KEEPING AND BREEDING THE ONE-SIDED LIVEBEARER *JENYNSIA LINEATA*

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This highly desired fish was once common at shows and conventions, and always sold for top money. Occasionally hobbyists did well with them, but few seemed able to maintain larger colonies. When the fish did well, it was often for short periods, and few hobbyists seemed able to keep them going over many generations.

One of its attractions is its common name, "The One-sided Livebearer." It was believed that each male possessed a gonopodium that could swing from midline to the left, or midline to the right, but not both. The females were born with genital pores that were constructed to receive fertilization from only the left or the right, so a left-sided male could only breed with a right-sided female, and vice versa.

The "one-sidedness" is described in most older texts (Sterba, Jacobs, Axelrod). Thought today not to be true, the wide acceptance of this belief implies a different approach when breeding this fish. Its care and breeding are still not well understood by hobbyists, as few today are successfully keeping and breeding this fish.

Five years ago, five fish, a young male and four young females, were received here, wild caught from Uruguay. All four females grew into sexual maturity and became gravid, producing many fry, which were then raised as breeders, and many (over 100) were sold and distributed out to the hobby. Other similar breeding groups were set up, and fry were produced consistently for another year. Then the breeding stopped.

It was clear that the odds of one male keeping four females gravid, all randomly chosen, were low if the one-sidedness rules applied, and likely those five fish were evidence by themselves that the one-sidedness may not be as once thought.

I knew they could become inconsistent in their breeding and approached solving this carefully. The problem, after three years of these fish slowly revealing themselves was eventually resolved, and the steps taken and issues considered could apply to many species. I will explain the process that was taken here.

Previously used breeding groups of one male to two to four females were closely watched, and the original male and four females responsible for the majority of the initial breeding had passed as they entered their third year. However, the majority of the young males put in to continue breeding in new breeding groups did not produce any spawns.

My population began to decline, so feedings were increased from one to three times per day to three to five times per day, and daily feedings of frozen bloodworms, brine shrimp, or live white worms were added.

J. lineata

Photos by the author.

Greg Sage, MEd., has been keeping fishrooms of various sizes for 45 years, always with an emphasis on livebearers. As an IFGA Guppy breeder for a number of years, those clean and organized practices were well suited to the wild swordtails and goodeids that have come into the hobby over the past 25 years. Select Aquatics was begun in 2009 to study, maintain, and breed many of these rare species, help others to keep them, and distribute them out into the hobby. Greg writes customers daily with fishkeeping issues, and has documented and posted much of what has been learned at selectaquatics.com. He resides in Colorado with his patient wife, Laura, and Ripley, the Cavalier King Charles spaniel. To contact Greg, email selectaquatics@gmail.com, and he will get right back to you.

***J. lineata* school.**

A new group of four 10-gallon tanks were set up for four breeding groups of one male to two–four females, with no other fish in the tanks.

The tanks were set up bare-bottom with a single layer of one-quarter-inch pea gravel over one-third to one-half of the tank bottom to provide nitrifying bacteria area, while still easy to keep clean of any mulm accumulation. Fine leaved floating plants such as Java Fern and Java Moss were added for security for both the adults and fry. Within each tank is an air driven four-inch box filter providing some water movement and aeration. Moderate light was provided with two CFL 40s in dome lights over the four tanks for 12 hrs per day.

These tanks were then hooked into an automatic water changing system that changed 15% of their water daily with untreated water from the tap. The water here is 7.4 pH and 90 ppm hardness, and was kept at 72–75 degrees. Temperature recommendations for this species vary, sometimes recommending cooler temperatures. 72–75 degrees has proven to be a perfect range for many of the wild livebearers, when conditions are not fully known.

One improvement I could have made was to raise the hardness of the water in the common belief that livebearers prefer harder water. From a long period when there had not been any breeding, raising the hardness to test the effect may have had some benefit. However, they are a South American fish that inhabits softer water naturally, and they had spawned in the water here before. In addition, all of the fish being used had been spawned in this water. With water changes being as important to this fish as they are, I also chose not to introduce inconsistencies in their water quality through buffers or additives of any sort.

Once set up, each breeding group is closely watched for two–three days to ensure that the male shows active interest in spawning. If the male does not, he is replaced and allowed to mature further before being used again, and another male is added in his place.

Diet and feeding frequency are clearly factors in their doing well. The benefits of multiple, small daily feedings can be seen within just a few days. They seem to do best at three–five feedings per day, and meat foods, particularly live and frozen foods, are alternated with quality vegetable-based foods for a broader diet. Some texts recommend diets higher in fat for this fish, but I have not fed specifically fatty foods and compared the results.

Live Daphnia, White Worms, and baby Brine Shrimp are alternated with frozen Bloodworms and adult Brine Shrimp. The *Jenynsia* will sometimes ignore common foods if the food is new to them, but through introducing and removing it over a few days they will often begin to feed on it.

Over many months, with consistent care they all grew into healthy, active adult fish, but not a single fry was born. It was clear by their overall improvement in health that I was on the right track, as unhealthy fish do not spawn, but I was still missing a fundamental aspect to their breeding.

Often the variables—water quality, feeding, filtration, tank setup, temperature, and light—need to be just right before a simple tweak will pull everything together. This change or addition, if recognized earlier, may have little effect by itself. All of the other conditions must be right, and the fish were now ready for whatever that last little change was going to be.

The fishroom here is an unfinished basement of approximately 1000 sq. ft. The west wall faces out to the mountains here in Colorado, and four large windows allow natural light into the fishroom throughout the year. The focus of this fishroom is breeding livebearers and the Green Dragon Plecostomus. The Goodeids, for example, breed from April to October, and the plecos breed primarily from October through January. Though many of the species of swords and Limias will breed year around, production is best from about May to November. I had assumed that the *Jenynsia* bred year around, but it occurred to me that the *Jenynsia* may breed seasonally.

Then, in early November, a spawn of the *Jenynsia* was born, and their sharing a similar breeding season with the Plecos from Brazil made sense.

The young when born are quite large and follow a gestation of approximately six weeks. Though large when first born, the young are vulnerable to predation by any adults in the tank and must be raised separately.

The young are also somewhat nitrate sensitive, and require that water quality be maintained. Any accumulation

of mulm must be removed, and some water motion and aeration should be maintained.

Primarily a social, schooling fish, they do well in larger groups, and are both a striking and attractive fish when swimming together. Not surprisingly, they do not breed well when maintained in colonies as they will feed on their fry, and gravid females should be moved to a moderately planted 10-gallon tank of their own to give birth, where the young are then raised up separately.

Due to the level of care and attention given to breed this fish, they are not kept with other species, though some hobbyists will maintain them in community tanks when in smaller numbers. Older aquarium texts claim they can be aggressive when kept with other species, and as they are primarily a schooling predator, introducing a mature group to a community tank of smaller fish could be a problem!

They generally patrol the top third of the aquarium, and any tankmates will likely do best if they do not compete with the *Jenynsia* for that swimming space in the aquarium.

With the exception of an occasional blue sheen, these are possibly the most attractive fish you can keep that are just silver and black, but they have nearly disappeared from the hobby. Fortunately, they are not endangered in the wild, and occasional fish are brought in from collecting trips to Uruguay. Hopefully, occasional online sellers will continue to offer them, and all it will take are a couple of individuals to breed these out to get them back into the hobby. Then you will want to be sure to document how you bred and maintained them. For those looking to make a difference as a fishkeeper, bringing this beautiful fish back into the hobby could be that perfect opportunity you are looking for!