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[Special Feature]

Lush Greenery Shadow

NATURE IN THE GLASS

ENJOY DOOA

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BIO Mizukusa no Mori: Guide to Cryptocoryne and Lagenandra

MAKE & KEEP
POWER SAND BASIC & POWER SAND ADVANCE

Mizukusa FOCUS／Plant Art Studio

Amano's view 'Catching Fish Barehanded After A Storm'

NATURE IN THE GLASS

“Lush Greenery Shadow”

Yusuke Homma

AQUA JOURNAL vol.271

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A school of Rasboras swimming in the shade of *Cryptocoryne* and ferns. The scenery brings up the image of a South-East Asian river.

©AQUA DESIGN AMANO

NATURE IN THE GLASS

A triangular layout, depicting water flow with Branch Wood and long tape-like plants

The framework of this triangular composition is produced with unique-shaped Branch Wood pieces, which were arranged parallel to one another in a lateral direction. The angle of branches was finely adjusted by securing the base of the driftwood with Manten Stones. The branches of the front Branch Wood have only a small amount of Willow moss attached; the individual branches are intentionally exposed in order to describe a flow of water running from left to right. Moreover, I attached a relatively large amount of Willow moss to the rear-side Branch Wood and gave shade in the background. It creates a sense of depth in the layout. Long tape-like *Cryptocoryne* located in the left background, swaying its leaves to the right side, further defines the flow of water described by the driftwood. (Yusuke Homma)

DATA

Shooting date	August 1st, 2017 (ADA)
Creator	Yusuke Homma
Aquarium	Cube Garden W180 x D60 x H60 (cm)
Lighting	Solar RGB × 3, turned on for 10 hours per day
Filter	Super Jet Filter ES-2400 (Bio Rio)
Substrate	Aqua Soil-Amazonia, Power Sand Advance L, Bacter 100, Clear Super, Tourmaline BC
CO_2	Pollen Glass Beetle 50Ø, 3 bubbles per second via CO2 Beetle Counter (using Tower)
Aeration	14 hours after the light is turned off using Lily Pipe P-6
Additives	Brighty K, Green Brighty Mineral
Water change	1/3 once a week
Water quality	Temperature: 24°C; pH: 6.4; TH: 20 mg/L

Aquatic Plants	*Cryptocoryne balansae*
	Cryptocoryne spiralis
	Cryptocoryne spiralis 'tiger'
	Cryptocoryne wendtii 'Brown'
	Cryptocoryne wendtii 'Green'
	Cryptocoryne lucens
	Cryptocoryne axelrodi
	Ranalisma humile
	Lilaeopsis novae-zelandiae
	Bolbitis heudelotii
	Fontinalis antipyretica
Fish & Invertebrates	*Trigonostigma heteromorpha*
	Crossocheilus oblongus
	Otocinclus sp.
	Caridina multidentata

Creating a layout, featuring Cryptocorynes, with a triangular composition composed of Branch Wood and Manten Stone.

Having a wide variety of species available, *Cryptocoryne* can be useful anywhere in a layout: the foreground, middle ground and background. There are a number of *Cryptocoryne* species specifically suitable for a shady middle ground under driftwood. They create a low-keyed, laid-back atmosphere when planted close to driftwood. In this layout, other rustic plants were also planted together to convey a natural serenity.

1. Create a triangular composition using driftwood to which Willom moss is partially attached, and recreate a flow from right to left with the branches.

2. The cut end of the main driftwood is big. So, place the driftwood in a position where the cut end is not visible from the front. Willow moss is attached near the cut end to hide it as much as possible.

3. Place some stones under branches as if they are holding the branches. This is one of the techniques used to promote a sense of nature.

4. Branch Wood is multiple branching driftwood. Make fine adjustments to the branches so that they are not too crowded or overlapped.

5. After placing driftwood, add more soil to the background. Since Cryptocorynes will be planted there, it needs appropriate soil thickness for the plant's root systems.

Layout Composition

©AQUA DESIGN AMANO

6. Mark the planting areas with bamboo sticks and determine the balance.

7. For easy planting, use long handgrip Pro-Pinsettes in difficult-to-reach places.

8. Carefully plant *Cryptocoryne* close to the driftwood. *Cryptocoryne* in the BIO Mizukusa no Mori series is relatively small in size. During planting, it is important to consider the full grown size of the plant and the space it requires.

