

Photographer's FOCUS



Lighting Techniques for Photographing Mushrooms PART I: THE BASICS

Edward Matisoff

This article is the first of two installments on the subject of lighting for mushroom photography and will address the forms of light utilized for photographing mushrooms. Part II will focus on advanced techniques for balancing ambient light with artificial light to create images with perfectly exposed subjects and backgrounds.

There are basically three forms of light that one utilizes when photographing mushrooms: Direct Sunlight, Ambient Light (or indirect light) and Artificial Light.

Direct Sun: Those sunny days that sometimes follow a good rainfall are an excellent time to find mushrooms. The soil is damp, the air is cool and often the sky is clear. This is beautiful weather, but horrible lighting for photographic purposes. Sunlight is directional and harsh. All by itself, direct sunlight will create intense shadows and high contrast that rarely results in pleasing photos. The sun is, however, a free light source that can be harnessed and utilized in a number of resourceful ways to provide some unique lighting effects. Keep in mind that the sun will never be directly overhead between the months of October through February, which is mushroom season on the West Coast. During those months, the sun follows a shallow arc in the southern portion of the sky. Depending upon where you place the camera in relation to the subject, you can have either direct lighting (coming over your shoulder and directly striking the front of the subject), side lighting, or back lighting. By utilizing some homemade lighting accessories, one can have the effect of a "mini field studio" without requiring a

single battery or artificial light source.

NOTE: As a general proposition, it is recommended that one mount the camera on a tripod or a beanbag (for true ground level shots) when photographing mushrooms. The tripod must have the ability to place the camera very low to the ground, with legs that swing out and lock in at a number of positions, permitting progressively lower camera elevations. The main advantages of a tripod are: (1) Smaller apertures can be utilized to maximize depth-of-field because the one can now use very slow shutter speeds; (2) It allows one to precisely set up and lock in the composition; (3) It frees up one's hands to take care of other matters such as positioning lights or reflectors, as well as the moving of distracting objects out of the scene without disturbing the composition; (4) It permits one to adjust the camera controls without misaligning or changing the camera position.

Because of the harshness of direct sun,

it is necessary to modify the quality of that light in order to obtain satisfactory photographic images.

Homemade Light Modifiers: Light modifiers can take a number of forms, but for purposes of this discussion, we will be looking at objects that modify the quality of the light, but not the color. This will be accomplished in one of two ways: (1) bouncing the light off of a reflective surface or (2) passing the light through a translucent material. To avoid the expense of commercially made photographic reflectors or diffusers, one can manufacture these items at home quite inexpensively with simple household items.

Reflectors: Because you will be shooting small objects that, in most cases, are close to the ground, homemade reflectors need not be very large. You can use white mat board as the basic material from which to construct the reflectors. A 10 x 14 piece of mat board will make four 5 x 7 inch



Figure 1.

