

THE BEGINNER'S BUCKET

In Praise of Poeciliids Part III: *Xiphophorus* Notes

Robert Bock

1602 Tilton Dr., Silver Spring, MD 20902
bockhouse@earthlink.net

No series on North American poeciliids would be complete without including the genus *Xiphophorus*. Native to México, Belize, Guatemala, and Honduras, *Xiphophorus* consists of various species of platyfish and swordtails, hybrids of which are available through retail stores and aquarium societies.

Initially, I was at a loss when writing this article. For the most part, I've been busy with sailfin mollies, and haven't worked with *Xiphophorus* species very much. The two occasions that I did, with red wags (a color variety of the southern platy, *X. maculatus*) and variable platyfish (*X. variatus*), ended in failure when I tried keeping them with my sailfins. The *variatus* didn't live very long, and the few fry that I got from the red wags were stunted and never reached full adult size.

So before I started to write, I did what I always do when I want to learn more about an aquarium species—I found someone who's worked a lot with a particular group of fishes, and asked for information. The most logical choice: Dr. Ted Coletti, the "livebearer guy" whose column on livebearing fishes ran, first, in *Freshwater and Marine Aquarium*, and now appears in *Tropical Fish Hobbyist*. Through the years, Ted has worked with 19 *Xiphophorus* species (more than half the genus) and several fancy hybrids.

According to Ted Coletti . . .

Coletti was more than willing to share his knowledge, and didn't make fun of me for not being able to keep the *variatus* alive. One problem, he explained, is that wild-type *Xiphophorus* are coolwater tropicals that do best in temperatures in the 60s and 70s. My sailfin mollies did great at 80°F, but that probably was too warm for the platyfish over an extended period of time.

After corresponding with Coletti, I also learned that, like mollies, *Xiphophorus* males don't usually like competition from other males. In both sailfins and *Xiphophorus*, larger dominant males will attack and bully subordinate males. Unlike sailfin mollies, however, *Xiphophorus* males can delay sexual maturation, apparently masquerading as females to escape the attention of the dominant males.

"Males are very scrappy—especially the swordtails. *X. montezumae* are especially problematic," Coletti wrote, referring to a beautiful species whose "sword" is longer than its body. Coletti continued: "I can't tell you how many hobbyists ask me, 'Why do I have all females and only one male?', only to witness their fish become 'males' almost overnight! This happens when the smaller male(s) get enough body size to stand up to the alpha male, and then display their true gender. Scientists call this the 'leap fish phenomenon.' In a sense, they 'hide' as females so they won't get killed or harrassed. Remove the females, however, and there usually is harmony."

"Try introducing a smaller, fully developed male into a tank of xiphs," Coletti added. "Watch him get harrassed. I had a 90-gallon planted tank with just Rio Axtla *X. variatus* (blue parrot). Only one male could be allowed in this tank. He was my big show winner, and no fish could reach his size to compete with him. He killed [directly or through stress] all other males I tried to introduce and stunted the growth of other 'hidden' males."

The many domestic varieties of platyfish and swordtails sold in aquarium stores are the result of crosses between the wild forms native to Mexico and Central America. Hybrid forms often show bright colors not seen in either parent species.

"The genus has very complex genetics," Coletti wrote. "You can line breed them for 75 years and create virtual