9. Separate *Cryptocoryne balansae* by length and size prior to planing. Making preparations like this enables you to plant efficiently according to the layout design.

10. The planted tape-like plants should be laid down in the opposite direction to the area where you are going to plant next.

An expression created by *Cryptocoryne* over a period of time

This aquascape, featuring *Cryptocoryne*, has matured as time passes. It takes time to create lush scenery. However, once it matures, you can enjoy its rustic atmosphere. A strong impression at the time of the initial setup, given by the driftwood and stones, softens over time as *Cryptocoryne* grows. The entire aquascape appears well-balanced.

Bolbitis, a genus of ferns, goes well with shade-loving *Cryptocoryne*. Together they create a subtle and profound atmosphere in the aquascape.

Tape-shaped Cryptocorynes, *C. balansae* and *C. spiralis*, are planted together.

The tips of the driftwood branches look synchronized with the movement of the flowing *Cryptocoryne* leaves, offering an interesting view.

Planting

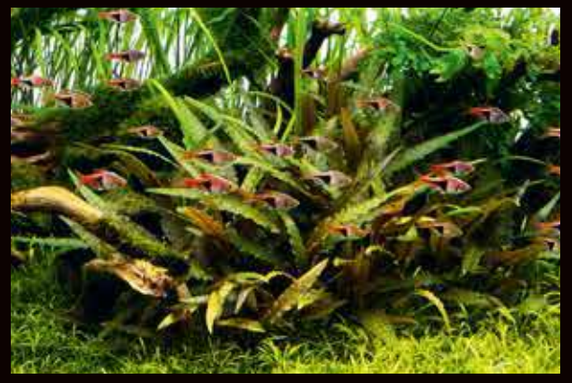
A typical triangular composition that gives a sense of stability. The tips of three driftwood branches pointing toward the right describe a flow in the aquascape. Large rocks were temporarily placed on the driftwood located at the front side to diminish buoyancy.

Aquascape completion

©AQUA DESIGN AMANO

Shade-loving *Cryptocoryne* also plays an important role in shady areas under driftwood.

A detailed expression that can be interpreted as a Wabi-sabi aesthetic. This small scene cannot be described without densely growing *Lilaeopsis novae-zelandiae* in the foreground.



A view of a school of Rasbora swimming in front of a cluster of *Cryptocoryne*; both originated from South East Asia, and match each other perfectly.

Ranalisma humile with bright green leaves was intentionally planted in a widely open area in the foreground. It gives a visual change to the aquascape.

BIO Mizukusa no Mori allows you to grow and enjoy *Cryptocoryne* and *Lagenandra* with ease.

We are going to feature *Cryptocoryne*, which was primarily used in the aquascape in the previous page, and its related species, *Lagenandra*, in this article. Although they are small, these plants that are tissue cultured in cups are quite stable and do not have the common leaf-melting problem associated with the plants in the family *Araceae*. Therefore, they are much easier to grow and will develop leaves more smoothly under water in an aquarium as compared to the same plants grown in conventional pots. Although *Cryptocoryne* and *Lagenandra* are often considered more of expert-oriented or advanced-hobbyist level plants, once adapted to an environment, they are hardy and do not require a lot of care to maintain their forms. In this respect, they are actually a type of plant that is easier to maintain over a long period of time. However, since they take up nutrients actively from their roots, it is necessary to periodically supplement the substrate with fertilizers by inserting a few substrate-fertilizer Bottom Plus sticks into the substrate. When the environmental condition changes suddenly, the leaves of *Cryptocoryne* can melt. However, this is not a big concern since new leaves will develop if you remove the melted leaves carefully by siphoning. On the other hand, *Lagenandra* does not have such a sensitivity issue. They are gaining popularity quickly as more varieties are being introduced lately.

