



*Figure 4. Activation analysis experiment to measure the distribution of gunpowder residues left on a "suspect's" hand after the firing of a revolver.*

the scene of a crime. The equipment is simple and consists of a small compartmented polyethylene bag with several cotton swabs moistened with a chemical solution for collection of residue. The used swabs are returned to the original plastic bag and sealed for later analysis.

Neutron activation analysis of hair is an area of research that has grown considerably since the celebrated case a few years ago when this technique was used on a lock of hair reportedly taken from Napoleon's head immediately following his death. The hair contained 13 times as much arsenic as is normal for human hair. This, added to other symptoms of his final days, has raised an inference that the Emperor may have suffered from arsenic poisoning. Perhaps it only indicates his vanity, as some scientists have pointed out that a black hair dye used during that era also contained large amounts of arsenic.