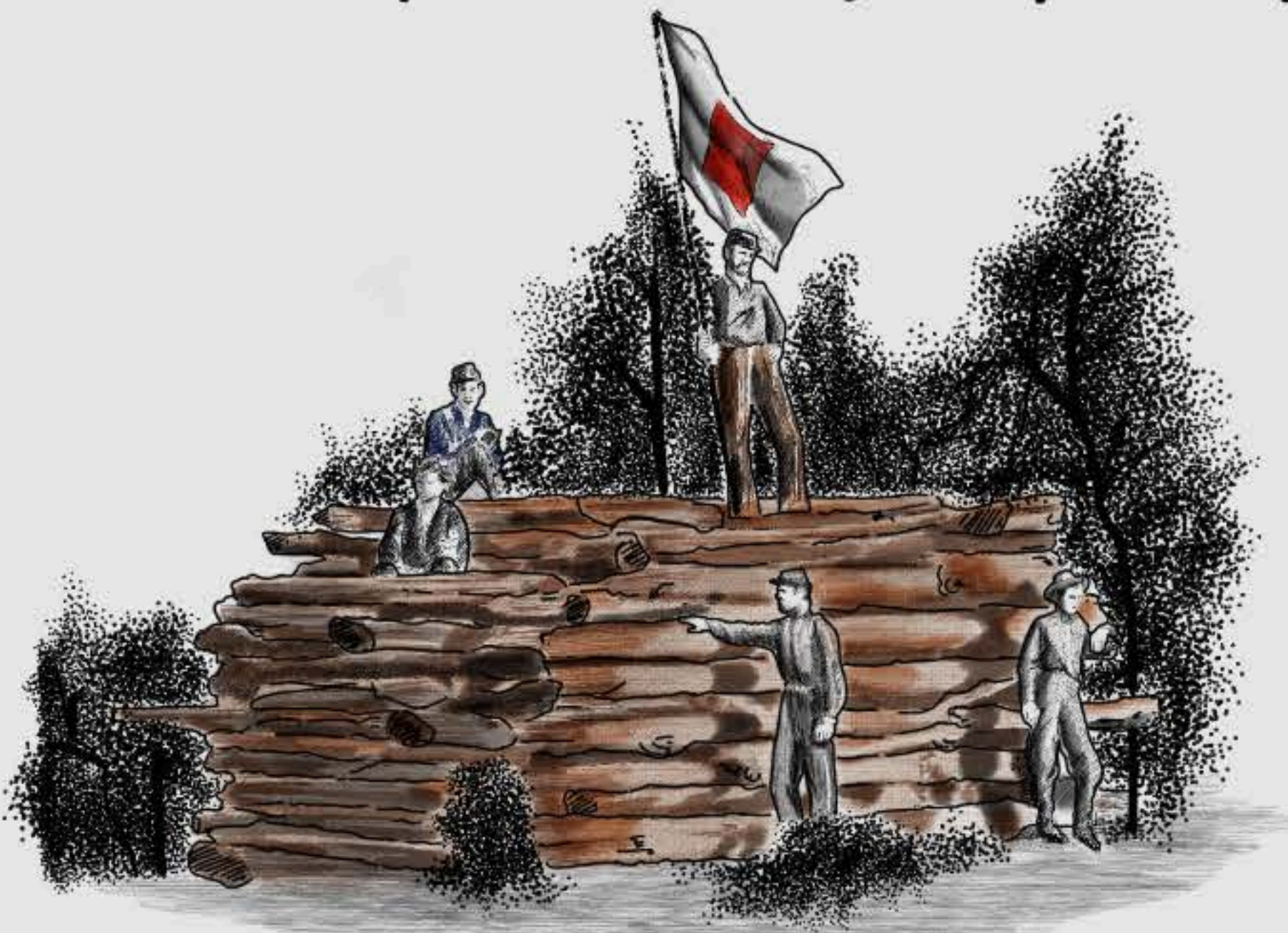


Just before the American Civil War, Albert Myer caused a revolution in long-distance communications for the Army. He devised a system in which different positions of a flag would stand for individual letters. When the Civil War began, both sides used a variant of this system for field communications.



