

The Madagascar Lace Plant: A Case Study in Cultivation

by JOSEPH FERDENZI

The Madagascar Lace Plant is the unrivaled sovereign of the aquarium plant world. Although it is not rare, its unique appearance and beauty have made it one of the most desirable plants for the home aquarium. Its culture and lore have been long steeped in mystery and fascination, and this has only added to its luster as the botanical star of the aquatic universe.

The Lace Plant was first described by European scientists who found it on the island continent of Madagascar, home to many unusual animals and plants. It was in use as an aquarium plant in America by the early 1900s. Pioneering Florida farmer, Albert Greenberg, founder of Everglades Aquatic Nurseries, and the preeminent aquatic plant expert of his time (pre-World War II), featured a drawing of a Madagascar Lace Plant on his business stationery as a testament to its lofty status.

Numerous articles have been written about this plant, and no reference work on aquatic plants could be complete without a discussion of it. Yet, a review of the books in my personal library reveals that these discussions are often abstract, and illustrate some of the confusion surrounding this plant.

Jiri Stodola's 1967 classic, Encyclopedia of Water Plants, refers to the Madagascar Lace Plant by the scientific name of *Aponogeton fenestralis*. He describes it as "unique among all plants." He goes on to claim that it is "too delicate to be placed in a tank with other plants." He states that it needs "a special tank" with a substrate consisting of equal parts of sand, clay, and charcoal, with indirect light or Gro Lux® bulbs, acidic water in the range of 6.8-7.0 pH, and a temperature of 64° to 68° F. He is also of the opinion that "good growth is dependent upon a frequent change of water" at the rate of about one quarter of the tank per month. In my opinion, this discussion would discourage most hobbyists from attempting to try their hand with this plant because it is depicted as a very fussy plant. Stodola also makes mention of the fact that there is a similar species from Madagascar known as *Aponogeton henkelianus* (more on this later).

The next entry is Aquarium Plants (1977) by Karel Rataj and Thomas Horeman. The plant is now known as *Aponogeton madagascariensis*, with *A. fenestralis* and *A. henkelianus* regarded as junior synonyms. Their advice on growing the

plant largely parallels that of Stodola. The plant should be housed in an "isolated tank" of seven to twelve gallons, in a substrate composed of sand and loam (which is essentially a mixture of soil, sand, and clay), and with "bright" lighting but "out of direct sunlight." They also stress that the plant "requires frequent change of water," which they describe as one third per week in summer, and one third per month in winter. And, once more, a discouraging epitaph: "they live in the tank for one season and then die off."

My next book is by a German aquarist, Helmut Muhlberg, and is entitled The Complete Guide to Water Plants (1982). Now, the information on the Madagascar Lace Plant changes a bit. He is the first author to claim that the nature of the substrate is not important, and that it can tolerate a wide temperature range (15°-25° C). He also makes no mention of frequent water changes. However, he does advise that the water be very soft and the lighting be fairly moderate. And, once again, a note of discouragement is sounded: the plants are generally doomed to die because the tuber disintegrates.

Muhlberg tells us that *A. madagascariensis* was recognized by the scientific world as the correct species name in 1968. This would account for Stodola's use of *A. fenestralis* in 1967. But unlike Rataj and Horeman, Muhlberg claims that there are two other Madagascar look-alikes: *A. henkelianus*, which supposedly has broader leaves than *A. madagascariensis*, and *A. guillotti*, which supposedly has narrower leaves. I have seen Madagascar Lace Plants with comparatively broad leaves and ones with comparatively narrow leaves, but whether they are separate species I leave to others to debate. I find they are all beautiful, although I do have a slight preference for the broader leaves.

Our next author, Barry James, A Fishkeepers Guide to Aquarium Plants (1986), takes Muhlberg a step further in making it seem less complicated to keep Madagascar Lace Plants. He says that plain gravel is just fine, that pH is not critical, that moderate light is required, and that the plants can tolerate a wide temperature range (59°-77°F). But, he too cautions: "the plants die down and the tuber seems unable to build up sufficient nutrients for the next growth cycle, and generally disintegrates." Oh, phooey! This "annualism" bogeyman rears its ugly head again, sure to



Drawing by Bernard Harrigan

discourage many hobbyists (akin to the dread most hobbyists have for “annual” killifish).

