Nature Aquarium information magazine

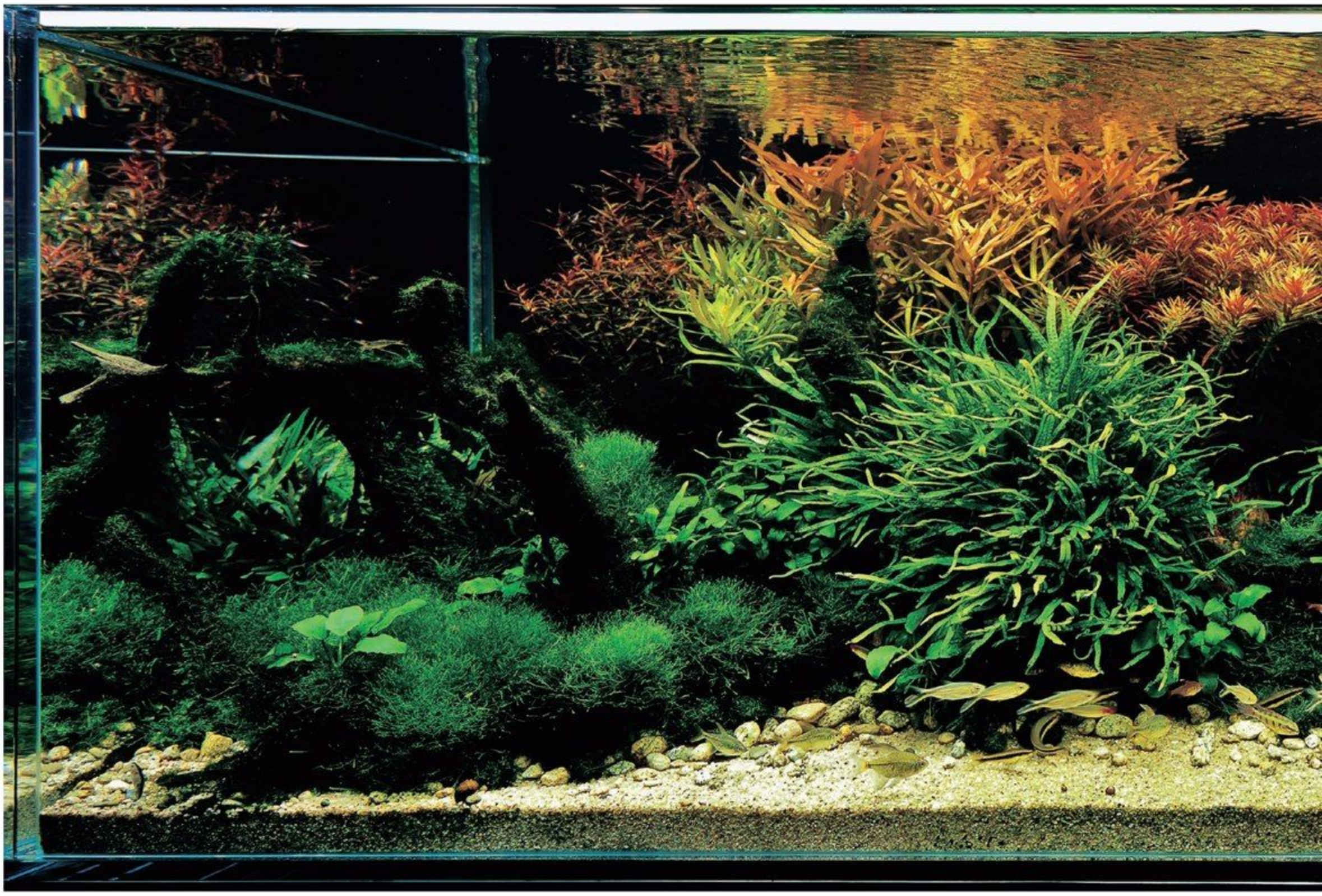
AQUAJOURNAL

ADA
aqua design amano
MAR.
2012

Special Feature

Preparation

The Beginning of Skillful Layout Process



ADA NATURE AQUARIUM

TAKASHI AMANO

ALL PRODUCTS BELONG TO AQUA DESIGN AMANO CO., LTD.
PRODUCED BY TAKASHI AMANO

ADA official website (English)

http://www.adana.co.jp/en

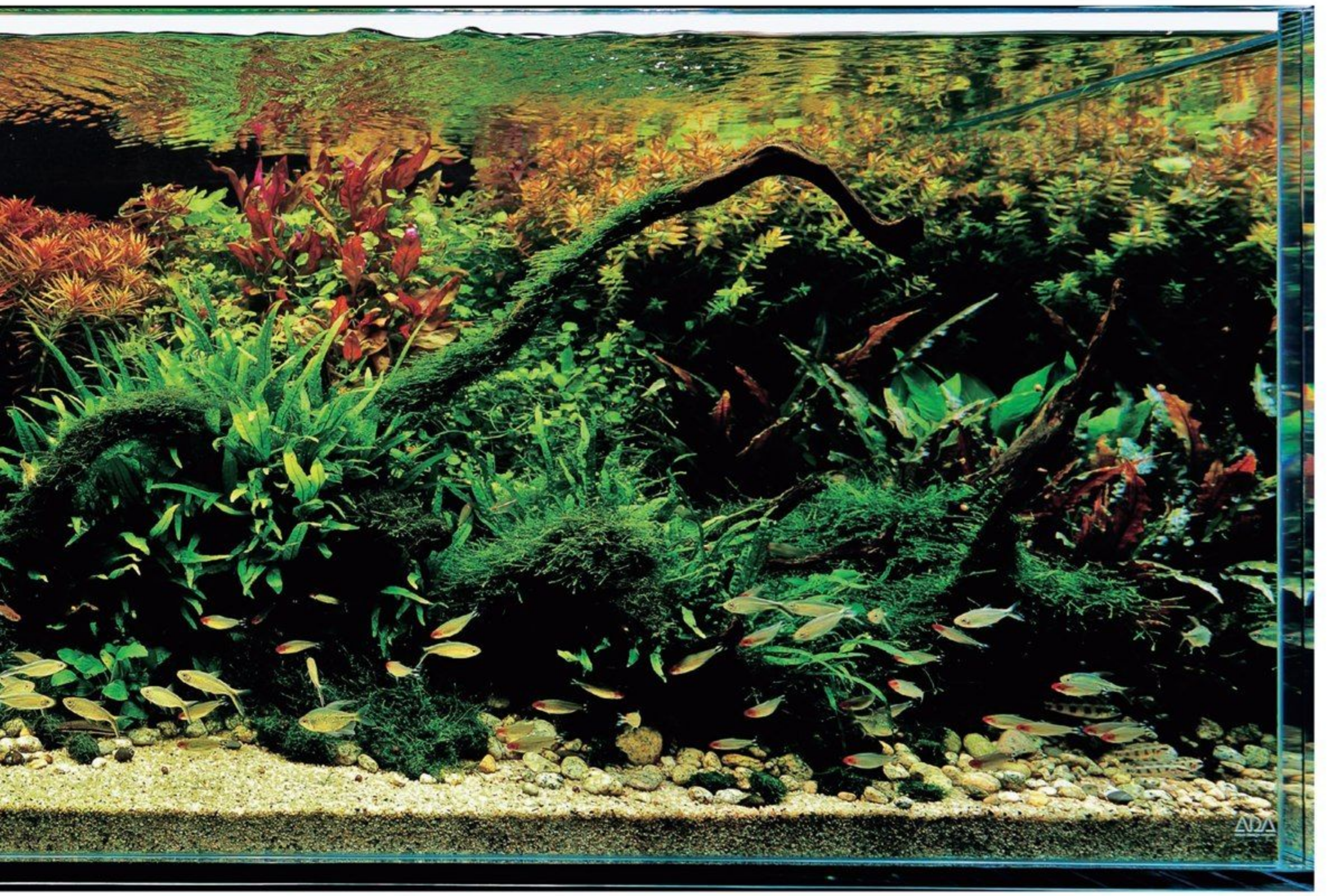
ADA Go

Creating a habitat for fish

In a large volume aquarium tank, it is possible to create an aquarium environment close to the natural habitat of the fish. Making a comfortable habitat for fish is one of the original concept of the Nature Aquarium, and also the greatest appeal of owning the large volume tank.

POLLEN GLASS BEETLE

Pollen Glass Beetle has a wider diffusion filter. Unique design Beetle sits conveniently on an inside corner of an aquarium tank. For a large size tank, Beetle can be placed on multiple numbers of corners.



TOWER

Tower is a refillable CO_2 tank equipped with elegant stainless steel cover for safety reasons. The refillable CO_2 is economical (18 bottles of small cartridge) and suitable for large size aquarium tank. The stainless steel cover keeps CO_2 tank securely in upright position.

CO_2 BEETLE COUNTER

It is a CO_2 bubble counter for large size aquariums. It has a practical and playful design, and the bubbles can be easily counted as CO_2 rises in a spiral. It is designed to be used with Pollen Glass Large or Pollen Glass Beetle.

CO_2 ATTACHE REGULATOR

It is standard type regulator for refillable CO_2 tank. The simple design regulator is suitable for ADA Tower refillable CO_2 tank, and it is equipped with fixed pressure inhibition function (0.30MPa) and second pressure safety hole for safety and functionality.

NA CONTROLTIMER

NA Control Timer controls lighting, aeration and CO_2 supply automatically. It has three outlets: two for lighting control and one for air pump. The outlet for air pump is inversely connected with lighting circuit, and it is activated when the timer is turned off.

Travelling across Japan

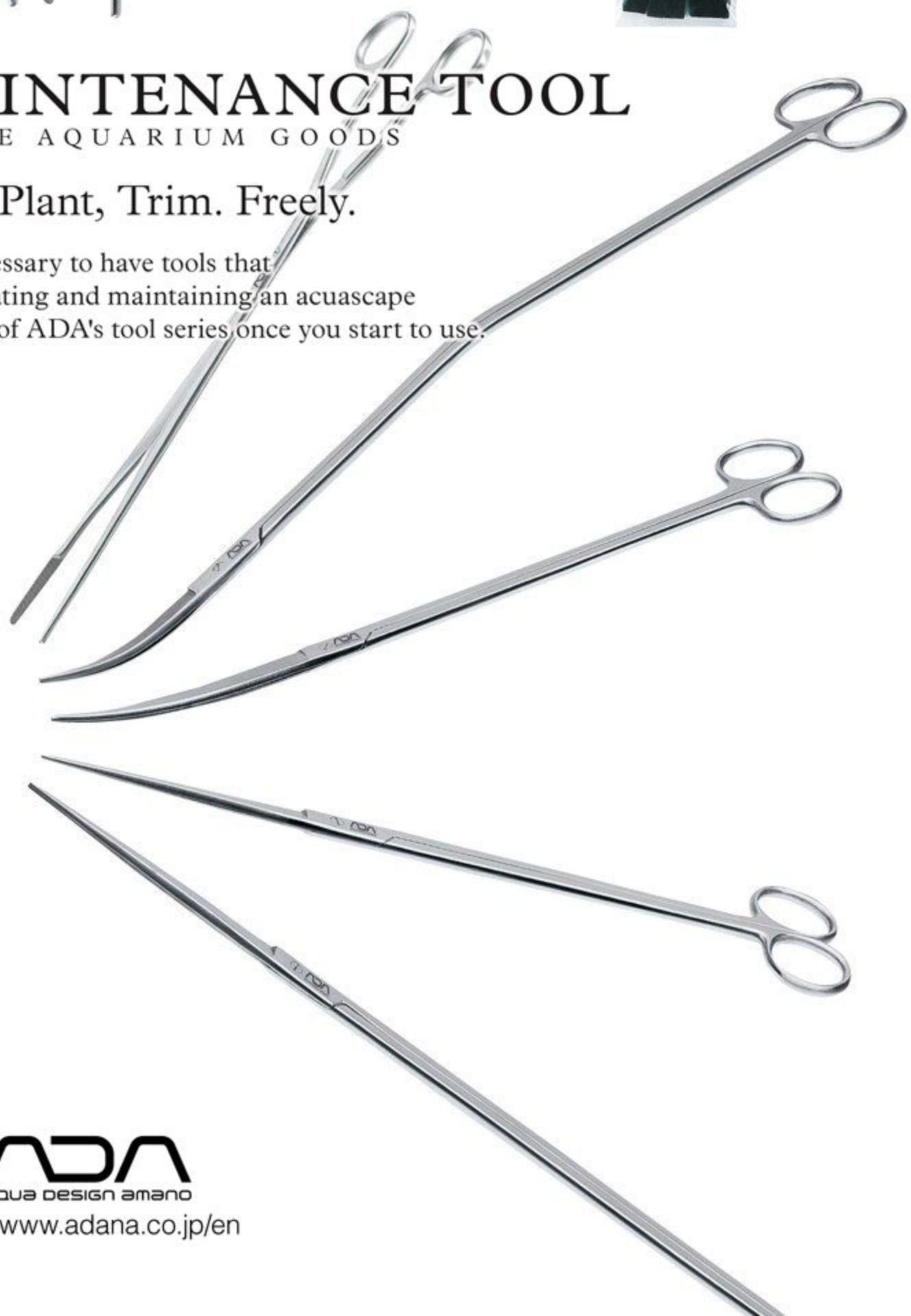
Vol.36 Sanjo, Niigata, Japan

LAYOUT & MAINTENANCE TOOL

ADA NATURE AQUARIUM GOODS

Tie, Hold, Plant, Trim. Freely.

