

Java Moss:

A Versatile and Hardy Aquarium Plant

by JOSEPH FERDENZI

Are you interested in a plant that is easy to keep, and can fulfill a variety of aquascaping and breeding needs? Look no further. That plant is the ever reliable Java Moss (*Vesicularia dubyana*), and it is the subject of this article.

Part of the common name, Java, indicates that the plant originates from a large island of the same name that is part of Indonesia. Inasmuch as Indonesia is in Southeast Asia, one would imagine that Java Moss could only thrive in tropical temperatures. Well, guess what? I have kept Java Moss outdoors throughout our New York winters. It doesn't grow in the winter, but it comes back strong every spring and summer. Before you know it, you have gobs of Java Moss outdoors. Of course, it also does well in the tropical temperatures of your home aquarium year-round. So, when it comes to temperature tolerance, few aquatic plants can match our Java Moss.

Is it a true moss? Well, I'm no botanist, but it sure seems to be. It has no roots and produces no flowers. It grows in dense mats. Lately, I've seen some discussion that the scientific name *Vesicularia dubyana* is not the correct one for Java Moss. Be that as it may, virtually all of the aquarium literature refers to it by that name, so that is what you need to know if you want to do some reading about it beyond this article. Be aware that, currently, there are other aquatic mosses available in the hobby. Some look a lot like Java Moss to me, and some are a little different in either the shape of the fronds or the color. Java Moss is, by far, the most commonly available, and it is the one with which I have the most experience.

Java Moss is a medium to dark shade of green. It has no roots, but simply consists of stems and fronds. If you have ever seen terrestrial moss, you will get the idea, except that this aquatic moss is not as dense. You can actually separate individual stems from one another.

As it has no roots and doesn't float, you don't need anything to hold it down. It will thrive

in a bare tank. All it needs is some light, and not much of that. For example, 20 watts of fluorescent light over a 20 gallon tank is more than adequate. Too much lighting could produce (along with other factors) algae, which will smother it. The algae may not kill the Java Moss, but it looks unsightly. In dimmer light not only will the Java Moss thrive, it will out-compete most other plants, including algae.

Having established that Java Moss will thrive under almost any temperature and lighting conditions, I can also tell you that it is not fussy about water chemistry. It will survive in either acidic or alkaline water conditions as long as you avoid extremes (remember, anything less than a 5.5 pH might as well be vinegar, which I love on my salads, but not for my aquarium plants).

Also, I have never seen or heard of an aquarium fish that likes to eat Java Moss (oh, maybe a few dedicated herbivores like Silver Dollars or Scats might, but such fish are few). In summary, it is fair to say that Java Moss is about as indestructible an aquatic plant as you can find. That is not to say that it will grow like wildfire in every aquarium. To understand why that is so, you have to understand that each aquarium is its own "little world." Small variations in each tank contribute to a microenvironment that can make a difference in growth rates. I know this from experience. But, that experience has also taught me that, if any plant can thrive in a given aquarium, the odds are that it will be Java Moss.

Because Java Moss does not need to be rooted, it presents many aquascaping possibilities. For example, you can tie it to a piece of driftwood using ordinary sewing thread. By the time the thread disintegrates, the Java Moss will have attached itself to the wood. I love the way moss-covered driftwood looks in the aquarium. Java Moss will also attach itself to rocks in the same way. Because Java Moss can attach itself, it offers a versatility few other aquatic plants can match. In effect, you can create a layered look

Scientific name: *Vesicularia dubyana*
Common Name: Java Moss
Native to: Southeast Asia
Light requirements: From low to high
Temperature: No preference
Hardness tolerance: No preference
Demands: very easy



Java Moss attached to driftwood

photo by Al Priest

with Java Moss growing on the bottom and then rising up over rocks and driftwood to the very top of your aquarium.

