

Iriomote Island *Kuuru Koubou* Symphony:

A Leading Case for Coexisting with Nature and the Resurgence of Culture

By Akiko Ishigaki and Mahito Yamamoto

Translated by Tetsu Ito

Introduction

This text is an English translation of Chapter 1 of *Iriomote Island Kuuru Koubou Symphony: A Leading Case for Coexisting with Nature and the Resurgence of Culture*, written by Akiko Ishigaki¹ and Mahito Yamamoto², published by Jiyusha in 2019, and translated by Tetsu Ito³ in 2023.

Okinawa is a prefecture known for its magnificent dyeing and weaving styles. *Kuuru Koubou*, located in Iriomote Island, is in itself unique for producing fabrics based on profound knowledge of threads and dyes from natural materials.

Kinsei and Akiko Ishigaki who ran the *koubou* (studio) were against the environmental destruction that the resort developers brought using outside capital. They advocated for the revival of a lifestyle rooted in the local ecosystem using agriculture and handicrafts, harmonized with rituals and festivals. They played pivotal roles as intermediaries who connect people from various fields who are interested in Iriomote Island to the local community. *Kuuru Koubou* can be considered as a leading model in sustainable regional development in the world.

Chapter 1 summarizes the key characteristics of the *koubou* with photographs (by photographer Masako Miyazaki) and figures. This was the first to be translated into English as the foundational material to give a glimpse of the work and lifestyle of *Kuuru Koubou*.

1 Akiko Ishigaki is the co-founder of *Kuuru Koubou*.

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Chapter 1

Basic Traits of *Kuuru Koubou*

Surrounding landscape

An Indian female designer who participated in the international exchange workshop held at *Kuuru Koubou* in 1996 said, “This is a paradise for artists.” Excellent fiber materials such as *ito-basho* (thread-banana, or *Musa balbisiana*) and many dye plants such as *kuuru* (dyeing yam, or *Dioscorea cirrhosa*) are within reach. The nearby waterside where *hirugi* (mangrove, or *Rhizophoraceae*) grow is very calm and beautiful. You can feel the pleasant breeze and hear the birds chirping if you take a nap in a hammock in the shade of the trees in the studio’s garden. At night a combination of *awamori* (distilled rice liquor), *sanshin* (three- stringed lute), and Yaeyama⁴ folk songs warm your heart.

It has taken much hard work with twists and turns to create this fascinating environment. One of the main themes of this book is to retrace in detail the process by which *Kuuru Koubou* was formed. As a prelude to that let me roughly sketch out its surrounding landscape.

Ishigaki Island, located in the center of the Yaeyama Islands, is about 400 kilometers away from the main island of Okinawa and takes about 45 minutes by plane to reach. A ferry boat leaves from Ishigaki Port to reach Iriomote Island where *Kuuru Koubou* is located.

The Yaeyama Islands consist of islands with different climates. Islands with elevated coral reefs, such as Taketomi Island, are flat and do not have large rivers, so they are prone to drought when it does not rain. In contrast, Iriomote Island has a 400-meter mountain range, including Mt. Komi, covered with subtropical and evergreen broadleaf forests. In addition to abundant rivers such as the Urauchi River and the Nakama River, countless small streams flow from the mountains into the sea. As you can see from the forest area ratio of 84%, most of the island is forest, and on the flat areas around the island roads are built,

4 The Yaeyama Islands are archipelago in the southwest of Okinawa Prefecture.



Kuru Koubou in Iriomote Island.

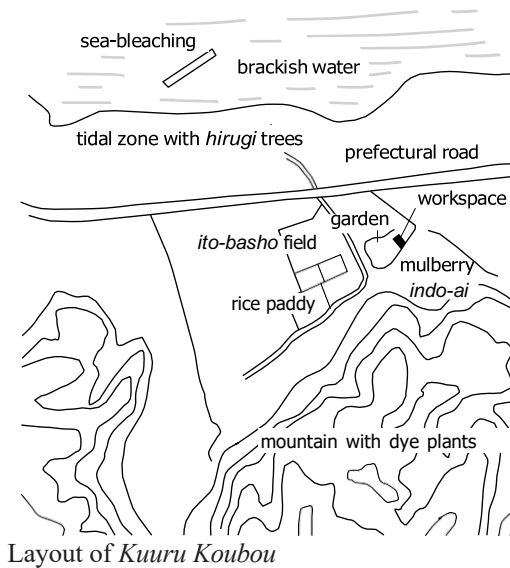
villages are formed, and farms and pastures predominate.

