



[ADA Review]

## NATURE AQUATIC PLANTS WALL

NATURE IN THE GLASS

ENJOY DOOA

MAKE & KEEP  
LIGHT SCREEN - LED Aquarium Back Light

Mizukusa FOCUS / Plant Art Studio

Amano's view "An Environment that is GOOD for the Soul"



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The Extensive Nature Aquatic Plants Wall is becoming a hot topic as a special exhibit at the "TAKASHI AMANO - NATURE AQUARIUM EXHIBITION", which opened at the Tokyo Dome City's Gallery AaMo on November 8th. The exhibit was created as something that would be symbolic of this event, and it is a new style of aquatic plants display that makes the most of the properties of aquatic plants capable of living under, on and above the water. The three-meter wall of aquatic plants, consisting of three-combination aquarium tanks, presents scenery of a jungle wetland area and gives a stunning view. This exhibition display which showcases an ecotone can serve as a connection between our natural environment and aquariums. ADA will focus on the concept of ecotone in the coming years. In this article, we would like to share behind-the-scenes stories from the making of this special exhibit with our readers.

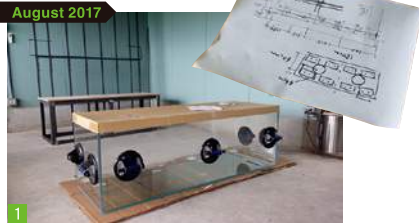
\* "TAKASHI AMANO - NATURE AQUARIUM EXHIBITION" will be held until January 21st, 2018.



# NATURE AQUATIC PLANTS WALL



## Designing a novel system to serve as an aquarium exhibition and testing its mobility.



The frame is built out of steel beams, and it can be dismantled for easier transport from Niigata to Tokyo.



The walls were designed based on the DOOA Wabi-Kusa Wall. The ceiling was removed for lighting.



Solar RGBs were installed, and a prototype of the basic system for the giant nature aquatic plants wall was completed.



The visual effects of water and mist flowing downwards are an element that cannot be found in walls that are covered with terrestrial plants.



Wabi-kusa mats with moss and epiphytic plants were temporarily attached, and the layout image of the wall was worked out.



The cultivation conditions like the performance of the mist maker and the sprinklers were inspected. Since the layout of the wall easily become flat and monotonous, making it varied was difficult.



The background color was carefully selected to make the transition area between terrestrial and aquatic sections look natural.



We managed to safely dismantle it. The diverse aquatic plants covered the surface of the wall.

In the morning before transporting the wall to Tokyo, there was a lot of anxiety about whether it could be carried to Tokyo while maintaining the condition.



After the assembly was completed, the process of grooming the aquatic plants that shifted in transit started without taking a break.



At dawn, finally the Extensive Nature Aquatic Plants Wall appeared in the exhibition hall. It's almost completed.

## The appearance of 'Extensive Nature Aquatic Plants Wall' in the exhibition hall.

The Extensive Nature Aquatic Plants Wall was planned and built as a special exhibition for the event. The preparatory phase was only three months. Additionally, as it was our first attempt at this sort of project, there was a series of difficulties from the inception of the project to the opening of the exhibition. It includes loading and unloading of all the equipment and materials and transporting from Niigata where ADA's headquarters locates to the event venue in Tokyo. When considering the short time frame to prepare the plants and create scenery of the wall, it left no room for indecision. Nevertheless, because of our working experience with Takashi Amano in a number of previous projects, we knew we were on the right track for a successful project. The Extensive Nature Aquatic Plants Wall is an accomplishment achieved by applying ADA's technology and enthusiasm.

\*You can watch the video footage of the exhibit installation on ADA view.  
<http://www.adana.co.jp/AJ/267/>



The giant aquatic plants wall is showcased as if emerging from the darkness of the background. Many visitors stop at the wall and stay for awhile. We hope this exhibition will give visitors an opportunity to better understand the natural environment.