It is necessary to have tools that
is easy to use for creating and maintaining an acuascape
You can feel the difference of ADA's tool series once you start to use.



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Scenic View from Yagihana (Sanjo, Niigata, Japan)

Mountains in Niigata are dotted with villages and enchanting landscapes of countryside featuring rice terrace spread out. I captured scenery of former Shitada Village from a cliff called Yagihana. This land is a heavy snowfall area and Mt. Sumondake is still capped with thick snow even when the rice-planting season arrives. The paddy fields there are filled with abundant melted snow water of two rivers, namely Sumon River and Igarashi River. This water is a secret of dainty Niigata rice.

Shooting data /Ebony 8x20, Symmar 355mm, PL filter used, 1 sec at f45 1/3,
Velvia 100F 8×20 inch format film
Text and photographs by Takashi Amano

AQUA JOURNAL
MARCH 2012

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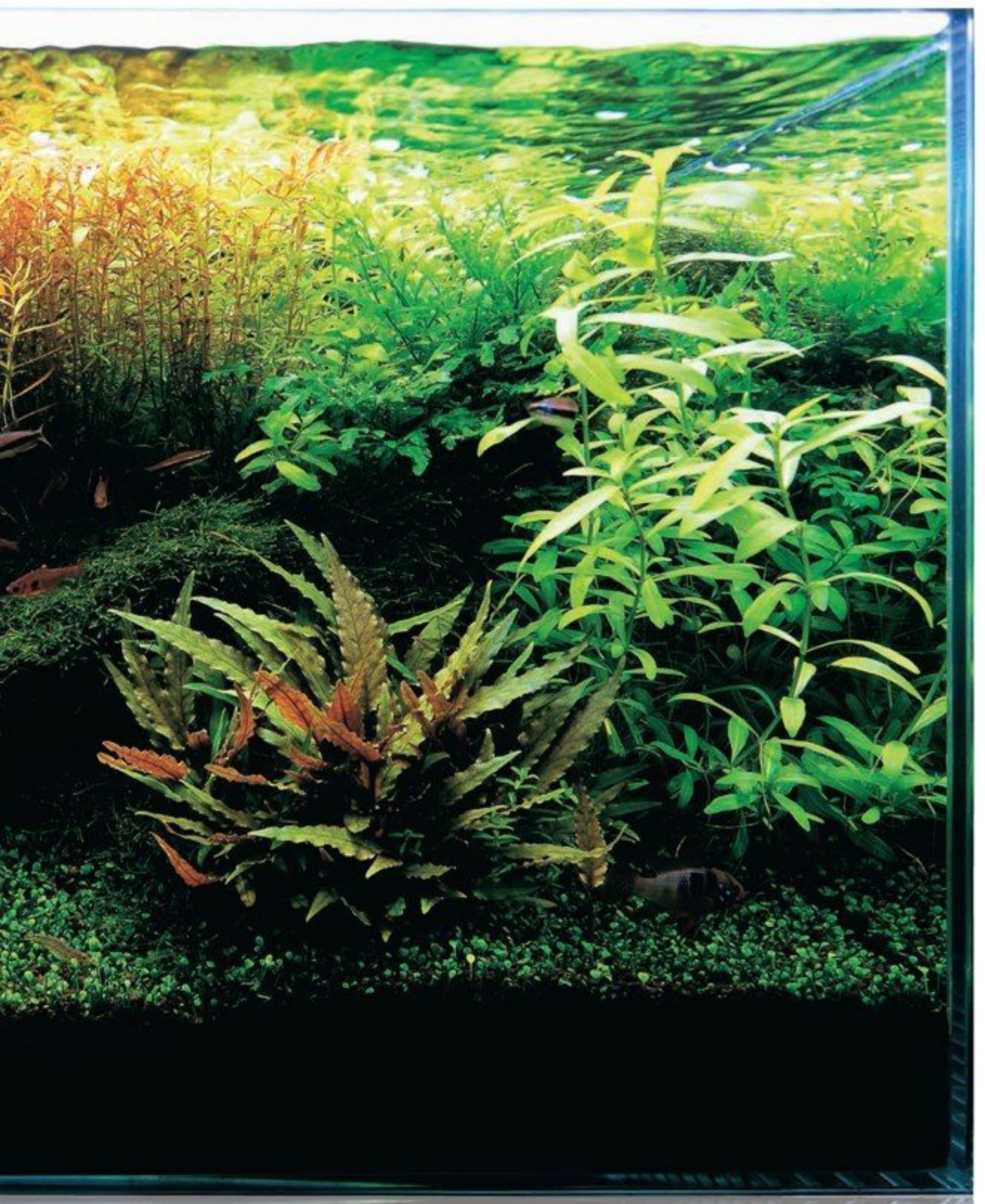


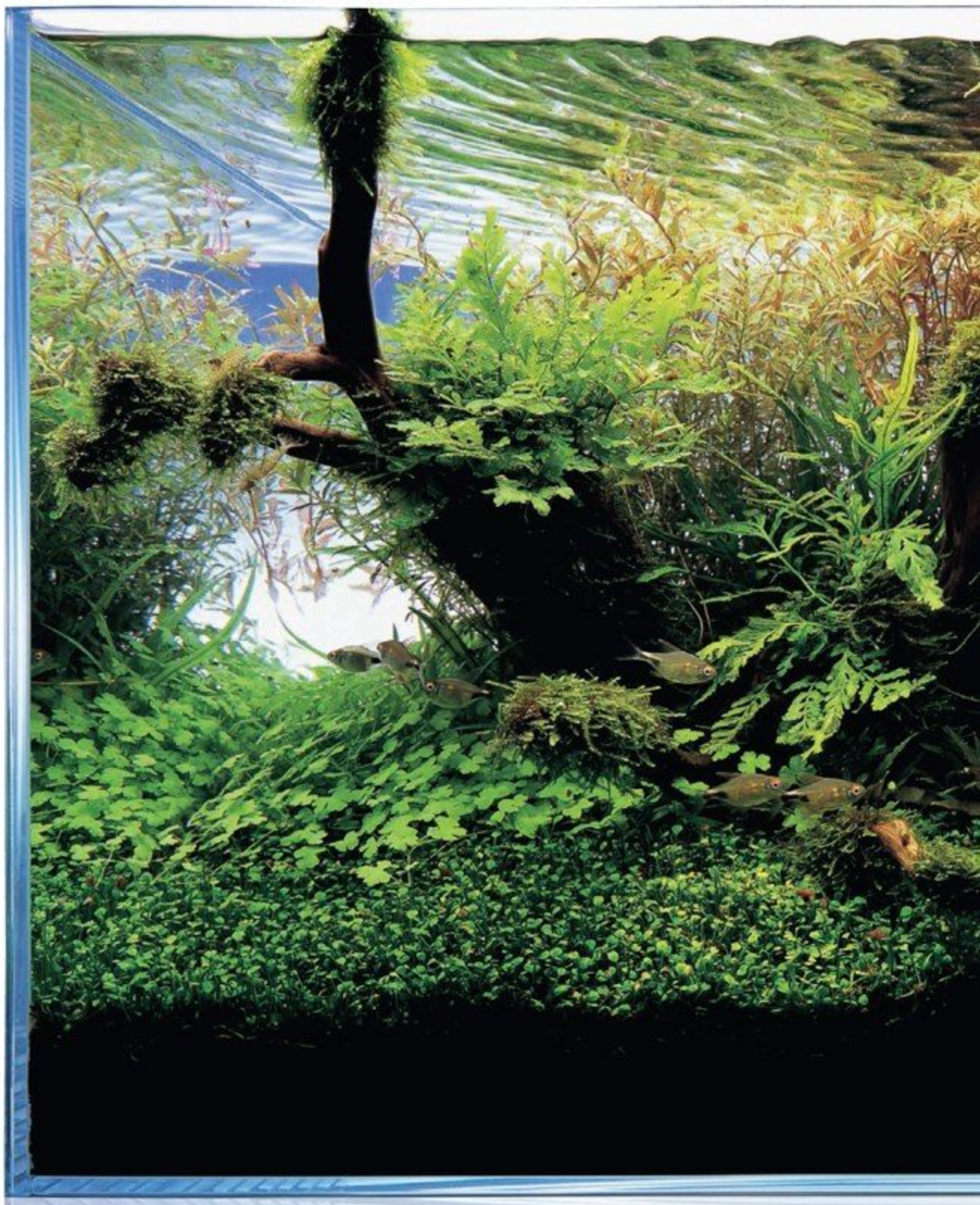
Preparation – The Beginning of Skillful Layout

Process

Photographs by Takashi Amano

Text by Masatoshi Abe／Tsuyoshi Oiwa

The planted aquarium consists of various aquatic plants and the preparations required prior to planting vary depending on the species. In the preparation process, identifying the condition of each plant as well as the removal of the damaged leaves and stems is required. These efforts may be avoided by the use of Wabi-Kusa, the effectiveness of which is to be highlighted in this feature article. The Special Feature of this issue is full of basic knowledge to help achieve a more skillful layout.



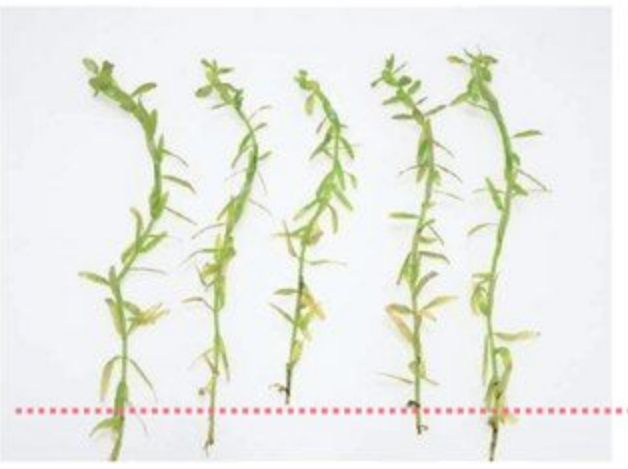
"Basics" Preparation by Aquatic Plant Type"

First of all, let's look at the preparation methods for each type of aquatic plants. The preparations may be made easy with Wabi-Kusa….

Narrow leaf × Stem plant

Stem plants with narrow leaves and a good tolerance to trimming are particularly useful in the planted aquarium. Rotala is a good example of this: the leaves from the bottom of the stem do not need to be removed, making it more convenient to plant.

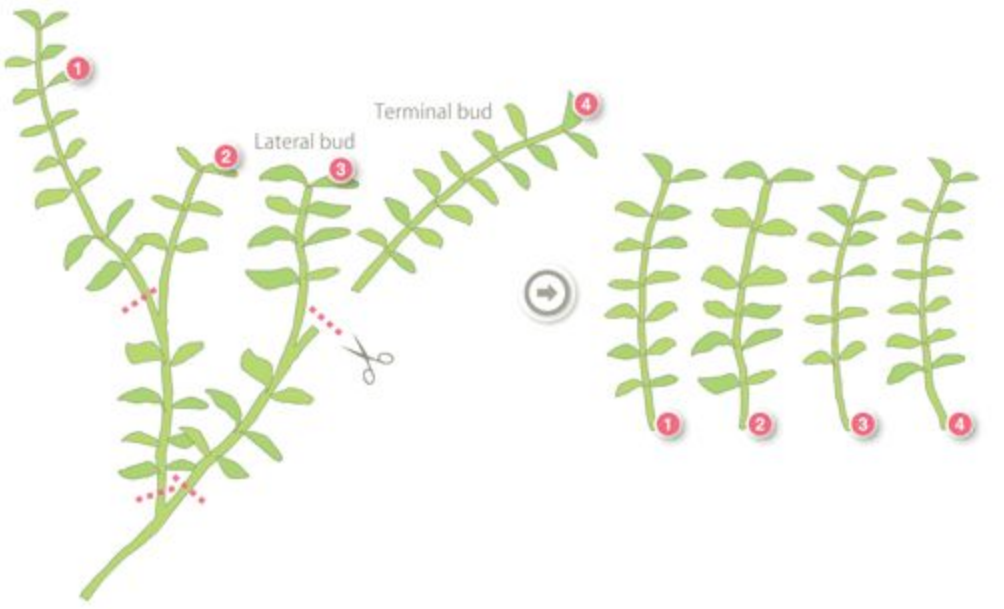
"Stem plants with narrow leaves such as Rotala"



Align the level of terminal bud of each stem plant.

Cut the bottom of the stem to the intended height.

Are tall stem plants a good buy?
Stem plants can be propagated by taking cuttings and re-planting them. This means that you can increase the number of plants by cutting and re-planting the branches of the stems. So if your budget is a little tight, buying tall stem plants is a good option. As the saying goes, "there is unexpected goodness in what others have left behind!"



Broad leaf × Stem plant

Stem plants with broad leaves are commonly found among species like Ludwigia and Hygrophila. The leaves on the bottom part of the stem should be removed prior to planting since they become a hindrance to planting and will eventually wilt.