The village on Iriomote Island is broadly divided into eastern and western districts, and *Kuuru Koubou* is in the latter. From Uehara Port where the ferry arrives, take a minibus, which travels west along the prefectural road for about 15 minutes before arriving at Sonai Village, where Kinsei Ishigaki [born in 1949, a historian, community leader, organic rice farmer, pioneer of eco-tourism, and master sanshin player] and his wife, Akiko, live. *Kuuru Koubou* is located a short walk from the prefectural road to the mountain side a few stops before Sonai Village. The land was originally farmed by Kinsei's parents, and the studio was crafted by renovating the work shed.

The workspace of *Kuuru Koubou* comprises of various elements, including the mountain, workshop building, garden, fields, and waterside. At the center is the workshop building, where looms are placed and weaving and other work takes place, with a kitchen and a toilet located at the back. The garden around the workshop is where dyeing is done. Rice and vegetable fields spread out towards the north of the workshop. *Ito-basho*, mulberry, ramie, and dye plants such as *indo-ai* (*Indigofera tinctoria* and *Indigofera suffruticosa*) are cultivated along the fields. Kinsei cultivates rice in the paddy.

On the south side of the studio, there is a road leading into the mountain where Kinsei collects dye plants such as *kuuru*. The water in the workshop is taken from the mountain. This is an essential element of the studio because the quality of water matters in dyeing.

You reach a calm waterside soon after crossing the prefectural road on the north side of the studio. This is where seawater and freshwater from the Urauchi River mingle. *Hirugi* trees grow on the beautiful sandy beach in this Urauchi River estuary. This scenic waterside landscape is in part the result of continuous planting of *hirugi* by Kinsei and Akiko. The dyed cloth is rinsed and



bleached in this estuary. This is “where the cloth is born”.

Year-round schedule

Seasons are quite different in the Yaeyama Islands as compared to Yamato (mainland Japan). Even in winter it rarely gets below 10 degrees Celsius, so you wouldn’t feel ‘cold’ in Yamato’s sense, but you will still need another layer of clothing as it’s often cloudy and windy. Iriomote Island has an average of 75 daylight hours in December and January, which is merely 30% of the daylight hours in July (250 hours).

In April, the average daylight hours are much longer with 122 hours. After the overcast winter, there are more pleasant sunny days, and the activities of all living things become vibrant.

This season is locally known as *urizun* and *wakanatsu* (around March-April

and May-June, respectively), which are more appropriate than ‘spring’. The wind direction changes in May: before this month wind blows from the northeast but after it blows from the south. It’s the season of *maapai* (due south wind).

There are many sunny days in July and August, and the heat becomes severe. Strong typhoons come one after another from August to September. This is the hardest part of living in Yaeyama.

The timing of rice cultivation in Iriomote is also quite different from that in Yamato. Rice is planted in January and February and harvested in June. The rice is harvested before the typhoon season to avoid crop damage.

During the rice bearing season people refrain from playing musical instruments such as *sanshin* so as not to frighten the rice spirit. Around the end of May⁵, before the harvest, *Shikomayoi* (celebration of the first ear of rice) one of the important rituals of the village, is held.

Puriyoi (harvest festival) is held after the harvest in July. This supposedly corresponds to autumn festivals held in various regions of Yamato.

Another important ritual is *Shichi*, held in October or November. This particularly important ritual can be traced back long before Yaeyama came under the rule of the Ryukyu Dynasty. It is New Year’s Day for farmers.

The chart on the succeeding page shows a one-year cycle of work at the studio, i.e., taking care of *ito-basho* and ramie, raising silkworms and forming threads, cultivating dye plants and making dyes, dyeing, and weaving.

Let’s take a look at the nature of work in each season. Dyeing is carried out from mid-April to October, when there are many sunny days. Supposedly the strong sunlight of Iriomote promotes vivid colors.