BIO *Cryptocoryne Wendtii* 'Green'

While this plant develops green leaves under low light, the leaves turn a dark, reddish-brown under sufficiently strong light. Although the leaves melt if the water quality changes drastically, once the plant adapts to its environment, it will gradually develop new leaves. It reaches heights of 20 to 30 cm. It is a highly recommended plant since it produces a nice atmosphere when planted behind driftwood in the middle ground. Since *Cryptocoryne* generally requires a large amount of nutrients, it is important to supplement the substrate with Bottom Plus.

BIO *Cryptocoryne Wendtii* 'Brown'

This plant is characterized by its glossy, subdued brown leaves. Adequate amounts of light, CO_2, and nutrients bring out the characteristically understated beauty of this plant. Although we recommend this plant to be used in the middle ground of a layout, it should be used in such a manner that its subdued, brown color creates an accent in the layout. While a tissue cultured plant is small, it is important to keep the mature size of the plant in mind when developing a planting scheme.

BIO *Cryptocoryne Wendtii* 'Green Gecko'

This plant has brighter green leaves than *C. wendtii* 'Green'. The light green leaves appear vibrant under sufficient light and the reddish-brown veins of its leaves are eye-catching. Since the plant can grow to a height of 10 to 15 cm, it is suitable for planting in the middle ground. Because the shape of the plant can be controlled by trimming, one can make adjustments to the shape depending on the layout.

BIO *Cryptocoryne Wendtii* 'Mi Oya'

This plant has characteristically green or reddish-brown, slightly hammered leaves. It is a relatively large plant among the *Cryptocoryne* family and occasionally grows beyond the height of 20 cm. Sufficient amounts of CO_2 and substrate fertilization encourage the development of large leaves. Since it can be grown emersed or submersed, one can enjoy different forms depending on the environment. Once it is adapted to the environment, it can becomes tolerant of changes in the water quality.

BIO *Cryptocoryne wendtii* 'Tropica'

This *Cryptocoryne* variety develops red stems and reddish-brown leaves. Hammered leaves are one of the characteristics of this variety. It is relatively easier to grow than other *Cryptocoryne* varieties. It grows well under low light and low CO_2 conditions. It grows to a height of 10 to 15 cm tall. It is suitable for planting in the middle ground where it will grace the layout with beautiful, shiny leaves.

BIO *Cryptocoryne axelrodi*

This is a variety of *Cryptocoryne* that develops greenish-brown leaves. Since its color varies slightly depending on the water quality, you can enjoy the subtle changes in a layout. Since it grows slowly and develops leaves in a rosette form, if it is planted in the transition area between the foreground and middle ground or near driftwood, it will render a natural feel to the layout.

ADA aqua design amano Review

BIO MIZUKUSA NO MORI

"BIO Mizukusa no Mori: Guide to *Cryptocoryne* and *Lagenandra*"

Cryptocoryne and *Lagenandra* look similar to each other. Both plants belong to the *Araceae* family. Their unique appearances make them outstanding plants for aquatic plant layouts, and their popularity is expected to grow in the future.

※BIO Mizukusa no Mori are sold in cups.

The joy of aquascaping grows even greater with a new addition of *Lagenandra* to the familiar *Cryptocoryne* plants.

BIO *Cryptocoryne balansae*

A *Cryptocoryne* plant with narrow leaves that have characteristic puckering. The color of the leaves vary from brown to green depending on the condition of growing environment. Although its leaves occasionally melt right after its introduction into an aquarium, once adapted to the environment, it will develop new leaves, become stable, and be easy to maintain. Since it grows to more than 50 cm long under the good condition, it is recommended for the background section of a large aquarium.

BIO *Cryptocoryne spiralis* 'Red'

Cryptocoryne with narrow, tape-shaped leaves. The plant develops reddish-brown leaves with slightly undulated leaf margins. Since it grows more than 30 cm long, it is primarily used as a background plant. This plant should be planted in a small group in a layout because of its narrow leaves. Given an adequate amount of light and substrate fertilization, it will grow into a hardy plant.

BIO *Cryptocoryne lucens*

The leaves of this plant with characteristically narrow, reddish-brown margins change their colors from deep to bright green depending on the light and nutrient conditions. Since they only grow up to 10 cm or so, it is recommended for planting in the foreground to the middle ground of a layout. Although a well-adapted plant is hardy, care should be given since it tends to melt if planted in a new aquarium with new filter media or after moving the plant to a new location.