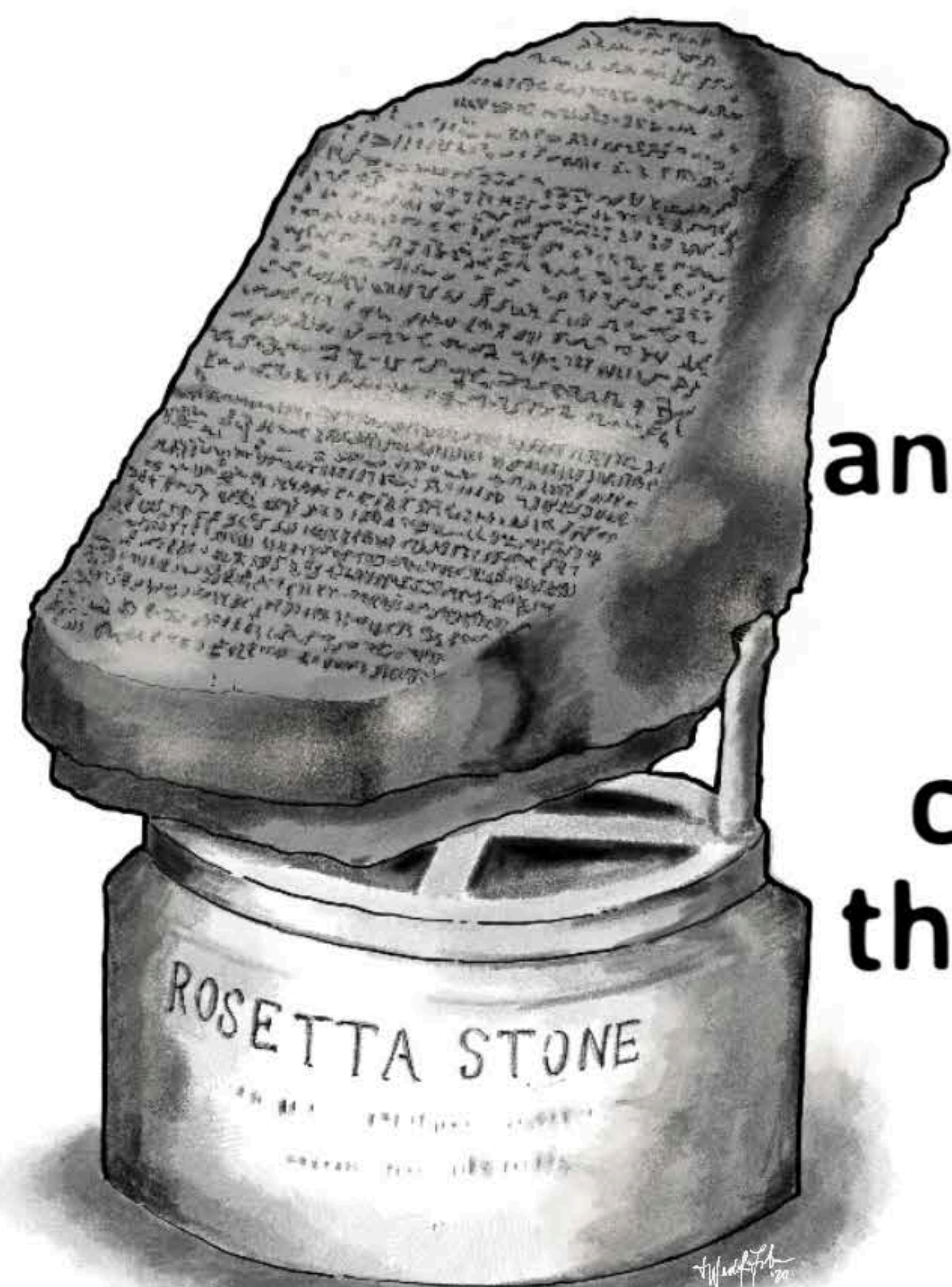
Because the process of sending a message was highly visible, both the Union and the Confederacy recognized that each message needed to be protected by a cipher system.



In the middle of the 19th century, people became interested in codes and ciphers. From the 1840s, long-distance comms were possible by telegraph, requiring



that business messages and sometimes personal ones be protected from prying eyes.