On the other hand, the indoor work of weaving silk and ramie is done almost

5 The dates for traditional events are determined each year based on the lunar calendar.

eaving , ramie and silk (*gumbou*) all year

all year round. However, *basho* thread breaks easily when dry, so it is woven from the rainy season to summer. Yarn-making is done across the year whenever there is spare time.

Cultivation of fiber plant and sericulture are mainly carried out in winter, spring, and autumn.

Ito-basho stalks are cut (*u-toshi*) and their fibers are extracted (*u-biki*) in the winter season from December to March. Prior to that, *surauchi*, or trimming off the leaves and tops of the stalks, is done from July to September.

Ramie can be harvested four to five times a year in Yaeyama, but at *Kuuru Koubou*, it is harvested only twice, in spring and autumn. Ramie yarns are made throughout the year.

Sericulture involves harvesting silkworms in May and June and later in November. The *zaguri* method uses a tool to reel silk from many cocoons, while the *zuridashi* method is done by hands from fewer cocoons.

Among the dye plants *kuurus* are collected in winter. *Kuurus* grow naturally in mountains and are collected when the ban on wild boar hunting is lifted (November 15 to February 15). What the wild boars dig up are collected as the gnawed ones are typically ripe and are suitable for making high-quality dye.

Harvesting work of *ryukyu-ai* (*Assam indigo*/Chinese rain bell or *Strobilanthes cusia*) takes place from April to May. *Shima-ai* (or *indo-ai*) leaves are harvested three times a year from June to July and stored as indigo paste. Fresh *shima-ai* leaves are also used for dyeing.

Dye can be extracted from *fukugi* (*Garcinia subelliptica*) that has been knocked down by a typhoon. The alternative method would be to carefully strip off the bark while leaving enough for the tree to regenerate or prune the branches of a standing tree. The latter is done during summer when dyeing takes place. Fresh bark and branches can also be used for dyeing.



(above) *Miroku Bosatsu* appearing in *Shichi Festival*. This costume was restored by Akiko.



Features of work at *Kuuru Koubou*

It is important for weavers who value plant dyes and threads made from natural materials to secure access to quality materials that they like, just like chefs at natural food restaurants. As such, the key feature of *Kuuru Koubou* is that it creates an environment where all the basic items such as main dyes and threads, except for cotton, can be made instead of outsourced. Akiko realized that the process of creating such an environment not only requires traditional techniques, but also greatly stimulates the inquisitive mind in trying out various new possibilities.

The background to the creation of such a unique creative environment at *Kuuru Koubou* can be roughly summarized as follows. Firstly, Akiko became an apprentice to Fukumi Shimura⁶, a master artist in weaving and dyeing in Kyoto, and studied her working style. With her strong inquisitive mind, Ms. Shimura collects various plants herself, asks others to share them, and conducts dyeing experiments using various methods. Akiko inherited the same insatiable spirit of inquiry in her dyeing and weaving work.

Secondly, Akiko moved from Taketomi Island, where the tradition of dyeing and weaving has been handed down for a long time, to Iriomote Island, where the tradition completely disappeared, and took on the challenge of recreating the environment for dyeing and weaving from scratch. Akiko acquired excellent skills as a weaver of traditional *Yaeyama-jofu*⁷ on Taketomi Island. But on Iriomote Island, traditional weaving had long since disappeared so it had to be recreated from the ground up. Akiko fundamentally reconsidered the relationships

6 Fukumi Shimura (1924-) was awarded the Living National Treasure of Japan in 1990.

7 *Yaeyama-jofu* is the top quality ramie fabric woven with fine thread typically dyed in *kasuri* (tie-dye) patterns.

among nature, dyeing and weaving, and island life, as well as the relationship between handicrafts and modern life, in the process of recreating her work environment.

Main work in *Kuuru Koubou*

▽ *Basho* thread making

Yaeyama-jofu, a traditional Yaeyama fabric, is made from ramie.

Akiko used to weave *Yaeyama-jofu* while living in Taketomi Island. In 1980, she relocated to Iriomote Island, where *basho-fu*⁸ had traditionally been woven, because its natural environment allows *ito-basho* to grow easily, unlike in Teketomi Island. But such tradition had died out long before. Therefore, Kinsei and Akiko decided to revive Iriomote Island's *ito-basho*.