My most recent entry in this survey is Christel Kasselmann’s book Aquarium Plants (originally published in Germany in 1999). She opines that *A. madagascariensis* is “one of the most popular aquarium plants,” but warns that it “should only be kept by specialists who can consistently meet the high requirements of this species in the long term.” (One wonders how the plant is going to be so popular in the future if this advice is heeded.) What does Kasselmann describe as the “high requirements”? Succinctly stated, they are: low temperature, strong water movement, soft acidic water, a nutrient-rich substrate, medium light, and regular rest phases (the book does not give details). In contrast to Muhlberg, she thinks of *A. henkelianus* as merely a variety of *madagascariensis* (this is of interest to scientists, but it does not change the maintenance requirements for these plants).

So, what conclusion do you draw from these various accounts — that the Madagascar Lace Plant is a great beauty to be enjoyed from afar, or only for a brief time? That would seem to be the message, but I have a different viewpoint. It stems from a guy named Steve Gruebel.

Steve has never written a book. He has never written an article on aquatic plants. He has never lectured at an aquarium society. No, the only thing Steve has is 40 years in the family business — Cameo Pet Shop (established in 1947). Cameo has always featured aquatic plants. To this day, it remains the finest expositor of aquatic plants of any store in New York City, if not the entire metro area. In short, Steve has a wealth of practical experience in buying, maintaining, and selling aquarium plants — few people can match 40 years in that business!

Steve regularly has all kinds of *Aponogetons* in his store. He generally gets them as tubers (bulbs) and grows them out in his display

tanks. This includes the Madagascar Lace Plant. He often grows simply magnificent specimens. What are his growing conditions? Hold on to your seat! Here they are: 10 to 20 gallon tanks, one fluorescent tube (sometimes a Gro Lux type, but often the least expensive general-purpose brand), an air-driven box filter, New York City tapwater, (pH is usually 7.0), fish, occasional water changes, and glass gravel! Notice the absence of fertilizers, special lighting, special substrates, fancy water movement, or anything of a high-tech or "special" nature. Do they last more than one season? Well, most of his lace plants fly out of the store, but Steve knows they can. I'm here to witness to that.

Over a year ago, I bought one of Steve's fledgling lace plants. I brought it home and placed it in a 10 gallon tank with a substrate of plain gravel, one 15 watt fluorescent bulb (a generic all-purpose aquarium bulb), two box filters with dolomitic gravel, and no fish. The water temperature was kept at 73° - 76° F. I did not test for pH or hardness (this will surprise no one who knows my habits).

Under these conditions, the plant prospered. In a month's time it became a beautiful specimen. Everyone who visited my fishroom admired it. After about six months, it started to die back. Eventually, it lost all its leaves. What to do? Steve said not to worry. I could either leave it there and it would grow back after several months, or I could hasten the process by placing the bulb in a plastic bag in the refrigerator for one month, and then replant it. I chose the former.

Sure enough, after about three months, it started to grow leaves again. I hadn't changed a thing except that I had added three small *Apistogramma* cichlids to the tank, and I performed a water change of about 30% once a month. These new leaves are still there, several months later. As a precaution derived from James' comment that tubers often seem unable to draw enough nutrients for the next growth cycle, I placed one aquarium plant fertilizer tablet in the substrate.

Steve's opinion on whether or not you will have success with this plant is that it largely depends on the quality of the tuber that you start

off with. He too has had experiences where the quality of the bulbs he has received has been poor, and the plants do not grow well, if at all. According to Steve, Madagascar Lace Plants are not difficult, and if you have a good quality bulb, you will have growth for more than one season. My Madagascar Lace Plant is living proof that his opinion has merit.

Incidentally, the Madagascar Lace Plant has a close cousin by the name of *Aponogeton boivinianus*. This plant does not have lace-like leaves. Instead, where *A. madagascariensis* has openings, this plant has a bubble-like texture. I currently have one growing in a 15 gallon aquarium that I bought as a young plant from Steve at Cameo. Again, the tank/water parameters are very ordinary, but it has grown into what I consider to be the most beautiful aquarium plant that I have ever owned.

Give aquatic plants a try. Don't give up if you don't succeed at first. Often, failure is simply due to the fact that many of the plants you find in pet shops are of poor quality, or are unsuitable as aquarium plants. I counsel patience and perseverance. I know that, for me, growing beautiful aquarium plants is every bit as satisfying as breeding the rarest of exotic fish.



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