

RADIOCARBON AND ARCHAEOLOGICAL CONTEMPORANEITY

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The identification of contemporaneity within sets of archaeological assemblages is crucial for the archaeological examination of cultural processes over time and space. Conventional radiocarbon dating has rarely led to satisfactory resolution of the contemporaneity problem. An AMS age determination program using maize kernels from single-component Mohawk Iroquois sites of brief duration is expected to solve the problem for the 16th and 17th centuries. Variations in the calibration curve and clues from the archaeological record combine to permit dating to within limits narrow enough to resolve contemporaneity within the sequence. This, in turn, allows analysis of demographic change during the period, especially epidemic-induced depopulation that followed 1634.

THE RESERVOIR EFFECT IN THE COASTAL WATERS OF PORTUGAL AND ITS VARIABILITY DURING THE HOLOCENE

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Radiocarbon dating on marine shells collected alive before 1950 from western and southern coasts of Portugal has indicated that the differences, ΔR , in reservoir age of these regional areas of the Atlantic Ocean and the reservoir age of the model of Stuiver, Pearson and Braziunas (1986) are 280 ± 35 years and 235 ± 25 years, respectively. The corresponding values of the apparent age of marine shells are 700 ± 35 years (western coast) and 660 ± 25 years (southern coast). These values suggest the occurrence, in those areas, of an active upwelling similar to that existing in coastal waters of California (USA).

On the other hand, radiocarbon dating on marine shells and on charred wood or bones collected from the same level (and closely associated) at various archaeological sites of Portugal, representing different periods of time in the Holocene, has shown that before 1200 BP, the mean apparent age was 360 ± 35 years, which is representative for all the Portuguese coastline, and corresponds to a coastal environment weakly influenced by the upwelling of deep water. After 1100 BP, it would have increased to the values referred to above. These results suggest that between 1200 and 1100 BP, a change in some climatological parameters along the Portuguese coast might have occurred, causing a significative intensification of coastal upwelling off Portugal.

REFERENCE

- Stuiver, M, Pearson, GW and Braziunas, T 1986 Radiocarbon age calibration of marine samples back to 9000 cal yr BP. In Stuiver, M and Kra, RS, eds, Internatl ^{14}C conf, 12th, Proc. *Radiocarbon* 28(2B): 980-1021.