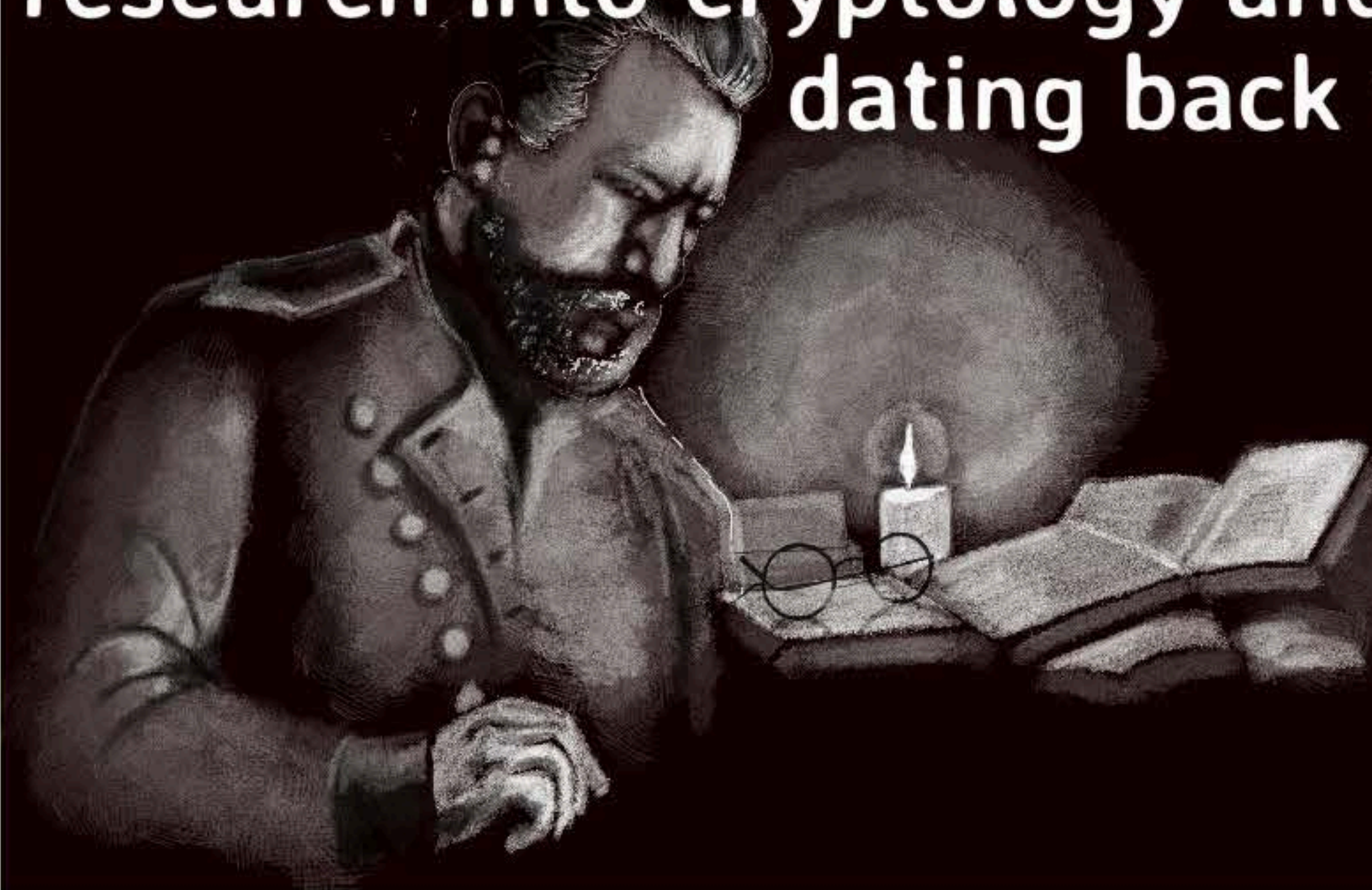


People were fascinated by the story of the Rosetta Stone, discovered in 1799. It was a broken piece of an ancient Egyptian monument that had an inscription in three writing systems---hieroglyphics, a common script, and Greek. Up to that point, Egyptian hieroglyphics had been unreadable.



Scholars used the Greek language inscription on the Rosetta Stone to solve the parallel inscription in hieroglyphics. In this process, European professors used skills identical with those that might be used to solve a secret code from a foreign country.

When Albert Myer composed a signal manual in 1864, he included large excerpts from the English surgeon William Blair's grueling and tedious research into cryptology and ciphers dating back to 1807.

