

¹⁴C DATING THE VINLAND MAP: PROBLEMS, PROCEDURES AND RESULTS

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The Vinland Map is a crudely sketched world map on vellum housed at the Beinicke Library of Rare Books and Manuscripts at Yale University. Its publication by the Yale University Press in 1965 triggered one of the most impassioned debates ever to be concerned with a historical document. The authors of "The Vinland Map and the Tartar Relation", R.A.Skelton, T.E.Marston and G.D.Painter concluded that the map dated to ca. AD 1440 and was probably related to the Church Council of Basle. The controversy came from the map's depiction of an island west of Greenland labelled "Vinlanda Insula" and its legend giving in detail its discovery by "Bjarni (Herjolfsson) and Leif (Eiriksson) in company" and how the "new land was fertile and even having vines". In short, the map (1) confirmed the saga legend of Scandinavian primacy in the discovery of the New World, 500 years before Columbus, and (2) established that 50 years before Columbus the existence and location of the New World were already known in Europe. Today, early Viking visits to the New World are no longer in question, but the map remains a highly significant historical document, important in the history of the Western Hemisphere.

The Vinland Map has been exhaustively studied, but scholars are divided as to its authenticity. Microscopic examination purportedly found a modern form of titanium dioxide in the ink, suggesting that the map was fraudulent, but a more recent examination using PIXE has decisively reversed that finding. The new Second Edition of "The Vinland Map and the Tartar Relation" (Yale University Press 1996) contains articles dealing with the PIXE results.

Although it is not possible to prove authenticity through scientific tests, one can prove fakery. Clearly, the presence of a recent pigment, or a carbon-14 date long after the 15th century, would give reason to declare the map a forgery. Thus, a ¹⁴C measurement of the Vinland Map should be considered as providing a necessary, though not sufficient test of authenticity. It is a question of some consequence as the map has an insurance value of \$25,000,000.

This paper will deal with the efforts of a team made up of Dr. J. Olin (Smithsonian Institution and N.I.S.T.), Prof. D.J. Donahue (NSF Accelerator facility, Tucson) and Dr. G. Harbottle (Brookhaven National Laboratory) to carry out ¹⁴C measurements on a sample of vellum removed from the Vinland Map in February 1995. Technical problems and, if possible, the results of the dating exercise will be presented.