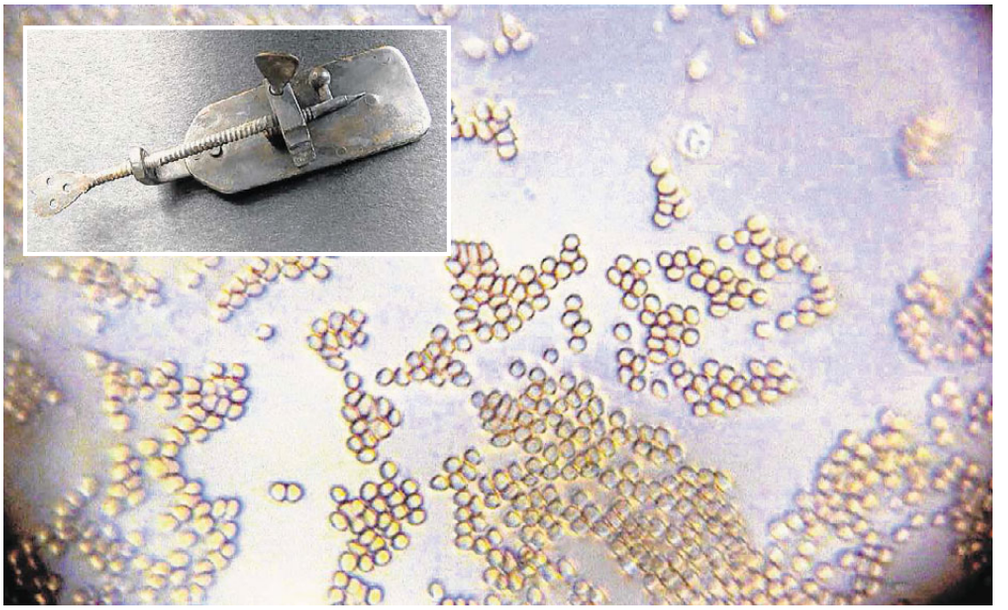
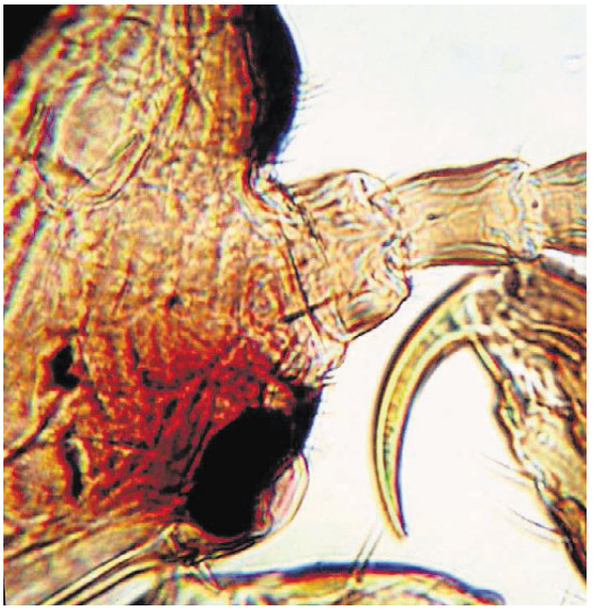
SCIENCE



PIONEERING: Inset, the object believed to be a Leeuwenhoek microscope; and above, blood seen under one of the instruments



MONSTROUS: Above, a microscopic image of a louse's head and claw

Discoverer of an unseen world

IT is two inches long, made of metal – and it may be one of the most astounding scientific instruments ever created.

A brass object found in mud dredged from a canal in the Netherlands is believed to be one of the first-ever microscopes, dating back to the 17th century, and possibly the handiwork of the father of microbiology, Antony van Leeuwenhoek.

And a Cambridge professor, who has been fascinated by the Dutch pioneer since he was a teenager, is hot on the trail of establishing whether it is genuine.

Leeuwenhoek perfected the microscope in the mid-1600s – a tiny single lens the size of a pinhead sandwiched in a hole between two flat, rectangular sheets of brass, and adjusted by turning a simple screw mechanism. Using the fiddly little device, the amateur scientist discovered a hitherto unknown world, because it was invisible to the naked eye – bacteria, blood cells, and sperm.

CHRIS **ELLIOTT**
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Prof Brian J Ford of Gonville & Caius College has been carrying out remarkable research into the Dutchman and his microscopes, including re-creating the inventor's work, using one of Leeuwenhoek's original microscopes.

Prof Ford also had a device built that effectively used the tiny lenses in authentic or replica Leeuwenhoek microscopes as the lenses for his own camera – which he then used to take photos, including his own blood cells and the head and claws of a louse.

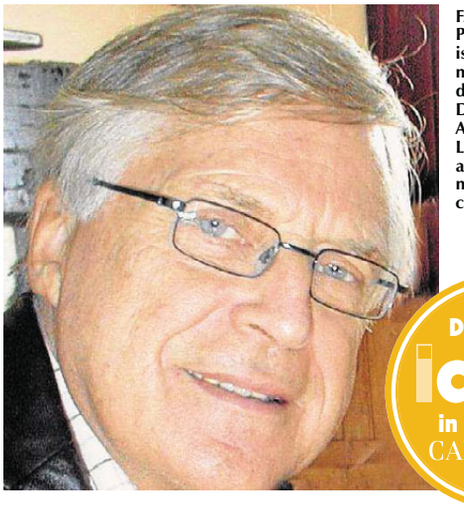
Prof Ford told the *News*: "My intention was to record exactly what Leeuwenhoek discovered all those years ago.

"Using the latest scanning techniques at the Cavendish laboratory in Cambridge, we have also been examining the detail of the microscope's focussing screw, which shows it is unlike any threads produced by modern mechanical methods.

"I am preparing a protocol through which details of all existing van Leeuwenhoek microscopes can be scrutinised. We can then use scanning electron microscopy to detect any forgeries.

"We hear about telescopes and astronomy these days, but the microscope opened up a completely new universe.

"Leeuwenhoek discovered bacteria and so many other microbes, and it was his work that set in motion our modern era of cell biology. Finding a new microscope from his own era is astonishing."



FASCINATED: Prof Brian J Ford is probing the microscopic discoveries of Dutch scientist Antony van Leeuwenhoek, and the microscopes he created