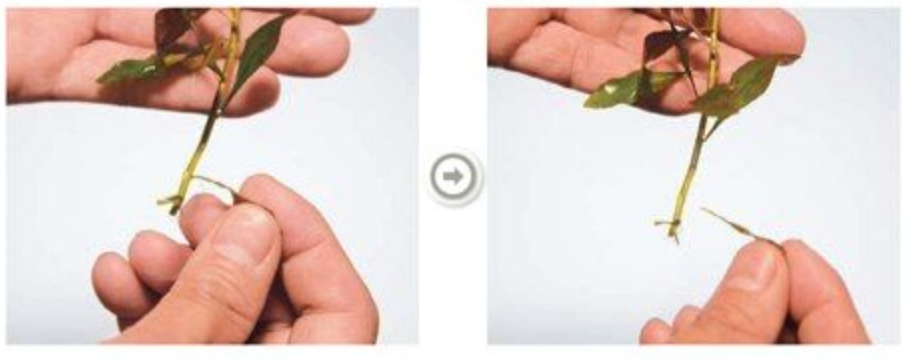
"Stem plants with broad leaves such as Ludwigia"

Align the level of terminal bud of each stem plant.

Remove the leaves on the bottom of the stem, and then cut the stem bottom to have the intended height.

Be careful with the bottom of broad-leaved stem plants
Stem plants have nodes on their stems. Remove the leaves from the bottom 2-3 nodes. This type of stem plants requires careful attention as they often have decaying, blackened stems.

It is alright to leave some leaf stems behind.



Foreground plant 1 × Wabi-Kusa

Foreground plants do not require much preparation, but the method of preparation does depend on the species of plant. They should basically be divided into small bunches that are easy to hold with tweezers.

"European clover" (Marsilea angustifolia)

Remove rock wool.

Spread out for convenience in dividing.

Divide into small bunches and arrange in rows.

In Wabi-Kusa Form Do not cut off the emersed leaves, which will be healthy. Submerged leaves will grow out fast without being affected by these emersed leaves.

"Cuba pearl grass" (Hemianthus callitrichoides)

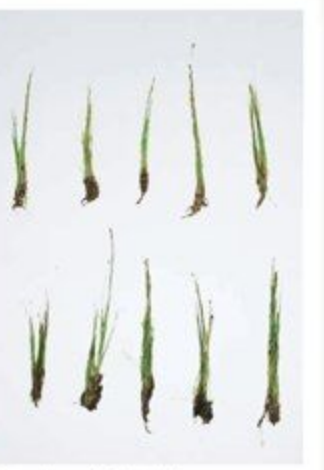
Can be cut into smaller pieces.

Can be placed flexibly, even in a complicated way.

In Wabi-Kusa Form Cuba pearl grass has short roots and can easily float out of the substrate immediately after planting. Using Wabi-Kusa prevents this, making the planting of Cuba pearl grass easy and more efficient.

"Hair grass" (Eleochalis aciculoris)

Select a fresh, green specimen.



Can be divided into around ten small bunches.

※ This method can also be used for Cobra grass.

In Wabi-Kusa Form Unlike the ones sold in a pot, the emersed leaves of the Wabi-Kusa form are in good condition and the roots have considerably spread. The Wabi-Kusa lineup includes Short hair grass.

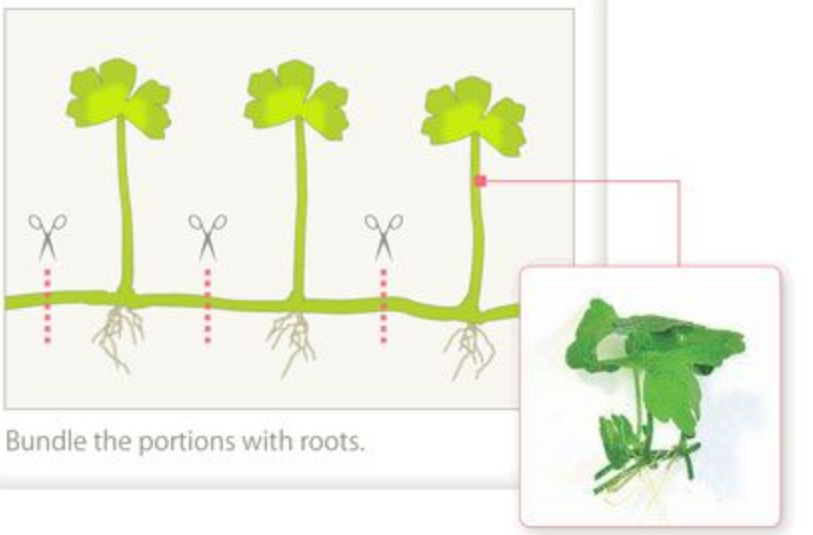
"Glossostigma"

Select a voluminous bunch.

It will not spread sideways much if it's too tall.

In Wabi-Kusa Form Fast-growing Glossostigma starts creeping sideways simply by placing the Wabi-Kusa in an aquarium. The 9Ø version is more suitable for tanks of a larger size.

"Australian dwarf Hydrocotyle" Hydrocotyle sp



Bundle the portions with roots.

In Wabi-Kusa Form This plant propagates very vigorously and even just a few stems will eventually cover a wide area. You can pluck this plant from its base and replant it in other areas of the aquarium.

Epiphytic Aquatic Plants 1

Willow moss is an essential plant for any aquarium layout that uses driftwood. The willow moss is attached to the wood using Moss Cotton. The use of Riccia Line is recommended for attaching less epiphytic plants such as South American moss.

"Willow moss"

Place a thin layer of willow moss and tie it tightly onto the driftwood using Moss Cotton.

Trim off the protruding willow moss with scissors for tidy appearance.

Example of layout expression
Attaching the willow moss to only a small area of the wood enhances the natural effect of the aquarium layout.

Epiphytic Aquatic Plants 2

This type of plant includes Microsorum, Bolbitis and Anubias species. To prepare these plants, place the roots around a small stone and secure them with Wood Tight. Damaged leaves should be cut off from the base of the leaf stem.

"Microsorum sp. 'Trident'"

Prepare a stone of such size that it can be hidden under the roots.

Cover the stone with the roots and hold them.

Attach the plant firmly to the stone with Wood Tight.

Twist the Wood Tight to fix and cut off the excessive part.

Crystalwort

Every planted aquarium hobbyist should experiment with a carpet of Riccia at least once. Riccia, a non-epiphytic, floating plant, should be fixed to stones using Riccia Line.

"Riccia"

Place Riccia evenly onto Riccia Stone. Ensure that every corner is covered with Riccia.

Tie Riccia onto the Riccia Stone using Riccia Line. Do not tie at the same place but tie the whole surface evenly.

Example of layout expression
A carpet of Riccia provides an element of brightness in the aquarium.

Rosette-Type Aquatic Plants

Thick roots of Echinodorus and Cryptocoryne will eventually wilt under the substrate after being planted. These roots may be trimmed off to a certain length to make them easier to plant.

"Echinodorus"

Select a plant with healthy, firm roots and leaves in good condition.

Remove rock wool from the roots. White roots are an indicator of good health.

Long roots should be trimmed to a certain length. Avoid rolling the roots in a ball for planting.

"Cryptocoryne"

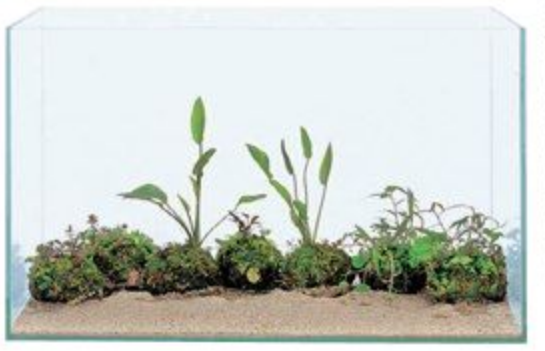
In many cases , roots protruding from the pot indicate a healthy, strong plant.

Carefully remove the rock wool between the roots with Pinsettes S.

The plant may be divided into around two portions depending on the layout.

In Wabi-Kusa Form Wabi-Kusa Echinodorus MIX and Cryptocoryne MIX contain an effective mix of stem plants and are suitable for use as a focal point in the aquarium. These can be enjoyed even in an aquarium that has only cosmetic sand and no Aqua Soil because the plants are already rooted in the Wabi-Kusa base.

Pre-mixed with stem plants.



You can enjoy it without using Aqua Soil as a substrate.

Bulbous Aquatic Plants

Bulbous aquatic plants are aquatic plants that have a bulb (or tuber). Representative species include Nymphaea, Lotus and Aponogeton. Once the leaves and roots have been prepared they can be planted by placing the bulb securely into the substrate.

"Lace plant"

Select a plant with a hard, firm bulb. Priority should be given to the condition of the bulb rather than the leaves and roots.

Long roots developed from the bulb should be trimmed adequately with trimming scissors.

If the leaves are not in good condition:
Any large or damaged leaves may be cut off.

"Knowledge on Preparation of Equipment"

Along with aquatic plants and composition materials, some equipment should be prepared in advance.

Filter

Left: Abundant beneficial bacteria are present on the surface of Bio Rio in use.

Right: Green Bacter serves as the initial food of filer bacteria and helps promote their growth.

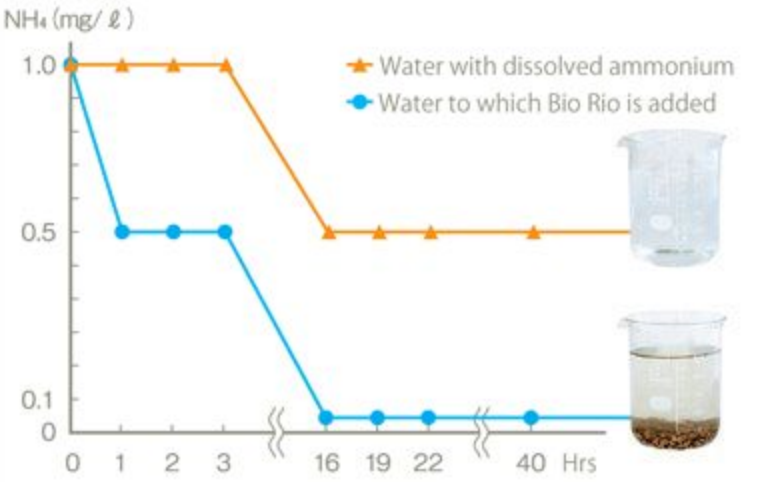
■ Preparation of Filter

Filters used for the Nature Aquarium contain abundant beneficial bacteria that purify the water by breaking down the waste that is present in it. However, these bacteria take time to colonize the filter media so the biological filtration process does not start immediately. It usually takes a few weeks until the filter media is adequately colonized with beneficial bacteria and the beneficial bacteria start to function. In view of this, when we set up a new aquarium at the Nature Aquarium Gallery, we purposely use a new filter on another tank for a while before we put it on the new aquarium, so that it will be ready for biological filtration by the time it is installed to the new aquarium. Alternatively, we extract some Bio Rio filter media which has already been adequately colonized from an existing filter and add it to the new filter. If you prepare a new filter by using it on an established aquarium, it is important to make sure that you do not use a "bare tank" which is just filled with water, or even with water and fish. This is because a bare tank like this contains no organic matter or ammonia. As the beneficial bacteria feed on organic matter and ammonia, a bare tank does not allow the beneficial bacteria to colonize the filter media. A tank with just water and fish is not suitable either because the concentration and composition of the organic matter and ammonia in a tank like this are very different from those in a Nature Aquarium. Using a filter that has been used on a bare aquarium, or an aquarium with only water and fish in it, is not only useless but it can also have a negative impact on the aquarium: the sudden change in the water quality can kill any bacteria that have colonized the filter media which results in cloudy water. Therefore, if you want to take some Bio Rio or other filter media from an established aquarium to use in your new aquarium it is important to obtain the filter media from another Nature Aquarium that has similar water quality.

■ Propagation of beneficial filter bacteria

Preparing a pre-conditioned filter in advance may not be easy for a new user who is setting up an aquarium for the first time, unlike the Nature Aquarium Gallery and distributors who have many tanks, or experienced users who have their own Nature Aquariums. If you are a beginner there are a few things you can do to make it easier. The chart below illustrates the results of an experiment on the ammonia decomposition capacity of Bio Rio which has

[Change in ammonium concentration]



NA Water

Carbon Filter HD30
Removes residual chlorine in tap water with its compressed high density activated carbon fibers.

Natural Cotton Sediment Filter
Fine natural fibers remove relatively large impurities in the tap water.

been removed from a filter and kept in the air for a few days; and it clearly shows that the bacteria on the Bio Rio are still active even after they are taken out of the filter. The bacteria are present in a dormant state on the surface of the Bio Rio and they quickly become active once they are provided with water and food, i.e., ammonia. To increase the number of beneficial bacteria, Bacter 100 is very effective. Bacter 100 is a substrate additive that contains abundant beneficial bacteria in a dormant state. It can be added to the substrate of a new aquarium, or to a newly set-up aquarium. In addition to this, Green Bacter is also very effective during the initial stage of the aquarium. Green Bacter is an additive containing rich organic acid that serves as an initial food for the bacteria.

