the most encouraging part of the meeting was the feeling of community spirit. The atmosphere at the meeting was not superciliously accusatory by some toward "a few bad apples in the barrel," rather one of colleagues recognizing a problem and together seeking the best solution. Some who have spent most of a career producing precise and accurate ^{14}C data talked about forming a Help Squad to advise labs who request it.

The workshop participants expect that by taking part in a rigorous quality assurance program, ^{14}C laboratory directors will quickly recognize if an accuracy problem arises, and take remedial action before incorrect data are released. Nevertheless, it was agreed that another round of intercomparisons with unknown samples, to be carried out in about 3 years, would yield quantitative data on the effectiveness of the quality assurance program. Those of us who attended this meeting hope that the same hosts will put on a repeat performance. Not only did we accomplish the technical goals, but we also enjoyed elegant meals and memorable excursions. The meeting closed in high "spirits," with bagpipes and the tasting of the haggis.

It may be yet a few years before the radiocarbon community can repolish its somewhat tarnished image. The important thing is that we have begun a process of self-healing.

Austin Long



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