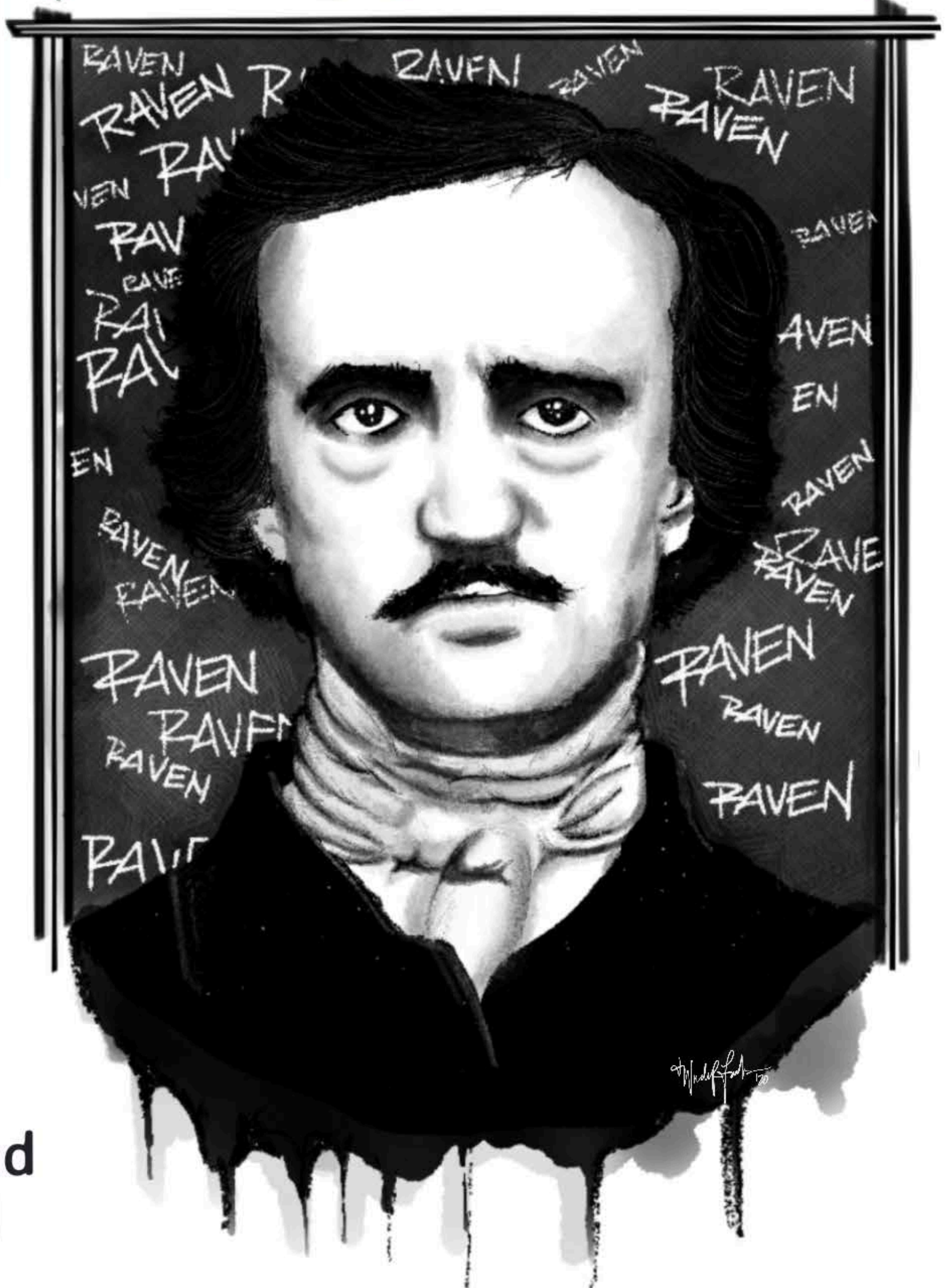


Edgar Allan Poe, now famous for his short stories, was an avid amateur cryptologist. As a magazine editor, he often challenged readers to send him challenge ciphers he could not solve. He also incorporated ciphers in his famous short story in 1843, *The Gold Bug*.