■Preparation of tap water to be used

Once the layout is done, the next thing to do is to fill the tank with water. To maintain the layout in good condition, periodic water changes are essential. We usually pour tap water into the tank, but tap water contains residual chlorine that is harmful for fish, shrimps and bacteria. Chlorine is added to water in water treatment plants for the purposes of sterilization and it still remains in the water we get from the tap. This chlorine found in tap water is called residual chlorine and it can be checked using Pack Checker CIO (for chlorine residue). Residual chlorine concentration in tap water varies depending on season and location. It tends to be lower in summer when the temperature is high because the chlorine evaporates more easily in higher temperatures, and the concentration tends to be higher in the winter when less chlorine evaporates because the weather is colder. As for location, the chlorine concentration is higher in urban areas and areas closer to water treatment plants. Residual chlorine is harmful to some living organisms such as fish and shrimps, and there is even a risk of death for these organisms if the chlorine concentration is very high. In addition to this, given that chlorine is designed to sterilize water, it is obviously harmful to microorganisms including beneficial bacteria. Chlorine can kill beneficial filter bacteria, resulting in cloudy tank water and deterioration in water quality. Residual chlorine may be eliminated by using additives such as Chlor-Off, but for larger tanks that require large water changes or where frequent water changes are required it is recommended to use NA Water, a water purification system. NA Water is a perfect water purification system for the Nature Aquarium as its high-performance activated carbon filter effectively removes residual chlorine as well as impurities such as iron mold.

It is advisable to remove the water in the filter if it is not going to be used for more than one week.

Left: NA Water provides peace of mind for users who pour tap water directly into the tank.

Right: You can also remove residual chlorine using additives such as Chlor-Off.

Aqua Design

WABI

Commercially Aquatic

How good and effective is Wabi-Kusa? Let's verify the advantages of Wabi-Kusa in four aspects.

1. Workability

Planting is good, but just placing in the aquarium is easier.

Aquatic plants are usually divided into small bunches for planting with tweezers. Careful planting work using tweezers is still vital for sophisticated layouts and for planting aquatic plants in narrow and small places such as gaps between stones. However, where there is a large space available in the aquarium, placing a Wabi-Kusa is much easier than planting with tweezers. With Wabi-Kusa, even beginners can handle hard-to-plant species like Cuba Pearl Grass.

2. Root condition

Roots are more important than leaves for healthy growth of plants

The condition of aquatic plants sold in a pot varies depending on the species and the farm from which it was shipped. Even if the leaves look very green, we often find only after we remove the rock wool that the roots are rotten and brown or in a disappointing condition. No matter how cheap the plant is, it will, after all, cost you a lot if it does not grow well. On the other hand, the Wabi-Kusa form of plants have an abundance of healthy white roots.

Amano

KUSA

-Available Plants

Wabi-Kusa is now gaining greater popularity.
It's no wonder, because Wabi-Kusa is hassle-free and contains aquatic plants with leaves and roots in tip-top condition.
Here we compare Wabi-Kusa with ordinary aquatic plants.
Which one would you choose?

3. Density of leaves

Stem plants in a pot

Wabi-Kusa Stem Plant Single

Number of terminal buds determines the density of stem plants.

Among Wabi-Kusa products, there are several types of Wabi-Kusa Stem Plant consisting of a single species of plant and they all have healthily grown emersed leaves. They are all relatively short and therefore at a first glance may seem to have less volume, but in actual fact they have a lot of terminal buds. Through the comparison of two types shown in the picture, it was found out that the stem plants in a pot have about 15 stems while Wabi-Kusa has about 60 stems, i.e., about three to four times more.

※ The lineup of Wabi-Kusa Stem Plant Single consists of Rotala sp. "Green", Rotala Indica, Rotala sp. "Ceylon" and Rotala nanjean.

4. Root spread

Root spread is of great significance for rosette-type aquatic plants.

Roots are very important for Echinodorus and Cryptocoryne because these species vigorously absorb nutrients through their roots. However, thick roots that have spread in the pot before planting will eventually wilt after the plant is planted in an aquarium. This is why many aquatic plants do not grow successfully after planting. In contrast, Wabi-Kusa grows fast once it is placed in an aquarium because their roots are not moved or damaged by the planting process.

Echinodorus in a pot

Wabi-Kusa Echinodorus MIX (bottom view)

Hair roots have grown out from the tip of the roots.

Which Should I Get?

Recommended Selection of Aquatic Plants

— Foreground Plants · Epiphytic Aquatic Plants · Mid-Ground Plants —

[Epiphytic Aquatic Plants]

Anubias nana "Petit"
Heavy use of Anubias often makes the aquarium layout look monotonous. Using Anubias nana "Petit" allows more variation in leaf size, giving a more interesting layout.

Microsorum sp. "Trident"
Its trident shaped leaves are very appealing to aquatic plant enthusiasts. It is relatively fast-growing but be aware that it can be affected by a disease that is peculiar to Microsorum (refer to page 32).

Anubias nana "Yellow heart"
Use Anubias nana "Yellow Heart" instead of Anubias nana for tanks that are 60cm or smaller. Notice how the aquascape looks different just by using different sized leaves.

Bolbitis heudelotii
When attached to driftwood, Bolbitis is very effective at enhancing its appearance and can even make unspectacular driftwood appear very beautiful. It can also be used to conceal the joints and any unsightly parts of the driftwood.

Microsorum pteropus "Narrow leaf"
The species sold as "Narrow leaf" can in fact have different widths of leaves. Be careful of the positioning of this plant, because its full grown, long leaves may touch the surface of the glass.

Foreground plants Select the plants primarily based on height.

- European clover (Marsilea angustifolia)
- Cuba pearl grass (Hemianthus callitrichoides)
- Glossostigma
- Cobra grass (Lilaeopsis novae-zelandiae)
- Echinodorus tenellus
- Hair grass (Eleochalis acicularis)
- Australian dwarf Hydrocotyle (Hydrocotyle sp.)
- Cryptocoryne parva

Cryptocoryne wendtii "Green"
This Crytocoryne, along with Cryptocoryne wendtii "Brown", has the longest history within the planted tank. Those with whitened leaves or stems have a higher risk of decay after planting.

Cryptocoryne petchii
With wavy-edged, sharp-tipped leaves, this plant is easily distinguishable from other species. Its brownish, attractively shaped leaves can provide an appealing and colorful focal point in the aquarium layout.

[Mid-Ground Plants]

Cryptocoryne albida
Unlike Cryptocoryne wendtii, this species does not grow so big and is therefore easy to use in the aquarium layout. The leaves of this plant often turn a brownish color.

Cryptocoryne wendtii "real green"
This plant is ideal for those who do not want the leaves of Cryptocoryne wendtii turning brownish as it develops relatively large, green leaves.

Blyxa Shortleaf
When planted between the foreground plants and the stem plants in the background, Blyxa Shortleaf can create a seamless link between the two areas, providing an elegant flow within the layout. With abundant light and nutrients its leaves Its leaves will turn a reddish-purple color.

Echinodorus latifolius
Echinodorus is an ideal midground plant but its leaves will fade easily if it does not have an adequate supply of fertilizer to the leaves and the roots.

There are a wide variety of aquatic plants available nowadays, but not all of them are suitable for use in the planted aquarium. This feature article introduces some plants that are easy to handle and recommended even for beginners. Most of the plants covered here are popular species, but it is important to remember that it is not the species of plants chosen that makes a good layout, but rather the composition of the layout. Those who can make the best use of their materials are the best layout creators.

Which Should I Get?

Recommended Selection of Aquatic Plants

— Background Plants Vol.1 —

Cryptocoryne retrospiralis
Skilled enthusiasts should use Cryptocoryne retrospiralis and Cryptocoryne balansae appropriately for each layout: Cryptocoryne balansae grows surprisingly large and is often too big for many aquascapes.

Eleocharis vivipara
You are an advanced hobbyist if you are able to adjust the color shade of Eleocharis vivipara by combing its leaves. Plantlets formed at the tip of the leaves should be trimmed off frequently.

Vallisneria nana
This plant has tape-like leaves that can be used to emphasize the vertical lines in a tank. Most of those tape-like plants are quite large but Vallisneria nana is the smallest in the Vallisneria genus and can be used even in a tank as small as 60cm.

Echinodorus angustifolia
This plant will often be damaged when it arrives so it is important to prepare the plant properly before planting to avoid fading or damaged leaves. Trim off any damaged leaves before planting even if this may initially detract from the plants appearance.

Rotala sp. "Green"
This is one of the most popular species for the planted aquarium and has indisputable beauty and charm. You can learn trimming techniques for stem plants from trimming this species.

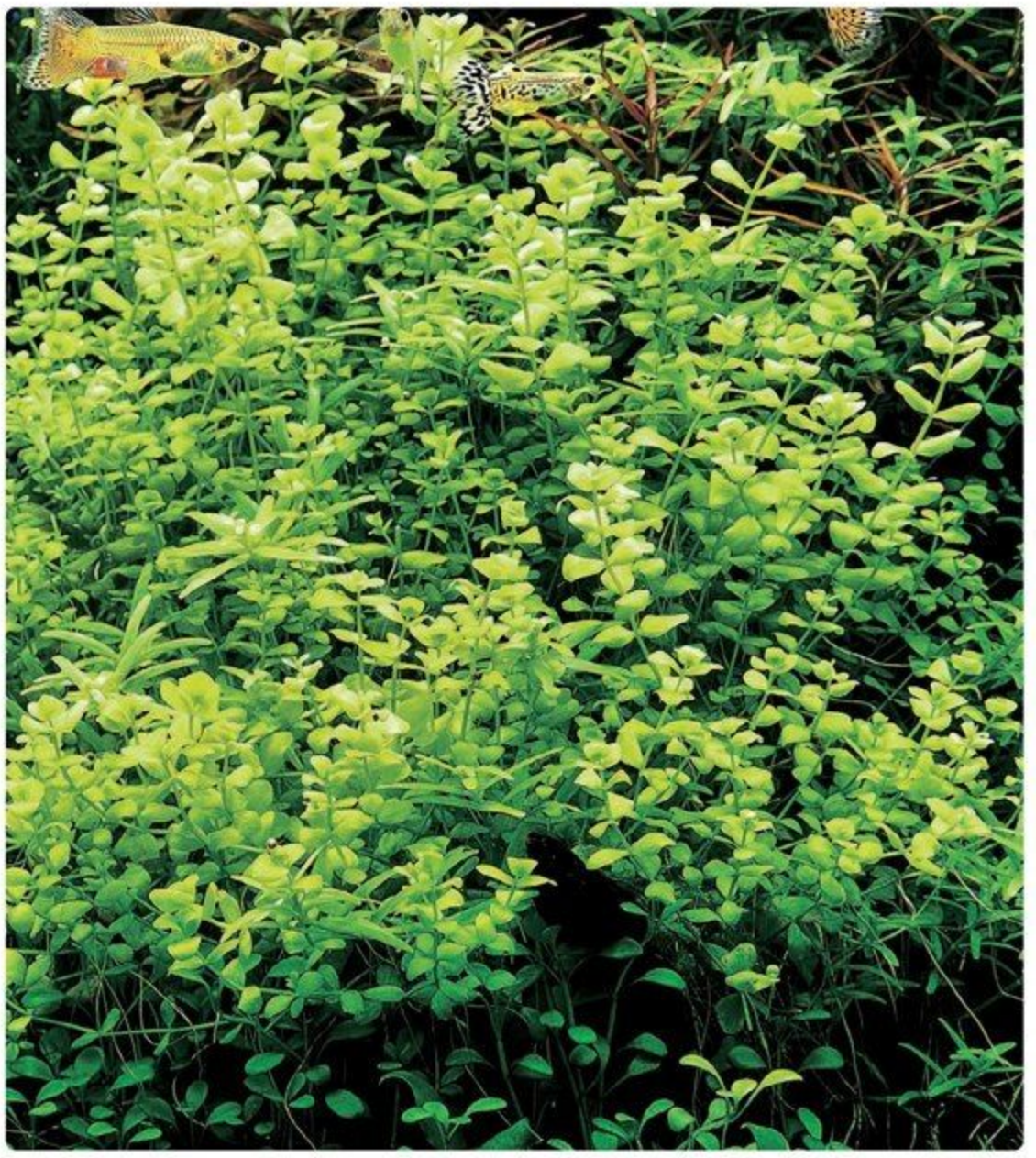
Rotala macrandra "Green"
Unlike Rotala macrandra "Red" which is known as difficult species to grow, Rotala macrandra "Green" is not a difficult species and grows rapidly with abundant light.

Rotala sp. "Ceylon"
This plant has a good tolerance to repeated trimming and is one of the long-lasting species among stem plants. When in good condition, its leaves glow and the underside of the leaves turns a reddish purple color.

Rotala nanjean
The fine, delicate leaves of Rotala nanjean create a very delicate effect within the aquarium. It is a tough plant that is easy to grow, making it an ideal Rotala species for beginners.

Rotala macrandra "Narrow leaf"
This red aquatic plant has a sophisticated beauty. Mildly acidic soft water, abundant light and adequate CO_2 injection are required to bring out its beautiful appearance.

Rotala indica
This plant is a Rotala rotundifolia that can turn red in color. To emphasize the color, plant it with some Rotala sp. "Green": the green will compliment the red.