In the main island of Okinawa, the tradition of *basho-fu* had been lost due to the war, but Toshiko Taira⁹ [born in 1921, a master weaver and dyer] of Kijoka¹⁰ revived *basho-fu*¹¹ during post-war reconstruction. Akiko invited Ms. Taira to Iriomote during the initial stage of setting up *Kuuru Koubou* to learn about the entire *basho* production cycle from scratch.

What was revived in Kijoka was *basho-fu* of the best quality, which had been woven with the finest threads for both warp and weft for the dynasty of the Ryukyu Kingdom. In contrast, Akiko aimed for *gumbou*, which typically used *basho* thread for weft and easier-to-weave silk and cotton for warp. Because of this difference there are slight differences in the thread-making techniques between *Kuuru Koubou* and Kijoka.

8 *Basho-fu* is a traditional Okinawan textile woven with *ito-basho* thread.

9 Toshiko Taira (1921-2022) was awarded the Living National Treasure of Japan in 2000.

10 Kijoka is a quarter located in the north of the Okinawa main island.

11 Kijoka *basho-fu* was designated as an Important Intangible Cultural Property in 1974.



U-hagi process. Stalks are stripped for threads.



Kawa-basho (banana bast).

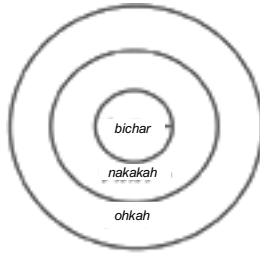


Diagram of *ito-basho* fiber layers
(Taketomi Island)

Toshio Tanaka and Reiko Tanaka.
*Okinawa Orimono no Kenkyu (A Study
of Textiles of Okinawa)*, p. 91.

Ito-basho is a plant that is a relative of *mi-basho* (which produces banana fruits that can be eaten raw). It matures about three to five years after being planted and is cut down to extract threads from the fibers of the stalks.

Thread-making consists of the following steps: (a) *u-hagi* (stripping the stalks), (b) *u-daki* (boiling in lye), (c) *u-biki* (extracting the fibers), and (d) *u-umi* (forming the yarn)¹².

(a) *U-hagi*

Each felled stalk of *ito-basho* is upended, and its concentric layers are peeled away one by one from the root end. In Kijoka, the layers are divided into *uwah* (outer skin), *nahau* (middle skin), *nahagu* (inner skin), and *kiyagi* (core) from the outer side. Only four to five pieces of *nahagu* are used for *kijaku* (standard length of material used in a Japanese *kimono*).

In contrast, in *Kuuru Koubou*, the layers are divided into three parts: *ohkah* (outer skin), *nakakah* (middle skin), and *bichar* (core), following the traditional terms in Taketomi Island. The outer skin is also called *kawa-basho* (banana bast), from which thick thread is extracted for weaving interior crafts.

¹² ‘U’ stands for *basho* fiber, pronounced “oo”.







U-biki process.

The inner skin and core are put together and used to weave *kimono*. At *Kuuru Koubou*, *basho* thread and raw silk thread are combined, creating a different texture from Kijoka's *basho-fu*.

(b) Boiling in lye

For *kimono*, the inner skin and core are bundled together, put in a pot, and boiled in lye. The lye made from ashes of dried banana leaves works particularly well.

(c) *U-biki*

The tape-shaped strips (dried skins and cores) are scraped with a metal tool or the like to remove impurities and extract only fibrous parts.

(d) *U-umi*

The dried fiber is soaked in water and softened, split into thin strips using the tip of a fingernail, and formed into a single thread by knotting or splicing.

▽ *Pirachika* sericulture

Raw silk became one of Japan's leading export industries as it modernized, and sericulture flourished in rural areas. From the Meiji period (1868-1912) onwards, the mission of the sericulture industry is to supply raw materials for the modern silk industry, and silkworm varieties were selected to meet that purpose. Until recently, the Sericulture Industry Law had specified the types of silkworms that sericulture farmers could raise. Silkworm varieties with high yields, long cocoon filaments, and easily produce uniform threads were selected, and breeding was limited to such varieties.

