Digital: Adjusting Color Balance
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Learning to manipulate the colors in underwater images with computer editing programs requires patience, but the rewards are worth the effort.
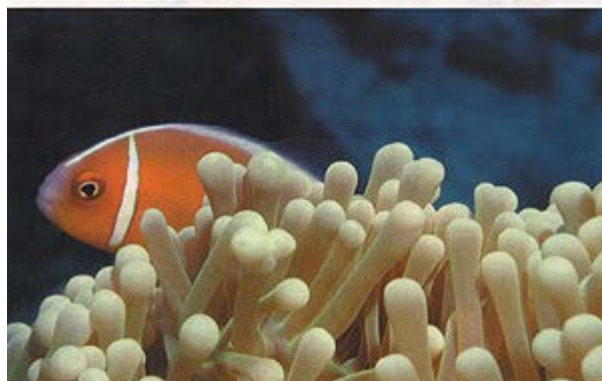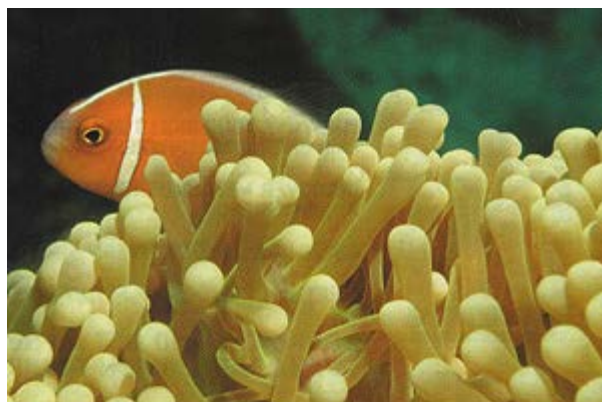
The original digital image of a clownfish (top) was significantly enhanced (bottom) with the "Variations" menu in Adobe Photoshop 6.0.

Sad to say, it is very seldom that an underwater image will scan in perfectly. Even digital underwater images have their share of similar problems. Water density can reduce light intensity, which lowers the contrast, decreases the image saturation and shifts the color.

Before the computer came along, there wasn't much you could do to fix the problems. But

thanks to modern technology, you now can easily adjust the image and accomplish miracles with a few keystrokes.

Adjustments to the saturation and contrast will be addressed in an upcoming article regarding image gamma. Right now we will concentrate on adjusting the color balance. With some of the newer image-editing software, you can find instant help with the Auto Levels function.

When you select this function, the computer makes the adjustment choice. Sometimes it is the right choice and other times it is way off. Topside photos auto balance most of the time, but underwater images rarely have a full spectrum of color from black to white, so they are harder to balance.

Give the Auto Levels a try first, and if you don't like the computer's selection, simply press Undo and move on to plan B.

In Photoshop 6, Photoshop LE and Elements, you will find a function called Variations. When you select this function, your image is displayed in the center, surrounded by a ring of color variations.

If you select a color variation that looks better than your original, it then moves to the middle and a new ring of colors forms. You can keep selecting different color variations until your image looks just right. At the top of the screen you will find a copy of your original image and the last change you made featured side by side for easy comparison.

To the side of the ring, you will find three exposure variations. Your image is in the middle and a lighter and darker image variations are displayed above and below. When you select one of the exposure variations, it moves to the center and becomes the new image.

It is best to use the Variations method when you first start editing images. This is a great learning tool since you can easily see the effect of each of your adjustment selections.

Don't be discouraged if you have difficulty choosing the correct color and exposure, as it is very subjective. You may think the photo is too red, while another person might disagree. Selecting correct color balance is an acquired skill that takes time to hone, so have patience.

As you become more proficient in your image editing, you might try your luck adjusting images manually. There are adjustment controls that have sliders for easy color adjustment. When selecting the color balance, brightness or contrast controls, be sure that you have the preview box selected so you can immediately see your results displayed on the screen. Most underwater photos have a cyan cast, even when you use flash, so if you adjust the red control, you should see immediate improvement.

If you find that an image is just not coming around to the colors you remember when you took the photo, there is another manual method you can try. In the Levels menu you will find three eyedroppers - one for black, gray and white balancing. If you know for a fact that a spot in the photo should have been white, then you can take the white eyedropper and touch that spot.

Immediately it will become white and the remaining photo will balance accordingly. You may find that this brings your photo closer to what your memory recalls. The only shortcoming with this method is that there must be a spot in the photo that was originally black, white or gray.

To test how well you have mastered your editing skills, try manually adjusting a photo that worked well with the Auto Levels adjustment. See if you can manually correct the color, contrast and brightness so that it matches the image that was auto-corrected. Have patience and don't get frustrated. Just as it takes a musician time to learn to play an instrument, mastering color balance correction will also take time, but the results will be worth the effort.

Send your editing questions to us at digitalduo@jackandsuedrafahl.com and we will try to answer them directly or in an upcoming column. For further information, check out our new book, Digital Imaging for the Underwater Photographer, published by Amherst Media or you

can also purchase it directly from our Web site at www.jackandsuedrafahl.com.

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