The packing was done in a way that would not harm the aquatic plants. The aquarium tanks were transported using a stand with casters that was prepared in advance.



Finally, came the process of attaching the walls that was the most difficult part. When the main unit was lifted, a sense of nervousness was welling up.



There were times when the work did not go as planned in the simulation, and a feeling of uneasiness hung in the air at the work site.



It arrived at the building after being transported by truck from Niigata. The installation of the wall was carried out throughout the night.



## The exhibit, combining water and greenery, shows the future potential of aquascaping.

The Extensive Nature Aquatic Plants Wall is a special display created for the exhibition. It was designed by further developing Wabi-kusa Wall 60 and System Terra 30 of ADA's new DOOA brand. Thus, they share the same basic structures though the sizes are very different. They are all comprised of pieces of 9x9cm Wabi-kusa mats. This layout consists of approximately 50 varieties of plants including both terrestrial and aquatic plants, and the view of the layout

looks like wetlands of a jungle where a great variety of plants are thriving in abundance. A transition area between two different ecological communities, such as the terrestrial and aquatic environments, is called an ecotone. As environmental awareness increases in recent years, more people pay attention to the ecotone as natural habitats for diverse organisms. The layout of the exhibit was created based on the concept of ecotone. Takashi Amano, founder of Nature Aquarium,

considered planted aquariums as a form of environmental model. In that sense, the exhibit was designed according to Amano's principle. This massive exhibit of water and greenery, comprised of three aquarium tanks, is a form of expression that cannot be achieved without aquatic plants. It shows the future potential of aquascaping. Aquascaping is a profound hobby and a form of art that allows you to enjoy aquatic scenery indoors. Its role in society will grow in the future.



As fog and water flow down the surface of the wall, the plants are moistened and moss grows on driftwood. Its "overwhelming" natural atmosphere is comfortable and soothes everyone who sees it.



The prototype of ADA's new LIGHT SCREEN is used to highlight the background of aquascapes. The color gradation expresses a transition moving from the terrestrial environment to the aquatic.



Extensive Nature Aquatic Plants Wall, a special exhibit at "TAKASHI AMANO - NATURE AQUARIUM EXHIBITION", creates a stunning view.

Creator: Kouta Iwahori (terrestrial layout), Yusuke Homma (aquascape layout)  
November 25, 2017 (ADA) ©AQUA DESIGN AMANO



# NATURE IN THE GLASS

“The flow of a mountain stream, covered  
with a thick coat of moss.”

Yusuke Homma



©AQUA DESIGN AMANO

As time passes, moss attaches  
to driftwood and stones,  
and ferns start to make an appearance.

Driftwood caught up on stones is a sight often seen in mountain stream basins, and it easily became a motif for layouts. Imagining a story of how the scenery is created in nature, the process of creating this type of layout is something to be enjoyed. In this aquascape special attention

was paid to the placement angle of the driftwood and another important point was making sure the impression of the driftwood did not become overpowering. Here, the aquatic plants take on the role of softening the impression of driftwood and as expected, stones and driftwood

look good with epiphytic aquatic plants like moss and ferns. As time passes, its quaint atmosphere will be further enhanced and the Bolbitis attached to the driftwood will help create a simple and elegant world.

## DATA

Shooting date	October 27th, 2017 (ADA)
Creator	Yusuke Homma
Aquarium	Cube Garden W180xD60xH60 (cm)
Lighting	Solar RGB x 3 units, turned on for 10 hours per day
Filter	Super Jet Filter ES-2400 (Bio Rio L, NA Carbon)
Substrate	Corolado Sand
CO <sub>2</sub>	Pollen Glass Beetle 50, 6 bubbles per second via CO <sub>2</sub> Beetle Counter (using Tower)
Aeration	14 hours after the light is turned off using Lily Pipe P-6
Additives	Green Brighty Neutral K; Green Brighty Iron.
Water change	1/3 once a week
Water quality	Temperature: 25°C; pH: 6.8; TH: 20 mg/l

Aquatic Plants	Bolbitis heudelotii Vesicularia sp.
Fish & Invertebrates	Hemigrammus ulreyi Crossocheilus oblongus Otocinclus sp. Caridina multidentata





#### NATURE IN THE GLASS

The soft, moist atmosphere of moss and ferns and the clear view of schooling Ulrey's tetra add freshness of a mountain stream.

