

## NOTES AND COMMENTS

### RECALIBRATION OF HEIDELBERG $^{14}\text{C}$ LABORATORY DATA

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A sodium bicarbonate solution with a 10-fold activity compared to oxalic acid is used as a secondary standard in the Heidelberg  $^{14}\text{C}$  Laboratory. All routine checks and counter tests are greatly facilitated because of the high activity of the solution.

The activity ratio of this substandard to oxalic acid was determined initially (1960-1969) to  $A_{\text{H}}/A_{0.95 \text{ ox}} = 10.30$ ; this value has been in use since then. Recent interlaboratory comparison studies on tree-ring (Stuiver, 1982) and oceanographic samples (GEOSECS) revealed an offset of  $^{14}\text{C}$  results.

A recheck of our previous calibration data yielded an erroneous conversion from the previously used wood standard and, in addition, there is the possibility that newer batches of the substandard differ from the 1960-1969 batches in  $^{14}\text{C}$  activity. Dates reported prior to 1971 are considered to be correct based on substandard calibration at that time.

In a careful recalibration, the total offset has been determined to  $\Delta^{14}\text{C} = 10.2\text{‰}$ , *ie*, all dates reported by the Heidelberg laboratory since 1971 have to be *increased* by 82 years ( $\Delta^{14}\text{C}$  values *decreased* by 10.2‰).

The correct normalization to oxalic acid is in effect since June 1, 1983. To distinguish between previous  $^{14}\text{C}$  dates, we have adopted the following notation:

All "new" dates, *ie*, those referred to the correct normalization, are given the laboratory prefix "Hd" instead of the prefix "H" assigned to the Heidelberg laboratory up to now. The prefix "H" is no longer used.

With the correction given above  $^{14}\text{C}$  results of four GEOSECS stations (Stuiver & Östlund, 1980) were compared to Heidelberg  $^{14}\text{C}$  data of comparable "Meteor" stations. The mean difference of 25 pairs (GEOSECS-Heidelberg) is  $\Delta^{14}\text{C} = 1.0\text{‰}$ . Details of the comparison are discussed in a forthcoming paper (Schlitzer *et al*, A meridional  $^{14}\text{C}$  and  $^{39}\text{Ar}$  section in the deep water of the north Atlantic, ms in preparation).

#### REFERENCES

- Stuiver, Minze, 1982, A high-precision calibration of the AD radiocarbon time scale: Radiocarbon, v 24, p 1-26.  
Stuiver, Minze and Östlund, H G, 1980, GEOSECS Atlantic radiocarbon: Radiocarbon, v 22, p 1-24.