

GUIDELINES FOR PHOTOGRAPHY AND OPCA A SLIDE COLLECTION

Photography is an essential component in establishing plant records. The subject, its scale and proportion can be recorded objectively on film.

1 OPCA A REQUIREMENTS

1.1 One master set of colour transparency photographs (slides) is required for each plant.

This Master Set consists of 4 views, either landscape (horizontal) or portrait (vertical) of each plant:

- i. Take 1 close-up detailed (full front) photo of flower. Include 5cm scale in picture, preferably at base of slide.
- ii. Take 1 close up photo at 90° angle to the above. This may be required to show flower detail. Include 5cm scale.
- iii. Take 1 photo of flowering stem and foliage. Include 5cm scale at centre base of slide.
- iv. Take 1 photo of semi-mature to mature plant to show growth habit and, if applicable, its flowering density.

These photographs may need to be taken over a period of time - from a few months to several years depending on the growth of plants and the particular species.

It should be noted that ideally 4 sets of slides are required since separate transparencies are much cheaper and of better quality than copies. These would then provide:

- 1 set for archival storage
- 1 set for copying and publication
- 1 set for everyday office use - i.e. a general purpose working set.
- 1 set for collector

But being realistic, the OPCA A can only expect 1 master transparency set.
(See 3. Storage of Photographic Transparencies)

1.2 Presentation

- i. Clearly identify in print (see iii Slide Identification) and number the slide in erasable pencil. Provide an annotated dated list or complete the accompanying photographic record sheet when forwarding to the OPCA A.
- ii. With slides for your own use, print clearly and use a permanent ink pen (e.g. Sharpie, Pen. fine point, from Zetta Florence. See 5.1
- iii. Slide Identification (see below)

Botanical Name		No.
Name (of photographer)		Date (of photography)
	Site & Photographic details (film/ratio)	

The most important advice is to read the manual and film information carefully.

Borrow or buy a good basic photography manual and work through the exercises. Suggestions for texts appear on the last page.

2.1 Film

Colour transparency slide film 35 mm, 100 ASA /19DIN (or lower e.g. 64:32). Kodak Ektachrome EPI produced good results. Agfa, Fuji and Kodachrome film have been used successfully by OPCA phot care needs to be taken to ensure that colour reproduction is accurate.

2.2 Camera

A good quality 35 mm single lens reflex camera with a through-the-lens metering system is probably the most versatile. A camera with a manual capability is necessary rather than just being automatic. Hand-held light meters are less common, but in the hands of an experienced user yield excellent results.

2.3 Type of lens

Use a lens that will fill the frame with the subject. A lens with fixed focal length, not a zoom, should be used for best results.

- *For close-up photography a macro lens is necessary with fixed a focal lens of 50mm or 100mm. A normal lens (50mm) will render the subject with a minimum amount of distortion.*

- *Use a Macro 50mm lens with extension rings to increase magnification. A compromise can be made by using a macro focusing teleconverter.*

2.4 Tripod

A tripod is necessary to prevent camera shake and to gain good depth of field. It will also alleviate arm ache. Generally a shutter speed of 1/125th of a second will eliminate camera shake. An extension cable release should be used as well as a tripod.

2.5 Film speed

ASA or DIN is a speed rating which reflects a film's sensitivity to light. 64 ASA is convenient with a range of apertures if light is good. An ASA rating of more than 100 should be avoided as reproduction quality is reduced. The lower the ASA the finer the film grain is.

2.6 Shutter speed

A fast shutter speed will freeze foliage and flower movement resulting in sharper definition. It is preferable to use a tripod if taking photographs with low shutter speed e.g. less than 1/125th of a second.

2.7 Aperture, f-stop

f-stop is the term used to describe the amount the lens opens to permit light entering. A lens often has **f-stops** ranging from 1.8 to 22. A numerically high **f-stop**, e.g. f22, only allows a small amount of light to enter the lens. Such an **f-stop** has a greater depth of field, while a numerically low **f-stop**, e.g. f1.8, has a shallower depth of field and focusing is critical. An f-stop of between f8 and f11 is commonly used.