Large pearl grass (Micranthemum umbrosum)
This is a different species from Pearl grass (Hemianthus micranthemoides) with different characteristics. It grows fast and upright. This plant is vulnerable to repeated trimming.

Ludwigia brevipes
This plant looks like slightly larger and tougher version of Needle leaf ludwigia. The leaf color changes easily depending on the supply of iron and nutrients.

Needle leaf ludwigia (Ludwigia arcuata)
This species can be easily damaged when it first arrives and often decays after planting, but once it has settled in the aquarium it is a hardy plant with a good tolerance to trimming.

Pearl grass (Hemianthus micranthemoides)
Once this plant has taken root there is no need to worry about it. Pearl grass is a small stem plant that is very useful for aquatic layouts because the shape of the plant can be arranged easily by trimming.

Pogostemon sp. "Dassen"
Resembling a large, elegant flower, its presence adds a splendid touch to the layout. Replant its cuttings to create a larger area of Pogostremon sp. "Dassen" or prune it for increased density.

Yellow amania (Ammannia latifolia)
This plant has unique color that cannot be found in other aquatic plants. It can therefore be used to create a balanced color arrangement within the layout. During trimming, be mindful of the fact that it is not a fast growing plant and trim it neatly.

Hygrophila pinnatifida
This stem plant is getting a lot of attention recently because of its unique and attractive leaf shape. It is expected to have significant potential since it can be attached to driftwood and other materials.

Myriophyllum matogrossense
The leaves of Myriophyllum matogrossense spread out sideways in good light conditions. Sharp-angled trimming helps the plant develop well-aligned terminal buds and form a beautiful clump.

Alternanthera reineckii
Its dense cluster of large, red leaves has a great impact in any layout. Alternanthera reineckii is suitable to add a focal point of color to the layout. Be aware that feeding shrimps may damage this plant.

Hygrophila polysperma
The length of the internodes on this plant can become too long when CO_2 injection is used. Frequent trimming is therefore necessary to help keep the internode length short and maintain a beautiful leaf shape.

Which Should I Get?

Recommended Selection of Aquatic Plants

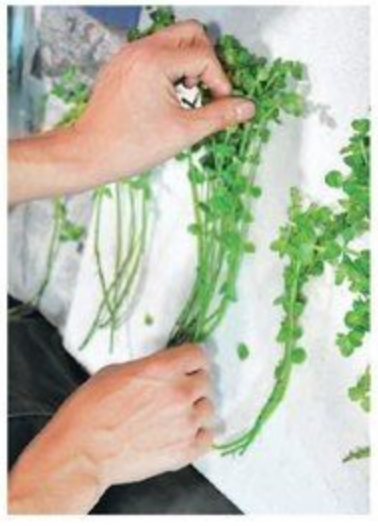
— Background Plants Vol.2 —













“Mental Attitude towards Preparation”

Professionals are always required to do the best job. This is why thorough preparation is needed.

Meticulous Preparation

"To ensure to make careful and thorough preparation to every detail"

ADA have been developing and introducing plant preparation techniques for some time now, all of which have been discovered through Mr Amano's actual experiences of producing Nature Aquarium layouts. When planting a small aquarium, the plant preparation does not make such a big difference to the time and effort required to make a layout, but as the size of the tank increases and more plants are required to make the layout, the plant preparation requires more time and effort. Especially in cases where the tank used is 180cm or larger, the plant preparation stage in which the roots are prepared, the plants arranged according to height and finally laid out, is not only tiring and time consuming but it can actually be damaging to the plants. This difficulty in the initial handling of the plants may be one of the main reasons why people often think of aquatic plants as hard to manage. When aquatic plants are first obtained they often have almost decayed stems at the bottom, and if the rock wool that the plants arrive in is not removed properly there is also a risk of damage to the roots of the plants. In addition to this, the long, thick roots of Cryptocoryne and Echinodorus will wilt and die in the substrate if they are not prepared properly by trimming before planting. This means that beginners often find it very difficult to prepare plants properly, and can be left feeling overwhelmed. There are so many variables involved in good plant preparation: different species must be treated differently, some must be cut at the bottom of the stems, some must have leaves removed, and some need the roots to be trimmed. To add to this, a lot of the preparation depends on the condition of the plant when it arrives and good plant preparation is crucial to ensure the success of the plants within the aquarium. To avoid some of these complexities, hobbyists can use Wabi-Kusa which has been developed to address some of the challenges of plant preparation. Nevertheless, we should still develop a good understanding of the basic knowledge of plant preparation and the handling of aquatic plants as described in this issue. In addition to this, in order to create a beautiful layout quickly, easily and precisely it is necessary to understand the methods of aligning the height of the aquatic plants and of dividing and arranging the plants into small bunches that can be planted easily and precisely with aquatic tweezers. These methods allow the layout to be made artistically, precisely and beautifully even immediately after planting. Not all of the plant preparation techniques are absolutely necessary, but if you approach your layout with an understanding of the importance of plant preparation then your efforts will lead to a beautiful layout achieved through careful, precise planting.

Amusement

An aquascape adorned with lush, aquatic plants and colorful tropical fish merrily swimming around in it is what many aquarists are longing for. The Nature Aquarium method, including the preparations described in this issue, has been developed to make this dream come true.

Tank size: W60×D45×H45 (cm)

"Chronological Changes up to Completion"

Takashi Amano's production process of two layouts at the NA Gallery

Here, Mr. Amano creates two layouts with certain restrictions imposed on the driftwood and aquatic plants to be used for the purposes of comparison. The progress of these two layouts was fully disclosed at the NA Gallery. A challenge that cannot be turned back on has now begun!

STEP 1

Preparation

12 species of aquatic plants including 5 species of stem plants for colorfulness are prepared.

1. Hygrophila polysperma
2. Needle leaf ludwigia
3. Pearl grass
4. Rotala macrandra "Green"
5. Rotala indica
6. Cryptocoryne albida
7. European clover
8. Cryptocoryne petchii
9. Bolbitis heudelotii
10. Microsorum sp. "Trident"
11. Cryptocoryne wendtii "Brown"
12. Willow moss

START

The Cryptocoryne and ferns used are common for these two layouts. Meanwhile, the layout in the upper section uses ordinary stem plants and foreground plants while the layout in the lower section uses the Wabi-Kusa version of those plants.

Four Wabi-Kusa products and Cryptocoryne are prepared.

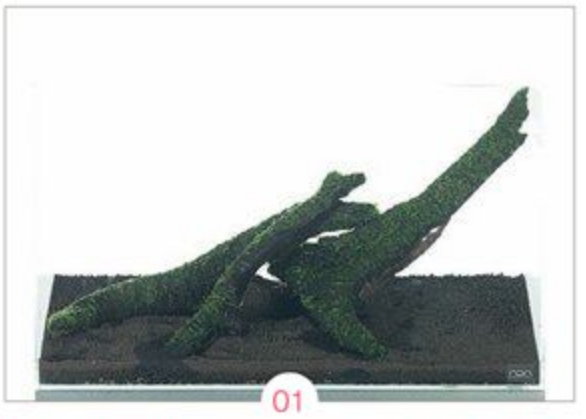
1. Wabi-Kusa Rotala sp. "Ceylon"
2. Wabi-Kusa Rotala Indica
3. Microsorum sp. "Trident"
4. Wabi-Kusa European Clover
5. Cryptocoryne albida
6. Cryptocoryne petchii
7. Willow moss
8. Cryptocoryne wendtii "Brown"
9. Wabi-Kusa Australian Dwarf Hydrocotyle
10. Bolbitis heudelotii

※ The amount of each plant to be planted differs between the two layouts.

STEP 2

Planting

Make up for any ordinary shapes of horn wood by carefully placing the aquatic plants.



01

Make a triangular composition using three pieces of horn wood. Since these driftwood pieces are an ordinary shape, Willow moss was wrapped around them.

02

European clover and Cryptocoryne were planted in the foreground and mid-ground respectively.

03

Microsorum and Bolbitis were attached to the driftwood to make the mid-ground more attractive.

04

It is recommended to use a bamboo stick to determine the balance in planting for the stem plants in the back ground.

05

Red aquatic plants such as Rotala Indica should basically be planted at the focal point of the layout.

06

Pearl grass with fine narrow leaves should be planted in a cluster of a few stems.

Start planting aquatic plants

Pinsettes are essential in pre-planting preparation and for the elaborate or precision planting of aquatic plants as they help to minimize any damage caused to the plants. With Wabi-Kusa, planting is completed just by placing it in the aquarium with no preparation required.

Layout production making the best use of branch wood is very quick when using Wabi-Kusa.

01

Determine the position and orientation of the branch wood to bring out the beauty of the shapes, rather than for creating a composition with them.

02

All you need to do for "Wabi-Kusa European Clover" is just to place them into the aquarium and slightly bury them into the substrate.

03

Cryptocoryne albida is planted to serve as a link connecting the stem plants in the background and European clover used as the foreground plant.

04

"Wabi-Kusa Rotala sp. 'Ceylon'" and "Wabi-Kusa Rotala Indica" were placed in the background.

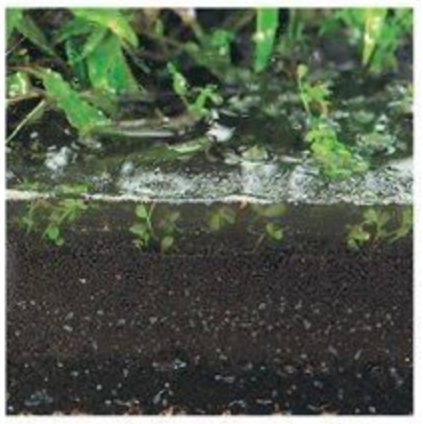
05

A clump of Microsorum sp. "Trident" is placed at the back of the joint of two branch woods.

06

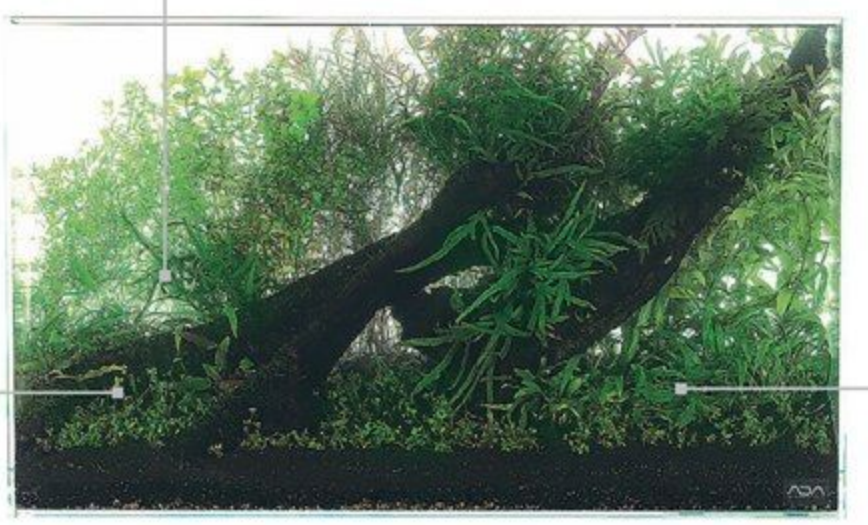
Furthermore, Bolbitis are attached to the branch woods to form a scalene triangle.

It is important to plant each aquatic plant in an organized and precise manner.



Pour in water until the substrate is just covered with the water and plant the European clover which was pre-divided into small bunches at evenly spaced intervals.

Plant the stem plants while tilting them against the planting direction to achieve a dense and neat finish.



Long roots of Cryptocoryne may be trimmed to a certain length. Plant them at a depth where the roots are not visible.

Immediately after planting

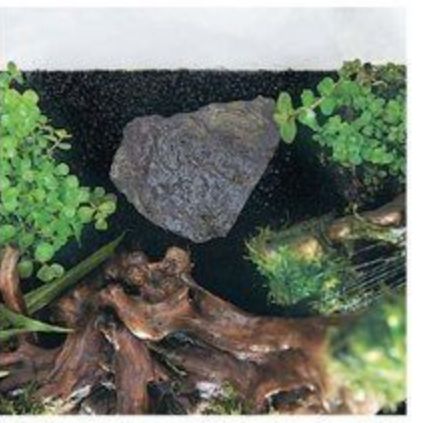
The aquatic plants that were planted with tweezers are facing different directions and are not very stable. They also have cut/trimmed roots and stems until they take root. In contrast, the Wabi-Kusa plants are free from damaged roots and thus stable from the very beginning.

Hassle-free planting with no damage to the plants can be achieved with Wabi-Kusa.

Pouring Aqua Soil (Powder Type) between Wabi-Kusas promotes the spreading of runners.

Cryptocoryne wendtii "Brown" is planted at the side of the driftwood. A little extra effort enhances the aquascape.

Stones are placed to suppress the initial buoyancy of the branch wood.



