Correspondence

The mystery of the microscope in mud

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A rare brass microscope was discovered in mud dredged from canals in Delft, the Netherlands, in December 2014. The instrument (pictured, left) is thought to have been made by Dutch pioneer microscopist Antony van Leeuwenhoek (1632–1723; see P. Ball *Nature* **520,** 156; 2015) and is an important find — if it is genuine. The last Leeuwenhoek microscope in public hands was a silver instrument that sold for more than US$500,000 in 2009.

The ten microscopes attributed to Leeuwenhoek are diminutive, comprising a biconvex lens sandwiched between two riveted body plates. A positioning screw holds a stage block and a pin to secure the specimen. A smaller screw moves the stage block to focus the image.

The Delft microscope's design and dimensions are comparable to those of a Leeuwenhoek microscope in the Boerhaave Museum in Leiden. Although the lens is abraded, it would have given about 160 × magnification.

The Delft find cannot be a replica. First, it has a rounded body plate — a comparable microscope in the Boerhaave Museum is rectangular (pictured, right), and a copy would have an identical configuration. Second, my analysis of the screw thread at the Cavendish Laboratory at the University of Cambridge, UK, shows that it is unlike threads produced by modern mechanical methods. The distance between the threads (or pitch) of the main screw is 0.9 millimetres, comparable with that in authentic instruments.

I am preparing a protocol through which the production details of all existing Leeuwenhoek microscopes can be scrutinized. Scanning electron microscopy should then be able to detect any forgeries.

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