2.8 Lighting

Use a camera tripod or movable table if light permits shooting outside. Use natural light rather than flash (also see 2.7 Outdoor). Use direction of light at 45 degrees to show up texture if this is important. A lens hood is useful to stop glare.

i Filters

A UV filter improves transparency quality. In early morning or late afternoon use a 81/82 filter. For glossy and water surfaces use a polarizing filter. Never combine more than 2 filters.

ii Outdoor

Weather conditions and direction of sunlight play major roles in determining the quality of your pictures. Generally a slightly overcast sky with the sun behind or above you (ie. not backlighting the subject) provides the best lighting. Bright, direct sunlight can create harsh shadows and cause glare on glossy surfaces. Note the outdoor subject's orientation to the sun and photograph it at the time of day when illumination is best.

The lens should not be pointed towards the sun but rather the sun should be behind the operator and positioned to avoid shadows. A Grey Card which reflects 18% of light can be helpful in determining correct exposure in other than average light situations (ie. backlighting, overall dark or tight subjects).

When taking a light meter reading exclude background sky or any other light source from the frame while measuring. Once the correct exposure has been determined, set the camera manually, then reframe the subject and shoot.

iii Indoor

Black velvet cloth is an ideal backdrop in a studio setting and can be used in a table-top setting outdoors.

2.9 Colour Coding

The Royal Horticultural Society's colour cards are available from the OPCA for colour coding the flower. This should be done on same day as the photography.

3 TAKING PHOTOGRAPHS

It is always wise to bracket the exposure of your photographs by taking extra shots one full stop f-stop on either side of the light meter reading. A professional photographer takes a shot at indicated exposure, another at less than indicated exposure, and a third shot at more than indicated exposure, and often at 1/2 f-over and under. It is important to remember that film is relatively inexpensive and the perfect image may be lost for ever through inaccurate exposure or only occur again in 12 months time.

4 FILM PROCESSING

There are 2 different processes used in developing colour transparency film:

- **Kodachrome process** used exclusively by Kodak and regarded to exhibit the best archival storage properties (eg. Australian National Botanic Gardens).
- **Ektachrome (E6) process** used by all other film brands and is readily processed by independent photographic laboratories.

Film other than Kodachrome can be processed locally by commercial photographic laboratories including the following:

<i>Latrobe Colourlab</i>	<i>89 Tope Street, South Melbourne</i>	Ph: 03 9695 4710
<i>Lab- X</i>	<i>4 Bond Street, South Yarns</i>	Ph: 03 9826 0484
<i>CPL</i>	<i>11 Wellington Street, Windsor</i>	Ph: 03 9525 2586
<i>Photographic & Electronic Image Service</i>	<i>365 Lonsdale Street, Melbourne</i>	Ph: 03 9670 0351
<i>Vermont Photographies</i>	<i>602 Canterbury Road, Vermont</i>	Ph: 03 9874 3865

5 STORAGE OF PHOTOGRAPHIC TRANSPARENCIES

5.1 All slides are to be stored in archival slide sheets. If air conditioned storage is not available, slide sheets should be enclosed in air-proof containers.

Zetta Florence. 187 Gertrude Street. Fitzroy 3065 specializes in archival storage material.
Phone 9416 2236, toll free 1800 247 666 Fax 9416 2360

It has a wide variety of archival polypropylene pocket sheets in various sizes and can provide a product called an Image Portfolio which is an A4 binder holding 50 polypropylene slide pages in a slip case which provides temperature, moisture and dust control (\$49.95 • 1999).

5.2 Ideally, one close-up slide is to be included in an 'ARCHIVAL SET' which is to be stored in the dark under controlled humidity and temperature conditions.

- 5.3 Other slides are to be known as the •WORKING SET. These are to be used for• identification • making copies for publication • use in lectures, etc.
- 5.4 Copies should only be made on special tow contrast copy film. Agfa have an excellent product. High contrast copy duplicates of transparencies are best done by a professional photographic laboratory.
- 5.5 Images can be digitally scanned and stored as computer files.

5.6 GOOD LUCK AND HAPPY SHOOTING

6 EXPERIENCES PHOTOGRAPHING A COLLECTION Don Journet, Collector

It is a common misconception that it is necessary to have expensive camera equipment in order to take photographs of plant collections and their flowers. Although one can spend large sums of money for state of the art camera equipment there are ways of keeping the expense to a minimum. When I started taking *photographs of the Lachenalia collection* I decided to keep one camera loaded with film for the sole purpose of catching the *Lachenalia* in flower. Shortly after this decision one of the lenses on my Practica started to stick giving wrong apertures. While looking for a secondhand lens I found an Asahi Pentax with Takumar 1:1.8/55 tens for less than \$50.00. It has been working well now for several years.

