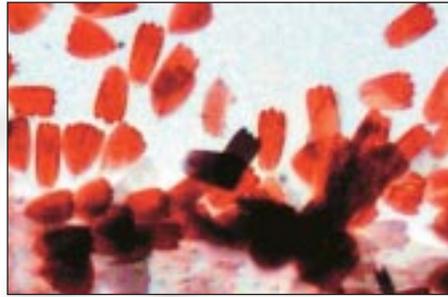


Real/Imitation?



The wing of a dead Small Tortoiseshell butterfly.



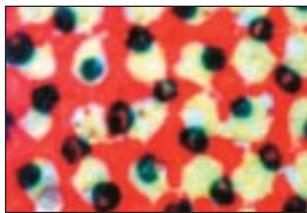
At 200x, the scales that brush from the wings are visible.



10x shows the fake wing with the first signs of a half-tone.



At 60x the printer's half-tone is easy to see.



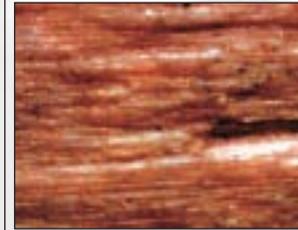
Under 200x it's clear that this wing came from the printer.

In a display case sits a dead butterfly with its wings spread wide. Not. It's a fake. The wings are paper cut-outs and have been printed in a factory. Under the microscope we can reveal the pattern of coloured dots printers use. The dots are the half-tone screen that makes up a printed image: red (magenta), yellow and blue (cyan), plus black. The wing of an actual butterfly is covered with shield-like scales, like tiles on a roof, and the digital microscope shows you their appearance. There are plenty of fakes around these days, and stamp collectors are sometimes sold printed copies of genuine stamps. These fakes are worthless. Even the wood around you is not always genuine. Formica gives us a chance to see what imitation wood-grain surfaces look like under the microscope. The

appearance is quite like wood under low power, but once you get to 60x you can see the pattern of dots from a half-tone. This means that the wood effect has been printed. Many supposedly wooden surfaces these days are actually a printed roll of paper bonded between sheets of plastic. Most 'oak' kitchen worktops have never been near an oak tree. The digital microscope will give you the evidence. Look at genuine wood for comparison. You will see the tightly packed vessels through which sap rose when the tree was alive. But artificial wooden work surfaces, wall panels and floors - no matter how good they look to the eye - can be identified using the microscope. You can count the number of dots per millimetre. Ink-jet colour printers have a finer screen than half-tones. If you look at the nozzles of an ink-jet



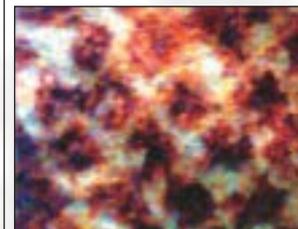
Here is the view of a pine door under the 10x objective.



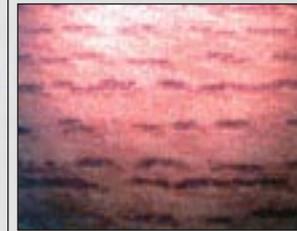
Under 60x the wooden door can be seen to be genuine.



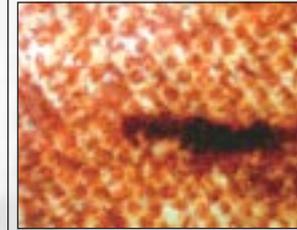
With the 10x lens, Formica looks very much like wood.



200x shows how the wooden pattern is printed.



At 10x magnification this 'oak' surface looks suspicious.



By the time we magnify the 'wood' 60x we can see the printing.

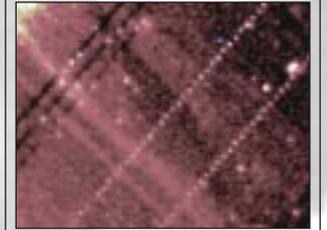


The hand-held digital microscope visualises an 'oak' panel at 10x.

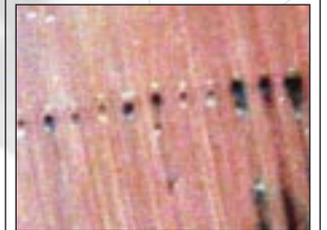


At 60x the truth is revealed - the 'oak' is made of plastic.

print cartridge you will see the tiny holes through which the coloured inks are squirted. The high number of dots is achieved by having two staggered rows of holes, as the 60x lens reveals. With your new understanding of forgery you can tell fake from genuine with your microscope.



Two staggered rows of ink-jets produce the dots - 60x.



These are the jets from a printer cartridge at 200x.



This sample is from a 760 dpi printer at 200x. Is it?