

# Yourself

## Looking at Yourself

Long before you reached this page you are bound to have turned the microscope on yourself. Go on, you did. You can look at your eye, hair, fingernails and skin at 10x. With a magnification of 200x it is impossible to use the microscope hand-held on a moving subject like a person, but you may capture good images with the 60x lens. Developing a skin lesion? Monitor its progress with photographs taken with the digital microscope. Catch a splinter from rough wood? Extricate it with the 10x



**Because the fingertip is curved it is hard to focus it all.**



**At 60x the details of the ridged skin are easier to discern.**

lens, and make a video if you wish to impress everyone with your surgical abilities. The QX3 isn't up to giving clear photographs of blood cells, though you can make them out. Fish blood cells are larger than mammalian cells, and (unlike ours) they each contain a nucleus. You can't make them out clearly with the QX3, even at 200x. However, this digital microscope does give reasonable images of permanent microscopical preparations. Making microscope slides is time-consuming and takes patience. The tissue sections in this book were made by the author as a teenager, but you do need to learn the techniques properly and have the right equipment available. You cannot simply stick something to a slide with tape and hope that will do. It won't. To make slides of animal tissues, the specimen is embedded in wax and then cut on a precision instrument, a microtome, to give very fine sections. They are stained with red or purple dyes to make the cells stand out. Nerve cells, it so happens, stain particularly well with salts of silver - indeed, many tissues have their own staining techniques.



**Can't resist this, can you? Look at your eye with the 10x lens.**



**With a steady hand you can capture details at 60x.**



**You may even capture the eye's blood-vessels at 60x.**



**A stained fish blood smear at 200x shows the cells poorly.**



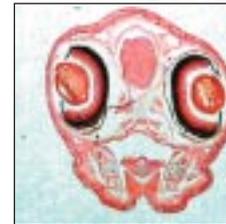
**Cross-section of sheep spinal cord magnified 10x.**



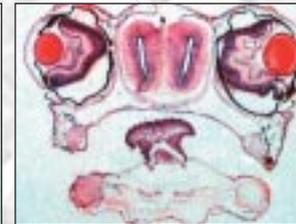
**By the time we get to 60x the nerve cells, neurons, are appearing.**



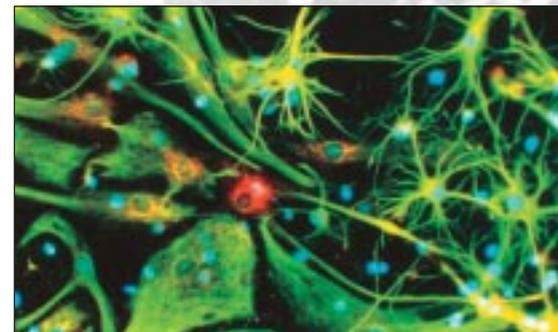
**At 200x you can see how neurons are wired to communicate.**



**Section of a young eel showing eyes, brain and jaws - 10x.**



**Maturing tadpole shows eyes, tongue and gill-slits.**



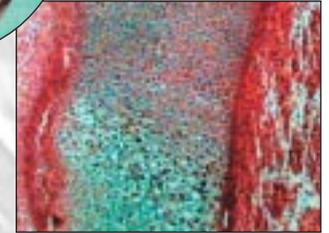
**Nancy Kedersha shows how to use a fluorescent microscope on astrocytes, branching human cells that are common in the brain - 500x.**



**Observe the adrenal gland (top right) next to the kidney - 60x.**



**Rat embryo at 10x teaches much about internal anatomy.**



**Even bone formation in the pelvis is visible at 200x.**

If you decide to explore the possibility you'll need full training, and you'll also need a microscope with really good optics. Sections of specimens can help you make sense of anatomy and it is important to see the cells of which you are composed if you are going to understand how you work, and what modern medicine means. When you have seen neurons, for instance, you can get a better idea how busy yours are at this very moment, with all this reading going on.