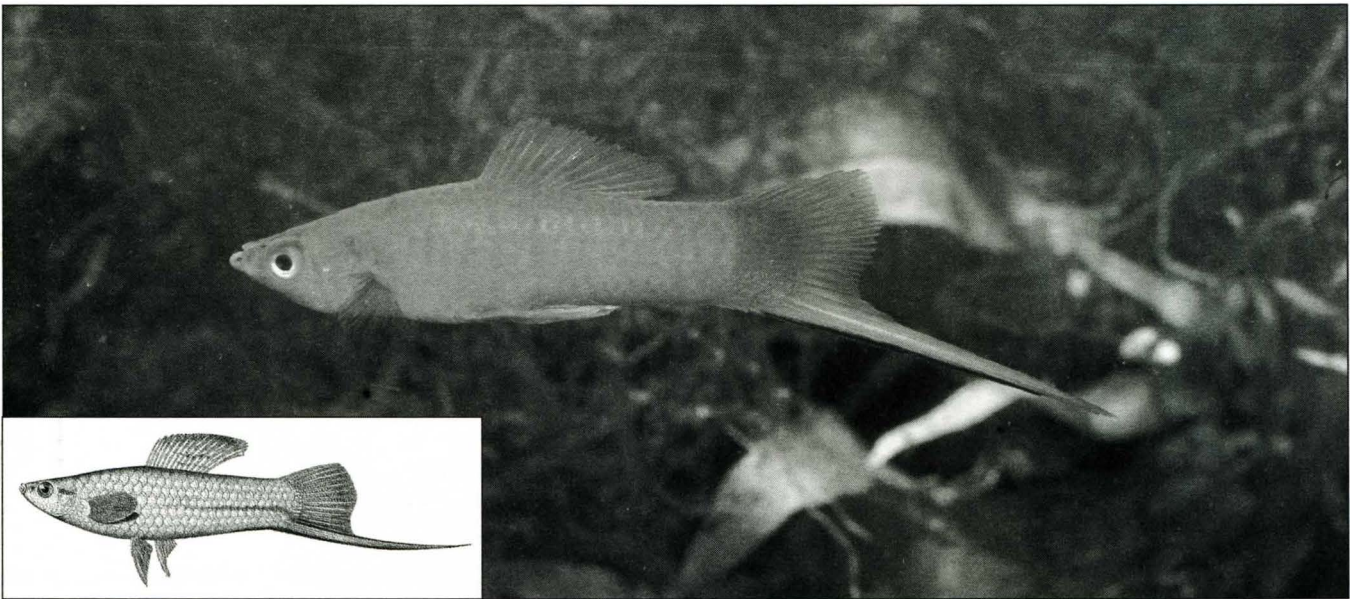


Fig. 1.

Swordtail, *Xiphophorus helleri*, then and now. Illustration shows a wild-caught specimen from Veracruz in the late 1800s. Photograph shows a modern aquarium variety. Illustration by A. H. Baldwin, courtesy Smithsonian Institution, NMNH, Division of Fishes. Photograph © Anthony C. Terceira.

clones that will not degrade like mollies and guppies. Their color and patterns and finnage are sex-linked, which is also complex. *X. maculatus* has three sex chromosomes across all the various geographic populations, so there are five kinds of boys and girls. Cross the various populations and you never know what you will get. A genetic 'surprise' resulting from one such cross is what created the wagtail platy (comet tail platy x domestic gold platy.)."

Compared to domestic varieties, Coletti explained, males from wild strains take longer to reach sexual maturity. He added that "wild *Xiphophorus* species also endure colder temperatures better than their retail cousins. There's an old joke: 'How do you get a red platy sick? Just look at him.'"

As with many other livebearers, breeding is relatively easy. "... the fry tend to be 'grazers,' moving to the bottom when born, rather than the top of the tank, like guppies. A good bottom cover of java moss, held down by a light coating of gravel, usually gives larger colonies."

The Ultimate *Xiphophorus* Web Site

For a comprehensive listing of the many *Xiphophorus* species found in the wild, check out:

www.xiphophorus.org

The site is operated by the Texas State University at San Marcos and The University of Texas M.D. Anderson Cancer

Center, with funding by the National Institutes of Health. Along with the interest they hold for aquarium hobbyists, platyfish and swordtails are important for medical research.

Scientists working with *Xiphophorus* discovered that certain hybrids developed malignant melanoma (a skin cancer) that was virtually identical to the human cancer. Soon, researchers were using a hybrid of *X. helleri* and *X. maculatus* as a "model" to gain insight into the human form of this disease.

On the site is a link to the *Xiphophorus* Genetic Stock Center, also housed at Texas State University at San Marcos. With funding from the National Institutes of Health, the Stock Center houses more than 70 strains of 22 of the 23 *Xiphophorus* species known to science. For the most part, the Stock Center makes the strains available for scientific research, although it periodically provides fish for aquarium hobbyists as well.

The site offers a wealth of information for both researchers and hobbyists alike, including photos of the known *Xiphophorus* species, maps of their distribution, and instructions on how to make food for your specimens. The Web site explains that platyfish and swordtails eat a wide variety of prepared foods. Specimens at the Stock Center, however, are fed six days a week, twice daily. For the first feeding, the fish receive live brine shrimp. The second feeding consists of a liver paste, made on site, from beef liver, carrots, spinach and baby food oatmeal. Instructions appear at <http://www.xiphophorus.org/feeding.htm>. ➡