

Ornamental varieties of the *Xiphophorus* genus: taxonomy is obsolete and powerless

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Abstract. This paper is a short critical note. Nowadays, the number of *Xiphophorus* varieties has risen sharply, but it has also become complicated to determine taxonomically an individual. Why? Because the production of new varieties is based not only on empirical selection but on intra- or interspecific hybridization, genetic engineering, and selection assisted by molecular markers. Many *Xiphophorus* varieties from aquariums have spectacular coloring, incredible uniformity at the variety level and unknown origins. As a conclusion, do not strive hard to name a *Xiphophorus* scientifically because you can only assume you did it correctly.

Key Words: *Xiphophorus*, difficult taxonomy, unknown origin.

The genus *Xiphophorus* (Figure 1) is one that has an impressive color diversity, especially if we refer to the number of colorful varieties grown in aquariums. When we were children, as aquarium hobbyists, we knew about *Xiphophorus hellerii*, *X. maculatus* and *X. variatus*, and it was relatively easy to discriminate within this group of fish.



Figure 1. *Xiphophorus* sp. (original picture).

Nowadays, the number of *Xiphophorus* varieties has risen sharply, but it has also become complicated to determine taxonomically an individual. Why? Because the production of new varieties is based not only on empirical selection but on intra- or interspecific hybridization, genetic engineering (including transgenesis), and selection assisted by molecular markers. Many *Xiphophorus* varieties from aquariums have spectacular coloring, fancy shape, incredible uniformity at the variety level and unknown or multiple origins. In the case of interspecific hybrids such as sturgeons, because they have a known origin, their hybrid nature is mentioned in the description: *Huso huso* male x *Acipenser ruthenus* female (see Andrei et al 2016). This is not possible in the case of *Xiphophorus* due to the fact the South-East Asian producers do not publish their production technology in order to avoid possible leaks of information to competing farmers or companies.

As a conclusion, do not strive hard to name a *Xiphophorus* scientifically because you can only assume you did it correctly. You can apply taxonomy successfully only to wild populations of *Xiphophorus*. Important to note that even the wild populations of *Xiphophorus* are highly polyphyletic (Kallman 1973, 1984; Păsărin & Petrescu-Mag 2011).

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