However, such industrial raw silk is not suitable for hand weaving. What would fit hand-weaving, which incorporates the natural rhythm of body movements, is not uniform and characterless but rather lively thread. Therefore, the criteria for selecting silkworm varieties are naturally different between those for industrial production and those for hand-weaving. It is necessary to select silkworm varieties that are suitable for hand-weaving.

In the 1980s, *Kuuru Koubou* conducted trials in search of the suitable form of sericulture for weavers, guided by Masayoshi Shikata, who had been a Professor at Kyoto Institute of Technology during the 1980s. At that time, Prof. Shikata was a sericulture expert, researching on improving sericulture technology in Okinawa at the tropical agriculture research facility of the University of the Ryukyus in Iriomote. He tried to explore ways of small-scale sericulture in *Kuuru Koubou* so that weavers could obtain raw silk for their own use while consulting to promote sericulture as an industry on Ishigaki Island.

For Akiko, her primary concern was to pursue sericulture to produce raw silk well-suited to *ito-basho* so that she could weave *gumbou* with *ito-basho* and silk. For this purpose, she planted a variety of mulberries, including a hybrid of *shima-guwa* (island mulberry) and tropical mulberry, and examined their growth.





Jofu (ramie).



① Newborn silkworm is called the first instar. Silkworms at the fifth instar, which have completed four cycles of sleep and molt, form cocoons after about 25 days.



② By the fifth instar the silkworms become the size equivalent to a cigarette.



③ Silkworms on a mulberry tree.



④ A mulberry tree covered with nets.



⑤ Cocoons in the net.



⑥ *Z uridashi* process. The most primitive method of extracting thread by using fingers of both hands. Extracting thread cannot be done without using fingerprints.



⑦ Thread extracted using the *zuridashi* method. Natural wave is retained after extraction.

Likewise, she also tried breeding various varieties of silkworms.

Through trial and error, she was able to find the variety and breeding method of silkworms that would suit *Kuuru Koubou*.

Silk suitable for combining with *basho* would be, for example, the Indian yellow cocoon variety (*Nastari*), which is less domesticated and has crisp and lustrous texture when used without removing sericin. Akiko requested Prof. Shikata to provide cocoon varieties with such characteristics.

As for the breeding method, Kinsei, guided by Prof. Shikata, learned a method called ‘*pirachika* sericulture’. *Pirachika* means ‘lazy’ in the language of Iriomote. Sericulture is quite a labor-intensive industry, but the weaver does not need to follow the same procedure when producing yarn for their own use. *Pirachika* sericulture is a method that saves Kinsei considerable time and effort.

Silkworms gradually grow larger as they molt. After shedding their skin for the fourth time and eating a lot of mulberry leaves, they begin to spit out thread and make cocoons. The period up to the first molt is called the first instar¹³, and the period after the last molt is called the fifth instar. When the silkworm reaches its fifth instar, it grows large and eats lots of mulberry leaves. The volume of mulberry leaves eaten during the fifth instar is about seven times the amount eaten during the first to fourth instars. Accordingly, the volume of their feces is so large that it becomes difficult to clean up.

In *pirachika* sericulture, silkworms are moved to standing mulberry trees when they reach the fifth instar and are allowed to eat the leaves freely. That way, you don’t need to feed silkworms with mulberry leaves several times a day.

After eating a lot of mulberry leaves, silkworms at the fifth instar crawl around looking for places to make cocoons. In typical sericulture, these mature silkworms are relocated to a cocoonery. This process is called *jozoku*. A

13 An instar is a development stage of arthropods such as silkworms.

cocoonery has a structure in which compartments are arranged in a row suitable for silkworms to enter, build a foothold, and make cocoons. *Jozoku* involves a lot of work. However, *pirachika* sericulture has no such process, as silkworms make their own cocoons on the trees. This is sericulture that taps into silkworms' instinctive behavior.

The problem with this method is that if silkworms are left on trees wild birds come and eat them. Therefore, the trees need to be covered with nets to prevent wild birds from eating silkworms.

In *pirachika* sericulture, the labor requirement is just like conventional sericulture up until the fifth instar. Beyond that, it's less time-consuming than conventional sericulture. In *pirachika* sericulture, however, predators such as rats, geckos, and ants may eat juvenile silkworms if no precaution is taken. Therefore, Kinsei sets measures such as putting juvenile silkworms in baskets and hanging them from the ceiling of the workshop or moving silkworm racks in the car.