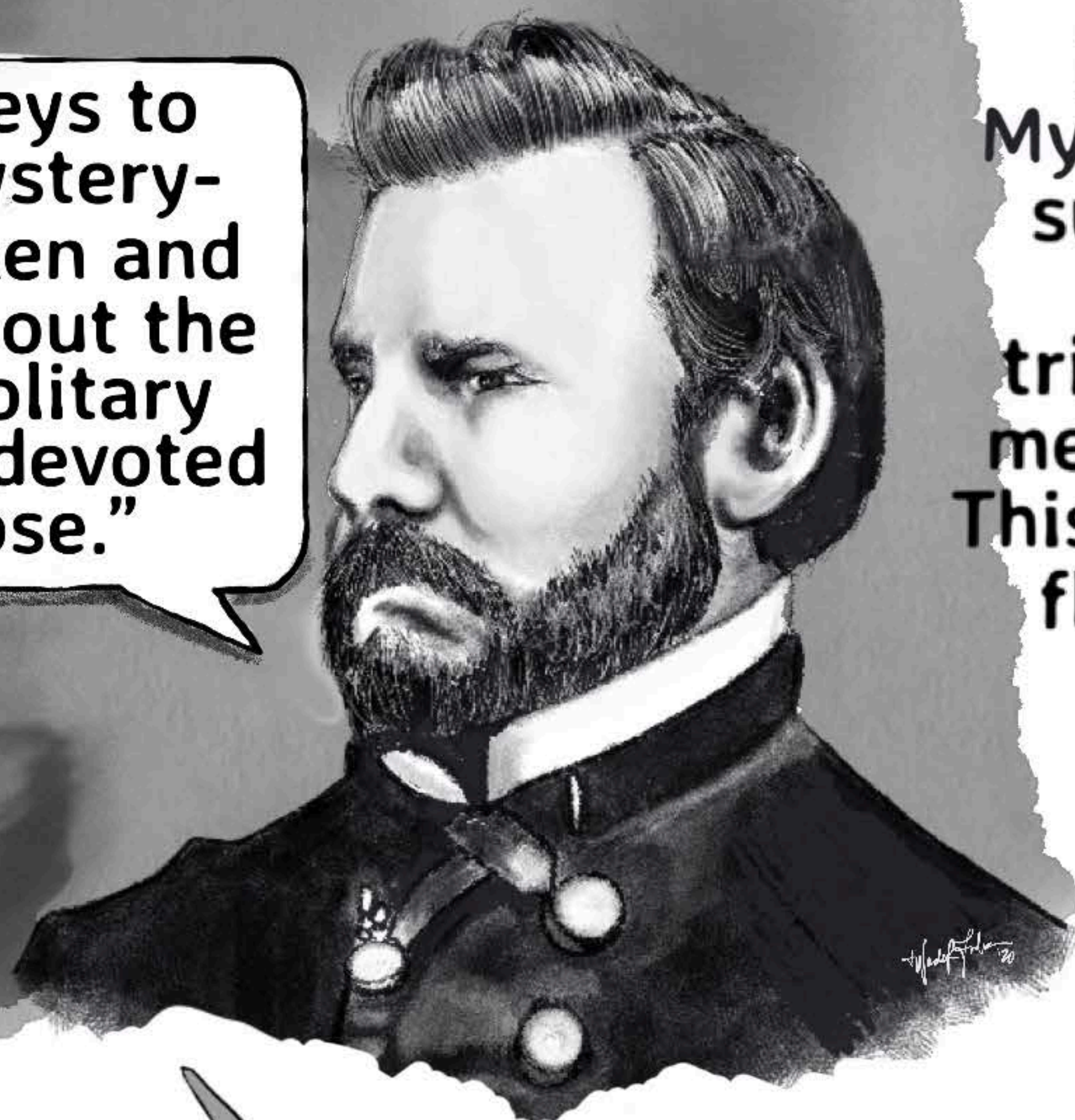


NEW SIGN LANGUAGE for the Deaf and Dumb, or Blind.—A thesis written by Albert J. Meyer, of Buffalo, has been published by the Faculty of the Medical College, in which the propriety of substituting for the present mode of conversing by signs, used by deaf mutes, an alphabet of dots and dashes, or lines similar to those used by the telegraph, by which a conversation may be carried on in the darkness of night by the sense of feeling or touch with quite as much facility as in daylight, and with more rapidity than by the present mode, is argued with force and plausibility.

