

### *Photomicrography with the SP-200 compound microscope or BMS stereo microscope:*

WHAT YOU NEED
SP-200 compound microscope or BMS stereo microscope
Nikon P6000 camera and adapter
Dell E5500 laptop
EzCap AV cable
Microscope slide with sample for viewing

#### *1. Set up camera:*

1. Connect the camera to the mains electricity as the camera battery is not suitable for use over a prolonged period.
2. Set camera to setting 'P' (Programme), then set to Manual Focus (MF).
3. Turn off the automatic flash.
4. Change 'Auto Off' (in the 'Set-up' programme, spanner symbol) to the maximum time which is 30 min otherwise the screen on the camera will shut off after 1 min. Once the maximum 'Auto Off' timing is set, the camera will shut down after 30 min. The green light of the 'ON/OFF' button on the camera goes out. To set for another 30 min, press this button.
5. The 'white balance' control will have an effect on the colour balance of the photographs. Select the version best suited to your lighting system by trial and error.

#### *2. Attach camera to microscope:*

1. Screw the microscope adapter supplied onto the front of camera.
2. For the BMS Stereo microscope, place the adapter in the trinocular port and finger tighten screw to hold camera in place.
3. For the SP200 microscope, remove the **right** eyepiece from microscope<sup>1</sup>, insert camera and adapter into eyepiece and finger tighten screw to hold camera firmly in place.
4. Turn on camera.
5. The image can be viewed on the camera screen. Focus slide with fine focus control (LHS microscope) and increase light (rheostat control) if necessary.
6. The field of view can be increased by using the 'Z', Zoom lever (part of the shutter button) on the camera.
7. The text can be removed from the image by pressing the monitor button (page 4 of Nikon P6000 Instruction Manual).
8. If you are **not** using the laptop with the microscope, the timer delay needs to be set each time you want to take a photo. This avoids 'camera shake'. The camera is supplied with a 2 GB memory card.

#### *3. Viewing and saving images with the laptop:*

1. 'Ulead Video Studio' software has been pre-loaded onto the Dell E5500 laptop to interpret the camera image. The AV cable, 'EzCAP' USB Video Grabber, requires this software (a copy of the software CD can be found in the KT Protocols file).

### *3. Viewing and saving images with the laptop Cont'd.:*

2. Connect the Nikon cable supplied with the camera (small USB cable with yellow and white plugs to the USB camera port. Next, connect the yellow and white plugs to the corresponding plugs of the 'EzCAP' USB Video Grabber. Connect the USB to the laptop.
3. On the laptop, click on 'Ulead Video Studio' icon on the desktop.
4. On the tabbed menu bar click 'Capture' then click 'Capture Video'.
5. The 'Live' screen on the laptop now shows the field of view of the microscope. If the view is circular use 'Zoom' lever which is part of the shutter button on the camera to adjust to full field. The screen can be made into a full screen on the laptop by clicking 'Full Screen' icon on the bottom right hand corner of live screen. Press 'Esc' on the laptop to return to the previous screen.
6. To take a picture, click 'Capture Image'<sup>2</sup> on the screen. The images are displayed adjacent to the 'Live' screen.
7. The resolution of the image taken with camera and saved to the memory card (point 8, section 2 above) will be superior to the image taken on the laptop.

### *4. Disassembly:*

1. Remove the camera with adapter from eyepiece and replace ocular.
2. Turn off camera, unscrew adapter. Store in a safe place.
3. Remove cables.

### *5. To edit images:*

1. Image editing software 'Picasa 3' software has been preloaded onto the laptop. Double click the 'Picasa' icon on the desktop. When this programme is opened it automatically shows the images taken.
2. The images can be edited or deleted in this programme.

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*Notes:*

<sup>1</sup> Do not use the camera with the trinocular port on the SP200 microscope except for fluorescence imaging.

<sup>2</sup> It is not necessary to press the black button on the EzCAP USB video Grabber (if there is one) as it does not work with the Ulead Video Studio software.