Another important point in making raw silk suitable for hand-weaving is reeling, wherein thread is extracted from cocoons. At *Kuuru Koubou*, thread is extracted from cocoons using a simple method known as *zuridashi*. This method is also called 'hand-pulling,' and is explained as follows in *Ishigaki City History and Folklore, Volume I*:

“First, put the cocoons in a pot of water and boil. Pupae living inside the cocoon balls begin to spew threads out of their mouths. At that time, you can catch cocoon ends if you lightly stroke the cocoons floating on the pot with a brush or a hand. Five to eight cocoon ends are taken for *tibiki* (putting them together).

The number of cocoon ends that can be pulled together will differ depending on use. To form thread thickly or thinly, bundles of cocoons are twisted through *titaguri* (delicate hand work) and stored in a flat basket.” (p. 570)

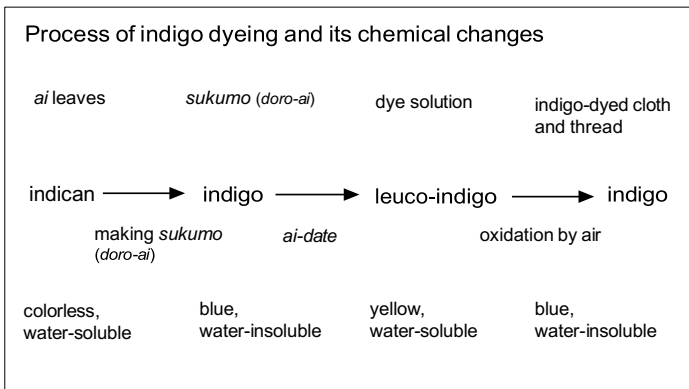
Thin threads are pulled from cocoons and glued using sericin dissolved in hot water. Thread is manually formed by applying a slight twist using fingertips without using any tools or instruments. In this way, thread with preferred texture can be made once skills are mastered.

At *Kuuru Koubou* the *zaguri* method is also sometimes used to make silk thread. In such a case, a hand reeling tool, the simplest instrument for this purpose, is used. It has a handle that can be manually rotated to reel in the thread. Since it is hand-cranked, the rhythm can be adjusted and there are no problems even if there are cocoon variations.

▽ Indigo dyeing with *ryukyu-ai* and *shima-ai* (*indo-ai*)

Indigo dye is a dyeing method that uses a component called indigo. This can be found in various plants in the form of indican, which is water-soluble. The plants used are *tade-ai* (*Persicaria tinctoria*) in Yamato, *ryukyu-ai* (*Strobilanthes cusia*) mainly in the mainland of Okinawa, and *shima-ai* or *indo-ai* (*Indigofera tinctoria* and *Indigofera suffruticosa*) in Yaeyama.

In Yamato, *tade-ai* is cultivated in Tokushima Prefecture. Its dried leaves are fermented to make *sukumo*. *Sukumo* has a blackish-blue color, reflecting the





Shima-ai dyeing.





color of indigo. The water-soluble indican in the leaves turns into indigo in the process of making *sukumo*.

Indigo is shipped from Tokushima in the form of *sukumo* and distributed across the country to be purchased by commercial and artisan dyers who manage *ai-date* (a vat process for indigo fermentation and reduction) and dye yarns and fabrics. Inside a vat, *sukumo* is dissolved in an alkaline aqueous solution, and microorganisms transform indigo into water-soluble leuco-indigo. Dipping cloth or thread in the vat turns it blue immediately after it is pulled out because the leuco-indigo is oxidized and returns to indigo.

Chemical reactions also occur in the indigo dyeing process of *ryukyu-ai* and *shima-ai*, similar to *tade-ai*.

However, in the main island of Okinawa, *doro-ai*, or indigo mud (precipitated indigo), instead of *sukumo*, is made in the cultivation area of indigo plants and shipped for commercial and artisan dyers to purchase.

Doro-ai contains indigo, which is transformed from indican originally in indigo plants' leaves. As such, *doro-ai* has the same function as *sukumo*.

