

Rapid high-quality imaging of fishes using a flatbed scanner

Application

Standard methods for photographing small and medium-sized fish usually involve confining live fishes in a restraining tank or photo-cell. Although these methods are also effective for preserved specimens, they are often time consuming, difficult for the novice photographer, and require costly equipment to ensure high-quality images. Here we discuss a fast, simple, and inexpensive method for imaging anesthetized or dead fish specimens using a flatbed scanner. Since scanners are far more robust and far less expensive than digital cameras offering similar performance, and because operating costs are low (\$0.1 USD per specimen for transparency film and background paper), this technology is particularly suitable for organizations with a limited budget.

Method Overview

This method employs a standard flatbed photo scanner^a, clear transparency film for copiers^b, a ruler^c, and a colour bar^d (total cost approximately \$200 USD).

The transparency film was first placed on the scanner surface, followed by 1-5 specimens. By convention, lateral photographs of the left side are most useful for taxonomic purposes. Because size and colouration are often important for identification, a colour bar and ruler were included in every scan. To ensure optimal illumination, a sheet of white paper was ordinarily placed on the fishes, but when specimens were thicker than 5 cm, a white Styrofoam box was used instead. To avoid reflections, most of the water or preservation liquid was removed from the fish skin before imaging.

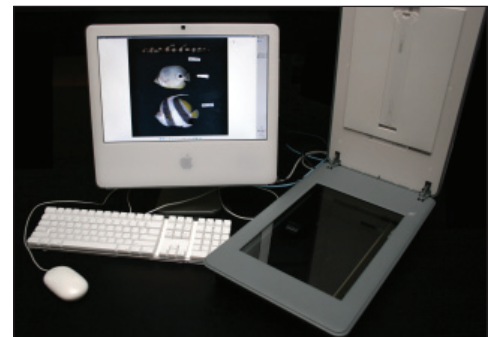
Scans were taken with a resolution of 600 dpi¹. The resulting images were processed with Adobe®Photoshop®6.0. Single specimen images were cut (4 x 3 formats) from the raw scan. The colour bar (scaled down) and the ruler areas in the scan were cut and pasted as additional layers into every single image. The layers were merged with every image saved as a high-resolution file in the tiff-format (for archival) and a reduced version (down-scaled to 300 dpi) as a jpeg-file.

More Information:

1. Steinke D, Hanner R, and Hebert PDN (2006). Rapid high-quality imaging of fishes using a flatbed scanner. *Unpublished*.

At a glance

- » Low initial investment required (\$200 USD)
- » Low operating costs (\$0.1 USD per specimen)
- » Up to 300 specimens per day



A basic setup requires a standard flatbed scanner and a computer.



Colour bar and ruler from same scan is added to each cropped image using photoediting software. The specimen identification label was also added directly to the image.

Materials:

- a. HP ScanJet 4850
- b. Clear transparency film for copiers
- c. Clear plastic ruler
- d. Colour bar from art supplier