

Holograph draft memorandum on methods of assaying gold and silver by refinement, such as should be used in assessing trial pieces.

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Gold & Silver are assayed by refining them & observing how much they are lightned by refining.

Silver is assayed & refined by melting it with thrice its weight of lead & keeping it in fusion till the lead fumes away with the base metals & The silver which remains is fine silver. If it be refined again with thrice its weight of Lead it becomes finer then before, the lead carrying away a little more of the base metals. But silver once refined is fine silver or silver 12 ounces fine by the laws of all Europe. And eleven ounces two penny weight of this silver melted & well mixed with 18^{dw^t} of copper makes standard silver by the law of England. And of such a mixture the standard trial pieces of silver ought to be made.

Gold is assayed & refined by adding to it twice its weight of silver & melting the mixture with thrice its weight of led till the lead fumes away & carries away with it all the base metal & leaves the gold & silver alone, which being hammered into a thin plate & put into hot aqua fortis, the aqua fortis eats away the silver & leaves the gold alone. If this aqua fortis be poured off & fresh aqua fortis be poured on, this second water (especially if it be a little stronger then the former) will eat away a little more of the silver & leave the Gold finer then before. And a third water will leave it still finer, & a fourth still finer. But Assaymasters & Refiners proceed no further then to two waters. Gold assayed or refined with two waters is fine Gold or Gold 24 carats fine by the laws of all Europe, & Eleven ounces of such fine Gold melted & well mixed with one ounce of allay make standard Gold by the law of England: And of such a mixture the standard triall pieces of Gold ought to be made.

The standard pieces should be made by the Queens Order, as the Indenture of the Mint expresses, but were made the last time (A. C. 1707) by the Lord Treasurers warrant. The Iury did not then refine the Gold & Silver but bought them off my Deputy M^r Carlich. They know not how he refined them, and wondred that he could make them so fine: But being generally of opinion that no gold or silver could be too fine, they made the trial pieces thereof for the money but absolutely refused to give receipts of them for making their plate thereby. And these Trial pieces were never yet established under the broad seal, as they ought to be. And if they be established the Merchants will thereby lose about 4 or 5^s in the pound weight of all gold imported.