In the main island of Okinawa, *doro-ai* is mostly made in Motobu, the production area of *ryukyu-ai* and distributed to various places since the Ryukyu Kingdom period. On the other hand, in Yaeyama, the production of indigo plants was dispersed here and there, and *doro-ai* production and *ai-date* were often an integrated process.

The process of *doro-ai* making with *ryukyu-ai* is described in *Ishigaki City History and Folklore ,Volume I*, as follows:

“Freshly picked indigo leaves are put in a water tank or a plastic bucket, and water is poured just enough to submerge leaves, after which a weight is placed so that they do not float. After three to four days,

when the indican in the leaves is hydrolyzed and changed to indoxyl, the leaves are taken out from the tank, lime is added to the remaining solution of the indoxyl component, and it is vigorously stirred. This promotes aerial oxidation. The pigments combine with lime and precipitate, forming an indigo component. Since this sediment is muddy, it is called *doro-ai* (or an indigo ball) and becomes indigo dye.” (p. 732)

The *doro-ai* making process at *Kuuru Koubou* is almost the same as this. The process is also basically the same when using *shima-ai*.

The *ai-date* process in Yaeyama is illustrated as follows:

“*Doro-ai* is put in a jar (or plastic bucket), and water is poured up to about 70% of the jar, together with sugar in the form of starch syrup or glucose, alkalis such as wood lye and caustic soda, and awamori to adjust potential hydrogen (pH). After about one week to 10 days, microorganisms promote fermentation in the jar, and indigo components become leuco-indigo salt through ‘reduction’; then once the solution turns green, it’s a signal that it is ready to be used as dye.” (p. 732)

Ai-date at *Kuuru Koubou* is almost the same except caustic soda is not used. An oral tradition suggests that if a jar is placed under a *yuuna* or *oohamabo* (*Talipariti tiliaceum*) tree, indigo fermentation will accelerate, and the *ai-date* process is sometimes actually done after two days when the condition is good. Microorganisms in *yuuna* trees supposedly promote indigo fermentation.

▽ Fresh leaf dye

As quoted above, during the process of making *doro-ai*, indican in the leaves is hydrolyzed to produce a component called indoxyl. Cloth or thread that absorbs indoxyl can be dyed with indigo. This process is called 'fresh leaf



Kuru is finely chopped to make dye.



dyeing’.

At *Kuuru Koubou*, *ai-date* and ‘fresh leaf dye’ are common methods of indigo dyeing.

Using fresh leaf dye is easier than *ai-date*. Soak the branches and leaves of *shima-ai* in water, expose them to the blazing sun, and take them out after about 20 hours to make the dye solution. Soak cloth and thread in the solution then dry and expose to sunlight to produce a pale translucent blue color. It becomes a nice color under the strong summer sunlight of Iriomote. A different dye solution with a pale purple color is produced if leaves are boiled instead of soaked in water.

▽ *Kuuru* dye

Kuuru is a perennial plant, and is also known as dyeing yam or *Dioscorea cirrhosa* of the family *Dioscoreaceae*. Yaeyama is its northern limit, and it does not grow in the main island of Okinawa. It has been used as a typical plant dye of Yaeyama for a long time.

Kinsei gets *kuurus* that grow wild in the mountains behind *Kuuru Koubou*. He doesn’t dig up an entire *kuuru* that he finds, but instead leaves some behind. By doing so, *kuuru* grows again after a while. Cutting a largely grown *kuuru* reveals a vividly reddish-purple cross-section. Humans do not eat *kuuru*, but wild boars sometimes eat this yam.

Dye solution from *kuuru* can be made by chopping it into small pieces and boiling them. Dip cloth or thread in this solution to dye it. At *Kuuru Koubou*, such solution is boiled in brackish water.

After dyeing with *kuuru*, a dark color is fixed by soaking the cloth or thread in the broth of *ito-basho* leaves. In other words, lye mordanting turns it into a darker color.





Finely chopped *kuuru*.

Kuuru-digging is done during the hunting season, from November 15 to February 15 of the following year.

As dyeing is done during summer, *kuuru* needs to be stored until then. For that purpose, it is cut into chips and dried. Alternatively, freshly collected *kuuru* is grated and the liquid is stored in a bottle.

