

# Close-Up Color

Discover a whole new world—colorfully!



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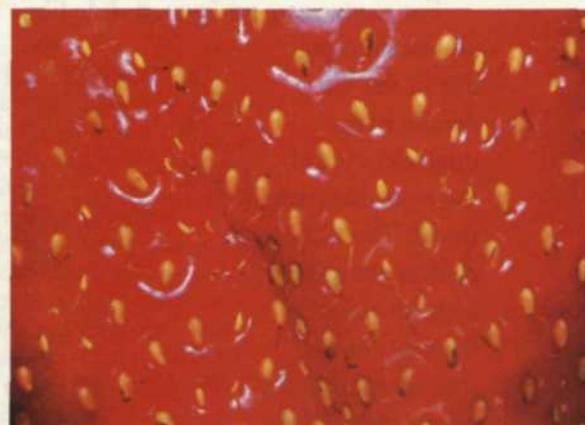
**Some** of the photo terminology today is sure confusing. For example, just what is a close-up? We've talked to other professional photographers and researched photo manuals, but we haven't discovered an exact scientific definition of where a normal picture stops and a close-up starts. Lens, camera, and film manufacturers all use the term so it best fits their products. As best as we can discern, subjects at magnifications greater than  $\frac{1}{10}$  life size are considered close-up. It's at this point that most lenses start to require exposure compensation for

increased magnification.

It is really tough to imagine image magnification, so let's use a couple of examples to illustrate our point. Take a small subject about 1.5 inches long and set it beside a ruler. We use 1.5 inches since it is the width of a 35mm film frame. If you zoom your camera lens to include the subject and 15 inches of the ruler, your image would be  $\frac{1}{10}$  life size (1:10). If you zoomed in until 6 inches of the ruler showed, it would be  $\frac{1}{4}$  life size (1:4). When the 1.5-inch subject fills the frame, it would be life size (1:1). If you can get even closer and only half the subject is in the frame,

your image would be twice life size, or 2X magnification (2:1).

Sounds rather simple, huh? Well, keep in mind that we have simplified the process considerably, and the world of close-up photography is actually very complex. Dozens of books have been written on the subject and we could not even come close to showing you all the different aspects of the close-up shooting. Our spin on the subject is to show you how to get great color close-up images. This involves several different elements of physics, and some special techniques to help improve the quality of your close-up images.



What is close-up photography? It's taking pictures closer than "normal" shooting distances. For our purposes, it's shooting subjects at  $\frac{1}{10}$  life size or greater magnification—the point at which most lenses start to require exposure compensation for the increased magnification. Within that realm are infinite photographic possibilities—from really tight views of common subjects to abstract images of everyday objects (such as the matches at top, or the berry above). And, of course, everybody's favorite—flowers.

Let's start with the types of lenses you can use for close-up photography. The quickest way is to use a close-up filter that screws on the front of your normal lens. These "close-up lenses" usually come in strengths of +1, +2 and +4 diopters. They are inexpensive and quickly get you started into close-up photography, but the down side is the quality of the images they produce is less than that produced by camera lenses specifically designed for close-up photography.

Some newer zoom lenses offer "macro" capability. Now this is where some confusion begins. What is the difference between macro and close-up?

Some manufacturers interchange the words, while others state that macro is an extreme version of close-up photography. Macro means that your lens will focus closer than normal. If you look on the side of your lens, it will show the maximum magnification and its closest focus point.

The best choice, of course, is a lens specifically designed for close-up photography. True macro lenses are specially designed for taking pictures of objects life size or  $\frac{1}{2}$  life size. These lenses are designed to be sharp at small apertures, such as  $f/22$  and  $f/32$ , that offer the greatest depth of field. Other

lenses, not designed specially for macro and close-up photography, will generally have their sharpest focus point two stops down from wide open. For example, a normal 100mm  $f/2.8$  lens would be sharpest at  $f/5.6$ , not  $f/22$ .

