

Dutch master rediscovered

Authenticated van Leeuwenhoek is only the 13th to be found and boasts the most powerful surviving lens

A microscope discovered by chance in a house clearance has been authenticated as the work of ‘the father of microbiology’, the 17th century scientist Antoni van Leeuwenhoek.

The small silver instrument, which is more than 300 years old, sold recently at Christie’s for c.£175,000, including commission.

Identified as a Leeuwenhoek by professor Brian J Ford (right), who has previously authenticated two others made by the scientist, it brings the number of surviving microscopes attributed to the Dutchman to just 13 out of the hundreds he designed.

Ford’s investigation was carried out at the University of Cambridge’s Cavendish Laboratory, with the support of professor Richard Langford and the technical advice of chief microscopist Eric Tapley. Ford employed a Hitachi S-3400N scanning electron microscope (SEM) to determine the method of manufacture which characterises

the ancient microscopes.

“Scrutinising an antique microscope under its modern-day counterpart is a unique experience,” says Ford.

“Identification of these antique objects is customarily made by individuals, based largely on personal opinion. I have now developed a protocol that provides objective data



on which to base a conclusion.”

The scientist compares newly identified instruments with the characteristics of known Leeuwenhoek microscopes; for example, manufacture of the screw threads by hand was a difficult and demanding task but Ford used the SEM to pinpoint techniques employed by Leeuwenhoek.

“The use of a SEM at very low magnifications is immensely revealing. You may need over 100 frames of each microscope, all of them tending to vary in tone, magnification, contrast and proportionality, so this is not a job for the faint-hearted or the tyro. But it does finally provide objectivity in authentication, and that has never existed before,” comments Ford, who believes his technique has broad applications in the study of historic scientific instruments.

A former draper, who turned to lens making, Leeuwenhoek embarked on his studies of microbial life relatively late, in 1674 when in his early 40s. He went on to identify microbes, sperm cells and bacteria using small, single lensed microscopes.

The newly-found microscope was discovered in a house clearance in East Anglia. The auction house’s description noted the lens achieved a magnification of approximately 285x, making it the most powerful surviving Leeuwenhoek lens. ■

Sequential images of the microscope (below) were assembled to give a SEM image of the entire instrument, using the Hitachi S-3400N scanning electron microscope