©AQUA DESIGN AMANO



The river aquascape created by arranging uniquely shaped driftwood in dynamic ways.

This layout combines angular Manten Stones and roughly shaped individual pieces of driftwood to dynamically express the underwater scenery of a river. I used only cosmetic sand for substrate to give the impression of a natural riverbed with epiphytic plants, like ferns and mosses. The simple composition tells us a story of a fallen tree washed down the river and was stopped right at the spot. Additionally, I replicated a natural fish habitat by leaving sufficient open space for fish to swim around.



Fill in the spaces at the bottom of the driftwood with moderately sized stones. It stabilizes the driftwood and gives a sense of unity to compositional frame.

An important point here is to position the fern clumps in a triangular shape. Use Wood Tight and small stones to fix the clumps.



Just a moderate amount of *Vesicularia* sp., giving the impression of time's passage, is used to take advantage of unique shapes of driftwood pieces.



Layout Composition



Completion



©AQUA DESIGN AMANO



By embedding *Vesicularia* sp. into the cracks in the driftwood using tweezers, the moss looks naturally grown on the driftwood.

Place rocks with *Vesicularia* sp. around the compositional frame. Riccia Line was used because it is difficult for them to stick to the Manten Stones.



The combination of driftwood and Manten Stones works effectively not only as a compositional frame but also as a natural fish habitat.



The *Vesicularia* sp. placed around the compositional frame creates a natural feel and visually connects the cosmetic sand and the compositional frame.

Creation process



1 Use Colorado sand as substrate. Spread it in a thin layer over the bottom of the tank. Colorado sand is a type of natural sand and is the most suitable layout material for recreating a riverbed.



2 Manten Stones and driftwood are placed on the substrate. The important point here is to express the flow of water in the layout by the tilt of the main driftwood pieces.



3 This layout broadly divides the frame of the composition into two groups. Smaller pieces of driftwood were positioned on the right side.



4 Place a small pile of Manten stones in the center. It gives a change in the layout. It also softens the impression of the protruding driftwood.



5 The spaces between the piled up Manten Stones are filled in with Colorado Sand. It stabilizes the composition and makes it easier to manage.



6 The Bolbitis, the main aquatic plant, is directly fixed to the driftwood. Some Bolbitis are fixed to small rocks and placed accordingly.





DOOA, an inspiring brand, helps you enjoy aquatic plants more freely. Minimal and easy, and designed as a platform allowing everyone to nurture plants indoors. Feel closer to nature, and bring beauty into your life.

## When arranging driftwood for an aquaterrarium, it is important to keep in mind the composition.

This layout portrays a scene of a wetland in a dense jungle by using a relatively large, nicely shaped piece of driftwood. When arranging driftwood for an aquaterrarium, it is important to keep in mind the composition. Here, I created a triangle composition. The arrangement of plants on the wall section, using some Wabi-kusa and Wabi-kusa mats, was made in line with the triangle structure framed with the driftwood. Additionally, the greenery of the aquaterrarium is nicely accentuated with bare branches of the driftwood which were spaced apart from the wall section. When making the underwater section, I tried not to make a gloomy impression by placing bright color Tropical River Sand, Wabi-kusa rocks (*Utricularia graminifolia*) and some riccia attached to small rocks. The sight of *Poropanchax normani* swimming under the aquatic plants hanging over the water's edge satisfies our yearning for water.