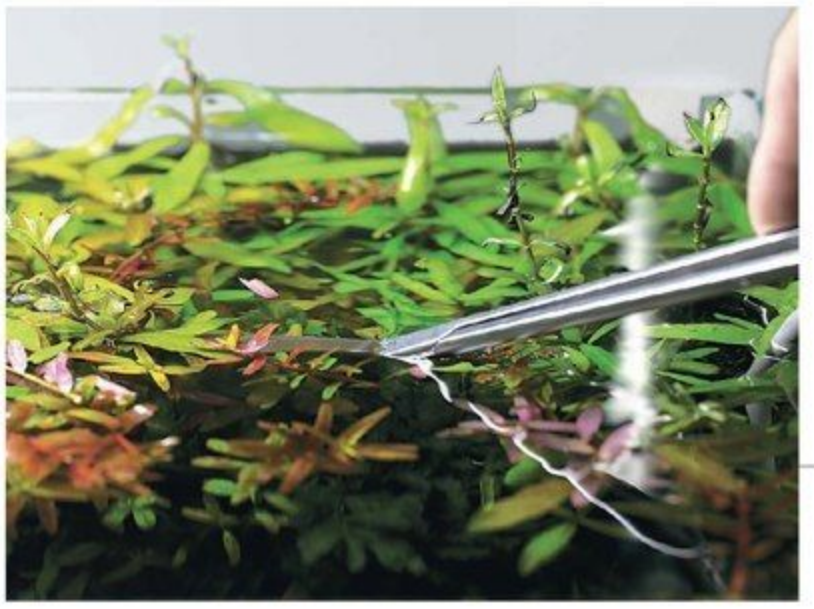
There is a trick at the location where Microsorum sp. "Trident" was planted: a stone is placed there to provide extra height.

"Wabi-Kusa European Clover" was placed. There is no need to trim off the emersed leaves.

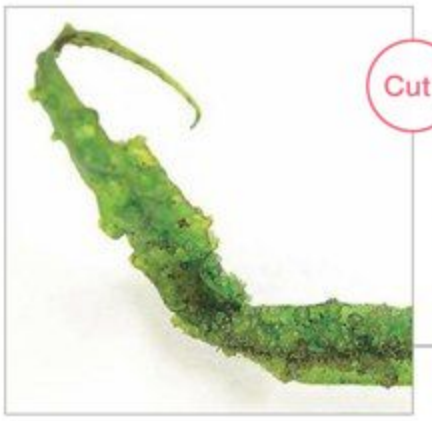
STEP 3

Initial Stage

Each stem plant grows very vigorously.



Once the stem plants reach the water's surface, it is time for the first trimming. Prune them with Trimming Scissors.



Cut!

This leaf suffers from a disease peculiar to Microsorum. Cut the infected leaves off at the base of the leaf stem to prevent the disease from spreading.

Trimming!

Moss Cotton gradually biodegrades when the willow moss starts taking root to the driftwood.

1 week from production

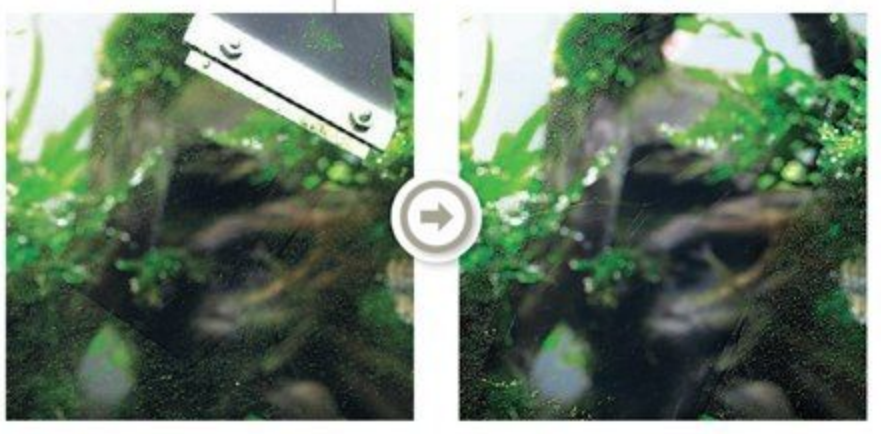
If brown-colored diatom algae are found in the aquarium, it is advisable to add 10-20 Cardina japonica (Yamato Numa Ebi) to the aquarium. Once the stem plants start growing, they will absorb the nutrients vigorously and the environment within the aquarium will become stable.

Add Cardina japonica (Yamato Numa Ebi).

Brighty K + STEP 1

The Wabi-Kusa start growing whilst creating a dense look.

Wabi-Kusa Rotala sp. "Ceylon" started developing submerged leaves. The density of these leaves is remarkable!



Algae growth is usually seen during the initial stage of the aquarium. Remove it promptly with the Pro Razor.

STEP 4

Process ①

Stem plants and Cryptocoryne develop new leaves after trimming.

European clover started developing spoon-like round submerged leaves.

There is no problem with decayed Cryptocoryne leaves as long as they are removed by suctioning with a small hose.

New leaves finally grow out from Cryptocoryne after their leaves have decayed.

2 weeks from production

Decay of leaves had been observed for Cryptocoryne in both aquariums, but they started developing submerged leaves steadily. Otocinclus are added to the aquariums for the removal of algae on the surface of the leaves.

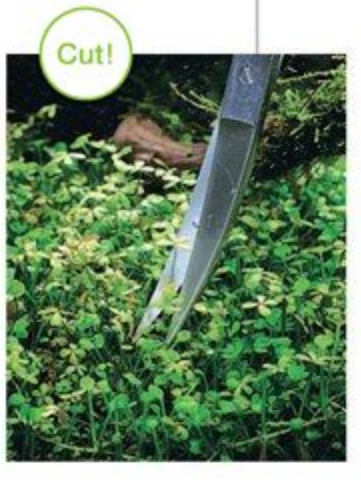
Add Otocinclus.

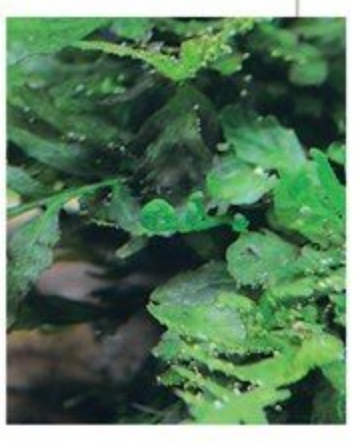
Apply Green Gain.

The algae problem has been overcome and plant growth is accelerated.

Darkly-discolored Bolbitis leaves should be cut off. This will promote the development of new leaves and lead to a more beautiful plant.

Keep in mind that decay of Cryptocoryne leaves is inevitable. What is important is how to treat the plant after the decay occurs.





Left: Emerse four leaves should be cut off once the round submerged leaves grow out.

Right: Bolbitis at last started sprouting new buds.

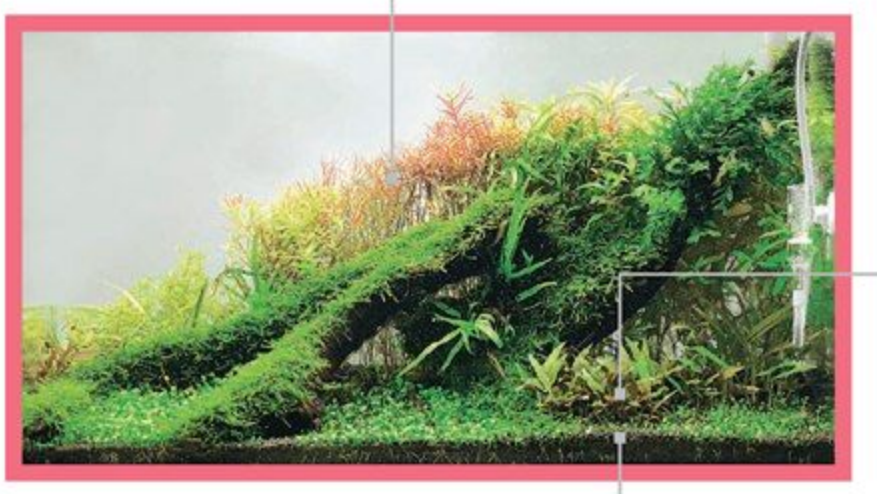
STEP 5

Process ②

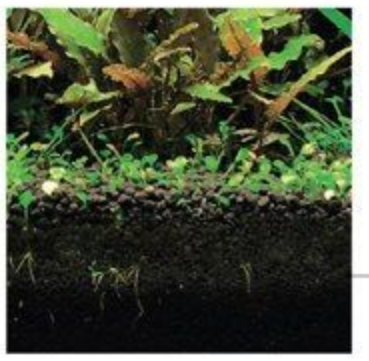
Trimming increases the density of stem plants.

Left: Rotala macrandra "Green" looks denser with the growth of terminal buds.

Right: It would be better if the red color of the Rotala Indica could be brought out more.



Cryptocoryne petchii has recovered from its previous condition with decayed leaves. It is now vigorously developing submerged leaves.



Some portions are covered with European clover grown on the soil carried by shrimps.

3 weeks from production

The environment within the aquarium has stabilized and the water condition is now visibly better. The volume of aquatic plants has increased for both layouts.

Stable growth of aquatic plants, which is a great feature of Wabi-Kusa, is observed.

Willow moss is gradually taking root and looks natural on the driftwood. This adds a rich natural feel to the layout.

When three weeks have passed since the set up of the aquarium, Wabi-Kusa Rotala sp. "Ceylon" has formed a beautiful cluster.

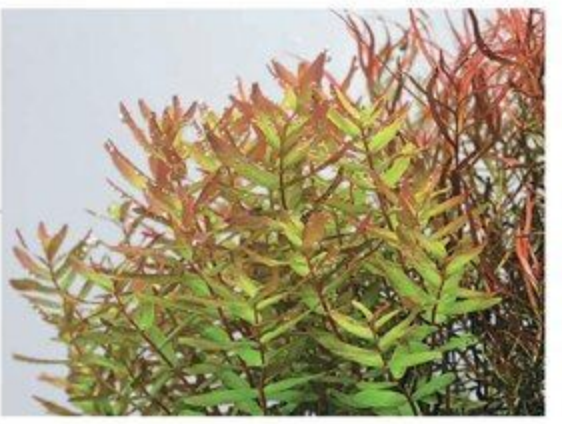
A carpet of European clover with lush submerged leaves is seen after its emersed leaves were all cut off.

STEP 6

Process ③

The leaf color is enhanced by an additional iron supplement.

A great mix of Pearl grass and Cryptocoryne albida forms a wonderful aquascape.



Terminal buds of Rotala macrandra "Green" turn reddish as a result of the addition of ECA to the aquarium.

Now that the aquatic plants are growing vigorously and the total volume of plants has increased, the CO_2 injection is adjusted to "3 bubbles per second".

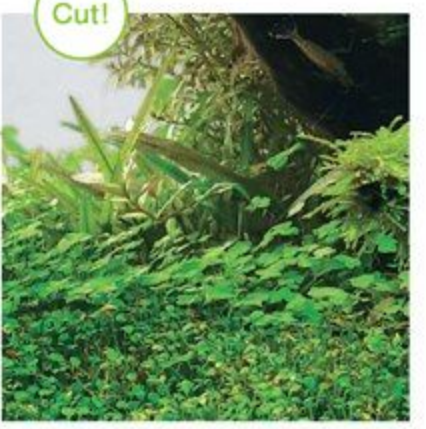
4 week from production

Nuisance filamentous algae are increasing as stem plants grow. They will multiply rapidly if left untreated. So when you see algae in your tank, remove them quickly with hose and brush.

Suction out filamentous algae.

Add ECA to aquarium.

Hydrocotyle should be trimmed to prevent it from occupying too large area.



Top: Fast-spreading Hydrocotyle was trimmed frequently.

Bottom: The color and glow of Cryptocoryne leaves are gradually brought out.

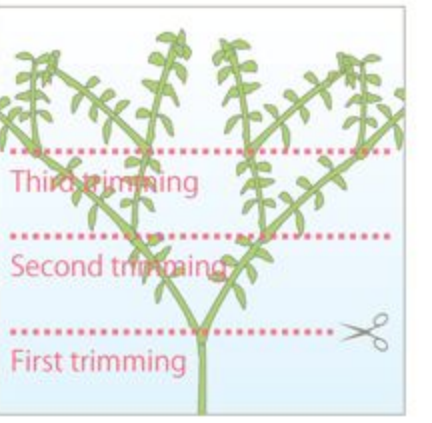
Almost reaching the water's surface. Terminal buds are not aligned since no trimming has been done yet.

STEP 7

Process ④

Trimming the plants repeatedly to make them denser.

Willow moss grows neat through pruning. The cut pieces should be suctioned out.



Plant density increases by gradually shifting the trimming position higher up the plant. The initial trimming position should be the lower part of the plant.

Trimming!

Repeated trimming shortens the internode length of Hygrophila polysperma and make the plant look better.