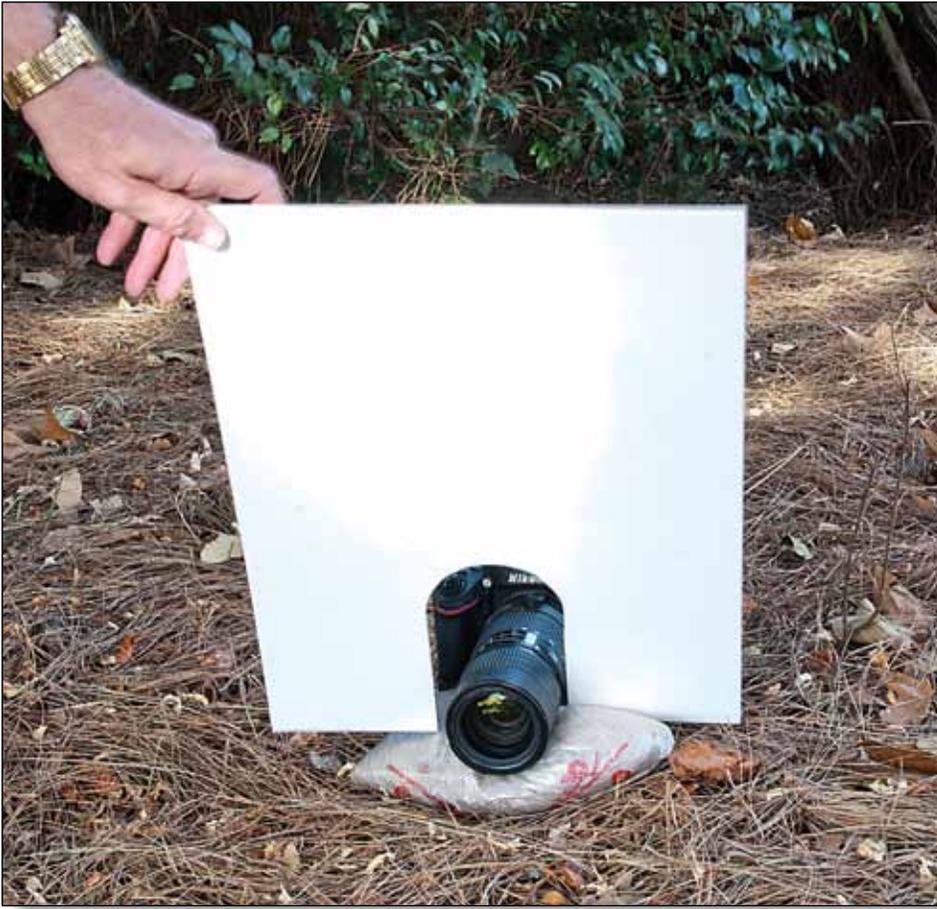
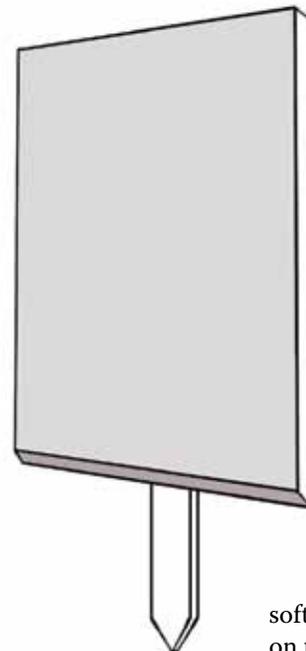
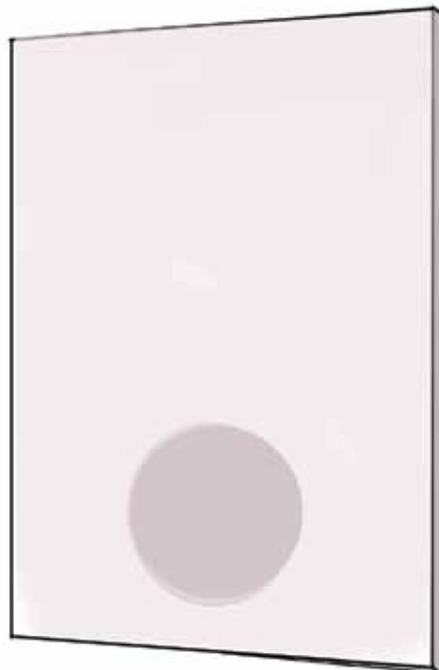


Figure 2.

reflectors and a 16 x 20 inch piece will make four 8 x 10 inch reflectors. One can also apply tin foil to the reflector to increase the amount of light reflecting onto the subject, but the quality of the light bouncing off of tin foil will be almost as harsh as the light that strikes it, and result in deep shadows and higher contrast. Crumpling the foil before applying it to the mat board will break up the reflected light a bit, but the light will still be more harsh than bouncing it off of a white surface.

In order to have the ability to position the reflector and to have it stay in place, locate a small flat piece of material, such as a wooden tongue depressor

or a pair of ice cream sticks, glue them to the back side of the reflector and sharpen the other end so it will stick in the ground. You should have at least two of these reflectors to effectively model the light (see Fig. 1). With this set-up, one



positions the camera so that the subject/mushroom(s) is *between* the camera and the sun. In this configuration, the sun is striking the back of the subject(s) and the reflectors are bouncing the sun light back on to the front of the subject(s). This lighting setup uses the sun as a rim light or back light and will have the effect of visually separating the mushroom subjects from their background. The downside to using this setup is that it obviously limits the scope of available compositions. The best shot of the mushrooms may very well not be the one where the sun is directly behind them.