- Solar RGB
- Solar RGB Stand For W60xH30cm
- Neo Glass Terra H23
- W60xD30xH18 / 23cm
- Wabi-Kusa Wall 60
- Wabi-Kusa Wall Stand 60
- Wood Cabinet (White)
- W60xD30xH70cm
- CO<sub>2</sub> Mini Counter
- CO<sub>2</sub> Mini Diffuser Ø15
- NA Control Timer II
- Stream Pipe V-1
- Super Jet Filter ES-150
- Tropical River Sand

October 27, 2017 (ADA)  
Aquaterrarium and Text by Yusuke Homma  
©AQUA DESIGN AMANO







DOOA, an inspiring brand, helps you enjoy aquatic plants more freely, naturally and easily, and designed as a platform allowing everyone to further expand horizons. Feel closer to nature, and bring beauty into your life.



The charm of the aqua-terrarium using Wabi-kusa Wall is that you can enjoy both terrestrial and aquatic environments at the same time. The layout presents a tropical wetland and fish habitat by arranging driftwood pieces.

The layout can be expanded by letting some emerged leaves lift out of Wabi-kusa Wall. The driftwood branches spreading out above the water are also one of the features of this layout.



©AQUA DESIGN AMANO

**I recreated a natural fish habitat using driftwood.**  
**You can enjoy making an aquatic plants layout with Wabi-kusa Wall.**



Willow moss attached to Wabi-kusa mats is a basic component of this Wabi-kusa Wall. By adding emerged leaves of a variety of aquatic plants to the wall, I created an "aquatic plants wall" showing different aspects of aquatic plants.



Recreating an environment close to their natural habitat, we can observe *Poropanchax normani*'s natural behavior, such as hiding behind driftwood and schooling near the water surface.

Solar RGB, a pendant style lighting system, can provide enough illuminance from a high position. It also allows a more dynamic driftwood arrangement, which helps increase the quality of the aquascape.

You can easily make an aqua-terrarium by placing Wabi-kusa balls with various plants and Willow moss based Wabi-kusa mats on the wall. It will be a full-fledged aquatic plants layout by adding driftwood and Wabi-kusa rocks to it. With this layout, I recreated a natural fish habitat using boldly arranged driftwood.



# MAKE & KEEP

2

**LED rear lighting specifically  
designed for aquariums.  
Beautifully illuminates your aquascape.**

ADA NATURE AQUARIUM GOODS

## LIGHT SCREEN

LED back light for the aquarium tank



LIGHT SCREEN is easily installed on a tank with the included hooks. (Image shown is a prototype image.)  
A blue gradation sheet is included.

### Special care taken for the background appearance in Nature Aquarium.

In the Nature Aquarium that provides a natural scenic beauty in a tank, the ideal is to keep the aquarium tank and all the equipment as simple as possible. For this reason, ADA has developed Cube Garden, a rimless aquarium tank with less obtrusive silicone joints, and other glass equipment, such as Pollen Glass and Lily Pipe. ADA also offers Aqua Screen to cover the rear side of the tank because room walls or interior objects reflected on the background would ruin a beautiful aquascape. Moreover, Cube Garden Mist with a sandblasted rear glass panel was introduced (currently discontinued). Takashi Amano paid great attention to the appearance of the rear section in order to draw out the

beauty of the aquatic scenery. During his early days, he started photographing aquascapes with a black background, and he then used a white background or a blue gradation. However, if any background but black is used, it is necessary to illuminate the back of the aquarium with intense light. It can be very difficult to achieve in a private home setting. If you just hang a white or gradation sheet behind the aquarium tank, it looks dark and it will not turn out like the bright background shown in Amano's aquascape photographs. Therefore, ADA has developed "LIGHT SCREEN" for aquariums that uses an LED back light to improve the quality of aquascape photos you take and enhance the appreciation of the aquatic scenery.

### MAKE & KEEP

This section of each issue introduces useful knowledge and product information for creating and maintaining Nature Aquarium or Aqua-Terrarium. This time, we feature LIGHT SCREEN, which is scheduled to release this winter. It enhances beauty of your Nature Aquarium and significantly improves the quality of aquascape photos you take.