Because of the way it grows, Java Moss can also be used to cover unsightly elements of your aquarium. Suppose, for example, that you had a piece of driftwood that was just right, except that it had a cut that was decidedly manmade, which would ruin the illusion that it was a natural part of your slice of nature. You could tie a clump of Java Moss over that part. Over time, the Java Moss would grow in such a way that you would never detect the artificial cut in the wood. It can't be used to cover everything, however. I don't recommend that you attach it to a heater. I also don't recommend that you attach it to filter intake tubes — pieces will get sucked in and clog your filter.

That also brings me to this word of caution. Under ideal conditions, Java Moss grows rapidly, and it could take over your entire tank. Fortunately, it is easy to prune, either with a scissor or just by ripping out portions of it with your hand. If your tank contains Java Moss, and you no longer want it to, it is removable without causing much damage. (I have never seen it actually attach itself to other plants, but it may grow over and around their leaves and stems, not attaching in the way it does with wood, rocks, and glass.) However, if even a small piece is left behind, it will slowly reproduce itself. On the bright side, excess Java Moss is always in demand by other hobbyists and

pet shops. So, you are doing a good thing if you are growing excessive amounts of it. The way I keep it under control in most of my tanks is just by using modest levels of lighting, and occasionally I prune it.

In addition to its versatility in aquascaping, Java Moss is also very useful as a spawning medium. A wide variety of egglayers — killifish, barbs — will use it as a place in which to lay their eggs. In a livebearer tank it is useful as a place for newborn fry to hide from preying adults. It is also a place where fry can find food, such as the microorganisms that live in the Java Moss "jungle," or food that travels in there, having escaped being eaten by the adult fish.

Because Java Moss can be easily moved, and doesn't have roots, you can use it in an otherwise bare breeding tank. After the fish have spawned, you could even remove the Java Moss with eggs to another tank if the eggs are of an adhesive variety (such as with killifish and rainbowfish).

Another breeding use for Java Moss was taught to me by hall of fame hobbyist Rosario LaCorte. This lesson involved *Corydoras* catfish. *Corydoras* usually lay their adhesive eggs on the glass walls of the tank. Then, you have to either remove the parents or remove the eggs (sadly, the parents will eat the eggs or the resulting fry if you don't do one or the other). Sometimes, it is better to remove the eggs. So, I used to do this by


carefully using a very sharp single-edged razor blade. Most of the time the eggs would stick to the blade, and you could transfer the eggs to the rearing container. But, there would be times when they would slip off. If they fell into the gravel, they were almost impossible to see and recover before the parents came along and ate them. Rosario showed me that I could use a small wad of Java Moss as a "pallet" onto which to push the eggs — the eggs adhere more readily to the moss, and then you can just plop the moss and eggs into your hatching container.

One of my favorite uses for Java Moss is in my killifish aquariums. Most killifish are small egg-laying fish that prefer cool temperatures (72°–75°F) and dim lighting. This makes Java Moss an ideal accompaniment to their tanks. The killifish will lay their adhesive eggs in the moss or in the gravel beneath the moss (if you are breeding killifish in a permanent aquarium setup), and the emerging fry will find refuge and food in the moss as well.

If you accompany the Java Moss with floating plants, such as Water Sprite, you will have an almost ideal breeding setup for most small non-annual killifish (non-annuals constitute the vast majority of small killies). Moreover, the combination of Java Moss and Water Sprite, with its long roots cascading down into the moss, makes for a very attractive aquascape, evoking the exotic look of the tropical rainforest.

In my mind, the versatility and hardiness of Java Moss make it a unique and irreplaceable component of my aquariums. I really don't know what I would do without it. That sometimes makes me sad for my hobbyist friends who live in Bermuda. You see, Bermuda forbids the importation of Java Moss for fear that it will become an invasive species if it gets loose in nature. So, all of my Bermuda friends have to do without it. On second thought, how can you feel sad for anyone living in Bermuda? Yeah, I should be so unfortunate as to be stuck in Bermuda!





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