Another style of reflector that can be very effective and more simple in design is a piece of white mat board between 11 x 14 and 12 x 16 inches in size that has a hole cut in it sufficiently large enough to permit one's camera lens to protrude through the opening. The hole should be placed in the middle of one of the dimensions a few inches from the edge of the board. In the same manner as with the small reflectors, the subject is oriented with the sun behind it and the composition is setup with the camera mounted low to the ground. The hole in the mat board is slid over the lens with the white surface of the reflector facing the subject. Using a free hand, the reflector is tilted and angled so as to direct reflected light on to the subject (see Fig. 2). Set the exposure mode on your camera to AUTO and release the shutter. Then check the results on the

LCD screen. You can make any necessary adjustments to the exposure with the *Exposure Compensation Dial* on your camera.

Diffusers: An alternate method of taming direct sunlight is with a diffuser. A diffuser is a device that scatters light and prevents glare. It can be made of translucent material that is placed between the light source and the subject for the purpose of softening the light that falls on the subject. A homemade



Figure 3.

diffuser could be a small sheet of white translucent plastic a few mills thick or a piece of white linen. You'll need to make a lightweight frame to which you can attach the translucent material. PVC pipe with elbow joints will make a very lightweight frame. The size of the frame should be big enough that diffused light will cast on the subject as well as the foreground and immediate background. The larger the frame, the larger the area of diffused light will be.

Ambient Light: If you are not shooting in direct sunlight, you will be capturing images in ambient light. The forms of ambient light that you will encounter looking for mushroom subjects are, typically, overcast sky or cloudy daylight, on the one hand, and shade, on the other. The light created by an overcast or cloudy sky will create a soft and diffused light that is low in contrast, rendering colors in soft pastels, flattening textures and depicting detail without harsh shadows. This light can also convey moods of tranquility and somberness. In practical terms, it's like having a giant overhead "softbox." When shooting in wooded areas, you are basically shooting in the shade. Shaded light is blue light, which will add a blue colorcast to your photographed subject. In the days of film photography, one would address this problem by attaching a warming filter. That remedy is still available, but now there are more options. We can adjust the white balance on the camera, use artificial light to render accurate color, or make the adjustments in color in a post-



Figure 4.

production image editing program such as Photoshop.

By and large, overcast or shadowed light is preferable for shooting mushrooms for the reasons stated above. There is, however, another problem that occurs when shooting in this light that is unique to photographing mushrooms. Ambient light is predominantly overhead light. Overhead light has a number of predictable effects on "umbrella-shaped" objects, like mushrooms. The top of the cap receives more light than the sides or the structures under the cap. The usual result is underexposed gills and stalks. This condition requires the use of reflected or artificial light to properly and completely expose those areas of the subject. While reflectors might help a little, they are not very effective in overcast or shadowed light. Artificial light is the best solution in this circumstance (see Figs. 3 and 4). These are images of the same subject shot with and without artificial fill flash. As they say, "a picture is worth a thousand words!"

Artificial Light: In most situations, it's hard to beat electronic flash for brightening up a mushroom photo. Shooting with electronic flash permits the use of smaller f/stops for greater depth-of-field, renders colors brighter, permits the controlling of contrast and subject modeling, fills shadows, and freezes any movement with its blazing speed. One can shoot with a single flash unit, multiple units or utilize a macro flash system. Artificial light can be used

as the main light source, or it can be used to fill shadows. In either case, it must be balanced with ambient light in order to obtain pleasing results.