BIO *Lagenandra keralensis*

It is a type of *Lagenandras* that develops somewhat large, narrow leaves underwater. The robust plant can be emersed-grown as well. The color of its leaves is subdued green rather than bright green. Since it grows more slowly and tall, it is suitable for creating a focal point in the mid-ground to the background. Plants in *Lagenandra* family are easy to grow without the difficulty of melting leaves often seen among the *Cryptocoryne* family.

BIO *Lagenandra meeboldii* 'Green'

It is a type of *Lagenandra* with green, ovoid leaves. It is a hardy plant suitable for both emersed and submersed growing. Like other *Lagenandra* plants, it is recommended for planting in the middle ground. However, the location should be chosen carefully since its size cannot be adjusted by trimming as in the case of *Cryptocoryne*. Plants in *Lagenandra* family are expected to become popular with the release of the plants in the BIO Mizukusa no Mori series.

BIO *Lagenandra meeboldii* 'Red'

L. meeboldii 'Red' develops more reddish leaves as compared to *L. meeboldii* 'Green'. It is slightly smaller than *L. Keralensis* and therefore is suitable as a middle ground plant. Its shape is probably more favored by experienced hobbyists. Extra care should be given when dividing this plant since new plantlets grow directly from its rhizome, unlike *Cryptocoryne*. Since the growth speed is slower than that of *Cryptocoryne*, an aquascape with this type of plant is easy to maintain over a long period of time.

Aqua Soil-Amazonia
Aqua Soil-Amazonia is rich in organic nutrients derived from humus. It creates a space where aquatic plants take root.

Cryptocoryne and *Lagenandra* have relatively thick and sturdy roots as evidenced in the way the small plantlets spread their roots in clear-agar medium. This indicates that they are a type of aquatic plant that takes up a large amount of nutrients from its roots. Therefore, it is essential to establish a nutrient-rich substrate colonized by active microorganisms to grow them well over a long period of time. The substrate system that helps to accomplish this is the complete substrate system built on the recently reintroduced Power Sand Advance along with Bacter 100, Clear Super, Tourmaline BC, and Aqua Soil-Amazonia.

Tourmaline BC
Beneficial soil amendments, Tourmaline and bamboo charcoal, condition the substrate environment.

Clear Super
This product binds to detritus in the substrate and feeds the microbes.

Bacter 100
This product contains various microorganisms and forms microbial communities suitable for the substrate environment.

Power Sand Advance
This product prevents hardening and clogging of the substrate and also becomes the source of microbes.

Enjoy DOOA | Yusuke Homma

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.

A habitat of fish depicted with driftwood and stem plants in System Aqua 30

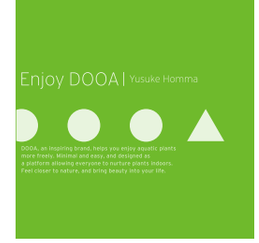
The amount of space available for a layout in an integrated aquarium with a built-in filter System Aqua 30 is limited to W30×D20×H30 (cm). So, the key concern for a layout production in this aquarium is how to make the space appear larger. In this layout, Branch Wood was arranged in such a way that one of its branches will protrude out toward the front right from near the center of the aquarium. Doing so created space underneath the overhanging driftwood to produce an impression of a place where fish hide out. The tip of the driftwood protruding above the water expands the space and renders a sense of depth by creating a contrast between the driftwood in the front and the open space in the right-hand-side background of the aquarium. Wabi-Kusa containing a lot of fine leaved stem plants were intentionally selected and placed in the aquarium.

SOL STAND G
SOL STAND G mounting piece
System Aqua 30
Base Stand 35
CO_2 Count Diffuser
NA Control Timer Ⅱ
Tropical River Soil

[Aquatic Plants]
Wabi-Kusa Stemmed Plants Mix
Wabi-Kusa Karen
Wabi-Kusa *Hemianthus micranthemoides*
Micranthemum umbrosum
Riccia fluitans
Taxiphyllum barbieri
[Fish]
Poecilia reticulata
Trichogaster chuna
Nannostomus trifasciatus
Crossocheilus oblongus
Otocinclus sp.
Caridina multidentata

Shoot on December 18th, 2017 (ADA)
Creation & Text by Yusuke Homma

The space beneath the driftwood becomes a perfect sanctuary for fish. Making a small adjustment to a layout can create an environment that is suitable for fish.