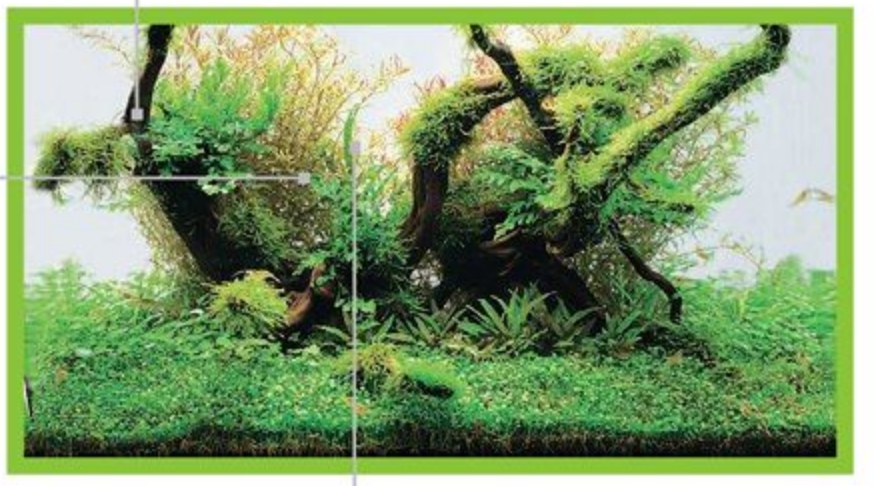
5.5 weeks from production

At this point in time, an additional 5ml of Brighty K and STEP 1 is added to the aquarium. Adjusting the amount of fertilizer to be added depending on the condition and volume of aquatic plants is a key to the effective dosing of liquid fertilizers.

Brighty K + STEP 1

Rotala spreading sideways indicates good light condition.

Black beard algae grown on the driftwood should be removed immediately with Pro Picker or a brush when found.



Luxurious Wabi-Kusa Rotala sp. "Ceylon" that is beyond imagination from its initial state. This shows the great performance of Wabi-Kusa.

The condition of Microsorum sp. "Trident" deteriorated and it is not recovering much. Its growth slowed down.

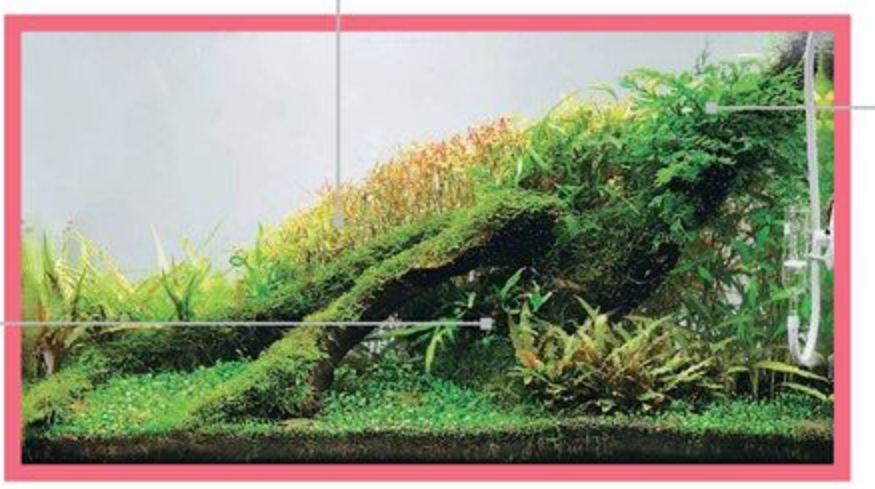
STEP 8

Process ⑤

Pay attention to the changes in the post-trimming environment.

Since the development of the disease, the symptoms were not improved even by cutting off the affected leaves. Re-growth of healthy leaves is not observed so far.

About 12 drops of Green Gain was added after trimming. New leaves will start growing in about one week.



Bolbitis developed clear, beautiful leaves through trimming off the old leaves with the aim of promoting the development of new leaves.

8 weeks from production

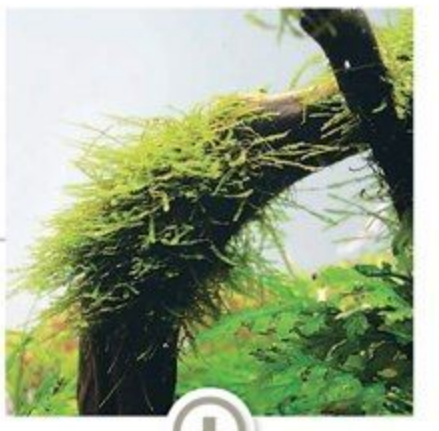
Add Green Gain to the aquarium.

6.5 weeks from production

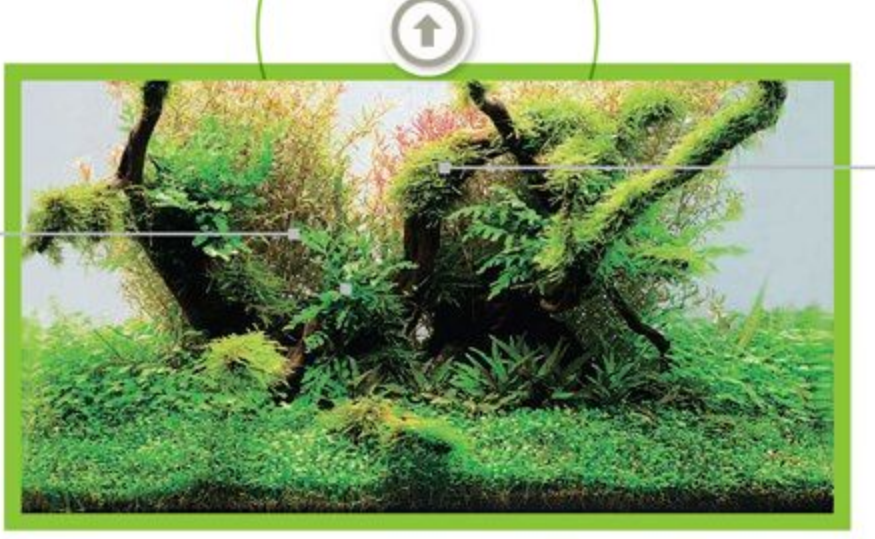
After trimming the plants, the water purification capacity declines because the aquatic plants get damaged and their volume decreases. Be careful of algae growth taking advantage of this opportunity.

Trimming!

Trim the plants, bearing in mind the balanced growth rate between the stem plants and the willow moss



Willow moss was also trimmed together with stem plants to prevent it from growing too thick.



Trim position should be slightly lower than Bolbitis so that the cut sections are not obvious from the front.

A layout based on a triangular composition, consisting of a driftwood framework with stem plants in the background

AQUARIUM EQUIPMENTS

Tank	Cube Garden W60×D30×H36 (cm)	Substrate system	Aqua Soil – Amazonia, Power Sand S, Bacter 100, Clear Super, PENAC W for Aquarium, PENAC P for Plants, Tourmaline BC	Air	Aeration with Lily Pipe P-2 for 14 hours when lighting is OFF at night
Lighting system	Solar II (NA Lamp 36W Twin ×2) Lighting for 10 hours a day			Additives	Brighty K & Green Brighty STEP 1, ECA, Green Gain
Filtration system	Super Jet Filter ES-600 (Bio Rio, NA Carbon)	CO_2 system	Pollen Glass – 3 bubbles per second with CO_2 Bubble Counter (CO_2 System 74-YA/Ver.2, CO_2 System 74-Tropical Forest NO.3)	Water change	1/3 water change once a week
				Water quality	Water temperature: 25°C; pH: 6.8; TH: 20mg/ℓ

The driftwood framework creates a clear triangular composition. The driftwood framework also serves as a guideline for trimming the plants, making it easier to trim the stem plants in the background.

AQUATIC PLANTS & FISH SPECIES

Aquatic plants

Hygrophila polysperma
Ludwigia arcuata
Hemianthus micranthemoides
Rotala macranda (Green)
Rotala rotundifolia
Crytocoryne albida
Crytocoryne petchii
Cryptocoryne wendtii (Brown)
Marsilea crenata
Bolbitis heudelotii
Microsorum sp.
Fontinalis antipyretica

Fish species

Inpaichthys kerri
Hyphessobrycon sweglesi
Nannostomus beckfordi
Microgeophagus ramirezi
Caridina japonica
Otocinclus sp.

1

Combination of stem plants

This layout takes advantage of the fact that the stem plants in the background of the layout can be elaborately planted, by planting them in a combination that creates a natural flow of color from green to red.

2

Covering driftwood with moss

The bare surface of driftwood has a strong presence within any layout. In this layout, the surface of the driftwood is covered with willow moss to ensure that it does not have an excessive presence within the layout.

3

Be mindful of the density of foreground plants

European clover, used here as a foreground plant, is slow to develop leaves so the leaves can become sparse. Be very careful not to over-trim this plant.

4

Use of ferns as a focal point

Bolbitis is attached to the apex of the triangular composition created by the driftwood framework. This arrangement stabilizes the focal point of the composition and provides a point of expression of natural ambience within the layout.

5

Planting Cryptocoryne in the mid-ground

Cryptocoryne is planted in the mid-ground to cover the open space under the driftwood. This also conceals the unsightly bottom part of the stem plants behind it.

Convex composition allows the red stem plants in the background to stand out against the green foreground plants

AQUARIUM EQUIPMENTS

Tank	Cube Garden W60×D30×H36 (cm)	Substrate system	Aqua Soil – Amazonia, Power Sand S, Bacter 100, Clear Super, PENAC W for Aquarium, PENAC P for Plants, Tourmaline BC	Air	Aeration with Lily Pipe P-2 for 14 hours when lighting is OFF at night
Lighting system	Solar II (NA Lamp 36W Twin ×2) Lighting for 10 hours a day			Additives	Brighty K & Green Brighty STEP 1, ECA, Green Gain
Filtration system	Super Jet Filter ES-600 (Bio Rio, NA Carbon)	CO_2 system	Pollen Glass – 3 bubbles per second with CO_2 Bubble Counter (CO_2 System 74-YA/Ver.2, CO_2 System 74-Tropical Forest NO.1)	Water change	1/3 water change once a week
				Water quality	Water temperature: 25°C; pH: 6.8; TH: 20mg/ℓ

This layout is based on convex composition and uses single species of Wabi-Kusa as the background and foreground plants. Cryptocoryne and ferns are planted in the mid-ground to avoid monotony.

AQUATIC PLANTS & FISH SPECIES

Aquatic plants	*Rotala* sp.	*Hydrocotyle* sp.	Fish species	*Hemigrammus pulcher*
	Rotala rotundifolia	*Marsilea crenata*		*Caridina japonica*
	Crytocoryne albida	*Bolbitis heudelotii*		*Otocinclus* sp.
	Crytocoryne petchii	*Microsorum* sp.		
	Cryptocoryne wendtii (Brown)	*Fontinalis antipyretica*		

1

Placing red at the key location of convex composition

Rotala sp. "Ceylon", having red under-leaves, and dark-red Rotala Indica (both in Wabi-Kusa form) are planted in the center of the background. Their color attracts attention and their position serves as a key point of the convex composition.

2

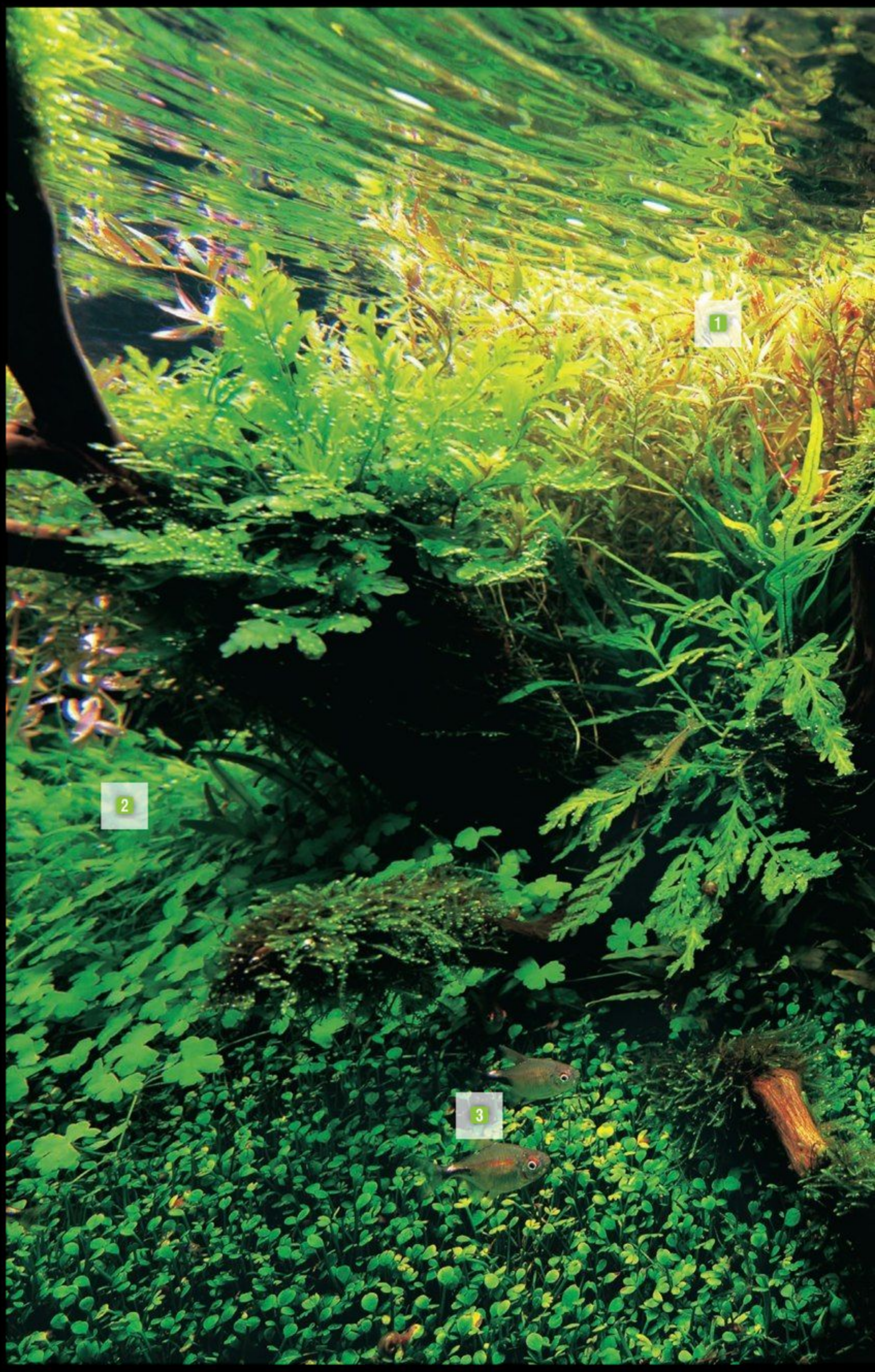
Covering the surroundings with green foreground plants

