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To Catch a Queen: Cryptology's Role in the Execution of Mary, Queen of Scots

Over 400 years ago, on 8 February 1587, Mary Stuart, Queen of Scotland, Queen Mother of France, and romantic martyr-symbol of the Counter-Reformation, died under the executioner's axe for involvement in a scheme to kill Queen Elizabeth I of England, a scheme otherwise known as the Babington plot.

What is remarkable is that the entire plot unfolded before the eyes of the English authorities: the conspirators' encrypted letters were collected, decrypted, copied, and returned to the couriers, themselves double agents. At the moment the details of the plot were known, the English authorities swooped in and broke it up. All the players, including Mary, were executed; but the romantic legend of Mary, Queen of Scots, took on a life of its own.

It all started in 1568, when Mary, a Catholic monarch and former queen of France, fled Scotland after a disastrous attempt to rule that predominantly Protestant country. She sought refuge in England with her distant cousin, Elizabeth I. Refuge soon turned into protective custody as the religious wars between England and Spain intensified. After eighteen years of enforced house arrest, Mary found herself turned into a paragon of Catholic martyrdom. This is especially ironic since Mary, in her early years as queen, was hardly such a paragon—in fact, her second marriage was in a Protestant ceremony. Still, she became a light that attracted the dreamy, romantic men of a new generation—men like Anthony Babington. Rich, gallant, educated in France by the Jesuits, Babington moved in a society fired with plots and conspiracies against Elizabeth. While in France, he concocted a scheme to remove Elizabeth.

In January 1586 Mary received her first "secret" letter from contacts in France. Carried by a trusted courier — in reality, a double agent—Gilbert Gifford, these letters were Mary's pipeline to all the conspirators. She would compose her letters (or notes), and her secretary would encrypt them in a cipher which was popular then—single substitution of English by Greek letters with additional substitutions for repeating words, common syllables, nulls, etc. These letters were wrapped in a leather packet, slipped down a cork tube in the bottom of a beer or wine cask. The letters were then carried to Babington. This system was thought safe and secure, so much so that the letters carried details of the plot: plans to invade England, uprisings by local Catholic sympathizers, the rescue of Mary, and the "despatch of the usurping Competitor." And so the plans went forward into that breezy summer of 1586.

Mary and the others never stood a chance.

At the center of this web of double agents, informants, and conspirators stood Francis Walsingham. Nicknamed "the Moor" by Elizabeth, he stands arguably as history's first great spymaster. Brilliant and dogmatic in his devotion to Puritanism and Elizabeth, he spared no effort in protecting both. In fact, because of Elizabeth's legendary parsimony, Walsingham would bankrupt himself to finance his secret service activities throughout Europe.

Like a calculating spider, he designed a web to snare the unwary and arrogant conspirators, baiting it and waiting for them to fall into it. Unbeknownst to Mary and Babington, Gifford would deliver the letters to Thomas Phelippes, Walsingham's chief cryptanalyst. Phelippes could easily decrypt the letters

and would forge copies of them all. (He was an expert forger—perhaps he anticipated the need for cryptologic cross-training?) The originals were then replaced in the cask and sent on their way.

On 17 July 1586, Mary sent a long letter to Babington accepting all the details of the plan against Elizabeth. So damning was it in Phelippes' view that he drew a picture of a gallows on the outside of the copy he sent to Walsingham. To better implicate Mary, Phelippes forged a postscript (enciphered) asking for the names of the conspirators. On August 3, Babington replied, acknowledging the fatal letter. The next day the plot collapsed, and all the conspirators fell onto Walsingham's plate. Babington confessed to the plot and began reconstructing the fatal letters which he had destroyed, helped along by Phelippes and his decrypts. Mary was arrested a week later.

Mary's execution followed in February of 1587. Some question remains concerning her guilt. There is no doubt that Walsingham's agents, who had infiltrated the group, may have acted as agents provocateurs. Also, Mary's perspective on the plot was centered on her possible release; any plot that promised that would gain her support. But in her letters she never opposed the plans to kill Elizabeth; it was an integral part of Babington's plan. Mary's complicity was in her own words, written in her own hand.

One final note. After her execution, a letter was sent to supporters in France describing it in detail ("...three blows before he severed it from her body. He held it up..."). This letter was encrypted in the Botley System, which was a variation of the same system used by Mary. A copy of a portion of this letter is available in the NSA/CSS Archives (Accession #2484N, "Decryption of Execution of Mary Queen of Scots - Shorthand Problem").

[For further details on Mary's life and the plots, a good source is Antonia Fraser's biography, *Mary, Queen of Scots*, published in 1969.]