A key point for creating a layout in a small aquarium, such as System Aqua 30, is to use Wabi-Kusa effectively.

Generally speaking, aquatic plants with fine leaves are more suitable than those with large leaves for a layout in a small aquarium. However, since aquatic plants with fine leaves tend to have fine stems and roots, planting them requires a more delicate handling and planting technique. Wabi-Kusa makes the planting of delicate aquatic plants a lot easier since it requires simply placing it on the substrate. This layout is an example of effective usage of Wabi-Kusa.

Wabi-Kusa Stem Plant Mix is used in the left background of the aquarium. The use of Wabi-Kusa enables you to create dense bushes simply by placing them on the substrate instead of tediously planting stem plants with tweezers.

Small Wabi-Kusa Karen and Wabi-Kusa *Hemianthus micranthemoides* were used in the background on the right where an open space was created. The contrast with the driftwood in the front added a sense of depth in the layout.

Stones covered with *Taxiphyllum barbieri* and *Riccia* were placed in the foreground. The atmosphere of a river bottom was created by intentionally exposing the Tropical River Soil used for the substrate.

MAKE & KEEP

6

New POWER SAND series: Rich nutrients and microorganisms make ideal substrates for aquatic plant growth.

ADA NATURE AQUARIUM GOODS

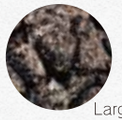
POWER SAND BASIC-S

BASIC-S

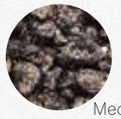
POWER SAND BASIC is easy-to-use substrate nutrient for all types of aquatic plant aquarium. Containing a modest amount of nutrients, this product is beginner-friendly. The 1-liter bag, suitable for small-size aquarium use, is now on sale in addition to the 2-liter bag for a 60cm wide aquarium.

ADA NATURE AQUARIUM GOODS

POWER SAND ADVANCE



Large (L)



Medium (M)

Small (S)

POWER SAND ADVANCE is ideal substrate nutrient for full-fledged aquarium layouts. Available in 3 sizes, for use in accordance with depth of aquarium water; Small (2L bag), Medium (6L bag), Large (6L bag). Small size is suitable for a standard 60cm aquarium tank (W60xD30xH36cm).

Easy-to-use POWER SAND BASIC and rich nutrient POWER SAND ADVANCE

The previously sold Power Sand and Power Sand Special have been used over a long period of time as substrate nutrients of the Nature Aquarium. This time we revamped these products as easy-to-use POWER SAND BASIC, and rich nutrient POWER SAND ADVANCE. Both POWER SAND products share same basic ingredients; natural porous material, and organic nutrients which promote the growth of substrate bacteria, and delayed-release mineral nutrients. New POWER SAND BASIC contains the same nutrients as Power Sand, and both Bacter 100 and Clear Super are newly added. So you can prepare an ideal substrate environment for aquatic plants by using it with the Aqua Soil Series products. New POWER SAND ADVANCE is further enriched with organic and mineral nutrients from Power Sand Special, and BC powder (bamboo charcoal powder), containing phosphate, is newly added along with Bacter 100 and Clear Super for making more nutrient-rich substrate. Here we show you two examples of substrate installation process, taking advantage of features of POWER SAND BASIC and POWER SAND ADVANCE.

MAKE & KEEP

Every month, this column introduces useful knowledge, skills and product information to make and keep your Nature Aquarium and Aqua-Terrarium. In this issue, we explain substrate preparation for a 60cm and a small-size aquarium tank, featuring the revamped Power Sand series.

Installation 1.

Easy substrate installation for a small size tank with POWER SAND BASIC

Spread a bag of POWER SAND BASIC S in a W36xD22xH26cm tank. A 1-liter bag is optimum amount for small size aquariums.

Rake POWER SAND BASIC S with Sand Flattener. Bacter 100 and Clear Super are already contained in the product.