### Easy-to-install LED back light for the aquarium tank.

LIGHT SCREEN 60 for ordinary 60cm aquariums (W60xH36cm) and LIGHT SCREEN 90 for 90cm aquariums (W90xH45cm) will be launched. The thickness of the main unit (Light emitting screen) is very thin (approx. 6mm), which enables an easy installation of the screen in a narrow space between the back side of the tank and the wall. Moreover the light emitting screen has a dimmer switch which allows you to view the aquascape at your preferred brightness setting and to adjust the strength of the background light according to the brightness of the main lighting system for a photoshoot. Another feature of LIGHT

SCREEN is that you can create not only a white background but also a blue gradation background by using the provided gradation sheet. The gradation sheet is an electrostatic film and can be used repeatedly. It offers two patterns of color gradation by placing the blue section on the top or bottom of the background, as similarly seen in Amano's aquascape photographs. For use with LIGHT SCREEN, ADA recommends AQUASKY G or Solar RGB, which enhances colors of aquatic plants and fish. Experience "Amano's world" in an easy and fun way!

### LIGHT SCREEN [Examples of using LIGHT SCREEN 60 with Solar RGB]

Unlit



When LIGHT SCREEN is unlit, it looks dark and does not have a pristine white background.

White background



When LIGHT SCREEN turns on, it gives a bright, pristine white background (dimmer function available).

Top blue gradation



"Amano blue" can easily be recreated when LIGHT SCREEN is used with the provided gradation sheet.

Bottom blue gradation



Create the bottom blue gradation by flipping the gradation sheet upside down.



Here, we will describe the topics related to the tissue culture of aquatic plants. The tissue culture of aquatic plants is a field where there are still many things that are not clear. The secrets of aquatic plants that have been slowly revealed by the research done by ADA's Biotechnology Division will be conveyed to all of the readers through this page.

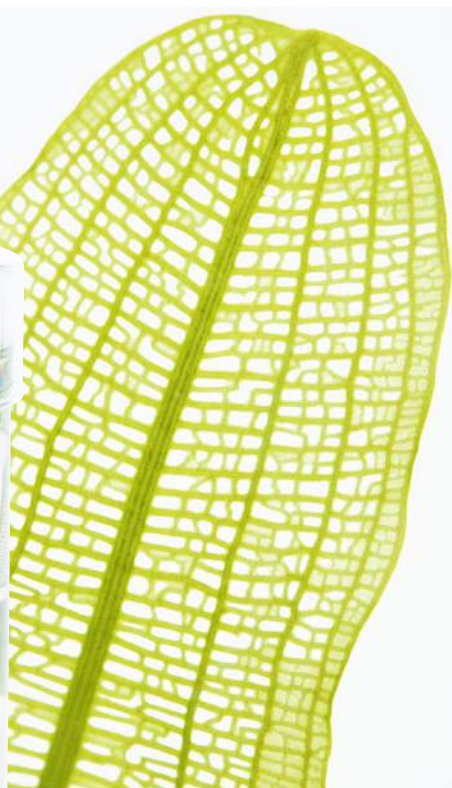
### *Aponogeton madagascariensis*

This aquatic plant is also commonly called the lace plant and comes from Madagascar, and it has a slightly different shape where the leaves have a mesh pattern. When they sprout, they don't have the mesh pattern, and as the leaves grow, they gradually get holes and a mesh pattern is formed. This phenomenon is thought to be a type of "programmed cell death" where the cells eliminate themselves. They are ideally cultivated in cold, hard water with a low pH, and weakening the water current is a trick to raise them beautifully. While it is a slight change of topic, we are currently attempting to proliferate the lace plant using tissue culture techniques. Clumps that are managed and maintained in sterile conditions grow faster than normal, and it is easy to use root division to start vegetative reproduction. Additionally,

there is no water current in the containers where they are cultivated, so the leaves develop beautifully, and when they are illuminated, it is possible to look at the bubbles that are produced by photosynthesis. Abundant nutriment in the culture medium create fast tuber growth, and there are some that reach several centimeters. The tissue culture technologies and techniques have resulted in making it possible to proliferate beautiful clumps in a short period of time, and we have our eye on large-scale proliferation in the future. Therefore, we are conducting studies that examine a more ideal nutritional medium and the optimal cultivation environment. We will continue to perform research so that we can bring high-quality tissue culture aquatic plants to everyone's home. Please look forward to our future product development.

