

RADIOCARBON UPDATES

New Laboratory

A new laboratory has opened in Miami, Florida. Ronald Hatfield and Darden Hood are the Directors of BIOCAMS International, which provides “AMS dating designed exclusively for art, antiques, and materials of potential commercial value”. See <http://www.biocams.com/> for details.

New Accelerator Mass Spectrometer

In March 2000, the University of Arizona NSF-AMS laboratory began running preliminary dates with its second accelerator unit, a 3MV Pelletron, manufactured by NEC.

Australasian Conference

The next Australasian Archaeometry conference will be 5–9 February 2001, at University of Auckland, in Auckland, New Zealand. The conferences are held every four years, and this will be the first time the conference is held outside Australia. In 1997 this conference was attended by several hundred scholars with involvement in the fields of Archaeology, Anthropology, Geography, Conservation, Museology, Material Science and Applied Nuclear Science (e.g. dating, materials analysis etc).

LSC 2001 Conference

The next liquid scintillation conference will be held 7–11 May 2001 in Karlsruhe, Germany. Preliminary registration begins in June 2000. Papers are due to the conference secretariat no later than 1 October 2000. Please see the announcement towards the back of this issue.

Saskatchewan Lab Closure

After 45 years, the Saskatchewan Research Council Radiocarbon Dating laboratory (lab code S) has ceased operation. Below is an overview of the lab’s history by Richard E Morlan of the Canadian Museum of Civilization.

The Saskatchewan Radiocarbon Laboratory was the first radiocarbon dating facility in Canada, commencing operation in the early 1950s at the University of Saskatchewan, Saskatoon, under the direction of K J McCallum. Initially, the Libby technique of counting solid carbon samples in a screen-wall counter led to considerable difficulty with sample preparation and contamination from radioactive fall-out, and the laboratory soon opted to install gas proportional counting equipment (McCallum 1955). The routine operation of the new equipment was taken over by Jurgen Wittenberg who continued in this role for the next three and a half decades.

From the outset, the Saskatchewan Laboratory was supported by the Saskatchewan Research Council (SRC) and, occasionally, by the National Research Council of Canada. In the early 1970s, the Laboratory began to operate commercially under the administration of the SRC and the direction of A A Rutherford. Soon thereafter, in order to provide radiocarbon dating to Canadian archaeologists, the National Museums of Canada contracted with the Saskatchewan Laboratory for their services. By the end of the 1980s, Jurgen Wittenberg retired and the National Museums corporation was dismantled, thus direct support to the Laboratory was withdrawn. These two events were not directly related to one another, but it was no mere coincidence that the gas proportional laboratory discontinued operation.

In 1989, the Laboratory was re-incarnated off-campus in the new facilities of the SRC. At the new location, a liquid scintillation counter was employed under the direction of Gene Smithson and the technical expertise of Jeff Zimmer. This change in counter technology took place shortly after S-3000 was processed. Some age determinations were verified by both gas proportional and liquid scintillation counting

during the transition period, but samples after S-3051 have been dated by liquid scintillation (J Zimmer personal communication 1998). The last sample number assigned by the Laboratory was S-3669.

Most of the work of this Laboratory has been devoted to Canadian Quaternary research and especially to archaeology and vertebrate paleontology. Even with many of its recently analyzed samples not yet available in the scientific literature, 64% of the total number of dates (3669) have already been entered into the Canadian Archaeological Radiocarbon Database (<http://www.canadianarchaeology.com/radiocarbon>). Of more than 7300 dates in CARD, 2142 (29%) were dated by the Saskatchewan Laboratory. Of the latter, 1094 (51%) are samples of bone, tusk, horn, or antler.

Rutherford and Wittenberg (1979) undertook extensive studies of bone pre-treatment protocols. Beginning with S-1300, collagen extractions were solubilized using a method similar to that of Longin (1971). It is noteworthy that studies relying heavily on bone dates from the Saskatchewan Laboratory (e.g., Morlan 1993; Dyke et al. 1996) have established very coherent chronologies for the histories of northern Plains cultures and Arctic sea mammals.

While celebrating the enormous contribution of the Saskatchewan Laboratory to Canadian Quaternary studies, we must reflect that the decommissioning of this Laboratory represents an enormous loss, especially in view of so many previous closures of radiocarbon laboratories in Canada. It's getting hard to get a Canadian date!

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Selected References

- Dyke AS, Hooper J, Saville JM. 1996. A history of sea ice in the Canadian Arctic Archipelago based on the postglacial remains of the bowhead whale (*Balaena mysticetus*). *Arctic* 49:235–55.
- Longin R. 1971. New method of collagen extraction for radiocarbon dating. *Nature* 230:241–2.
- Morlan RE. 1993. A compilation and evaluation of radiocarbon dates in Saskatchewan. *Saskatchewan Archaeology* 13:2–84.
- Rutherford AA, Wittenberg J. 1979. Evidence in support of soluble collagen extraction for radiocarbon bone dating. Saskatoon. *Saskatchewan Research Council Report C79-22*. 8 p.

Saskatchewan Date Lists

- McCallum KJ. 1955. Carbon-14 age determinations at the University of Saskatchewan. *Transactions of the Royal Society of Canada* 49 (Series III, Section 4):31–5.
- McCallum KJ, Dyck W. 1960. University of Saskatchewan radiocarbon dates II. *Radiocarbon* 2:73–81.
- McCallum KJ, Wittenberg J. 1962. University of Saskatchewan radiocarbon dates III. *Radiocarbon* 4:71–80.
- McCallum KJ, Wittenberg J. 1965. University of Saskatchewan radiocarbon dates IV. *Radiocarbon* 7:229–35.
- McCallum KJ, Wittenberg J. 1968. University of Saskatchewan radiocarbon dates V. *Radiocarbon* 10(2): 365–378.
- Rutherford AA, Wittenberg J, McCallum KJ. 1973. University of Saskatchewan radiocarbon dates VI. *Radiocarbon* 15(1):193–211.
- Rutherford AA, Wittenberg J, McCallum KJ. 1975. University of Saskatchewan radiocarbon dates VI [sic]. *Radiocarbon* 17(3):328–53.
- Rutherford AA, Wittenberg J, Wilmeth R. 1979. University of Saskatchewan radiocarbon dates VIII. *Radiocarbon* 21(1):48–94.
- Rutherford AA, Wittenberg J, Wilmeth R. 1981. University of Saskatchewan radiocarbon dates IX. *Radiocarbon* 23(1):94–135.
- Rutherford AA, Wittenberg J, Gordon BC. 1984. University of Saskatchewan radiocarbon dates X. *Radiocarbon* 26(2):241–92.