



# Trigger happy

**Bill Harvey** tries out the latest slit-lamp imaging system from Haag-Streit and is impressed by its novel history trigger function



Figure 1



Figure 2



Figure 3



Figure 4

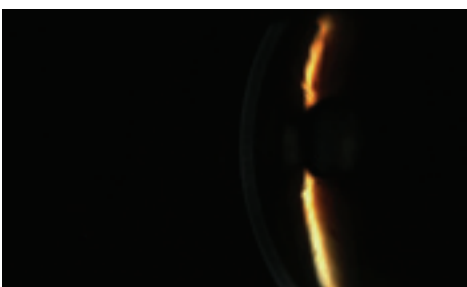


Figure 5

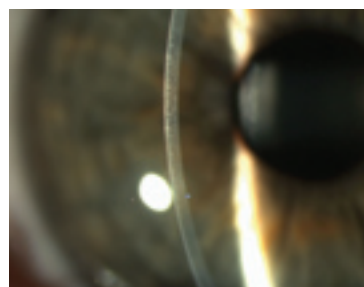


Figure 6

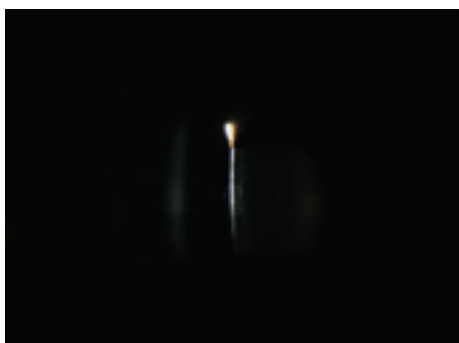


Figure 7



Figure 8

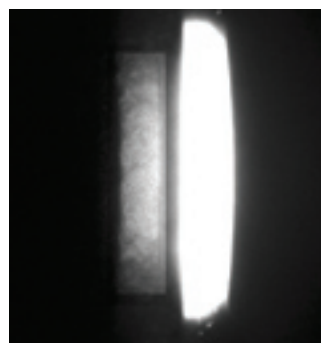


Figure 9

**J**ust stare straight ahead. Hold it! Hold it! And... click! (Figure 1). The number of times the system captures a blink or a moving eye can be quite frustrating. There is often a delay between pressing the button or foot pedal and the capture of the actual image, meaning several attempts are usually needed before the best image is obtained and selected for storage, analysis, transfer or whatever else is required. This takes up valuable time of both the

practitioner and the patient. It also leads to a rapid build-up of images to be sorted through on the hard drive. However, a new imaging system includes features that make this a thing of the past.

### The IM900

The new IM900 is an integrated camera system (Figure 2) with a 2 megapixel camera integrated into the microscope of the slit lamp. There is also a variable stop adjustment (Figure 3 on the left), allowing a reduced stop for higher

magnification images when a bigger depth of focus is required. Image capture is either via a foot pedal or – as in the case of the system trialled recently at City University – a large button at the base of the unit to the front of the joystick (Figure 4). On either side of the larger capture button, which I found easier to use than a foot pedal, are two smaller buttons. During capture mode, these may be toggled to change the exposure of the image. Combined with a variable brightness backlighter, the rheostat of

