

# Preface

This book has been ten years in the making and has had previous incarnations. The last was the *Color Bank*.

I went through the entire collection and did quite a bit of editing, cutting some text, expanding others, providing updated information in others.

I included about ten new strains and deleted about twenty. It has been my long term goal to reliably genotype (provide the actual color gene makeup) of all the strains in the collection. The ones I deleted I just gave up on. While the genetics of many strains are obvious, some are impossible to genotype without some reliable information about their ancestry.

My goal throughout the last ten years is to provide guppy breeders with a reliable reference source. Some will use the collection to identify guppies they acquired but whose genetics they do not know. Some strains can be fairly complex and require basic knowledge of their genotype to maintain them.

The guppy breeder interested in crossing experiments will find that many combinations of color genes have already been created and refined. I have grouped many variants of basic strains together to make the collection useful. For example, you can see what a White Half-Black Pastel looks like, then the blond white and yellow variants.

I have also provided a lot of breeding tips for specific strains, including tips for developing specific strains for the judging bench. Where the gene makeup of the strain is complex I provide basic information about how to keep all those genes intact.

This book has a much tighter focus than the previous incarnation, *The Color Bank*. I decided that the previous book included information that was duplicated in other books I have published. For example, the chapter on the color biology of guppies was recently updated and expanded in *The Theory and Practice of Guppy Breeding*. The Notes section that was once part of the *Color Bank* was moved to the *Theory* book. The introductory chapter on genetics was moved to the *Theory* book and thoroughly re-

vised. I also removed other chapters that I thought would be only peripherally interesting to the majority of readers, like the chapter on lab strains.

To include all that information in the Bible would have made the book too large, running up the printing cost and doubling the shipping cost. This has been a barrier to its distribution in the hobby. The new edition of the library is much more focussed on the original goal which was to provide a visual reference to world guppy strains with as much reliable information about the strains as I was able to gather.

Reflecting this “back to basics” approach I have given the book a new name: *The Guppy Color Bible*. “Bible” is used in the sense of a hobby wide reference for world guppy strains.

### Classification System

There is no good way to absolutely categorize guppies into strains, where a **strain** is defined as a truebreeding guppy that produces sons and daughters that are 80% similar. An example is a Panda Moscow, a guppy with both Moscow with the Pink mutations (*Fig. 1*).



*Fig. 1 Panda Moscow. Photo by Finn Bindeballe*

The Panda belongs to both Moscow and Pink categories.

In loosely grouping guppies in this book, I start off with a rule that says certain strains have dominant traits that are strictly Y-linked. The Moscow is a case in point. The Moscow defining characteristics are strongly Y-linked, meaning they are passed on from father to son and not to

daughters. So I have grouped all guppies that have the Moscow Y-linked supergene together as a family of strains.

Then there is the “Blond Glass Belly Panda,” which combines the blond, Glass Belly, Pink and Moscow mutations (*Fig.2*). This is a guppy that belongs to three different categories. I know it is entirely arbitrary, but I think of the Blond and Glass Belly traits as “modifier” traits because they are autosomal and tend to affect the whole body uniformly. So I have made the Blond Glass Belly Panda a variant of the Panda and the Panda is grouped with the Pink mutation guppies.



*Fig. 2 Glass Belly Panda. Photo: Philip Shaddock*

The Bible has split many of the old groupings into smaller groupings. For example, the newly discovered Mg (Metallic Gold) gene has now got its own chapter.

I have nothing to recommend my arbitrary classifications other than the fact that they may be of some use to breeders examining strains of unknown genotype. Or more simply the classification system makes this book easier to read from beginning to end. In fact fancy guppies are usually an arbitrary concoction of genes, selected for aesthetic appeal and perpetuated through the habit of selective breeding and the assignment of such names as “Flamenco Dancer.”

There are so-called “base body” classification systems. Classification sys-

tems like these have to do with **phenotype**, *what you see*. My work with the microscope examining color on the cellular level shows that what you think you see with your naked eye is not necessarily what you actually see with the aid of the microscope. The microscope is much more accurate. And if you had tools that could make observations on the molecular level, your observations would be that much more accurate again. Good theories rest on accurate observations. The designer is interested in **genotype**, the actual genes that are determining the appearance of the guppy.

I record the genotype for many of the strains in this book. Ultimately this is the most accurate way to identify guppies.

You will find a guide to the system of notation I use for genotype in Appendix A: Gene Symbols.

I recommend that you buy *The Theory and Practice of Guppy Breeding* as a companion to this book. It will make understanding the genetics sections a lot easier. And I include a wide array of breeding strategies and advice on designing breeding programs. Neither book stands on its own.

### **Acknowledgements**

I would like to thank the photographers for their excellent photographs, filling in many of the gaps in this enormous collection of strains.

I would also like to thank those who I quote in the text for their contributions. For those who have shared their knowledge freely I am truly grateful.