Most flash units marketed today are TTL. That means the camera makes a through-the-lens reading of the intensity of the electronic flash as it is bouncing off the subject and then automatically cuts off the strobe light when the subject has been properly exposed. The more expensive flash units also have a manual function where one can manually set the power level of the flash unit at intervals ranging from full power to as low as 1/128th power. A manual setting will permit a great deal of flexibility and control in balancing the artificial light with the ambient light level as well as controlling lighting ratios between the flash units. The current trend for flash is wireless units that require no cables to connect them with the camera. Wireless units are convenient and less cumbersome, but have no material impact on the quality of the images one can take. The flash unit that is built into a DSLR is not suitable for mushroom photography as it will be too close and too high above the subject to properly illuminate it. Likewise, a flash mounted in the camera's hot shoe doesn't work very well either for the same reasons - that is unless one is using a telephoto lens that will position the camera far enough away from the subject so as to reduce the angle of elevation of the flash unit in relation to the subject.

Single Flash: Quality mushroom photos can be made with a single



Figure 5.

flash. But there are limitations and shortcomings when restricting oneself to a single light source. If the single flash unit will be the main light source for the



Figure 7.

exposure, the flash cannot stray too far to the side of the subject or harsh shadows and high contrast will result. For single flash photography of



Figure 6.

mushrooms, a diffuser is recommended. The retractable diffusers that are often built into the flash unit are generally not satisfactory in that they do not provide enough diffusion. There are a few commercially made products that will work. A mini “soft box” (store.lumiquest.com/lumiquest-mini-softbox/) or a Fong “Lightsphere” (www.garyfongstore.com) that are marketed primarily for “people” photos, will do a very good job of diffusing light for mushroom photography. Even a white sock pulled over the flash head would provide some diffusion. In principle, the larger the size of the diffuser, the better. Positioning this light close to the camera lens will create a very soft lighting effect that avoids harsh shadows. Keep in mind that it will also need to be positioned low enough to illuminate the underside of the mushroom.

Multiple Flash: From the standpoint of light quality and creative flexibility, two lights are better than one. With two flash units, one can consistently create lighting effects that appear more



Figure 8.

natural than that obtained with a single flash. One can control modeling effects by arranging the lights in a “main/fill” configuration, or very even, balanced lighting can be created. One can also use a third light as “key” or “rim” light to illuminate the subject from behind, having the effect of separating the subject from the background.

A main light/fill light configuration will have the main light about 45 degrees to one side of the camera, angling down at about 45 degrees. The fill light is located near the camera position, at about camera level. The fill light is generally set 2 or more stops under the power level of the main. The fill light can also be diffused if desired. If the camera and flash units are not compatible with wireless technology, you will need the appropriate cords to connect at least one of the flash units to the camera. You can connect the second flash unit to the first with a similar type cord or you can attach a small “slave” unit to the second flash unit that will trigger it when the main flash is fired.

Macro Flash Systems: Nikon, Canon, Sigma, Olympus, and Sony all have dedicated macro flash systems in their product lines. The Nikon, Canon, and Sony systems are comprised of a donut shaped mounting ring that attaches to the front of the lens, a controller and two mini flash units that attach to the mounting ring. Of these three, only the Nikon and Canon systems operate in wireless mode, however, all three have multiple manual power settings. The beauty of this hardware is that your entire lighting system is right there with you at subject level. It will fully illuminate the underside of the cap as well as the stalk, rendering excellent detail of structure, texture and color. Other macro lighting systems that are available utilize flexible extension arms that can position the flash units in unlimited configurations, above, below and to the side of the subjects. One can find these non-dedicated macro accessories at Really Right Stuff (www.reallyrightstuff.com) and Kirk Enterprises (www.kirkphoto.com).

Another consideration when using flash is that light falls off at a constant rate as it travels from the flash to the subject. Therefore, when the light from a strobe is sufficient to correctly expose the subject, that light will be insufficient to expose the objects that are only a short distance behind the subject.

One of the obvious signs of an amateur photo is the black background present in a flash photograph. There’s simply nothing natural looking about such images (see Fig. 5). This condition will arise when shooting flash in Auto Mode with moderate to small apertures. In order to avoid black backgrounds, one must find a way to ensure that the illumination reaching the background is not significantly less than that which is lighting the subject. Figures 6, 7, and 8 demonstrate the results of balanced lighting.

In the next installment of this article, we will address methods and techniques to effectively balance artificial light with ambient light to ensure natural looking images. 🍄