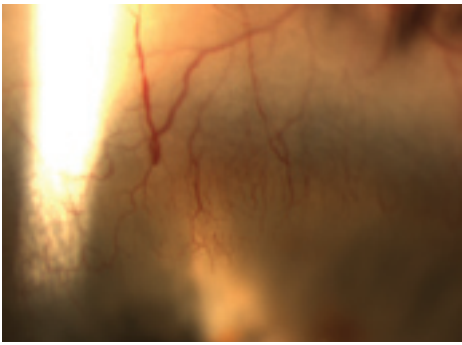


Figure 10

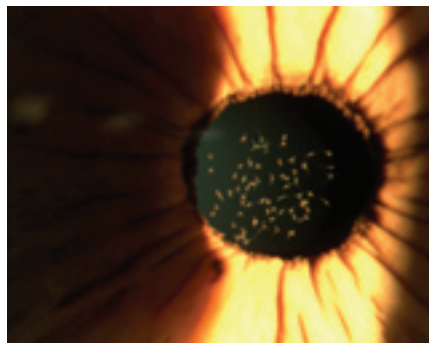


Figure 11

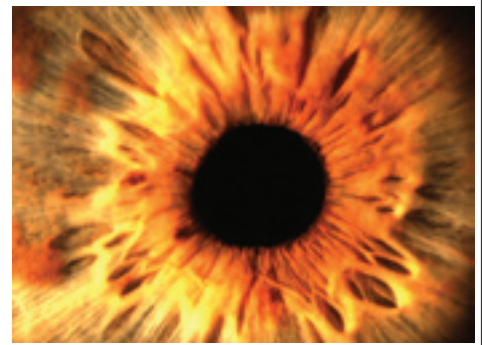


Figure 12



Figure 13

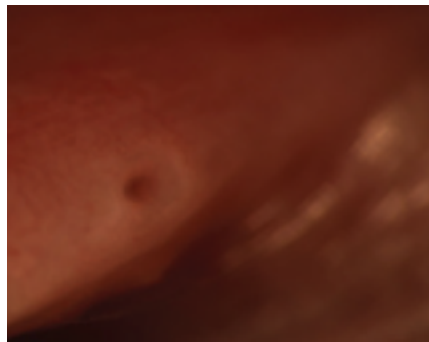


Figure 14

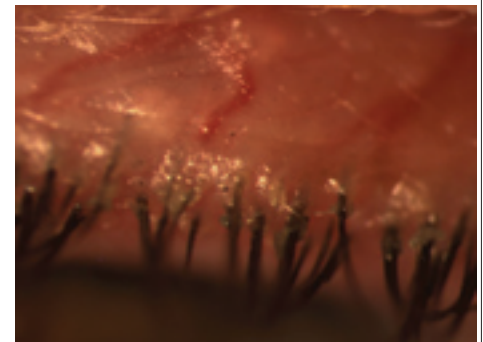


Figure 15

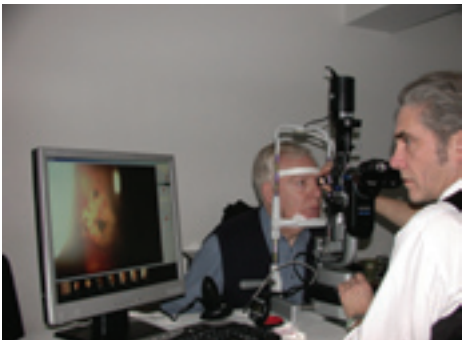


Figure 16a



Figure 16b

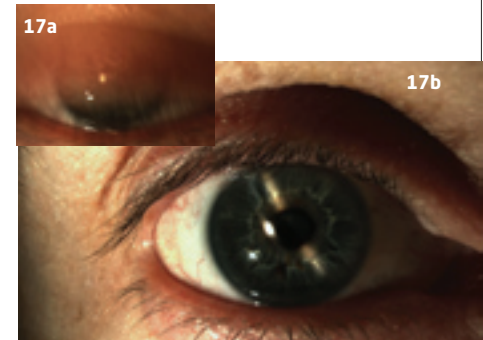


Figure 17

the slit lamp itself and the controlled aperture setting for changing depth of focus, this represents the most adaptable imaging set up I have encountered. And with just a few minutes of practice even some of the more difficult images become easily attainable.

These include a good optic section of the cornea, either with or without backlighter (Figures 5 and 6). As this view requires the thinnest of beams, very often the light levels are too low for capture until the beam is widened – but then the detail of the section is lost. Not so with this system.

Similarly, a good section of the lens is possible (Figure 7) and even the capture of the retrolental space and anterior vitreous (Figure 8), as if aiming to view tobacco dust. This is notoriously difficult to achieve because of the reduced light levels reflecting from behind the iris. The image shown has been enhanced by increasing the gamma setting after capture and the anterior vitreous face

is just visible. Figure 10 shows another often difficult capture, the endothelium. By adjustment of the incident light it is possible to see some cellular shape detail. Figures 10 to 15 show a variety of images taken during our session.

I was also able to try image capture when using a fundus viewing lens (Figures 16a and 16b). The patient shown has significant myopic degeneration and an area of chorioretinal scarring may be seen on screen. This was especially useful, not only to show to the patient, but also to show to the students to check that what they had seen with their examination tallied.

### History trigger

One push of the button or foot pedal captures the image instantaneously, something that Haag-Streit calls 'freeze technology'. However, for all those instants where the final image is not the precise one desired, the system includes a useful feature. The previous seconds up

to the point of capture are also stored. If the image seen on screen is not adequate or as good as wished, the two buttons at the side of the capture button allow the user to scroll back through preceding presentations, each click showing the image several milliseconds before.

For the blinking eye it was possible to click back three times until a view was selected that was suitable and then a second click of the capture button stored that as the definitive image (Figures 17a and 17b).

### Adaptable and easy

For sheer ease of use and adaptability I have to say that this represents the best slit-lamp image capture system I have used to date. The history trigger function is a great help and the quality of the images produced are excellent. ●

● For further information of the IM900 contact Haag-Streit UK on 01279 456261 or on Stand N10 at Optrafair.