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Firing quill from the Duke of Cumberland's Bastion, Fort George

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ABSTRACT

Describes a firing quill and detonating hammer of mid-19th-century date, found on the Duke of Cumberland's Bastion, Fort George, Inverness District.

The firing quill was found in November 1988 after turf was removed from the east side of the bastion, revealing circles of single bricks, with sand spread in a thin layer within the circle. Just below the surface were two pieces of fabricated copper, both of which had originally been japanned black. The larger piece is a tube 78 mm long and 5 mm in external diameter, formed from copper sheet, with a butt joint. At one end is a hole 4 mm in diameter, opposite the joint with its centre 6 mm in from the end. To this was soldered a side tube. The joint has been split open for 35 mm from the end with the hole, with the disruption most severe for the last 13 mm, from which most of the japanning has disappeared. The intact end of the tube is slightly irregular, and thickened.

The side tube is formed of thinner copper sheet, with a lapped joint. It was attached to the main tube by two integral copper straps, each about 10 mm long by 3 mm broad, which were soldered. The side tube is much distorted, one of the straps having been torn away, the joint burst, and most of the japanning gone. The outer end has two grooves which appear to have been made by impact from a sharp-edged object. The tube is 10 mm long by about 5 mm diameter.

Reconstruction of the original form of the object, and the nature of the modifications made to it, point to its having been a firing quill for cannon of the type devised by a Mr March of the Woolwich Arsenal in about 1830. In this the main tube was filled with gunpowder, and the side tube with a detonating compound. These quills were approved for use by the Royal Navy in 1831, and by the army in 1845 (Hogg & Batchelor 1978). The mode of operation was simple: a hammer mechanism hit the side tube detonating its contents which in turn ignited the gunpowder in the main tube, sending a jet of flame down the touch hole to the powder charge. The force of explosion would hurl the remains of the quill out of the touch hole. The quill could thus be used only once.

The condition of the object as found is absolutely consistent with this theory. The marks on the end of the side tube and the form of its distortion would be made by the hammer and by the subsequent explosion of the small quantity of detonating compound. The disruption of the main tube and the distortion of the lugs on the side tube would have been caused by the explosion of the gunpowder in the tube, and the appearance of the end of the long tube may

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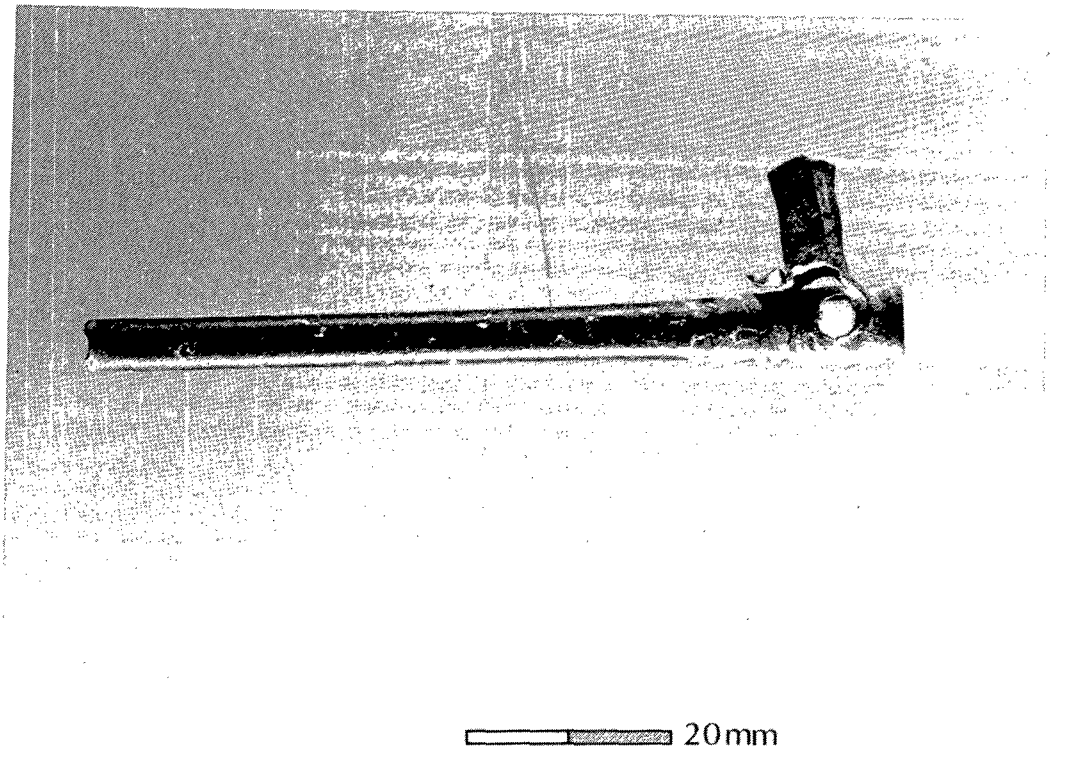
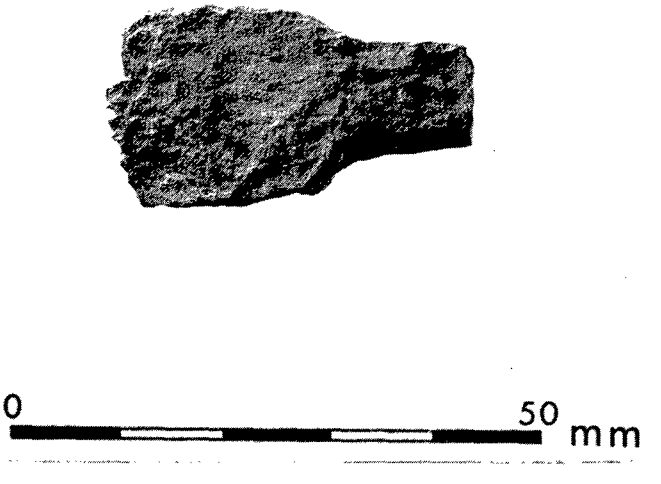


ILLUS 1 *Firing quill from the Duke of Cumberland's Bastion, Fort George*



ILLUS 2 Detonating hammer from the Duke of Cumberland's Bastion, Fort George

have been caused by melting. The good state of preservation of the japanning on most of the main tube can be ascribed to the conduction of heat into the body of the gun, that on the exposed part being burned off or blistered.

The precise dating of this firing quill is impossible to determine, but I would suggest that it was made between 1845 and, perhaps, the mid 1860s, after which time the cast guns protecting the landward face of Fort George would have been obsolete. Its survival is most unusual: no doubt most of these quills would have been collected for sale as scrap.

The detonating hammer was found during the removal of turf from the same area, some days previously. It was originally supposed to be a small chisel, but is ill adapted to this function. It is 35 mm long, 19 mm wide and 14 mm thick, with a tang at the blunt end. There is no evidence of hammer blows to that end. The corrosion pattern is consistent with its being of steel rather than wrought iron. On the sharp edge there is slight evidence of impact at two points consistent with its having hit the percussion tube of the quill, and its proximity to that object is good circumstantial evidence for its use as a means of firing the percussion charge.

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REFERENCE

Hogg, Ian & Batchelor, John 1978 *Naval Guns*, Poole, 36.

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