381-5676

December 17, 1974

Mr. Alexander Orr Vietor
Yale University Library
Yale University
New Haven, Connecticut 06520

Dear Mr. Vietor:

Having returned to Washington I wanted to take this opportunity to thank you, Ken Nesheim and the others who were so kind and cooperative to both Mrs. Olin and myself on our recent visit to the Beinecke Library. I am most grateful to have had the chance to examine the Vinland Map and associated documents. I must admit however, that as a result I was disappointed not to be able to lend support to the possibility of an alternative explanation for the presence of the anatase in the Map inks. Prior to the visit we had had high hopes for its possible authenticity.

Speaking only for myself, three facts, when added to the weight of existing evidence, can be raised against its authenticity:

(1) Without doubt, pure anatase pigments were commercially available as early as 1921 and according to the people at the Titanium Pigments Division of NL Industries they were yellow-brown as a result of the associated iron which the technology of the day had been unable to remove. This explains the use of such a pigment when modern anatase pigments are white and seemingly inexplicable for use by the forger.

(2) The anatase present in the Map ink has distinct characteristics which can be obtained from an original chemical precipitate only after calcining (heat treatment at temperatures in the range of 600-900°C.). Although the aggregate particle size of precipitated anatase before any calcination is similar to that displayed by the Map ink, the crystallinity of the individual crystals is much lower. The conclusion of Walter McCrone in this regard is correct. It is conceivable to me that a 15th century ink could have contained anatase as a precipitate, but to add the further requirement that the anatase be calcined to a very high temperature before use is to remove it from the realm of possibility beyond a reasonable doubt.

(3) The clear lack of register between the yellow-brown line and the black line that I discovered on the Map in the region of the western coast of England makes a forgery quite believable and is even more difficult to explain were the Map to be considered genuine.

The alternative raised by Karl Turekian that the anatase could represent contamination from flaking room paint or the like is plausible to me only if the anatase had been found in only one or two samples. According th the McCrone report anatase (or Ti) occurs in all of the ink samples and none of the non-ink samples. The likelihood of such selective contamination is remote beyond a reasonable doubt. Turekian raised the additional possibility that the anatase, in a form well-crystallized over geologic time, could have been derived from weathered soils or bauxitic materials. I think that this, too, can be ruled out because of the absence in the Map ink of any of the clay minerals (kaolinite for example) which should definitely be present in such a case and which are readily identifiable as such in the electron microscope or with X-ray diffraction.

One additional piece of information is worth mentioning. In support of the feelings expressed to us by Mr. Marston, you stated that Mr. Witten neither visited nor purchased the VM-TR from a private library but rather obtained it directly from Mr. Ferrajoli. This disclosure regarding the Map's provenance does little to engender confidence in its authenticity.

In conclusion, and emphasizing that I speak only for myself, I no longer have any doubt that the Vinland Map is a forgery, and a modern one at that.

Thank you once again for your kindness and hospitality. Please extend my thanks also to Mr. Nesheim and the others.

Very sincerely,

Kenneth M. Towe
Geologist