#### The Lace plant under tissue culture conditions

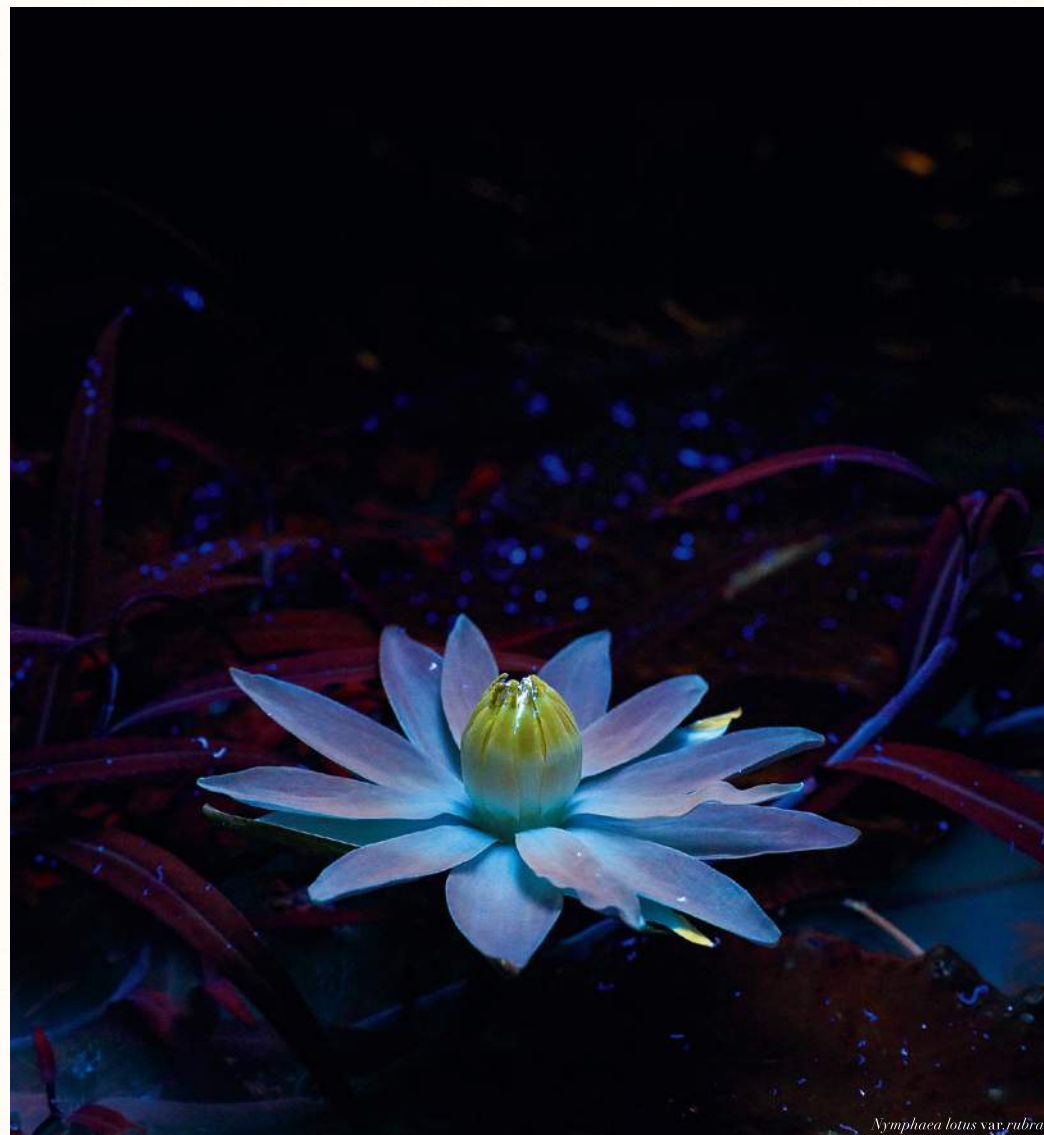
The cultivation environment is completed by planting them into nutrient agar and injecting sterilized water. Because there is no water current, the leaves are free to develop, and after around one month, the cultivation container fills up. We are working on nutritional composition studies so that people can achieve this growth speed in normal aquarium tanks.



