

Art Historian Detective. (AHD)

First, just to be clear, my team and I are the Caretakers. We are techgees and not Art Historians. But life threw us Katrain. Fortunately. Her intriguing image forced us to follow the uncertain path of the Art Historian. Secondly, early on, I noticed my own limitation; I do not have any recognition for “Gut Feeling”. When somebody states that looking at Katrain tells her/him it’s 19th Century, that person is automatically registered in my memory as Missing Interdisciplinary Capacity. Not nice but it comes probably from my Mom’s saying: ”Je moet een aap nooit leren klimmen”. Translated: ”Never teach a monkey how to climb”.

It all started with Toledo. The stained glass portrait (Katrain) and the painted portrait of Toledo are not lookalikes. They are identical. A pretty bold statement but... (the famous one) we recently printed transparencies from both and if you lay one on a print of the other; they are exact the same, except for the eye-stare direction.

For the AHD, paintings have a world of factors to analyze, like the paint, varnish, canvas, wood, under drawing(s), brush stroke etc. All with their distinct research disciplines. Au contraire, the world of stained glass is extremely small, actually very narrow. It consists of glass and lead. That’s it! The lead (came) is not even that significant, as many stained glass panels have been re-lead-ed to maintain integrity. To make it worse for the AHD, glass is just glass! And the only way to research it is by understanding its chemical composition. That is very hard for non-techgees.

For an AHD to delve into the mysteries of stained glass, we suggest to make her/himself familiar with the Corning Museum of Glass (CMG). The amount of research and analysis they have done is mind boggling. One of the authorities of CMG was Dr. Robert H. Brill (1929-2021). CMG refers to him as RHB. He was the principal author of: Chemical Analyses of Early Glasses. Volume 1: Catalogue of Samples. (335 pages). Volume 2: The Tables. (535 pages). Volume 3: The years 2000-2011, Reports, and Essays. (727 pages). That is a lot of pages! But the way it is organized makes it reasonable easy to use for research.

Why this long (and for most people quite uninteresting) introduction? Critical to Glass production is, to make it workable, the need of a flux to lower the melting point. On our website is the 3rd heading: XRF Analyses and together with the 4th heading: Period Specific, it explains the differences of the flux in glass. Adding here that they are listed in the

Periodic Table: Sodium (Natrium) $^{11}\text{Na}_{23}$ and Potassium (Kalium) $^{19}\text{K}_{39}$. The second part of the 3rd heading is the analysis of Dr. Bruce Kaiser from Bruker Inc. For non-techgees, boring and abracadabra.

The reality for us was that Dr. Bruce Kaiser's conclusion was turning the snowball into an avalanche. Fortunately Kaiser and RHB knew each other very well and have worked together on many projects. See our References # 2. For understanding Dr. Kaiser's analysis, we better delve into the history of glass, whereby following RHB along through his Chemical Analysis. Here we go...

The analysis is for 26 elements of the glass fragments from:

XI AE Lautenbach, poss. from the studio of Peter Hemmels in Strassburg. ca.1482. (Excerpt)

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Sample #	2087	2081	2082
SiO ₂	57.95	57.68	55.40
Na ₂ O	1.52	2.65	0.87
CaO	24.1	19.8	13.2
K ₂ O	5.1	7.83	20.5
MgO	4.04	4.19	3.71

(weight percentages)

Obviously in all the 3 samples from the last part of the 15th Century, the Na is low and the K is high. Short and powerful !

But, way more interesting is next from RHB a very comprehensive analysis: Glass fragments from the Abbey of Saint-Jean-des-Vignes in Soissons (France). RHB's description of the church: Formally established in 1076, the abbey was built, rebuilt, sacked, and restored from its founding to the present day. In 1567, Huguenots sacked the Abbey, presumably knocking out much of the stained glass. From 1796 through 1976, the French Army used Saint-Jean as a military base. During the war of 1870 and World War I, the abbey, like much of Soissons in general, suffered severe damage. The result of all these changes is that none of the glass is left in situ. All the fragments were excavated, but why Soissons?

We all know that data manipulation is a part of scamming. "Fake" is all around us. And of course "Katrain" is fake by most Historians. She looks too new; too good to be true and whatever reason Flat Earther gut-feelings can come-up with. Critical for Katrain is that Kaiser's assessment was: "Pigments and Glasses appear consistent with the time period that this art work was expected to be made". (See heading: Period Specific). That is the core of Katrain's authentication. Moreover, it is supported by the variation of the glass thickness. (See heading: Glass).

Of course; the question of, where is Dr. Kaiser's conclusion based on, is a valid one. To say that it is general knowledge among glass scientists is pretty vague. So here is a highlight for support.

Back to Soissons (France) pre 1576.

In RHB Vol. 3, from pages 150 to 155 is the analysis of 77 glass fragments as listed: XI AT.* Soissons. They are in numerical order as 8100-8176 and 8192. No. 8173 is missing.

Analyzing and condensing these pages for K and Na values, some interesting conclusions can be drawn. 13 fragments are high in Na and very low in K, being Soda-Lime glass (SL). 51 fragments are high in K and low Na and are Forest Glass (FG). Lastly 13 fragments have neither high nor low Na or K, and are listed as Undetermined (UND). The reader should be aware that we left out, on purpose, the other elements for it does not affect the classification of Forest Glass and Soda-Lime glass.

The complete chart is available here: [Link to Soissons Data](#).

Analyses like these confirm that Dr. Bruce Kaiser is correct. In the first part of the 16th Century, in Northern Europe, the majority of glass was indeed Forest Glass.

Stay Safe,

Caretakers.

P.S. Sometime in the 80's travelling in the Pennsylvania/New York area, we visited CMG. Speaking Dutch (of course) we were noticed by a very friendly gentleman. During a nice conversation, he brought our attention to some beautiful glassware from the Dutch Royal Family.

That was Dr. Robert Brill.