I recently went for a quick look around to see what was available in the way of second-hand cameras and found single lens reflexes in the range \$80 to \$150. This was at camera shops. Other possibilities are shops such as the Cash Converters or Pawn Brokers where one may be able to strike a bargain particularly if the camera has some slight external damage. Obviously there is greater risk but it may be possible to get a refund agreement if you take the camera for a check and find serious faults.

What is required in a camera for use in such work?

Camera: This should be a Single Lens Reflex preferably with through-the-lens metering
eg Asahi Pentax Spotmatic, Praktica

Lens: Good quality removable lens with aperture stops down to f16 or f22.

Extension tubes: Set of three tubes.

Tripod: Any simple tripod.

Other accessories: Shutter release cable, black velvet back cloth.

Other Comments

For close-up work the single lens reflex is essential as the view through the view finder to what you get and focusing can be precise. Bayonet fitting lenses are most convenient but as the screw fittings are largely obsolescent they can be found quite cheaply second-hand.

The through-the-lens metering, although still requiring judgment, gives the easiest assessment of the light levels. In sunny weather a good depth of field is obtainable using (f16 or f22 stop settings at perhaps 1/125 of a second depending upon film speed. To avoid hand shake a shutter speed of at least 1/125th second is required for hand held close-up work. Depth of field is the range of distances from the lens that will be in focus for a certain aperture setting. The depth of field increases as the aperture decreases ie. the larger the aperture f stop number. The greatest problem is obtaining a completely stationary subject otherwise fast shutter speeds will be necessary with consequent opening of the aperture and loss of depth of focus. It may be necessary to take the flowers indoors to avoid the breeze. Find a sunny window because when one can ensure the subject is still a tripod can be used with relatively slow speeds and smaller aperture settings (ie. larger f stop number).

Flowers and small plants can be presented to best advantage if the background is uncluttered. To this end a piece of black velvet suspended behind the subject gives the best results. It is surprising how much reflection is produced when such media as black card or paper is used. The black velvet absorbs practically all light and cuts out any possible distractions.

If this type of photography is new to you it is a good idea to use a complete roll of film quickly to view the results before one forgets the particular techniques adopted. Record as much detail as possible such as aperture, shutter speed, film speed, and even conditions such as time of day and how clear the sky. This data will enable you to assess the results and decide upon modifications necessary to improve on the exposure settings dictated by the camera metering. It will be found that some pale flowers need faster speeds or smaller apertures and some dark subjects require slower speeds or wider apertures than those

suggested by the through the lens metering which sometimes averages an area of frame. Your skill and judgment will soon increase and your reward and satisfaction grow. Remember even professional photographers have a significant number of photographs that are rejected.

If you need to check a camera for shutter speed and lens function a number of the larger photographic stores can run a rudimentary check for very little cost. I have had checks carried out for no charge when buying film. To get good prints, with plenty of detail, it is usually best to get close to the flower.. If the effect required is one of an expanse of colour make sure that the colour occupies a reasonable proportion of the photograph otherwise it can get swamped by masses of green. The most lively and bright colour photographs result from using transparency film. In any case if one hopes of having any photographs published transparency film must be used.

It really is not very difficult to get reasonable photographs so have a go and do not be frightened to make mistakes and ask (or advice if the results disappoint you.

FURTHER READING

Freeman. Michael. *The 35mm Handbook*. Collins, London (unavailable since 1988)

Langford, Michael, *35mm Handbook*. Nelson

Angel, Heather, *The Book of Close-up Photography*. Thomas Nelson, 1983
ISBN 0170062317 (Out of print)

Angel, Heather, *The Book of Nature Photography*. Thomas Nelson ,1982
ISBN 0170061477 (Out of print)

Angel, Heather, *How to photograph Flowesy*. Stackpole Books US. 1998

Bruck, Axel, *Close-up Photography in Practice*. David & Charles, 1884

Hedgecoe. John, *Book of Photography*. Viking ISBN 0670858285

Ruffel, Michael, *The Encyclopedia of Photography*. Octopus Books

Close-up Photography, Kodak Workshop Series

John Shaw's *Close-ups in Nature*. Amphoto, Penguin

Nicholls, Clive. *Photographing Plants and Gardens*. David & Charles