The leaves that developed beautifully change into a mesh pattern like in the pictures. One of the charms of lace plant is being able to observe this unique shape.

## Plant Art Studio

Photographing *Nymphaea lotus* by running UV rays through them using a special filter. It creates a fantastic world. Let's look at the water lilies that bloom at night from the perspective of the bugs that can detect short wavelengths of light that human beings cannot see.



*Nymphaea lotus* var. *rubra*

02

"Whether seen by others or not, still I bloom." – Saneatsu Mushanokōji\*

A single water lily blossoms in the darkness.  
Its faint presence on the dark water's surface is beautiful and even solemn.  
Photo / Yusuke Homma



\* Japanese novelist and artist.



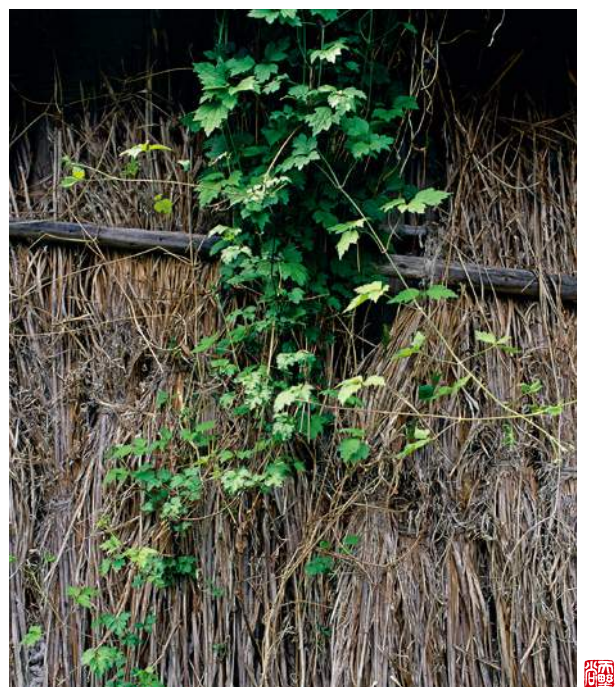
This is the essay Takashi Amano wrote for his planted aquarium collection book *Glass no Naka no Daishizen (Nature Aquarium World)* published in 1992. It gives the opportunity to understand Amano's unique views of nature and his experience.

考 [Amano's view] Nature Aquarium World

An Environment that is GOOD for the Soul  
Photo&Text / Takashi Amano



A watercolor painting of an old Japanese house on the Sea of Japan coast. Amano preferred sceneries with old-country atmosphere.



When it comes to landscape painting, I'm one of those no-talent enthusiasts. I pretty much stick to photography now, but when I paint I prefer lightly-colored paintings of thatched-roof houses in the mountains or boathouses and fishing villages by the rough Sea of Japan. However, the subjects of these motifs are hard to find these days, and when I do come across such old homes the gardens are unkempt or they have modern sliding glass doors on them.