Spread Aqua Soil-Amazonia 3L on top, and complete this easy-to-follow substrate making by creating a slope running up from the foreground to the background.

Installation 2.

Perfect substrate with POWER SAND ADVANCE for a 60cm wide tank.

Spread POWER SAND ADVANCE S. A 2-liter bag is standard amount for a W60xD30xH36cm tank.

Sprinkle extra powder of Bacter 100 for preparing substrate for long-term maintenance, though it is already contained in POWER SAND ADVANCE.

Add Clear Super. 3 leveled spoonfuls (spoon provided) of Bacter 100 and Clear Super are appropriate.

Sprinkle Tourmaline BC powder for purpose of maintaining the substrate environment. 10 spoons (spoon provided) of Tourmaline BC are sufficient.

Spread Aqua Soil-Amazonia. Rake it and make a slope from front to back. A 9-liter bag is optimum amount for a 60cm size aquarium.

Spraying Green Brighty Nitrogen liquid on the soil surface is effective for enhancing the growth of short foreground aquatic plants.

Part 6 author / Masahiro Sato (ADA)

Three years have passed since Mizukusa no Mori was introduced. More than 60 types of plants are available now in this series. Following are some of the new faces that are going to be released in the near future.

"Arrival of *Aponogeton*"

Many of you probably think of a beautiful Lace Plant with fenestrated leaves when you hear the name *Aponogeton*. It is a very delicate plant just as it appears. Adding this plant to the Mizukusa no Mori lineup required a different culture condition from that of other aquatic plants. We finally arrived at the following: filling the upper part of the package above the culture media with liquid. This enabled us to grow *Aponogeton* with delicate leaves without stressing it. The cup was also replaced with pouch-type packaging to prevent the media from breaking up or the liquid from leaking. A new, slightly different Mizukusa no Mori will be released shortly.

"*Aponogeton madagascariensis*"
A beautiful *Aponogeton* with fenestrated leaves. It has wide leaves that spread sideways.

"*Aponogeton longiplumulosus*"
Aponogeton with narrow leaves with fluted margins. The leaves grow in an upright manner.

Plant Art Studio

Vallisneria asiatica var. biwaensis

06

SPRING COLOR, WAVE, and VIGOR.

Photo / Yusuke Homma

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.

雑考

[Amano's view]
Nature Aquarium World

Catching Fish Barehanded After A Storm

Photo&Text/ Takashi Amano

A sunrise over the watered rice fields in the Echigo Plain (Spring, 2011)

In the middle of April the snow melts and the plains of Niigata are flooded. This is done intentionally to soften up the rice fields for plowing. When I was a child I would climb up a mountain before sunrise to see the water-covered earth turn into a sheet of gold.

Spring planting time is the happiest season for the farmers in snow country. In the next month land will be reborn in green. Then in mid-June the rainy season begins and rice grows quickly. In the old days we didn't have drainage pumps or tunnels, so the levees would break and the fields would quickly fill with water. These were real floods, not like the April flooding, and disturbing as it was to the farmers, we children were thrilled. When the rivers and ponds began to overflow, fat carp would begin to spawn. They would be so distracted that we could catch them by the roadside with our bare hands.

A story we often heard was how the school grounds flooded once during lessons, and from the classroom they could see carp in the water outside the window. Some students couldn't contain themselves anymore and leapt out the window to go catch some. The teachers followed right behind them, and soon most of the school was outside chasing carp and having a great time.

That episode was before my time, but when a heavy rain was falling outside and the class was restless, the teachers would tell us that story, and I think I remember it as well as they do.

Nature Aquarium World (TFH, 1992)

※*The image is changed for this edition from original book.*

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STAFF CREDIT

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Editor
Tsuyoshi Oiwa
Masatoshi Abe
Yusuke Homma
Masahiro Sato

Art Direction
NATURE AD DESIGN

Design
Satoshi Maruyama
Ryo Ichikawa
Konomi Ishii

English Translation
Aqua Design Amano Co.,Ltd.

aqua design amano co.,ltd.
8554-1 Urushiyama, Nishikan-ku,
Niigata 953-0054, Japan
http://www.adana.co.jp