Aquarium Making—Fishkeeping and Maintenance by Mundy Obilor Jim.

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This is an updated print edition of the ebook release of 2014. More content including images has been added.
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Preface

For centuries, fish have been found worthy of keeping as pets or in captivity by people and the interests have grown continually due to the many fun ways of making the aquarium and caring for the fish. Fish has become one of the most popular pets in many parts of the world. Fish-keeping has been advanced in recent decades with fancier and easier methods and even the breeding of fish for pets has improved greatly in terms of techniques.

This book is for both experienced fish-keepers who have had aquariums for a considerable period of time and for new aquarium hobbyists alike. It is for those who want to build and set up their own aquariums and for those who wonder how they can dismantle the aquarium accessories and still be able to set up the aquarium to function appropriately. It also aims at teaching how to properly maintain an aquarium; feed the fish adequately, and know when they are sick or need attention and take good care of them.

A lot has been learnt about different types of fish that can be nicely kept as pets in aquariums. We now want to keep beautiful fish like the goldfish, those with striking colours such as the zebra danios and even the odd-looking ones like the leaf-fish and longnose. We have come to know fish which can survive long in aquariums, types of environment that favour some particular fish, compatibility of fish, etc.

The book will surely serve as an elaborate guideline which I believe will also enable anyone interested in the aquarium hobby to benefit from and even study further,
especially in deeper areas like breeding. It starts with the make-up of an aquarium in chapter 1. Chapter 2 renders several crucial tips while chapter 3 dwells on feeding and gives some tips on breeding. No one will ignore the challenges or common problems and diseases associated with keeping an aquarium and these are treated in chapter 4. The most commonly kept aquarium pet, the goldfish get chapter 5 and finally, in chapter 6, a step-by-step approach in setting up an aquarium is outlined; and this will help those who just want to set up an aquarium right away.

First published as an eBook, the book contains new sections and updates to existing sections. In addition, a set of exercises and multiple-choice questions have been added at the end of each chapter to help students and hobbyists alike.
From The Author

My journey with aquariums started more than 25 years ago when I had the privilege of working for an aquarium firm which designed and manufactured aquariums including accessories sales, maintenance and service. I also worked with the team in charge of fish ponds and breeding. For me, it was a combination of an interesting job for a high school graduate and a passionate hobby which I enjoyed so much that I built up many tricks and made notes for myself. I experimented extensively with customers’ aquariums and with my own personal aquariums. I am a fan of cold water aquariums and I cherish keeping a combination of goldfish of various colours as I find them very easy to manage.

When I started writing books, I recalled many of the practical experiences I have had in building aquariums, servicing them and caring for the fish and I decided to share them in this book. I am quite sure that anyone who likes aquariums and is practical-minded will benefit from my journey in aquarium making, fish-keeping and maintenance.

Mundy Obilor Jim

The mystery of nature
Is deeper than science.
It is like a goldmine
With a blanket of silence.
Life is always about animals.

The rest are extras:

Fungi, protists, moneras.
Chapter 1
Aquarium Making

An aquarium is usually made of a glass or transparent plastic tank coupled with a variety of accessories and decorations in which fish or other water-related creatures live in captivity. Acrylic tanks have become very popular. This special type of hard plastic has many good qualities such as great strength. However, glass remains the best choice for hobbyists. There are bowl-shaped aquariums simply regarded as fish bowls. They are not big enough to contain several fishes and are mostly without filters which make them less popular than regular aquariums.

In some communities, keeping fish in bowls (especially the goldfish) has become illegal under ‘domestic animal welfare legislation’[1] as there is a risk of stress and suffocation to the fish due to high de-oxygenation rate and poisoning by ammonia. Goldfish have high
Aquarium Making

oxygen needs and there is a risk of stress and suffocation to the fish due to high de-oxygenation rate and poisoning by ammonia. Their level of high waste output actually makes these bowls inappropriate environment for them.

Without drifting away from the focus of this book, let us highlight the basic aquarium systems. There are basically four types of aquarium systems: freshwater tropical aquarium, coldwater aquariums, marine aquariums and brackish aquariums. First, note that freshwater fish can be either a tropical species or a cold water species.

**Freshwater Tropical Aquarium** is common and popular. The temperature range is within 22 – 28 degrees Celsius, which falls within the room temperature range in tropical environments. They are easy to maintain and one good advantage is that tropical fish are not expensive.

**Cold water aquarium** is different– the temperature can well be below 20 degrees Celsius, which is a perfect temperature for cold water fish. One of the most popular species for this system is goldfish and Kois.

**Marine aquariums** require salt water. Some prescribed salt is purchased and mixed with the water before fish are introduced into the tank. The maintenance of marine water aquariums can get more expensive.

**Brackish Aquarium** falls into a special category of the water being semi-salty. Think of the water you find in
deltas and mangrove swamps.

### 1.1 Aquarium Design

The term design here simply refers to how the aquarium is expected to look like including the choice of components and fish long before purchase or building the tank begins. A simple aquarium design is shown in Figure 1.1. A single air-pump is meant to aerate three accessories: an external filter (1), a decoration (2) and a long air-stone (3) via a cross-connector. A combination of stones, gravel and sand is part of the design. This aquarium has three artificial plants. The red thin lines from the cross-connector are a representation of the air-hose. This is a basic design suitable for any aquarium within 24 – 36 inches in length, 12 inches wide and 15 inches high. A design

![Figure 1.1: A simple aquarium design aimed to contain three air-powered accessories.](image)