Don't get depth of field confused with lens sharpness. Most lenses gain depth of field as the aperture becomes smaller, but lose overall sharpness as you stop down beyond the optimum aperture. We have also found that lenses specially designed for close-up photography also record color and image detail better than a standard lens used for close-up photography.

## Films for Close-Ups

Film selection is probably the most critical element in getting great close-up color images. If you have followed any of our previous articles, you probably figured out that close-up photography is one of our favorite types, and we always try to include some in every color film test we conduct. With all the film data we have collected over the years, we have found that the slower films are best for close-ups. More recently, many film manufacturers have created special films offering various contrast levels. If you are looking for the maximum color saturation, grab some film that offers enhanced or extra color saturation built-in. If you favor pastel colors, then you might consider the portrait films that feature a lower contrast and less color saturation.

For many years we favored slide films for all our shooting, but in the last decade have migrated toward the color-negative world. The film choices are greater, and the exposure latitude ensures that we will hardly miss a shot. While preparing to write this article, we reviewed more than 30 years of close-up color images, and our slides still seem

**Top:** Half life-size (1:2) flower image was made with a macro lens, using two flash units (main and fill).

**Near right:** Stamps were placed in a slide duplicator on a bellows unit. Such a setup is ideal for photographing flat subjects.

**Far right:** This horse fly was photographed at 4X magnification using a bellows and a reversed 28mm lens, on Kodachrome 64 slide film.

**Below:** A 1:1 (life-size) flower image, backlit by the sun, with fill flash.



to be our best images. The grain is tighter, detail more extensive, and overall image sharpness still beats color negatives. Hang on though, don't jump to conclusions and get us wrong. We are not saying that you should shoot all your color close-up images on slides. It's just that the very low-ISO color-slide films (25–100) allow you to get the maximum impact in your images. You just have to be very accurate in your exposure. The low-ISO color-negative films today do a great job and will match the quality of slides. You won't notice the difference until you get into extreme enlargements.

In the past, it was difficult to get prints made from slides because you needed internegatives or an expensive direct print process. Today, the digital world makes it just as easy to scan a slide as a negative, and then output to a high-quality inkjet printer. So, your decision really comes down to the exposure latitude between the two types of film.

Another variable in getting great close-up color is when using electronic flash. Many photographers make the assumption that if they use flash, it will





**Top:** Hawk moth tomato worm, Kodachrome film, two flash units—one on-camera for fill; one off-camera and high as main.

**Left:** Underwater close-up of crinoid, 35mm SLR in UW housing, flash, on color-slide film.

**Above:** Christmas candy, diffused flash in homemade softbox, color-print film.

freeze any motion created by camera shake or subject movement. Not true, since the slowest flash speed at full power is about  $\frac{1}{1000}$  second. It increases as the flash gets closer to the subject, the aperture is opened up, or film speed increases. What most photographers don't realize is that as they get closer to a subject, they need a shorter flash duration or shutter speed to keep the

same degree of sharpness.

If you hand-hold a camera and photograph a flower, and take another image with the camera braced, you will find the braced image much sharper, even if flash was used for both images. One solution is not stopping the lens down all the way. As you open the lens up, the flash duration decreases, to as brief as  $\frac{1}{40,000}$  second. The wider aperture

allows sunlight to appear in the background to provide a better image. Since the depth of field is less, it is critical that you focus on the most important part of an image. An insect, for example, look best when you focus on the eye. You can photograph it using a  $\frac{1}{4}$  angle and let the body go out of focus, or use parallel-plane focus so the side of the subject is in focus.

The last element in this close-up puzzle is you, the photographer. Just having the right equipment doesn't guarantee great color close-up pictures. You have to go beyond just documenting a subject and look for patterns, design, color balance, fine detail, and a center of interest. Color close-ups are like creating a painting with silver and color dyes. You have the brushes and a canvas, now you must manipulate the lighting and subjects to create the best image. When you think you have a good shot, don't stop there. Try a different approach by moving the lights, changing your angle, moving in closer, or modifying the depth of field on your lens. Each time you do, you create a new and potentially even better image. ■