- 1. Different problems are presented depending on age, preservation and degree of contamination of bone.
- 2. Methods may or may not be developed with routine application in mind.
- 3. Determining the conditions for which any method can be regarded as reliable is not at all straightforward.

# DEVELOPMENTS IN SAMPLE COMBUSTION TO CARBON DIOXIDE, AND IN THE CARBON DIOXIDE ION SOURCE SYSTEM

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The operation of a commercial system as modified for preparation of  $CO_2$  for the  $CO_2$  source is described. AMS samples are automatically combusted in a CHN analyzer, and stable isotope measurements are made on line. The performance of this equipment is described, with reference to yield, sample contamination, memory effect, accuracy of isotope measurement, convenience and cost.

The current status of dating using the  $CO_2$  source is described. This is the only source in operation at Oxford, and has been in routine dating for 18 months. An assessment of the practicalities of operation will be made, including the latest measurements on background, memory, sample size requirements and operating schedules. Modifications to the sputter beam optics and to the gas handling systems will be described.

## GEOCHRONOLOGIC AND PALEOCLIMATIC CHARACTERIZATION OF QUATERNARY SEDIMENTS IN THE GREAT HUNGARIAN PLAIN

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We present here radiocarbon ages and  $\delta^{18}$ O isotope ratios of mollusk shells from fluviatile and aeolian Quaternary deposits. We have identified ten malacofaunal levels and some species, serving as chronological indicators, from 7000 - 32,000 BP. These paleoclimatological investigations, according to the rules of sedimentology, are based on the oxygen isotope analysis of properly collected *Pupilla muscorum* shells. Oxygen isotope ratios of remote deposits from the same time period showed good agreement. Temperature values obtained from the results of the isotopic studies and of a malacothermometer constructed on the basis of the dispersion and climatic indicators of mollusk species are also closely correlated.

Comprehensive studies of paleoclimatic changes, through chronological, isotope chemical and biological analyses showed the same climatic periods as found in northern and western Europe. The climate of our study area was of a rather continental character at the end of the Pleistocene.