In 1851, Myer wrote his M.D. thesis at the University of Buffalo on sign language. His study of gestures, hand signals, and finger spelling inspired his future flag code.



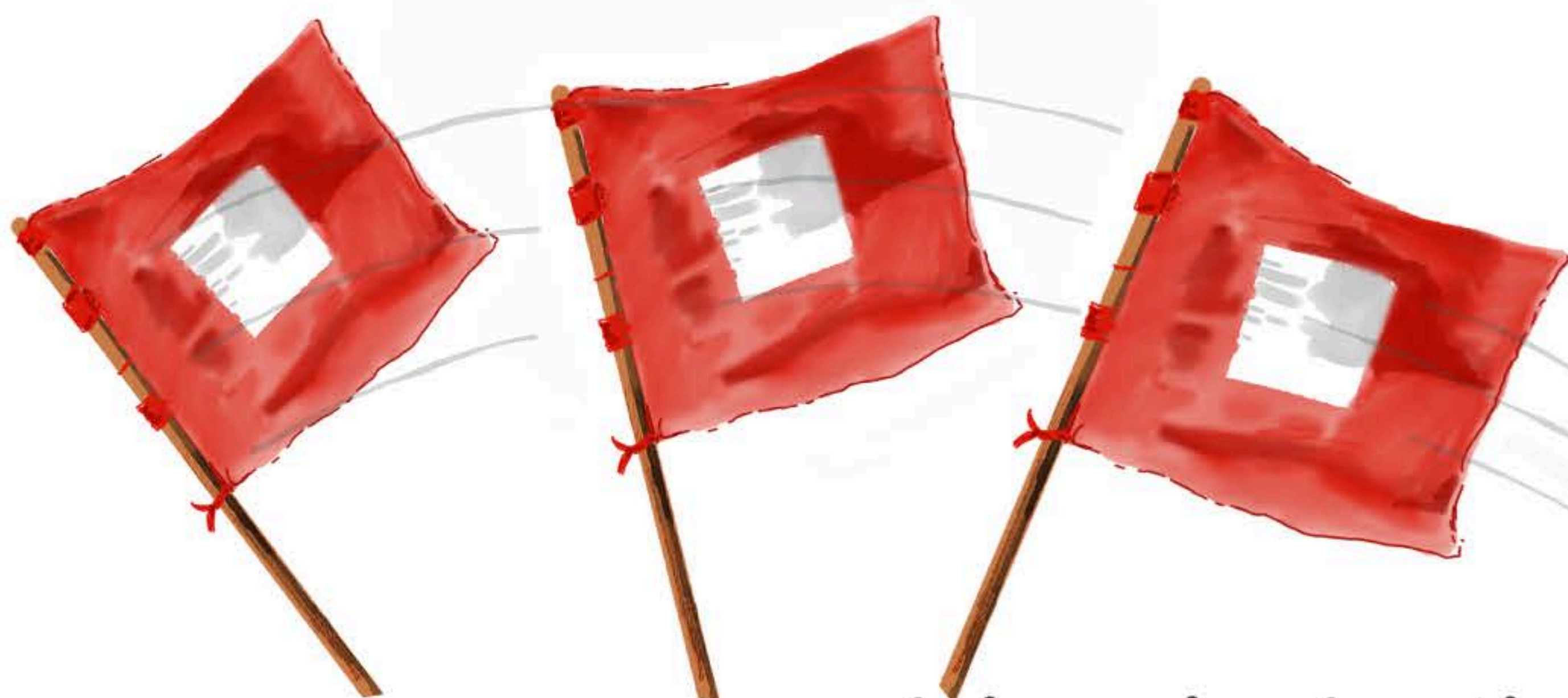
"Such are the keys to the seeming mystery—a language spoken and understood without the exertion of a solitary organ naturally devoted to the purpose."



In 1854, the Army stationed Myer in Texas as an assistant surgeon. While there, Myer observed the Comanche tribe's use of lances to send messages over long distances. This gave him the idea of using flags and torches for signals by the U.S. Army.



Myer developed a method for swiftly enciphering and deciphering messages. The inner ring of a cipher disk represented the plaintext letter of a message, and the outer ring represented the enciphered number.



Once a message was enciphered using the disk, it would be sent to the next signal station. There, soldiers with a copy of the same disk would put it into plaintext for officers who needed to read the message.

