

## Aquarium Fish Photography

Learn how to photograph aquarium fish.

*By Michael F. Havelin*

It's another world, a world you created yourself — one that is populated by aquatic creatures of beauty and personality. You are proud of the lush growth of your plants or those hard-to-find fish, and you would like others to see what you've accomplished. But an aquarium isn't exactly the kind of thing that you carry around to show your friends. Or is it?

Even if you wanted to invite them over, how would you get all your friends and fellow workers to your house to see the tanks? It's not practical — probably not even possible — to invite everyone at once. Besides, their interest may not be enough to induce them to take the time to visit, or they may not live close enough. There is, however, a way to share your aquatic triumphs: photographs. Do you have to hire a professional photographer? Not at all. With the basic 35mm equipment you may already have, plus close attention to a few details, you should be able to turn out work that will impress everyone. You'll certainly surprise yourself with the results.

### Problems and Solutions

Before starting any project, it's best to have an idea of the specific difficulties ahead. Once identified, the problems can usually be solved fairly easily. Let's look at what you're up against.

The first thing we need to consider is how to get close enough to our subjects. If you have a 35mm single lens reflex (SLR) camera, things will be simpler because you can see exactly what the camera sees. Look through your camera and see just how close you can focus and still have a sharp image. How big is the "field," the area that the lens sees? My "normal" 50mm (focal length) lens will focus down to a distance of about 19½ inches from the front of the lens, covering an area of 8 inches x 12 inches. That's fine for an overall shot of the tank as it sits in your living room, but it's not quite close enough to shoot portraits of individual fish. For that we'll have to get in a little bit closer.

If you have a "macro" lens, that's great — the problem is solved. (A macro lens is designed to focus closer on smaller objects than a normal lens.) If you don't have a macro lens, a simple and relatively inexpensive solution is to purchase a set of supplementary close-up lenses that screw into the front of your normal lens. These lenses are usually sold in sets of three, with each lens being of a different diopter or magnifying power: +1, +2 and +3.

Close-up lenses can be used individually or in combination with one another, thus providing a nice selection of magnifying powers to choose from. If used in combination, put the higher diopter (greater magnification) lens on the camera lens first and then stack a second lens of lesser power on that. Just remember that every time you put another piece of glass in the optical path between your subject and the film, you are increasingly degrading the quality of the final film image. For most people, this is not likely to be a problem. If you plan to sell your slides to magazines, however, close-up lenses will not provide acceptable images.

Another way to increase magnification is by using extension tubes or bellows. These are placed between the camera lens and the camera body. Optically, these accessories give you a better image than supplementary lenses because you are not adding more glass to the optical path. On the other hand, they are more difficult to work with because they reduce the amount of light reaching the film. A lens plus extension requires more light than the lens used by itself. This is because light decreases by a factor of four when the distance from the lens to the film is doubled. With through-the-lens (TTL) automatic flash, this is not a problem, but if you are shooting with non-TTL flash units, you must adjust for the additional light needed (see sidebar to the right).

At this point, we need to examine depth-of-field. Depth-of-field refers to how much of the image is in focus from the foreground to the background. In other words, how far in front of and behind the subject is the picture sharp. Although not a problem when photographing a landscape, depth-of-field becomes a major difficulty when photographing small subjects at very short distances.

It is a rule of optical physics that as you get closer to your subject at a given f-stop, the depth of field decreases. In practical terms, this means that it is difficult to get the front of a fish (such as the eyes), all of the body and the tail in focus at the same time.

How can we overcome this limited depth of field? Stopping down the lens aperture (by going to a larger f-number — i.e., f/5.6 to f/11) increases depth-of-field, but in order to use smaller lens apertures, you must either use a higher speed (faster) film or put more light on the subject.

Films with higher ISO (or ASA) speeds are more sensitive to light than those with lower numbers, enabling you to shoot at smaller apertures. For example, an ISO 200 film is four times as sensitive as film of ISO 50, requiring only one-fourth the light to make the same image. However, because everything in photography is a trade-off, faster films will show the grains in the emulsion more than slower films. That is, image sharpness and contrast are better in slower films.

The other way to squeeze more depth-of-field out of a situation is to add more light. This is done by using studio photography techniques. Flash units can be used that will allow you to shoot at f/11 to f/22, apertures that will provide better depth-of-field for small subjects. While there has to be enough light to make an image on the film, it must be controlled as to direction and the amount of reflection it makes on the aquarium glass. I will deal with this later in the article. There is, in fact, a third way to get more light to the film. You could use a slower shutter speed. But this is of limited value when it comes to photographing fish, which brings us to the topic of subject movement. How do you get these healthy, active fish of yours to stand still for their portrait?

Most fish are active and seldom stop moving, although this varies depending on the species. A plecostomus is no problem at all and angelfish are fairly easy as well, but what about a kuhli loach? The trick here is to move the fish to a smaller aquarium where there is less room for movement. The problem with this solution is that the fish is no longer in the display tank that you so masterfully aquascaped.

This can be solved by using a small tank (a "photo" tank) to hold the fish, which is then placed in front of the display tank. A photo tank is quite narrow from front to back, reducing the amount of space that needs to be within the depth-of-field. To make things even easier, a separate piece of glass as large as the front glass, but small enough to fit in the tank, is used to create a narrow space between it and the front of the tank. As the piece of glass is moved toward the front glass, the movement of the fish is increasingly limited, making it much easier to keep the entire length of the fish in focus.

This same technique can, in theory, be used in the display tank, but the sheet of glass may be somewhat unwieldy if the tank is large. Also, the aquascaping may cause problems with this approach.

Next Page