Summary of Photographic Equipment and Techniques Used

Firstly the equipment components will be listed and then general procedure will be described.

Camera - Canon EOS 7D Digital Single Lens Reflex

This camera has two facilities for this type of macro work where precise focusing is particularly critical. Firstly it has a "live view" screen so which previews the actual image to be recorded by the sensor which is easier to use than that provided by the visual view finder. Secondly the camera has a mirror lock-up facility which avoids the camera shake that might otherwise occur when the mirror is raise, this is particular important when high magnifications are being used. Also to prevent camera shake the camera is invariably used with a cable release.

Lens 1 - Canon 100mm macro

This lens is used for magnification up to life-size, so it is used for the larger stages, mature larvae, pupae and adults. Indeed this is my favourite lens in the field.

Lens 2 - Canon 65mm macro (shown in setup picture.)

This special lens is used for magnifications in the range 1 to 5 times life-size, and is used for smaller details such as eggs, scales on butterfly wings etc.

Flash - Canon Macro Twin Lite MT24-EX

This provides flash lighting from either side of the lens thus avoiding shadows yet providing some modelling depth. If needed, the brightness ratio of the two sources can be varied. As some subjects can be shiny, diffusers were placed over the lamps.

Support - Opticron Hide Mount

I have found this, primarily aimed at birdwatchers in hides, provides a convenient and steady G-clamp support for the camera which can be affixed to the edge of the work table.

General Procedure Notes

Obviously the main concern is to obtain reasonably sharp images. Having obviated camera shake it is then important to obtain focus and sufficient depth of focus. At high magnifications this latter can become very small, it can however be increased by reducing aperture but not to the extent that lighting and image resolution is compromised. The use of flash helps in providing controlled lighting. In general the optimal exposures were found by trial and error by taking a series of shots - digital photography at least has the advantage of providing instant feedback. Another practical consideration is to provide suitably placed neutral background, matt coloured card was found suitable for this purpose - again a subject for experiment.

Although I take images both in RAW and JPEG, I find the quality of the latter are sufficient for most purposes. I use Photoshop for minor image manipulation such cropping and brushing out any unwanted items (which are annoyingly common at high magnifications!) Sometimes I have used Helicon extended focus software which enables images to be stacked to obtain a greater depth of field.

In conclusion it should be emphasised that this type of photography is a continuing learning process - there is always a better way!


Canon