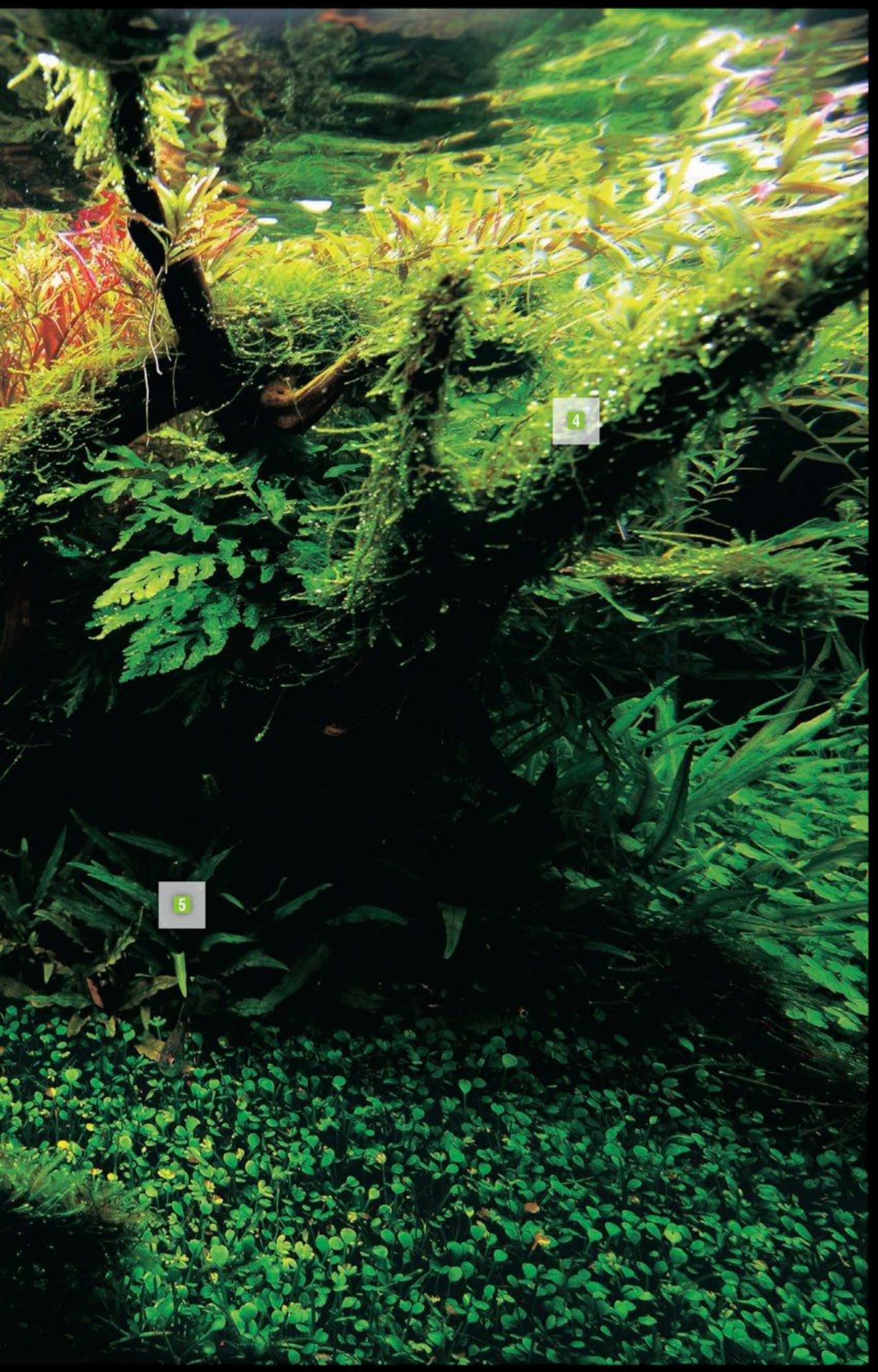
Wabi-Kusa Australian Dwarf Hydrocotyle (single species) is planted around the convex portion. Bright-green fore-ground plants help the red color in the center stand out.

3

Lining the foreground with small leaves

The foreground is covered with European clover which has small leaves. It is a relatively slow-growing plant but it grows easily in Wabi-Kusa form.





4

Attaching willow moss only to a part of driftwood

Willow moss is attached only to a part of the driftwood to emphasize the beautiful shape of the wood. The decision about where to attach the willow moss will be determined by the overall balance of the composition.

5

Adding firmness to the mid-ground

Cryptocoryne, a shade-loving plant, is planted around the driftwood in the mid-ground. Its unique brownish leaf color adds firmness to the mid-ground and enhances the natural ambience of the layout.

Glow

Aquatic plants and fish grow healthily in a layout that has been well prepared and appropriately composed. Bright, healthy, glowing plants and fish are a sign of a healthy functioning, mini eco-system within the Nature Aquarium.

Tank size: W180×D100×H90 (cm)

NATURE AQUARIUM Q&A

In Japan, a long and hard winter is finally over, and the warms of spring has arrived in town. But during this season, temperature fluctuation during the night and day affect the tank water temperature daily and can cause disease in heterothermic fish due to stress. To prevent this, we should remember to monitor the water temperature more closely than usual during this season.

Q My Glossostigma grows upwards. Is it because of insufficient nutrients in the substrate? Or is there any other reason?

A The main reason why Glossostigma grows upwards instead of spreading sideways is inadequate light intensity rather than insufficient nutrients in the substrate. Glossostigma also grows upwards if it is placed in the shade of stem plants or other aquatic plants. For instance, growing Glossostigma in a 60cm tank requires the light intensity produced by two units of the NA Lamp Twin 36W or four units of the NA Lamp 20W. On top of this, the use of Power Sand, a substrate material effective in providing additional nutrients, will help the plant grow large, healthy leaves.

If Glossostigma grows upwards, check whether the light intensity is adequate.
Replace old fluorescent lamps with new ones.

Q I have read in a previous issue of Aqua Journal that Nature Aquarium Gallery has 7-8 year-old aquascape. I'm afraid the growth of aquatic plants slows down after about one year has passed since they were planted. How to manage Aqua Soil used for the substrate?

A A substrate using Aqua Soil can basically be maintained for many years without any treatment unless removal or replanting of aquatic plants takes place. If you wish to maintain Aqua Soil for a long time, it is recommended to make a layout mainly using Cryptocoryne which is sensitive to replanting. In the event of a deterioration in leaf color or where a slowdown in the development of new leaves is observed due to a lack of nutrients after more than one year, we usually supply additional nutrients to the substrate using Iron Bottom or other types of additives. When stem plants are used in the layout, it is impossible to maintain the aquascape just by trimming the stem plants. Therefore if it is found that the aquascape can no longer be maintained by way of trimming, we usually replant the cuttings of stem plants. During this replanting work, the Aqua Soil is partially replaced with new Aqua Soil depending on the crumbliness of the grains and the hardness of the substrate. In contrast to Cryptocoryne, stem plants prefer new substrate and thus partial replacement of the Aqua Soil is very effective when stem plants are used.

Q I have planted Pearl grass but its leaves turned slightly brownish. I still observe a number of oxygen bubbles on the leaves formed during photosynthesis. The pH level of the tank water is 7.0 – 6.8. Is this pH level appropriate for the growth of Pearl grass?

A Newly-arrived Pearl grass in many cases has thin stems and easily gets damaged, often resulting in many decayed and floating lower stems after planting in aquarium. Pearl grass is relatively slow-growing until it takes root in the substrate. For the leaves that have turned brownish, it is not likely that your Pearl grass is wilting in view of the fact that there are bubbles formed through photosynthesis, but it is suspected that the cause of the problem is brown diatom algae which are usually observed during the initial stage of the aquarium. Perhaps the terminal buds of your Pearl grass are in bright green color in this circumstance. The pH level of about 7.0 is no problem at all since Pearl grass likes mildly acidic or mildly alkaline medium hard water. For Pearl grass, the stage until it takes root is very critical. If the bottom part of the Pearl grass stem is fading or decaying, it is advisable to cut the plant immediately and replant the cuttings of its vigorously-growing dark-green terminal bud portion into the substrate.

Handling of Pearl grass is quite hard immediately after planting.

Q I want to enjoy Wabi-Kusa in a waterfall. Which filter media should I use? Can you also please advise me how I should supply nutrients?

A Firstly, let us explain about filter media. During the initial set-up stage, the water turns yellow in the waterfall due to humic acid from the plant fiber base of Wabi-Kusa. In view of this, it is recommended to load only NA Carbon into the filter first. The absorption effect of NA Carbon solves the yellowing problem and purifies the water. Yellow water during the initial set-up period will be gradually improved by this absorption filtration process and also through regular water changes. NA Carbon is almost free from clogging thanks to its pellet form and can be used as biological filter media for a certain period even after its absorption capacity has been lost. However, it is advisable to switch NA Carbon to Bio Rio specifically designed for biological filtration in about two phases taking long-term maintenance into consideration. Subsequently, as for nutrient

Send us your questions!

We welcome your questions and inquiries about the Nature Aquarium. Please feel free to send your questions to the ADA Editorial Department by email (aj@adana.co.jp) or to our postal address listed at the end of this magazine.

supply, it is advised to apply be-Bright solution, 8ml (one capful) of be-Bright diluted with 500ml water, by way of spraying every morning. Liquid fertilizer "be-Bright" containing nitrogen, phosphorus and other nutrients is ideal for enhancing the leaf color of floating aquatic plants. Daily spraying also has an effect of washing off the dust or dirt on the leaf surface and also preventing damage from insects. Spraying plenty of be-Bright solution is a key to maintaining Wabi-Kusa in a good condition.

Supply nutrient to emersed leaves by spraying be-Bright solution.

Q I would like to know the best timing for adding fish to a planted aquarium.

A In the case where a new aquarium was set up using brand-new filter media, fish should be added after three to four weeks when the environment within the tank is stabilized and aquatic plants grow almost up to the water's surface. If an existing filter media already colonized with bacteria is used, it is possible to add fish to the aquarium when ammonia is no longer generated, i.e., about one week after the setup, as long as no algae is observed in the tank. It is advised to add fish in about two phases, since the balanced self-purification process within the tank can be affected by adding a large number of fish at the same time. You might want to add fish as soon as possible once the planted aquarium is done, but it is, for the sake of fish, better for you to wait until the environment is adequately stabilized (i.e., the condition in which water is clear and sparkling, no algal growth is observed and aquatic plants grow lush and healthy). Keep in mind that overpopulation of fish must be avoided to prevent growth of algae. Adding a relatively small number of fish and feeding easily digestible and absorbable food such as Fish Food AP Series are a key to maintaining a beautiful planted aquarium.

AP Series

Q What are the differences between Aqua Gravel and Oiso Stone?

A Sea gravels collected from the beach contain seashells and therefore can hinder healthy growth of aquatic plants due to a rise in water hardness caused by calcium efflux from seashells during CO_2 injection. Aqua Gravel, a natural river gravel, contains no seashells and will not increase water hardness. This is a feature of Aqua Gravel and also a major difference from sea gravel. Size S is the best to be used for substrate in the planted aquarium. Skillfully mixing all sizes of Aqua Gravel (size S, M, L and LL) allows you to express the landscape of a river bed in more natural way.

Aqua Gravel suitable for the expression of a river bed

Q I always find it difficult to choose driftwood and am not very satisfied with the wood I purchased after using it. Are there any tips for choosing driftwood?

A Not many natural materials, whether it is driftwood or stone, are originally in a good shape. Even if you find a shapely item, you cannot produce a good layout unless it fits the tank size. We usually look at the shape when we choose layout materials, but what is actually more important is to see if the material is an appropriate size for the tank used for layout production. It is best to choose the item with the best shape from the materials that are the appropriate size for your aquarium. This is because, to a certain extent, we can make up for unsatisfactory shape using aquatic plants while it is impossible to adjust the size. Particularly for driftwood, even the wood in rather poor shape can still be well used in the layout by attaching ferns to it or wrapping its overall surface with willow moss (refer to the column on driftwood on page 30). Please focus on the size first and then on the shape second when choosing driftwood.

Select driftwood based on the size rather than the shape.

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