When I first visited Africa fifteen years ago, even the lodges and pensions for tourists blended right in with the traditional housing surrounding them. And on a certain Mediterranean island an ordinance requires people to repaint their homes white every year. These kinds of rules are found in many countries, and I admire the people of advanced culture who make them. I've realized something in my travels, and it may be my own prejudice so I'll state it briefly: people who live in

simple, beautiful surroundings are simple and beautiful inside. But as development progresses, the soul is ravaged along with the landscape. So I think that we should make our daily surroundings beautiful. How about requiring every home to have at least one large tree? Every home would have to have the necessary space, and different towns could require different trees: this town apricot, that one zelkova, another ginkgo and so on. Ugly homes and billboards would be covered up, and eventually neighborhoods would be blanketed in green.

Likewise, aquarists should add some plants every time the fish population increases. Of course the quantity depends on the fishes' size, but a small characin, for example, would require only a few stemmed plants such as *Hygrophila* or *Rotala* to take care of the water purification. Plants and animals balance each other, and this balance needs to be maintained even in the smallest systems.

*Nature Aquarium World* (TFH, 1992)

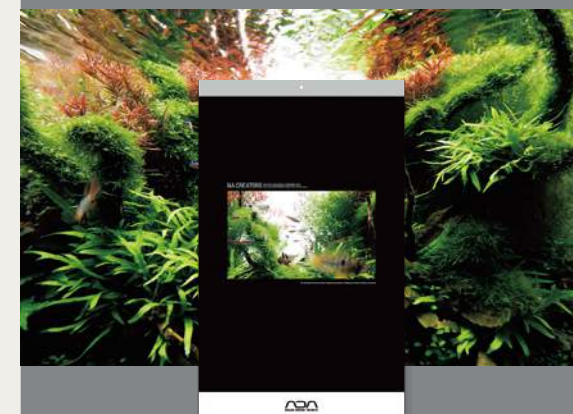
## INFORMATION

# New ADA CO<sub>2</sub> system is released!

**NEW** CO<sub>2</sub> ADVANCED SYSTEM-FOREST

ADA's CO<sub>2</sub> ADVANCED SYSTEM-FOREST has evolved sophisticatedly and renewed more simply. With its stubborn reliability, new design with POLLEN GLASS EZ and CO<sub>2</sub> METAL STAND, it is now the new standard.

## NA CREATORS NATURE AQUARIUM CALENDAR 2018



The Nature Aquarium Calendar 2018 showcases new 12 aquascapes created by ADA in-house aquascapers who take over the philosophy of Nature Aquarium. Enjoy powerful, astonishing aquatic worlds presented by a group of emerging creative challengers!

[Limited Edition]  
\* Size: W29.7cm x H48.5cm \* Hot-melt coating  
\* Monthly Calendar : total 13 pages including the cover  
\* Pre-bagged

## ADA NEW BOOKS

### TAKASHI AMANO - The Art of NATURE AQUARIUM

It features Nature Aquarium and natural environment photographs created and taken by an artist Takashi Amano. A new technology has been used for printing this booklet to embody the dynamism of photographs captured on Takashi Amano's enthusiastic large format film. Please enjoy analog, yet dramatic Nature Aquarium.



\* Language: Japanese, English \* Size: 278x250mm  
\* 160 pages / all colored

Exclusively available at Gallery AaMo, TOKYO DOME CITY

### ADA Annual Edition 2017

"ADA Annual Edition" is a wrap-up annual booklet of all Aqua Journals issued in this year. It contains feature articles about ADA's products launched in 2017, newly created Nature Aquarium layouts and so on.

\* Language: Japanese only  
\* Size: A4  
\* 120 pages / all colored



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ADA presents new VUPPA-II.



NEW ADA NATURE AQUARIUM GOODS  
**VUPPA-II**

VUPPA-II removes oil film and surface debris more efficiently, and it can prevent cavitation by automatically adjusting the water level with a built-in float switch.

Having a simplified inner structure, VUPPA-II is easier to clean.

Have a healthy, oil-free aquarium.

Size : W43×H43×D130 (mm) \* Projecting parts not included.

RELEASING IN JANUARY 2018