There is also a method of evaporating water from the liquid and converting it into a pigment for storage.

▽ *Fukugi* dye

In Yaeyama, *fukugi* is traditionally planted in a residence and is an integral part of the village landscape. It is characterized by a straight tree shape. It serves as a windbreaker, softening the strong winds of typhoons. In the summer, the leaves block the strong sunlight.



Fukugi bark.



Soaking in *fukugi* solution and dye.

The bark of an old *fukugi* tree that is over 100 years old is boiled to make a dye solution. Brackish water is used for boiling *fukugi*, as in the case of *kuuru*.

Fukugi bark can be obtained from fallen trees after a typhoon, or by partially peeling off the bark so as not to cause fatal damage to the tree. In the case of fallen trees, the bark is dried and stored for dyeing during summer. Freshly picked bark and branches produce better colors, so they are used for dyeing immediately after being peeled off.

▽ Mordanting

‘Mordant’ not only lets plant pigments permeate into fabric and thread, but it also promotes a reaction which binds metal ions to pigments, making the colors vivid and resistant to fading.

One of the mordants often used at *Kuuru Koubou* is lye-based and made from the ashes of burned plants.

The ashes contains various minerals that are found in plant tissue. The metals bind to the pigment when cloth or thread dyed with vegetable dyes is soaked in lye. The metal composition differs depending on the plant, resulting in different colors after mordanting.

Kuuru Koubou has been experimenting with what kind of plant ash to use to get the right color. For example, the following points were found from the results.

For *hirugi* dye, mordanting with *hirugi* would be suitable.

For *ai-date*, lye made from *akou* (*Ficus superba*), *yuuna* (*Talipariti tilaceum*), and *gajumaru* (*Ficus macrocarpa*) would be good.

When a pigment and iron combine, the color becomes blackish. One method



Hirugi grows at the waterfront where sea-bleaching takes place.

of iron mordanting is to put dyed cloth or thread in mud from a rice field. The iron in the mud of the rice fields binds to the pigments of the cloth or thread.

Iron mordanting can also be done within a few days by putting old nails in an acid solution such as vinegar.

Should *kuuru*-dyed cloth be further dyed with indigo, the color changes from gray to black, showing the depth of natural dyes.

▽ Sea-bleaching

Originally, *Yaeyama-jofu* and *basho-fu* went through the process called ‘sea-bleaching’, in which dyed cloth was soaked in the sea. However, in the Taisho period (1912-1926), under the guidance of an industrial engineer





Sea-bleaching *gumbou* made from silk and ramie in brackish water.

of the prefectural government, using potassium dichromate instead of sea-bleaching to fix the color was adopted (*Ishigaki City of History and Folklore, Volume I*, p. 716).

Reflecting on the growing awareness of pollution problems in the 1970s, some weavers found the method of using highly toxic potassium dichromate problematic. Under such circumstances, Akiko and Sachiko Aragaki, who were weaving *Yaeyama-jofu* in Taketomi Island at the time, worked together to research and revive the old sea-bleaching method to stop using potassium dichromate.

Given this background, at *Kuuru Koubou*, dyed cloth is taken to a nearby area with brackish water where *hirugi* grows and is exposed to the sea. Akiko remembers that her grandmother and her companions have said and shown “how cloth is born” through sea-bleaching.

Sea-bleaching binds pigments and minerals in seawater, especially magnesium, creating a color-fixing effect and preventing mold (reference to the research conducted by the Dyeing-Weaving Research Unit at Okinawa Prefectural University of Arts).

▽ *Gumbou*

In Yaeyama, a cloth woven using different materials for the warp and weft threads is called *gumbou*. It is woven mainly for home use using leftover yarns.

Many of them are made with cotton for warp and ramie for weft. Even today, *kimono* worn during festivals are often made from *gumbou*. In the past, *gumbou* was also woven by combining cotton and *basho* (*Ishigaki City History and Folklore, Volume I*, pp. 723-724).

Following this tradition, the basic theme of *Kuuru Koubou* is to explore the potential of *gumbou*. And given that *ito-basho* grows well in the climate of Iriomote Island, *basho* thread is among the key materials used in this pursuit.

Kuuru Koubou has also been working on sericulture to create raw silk, another key material that works well with *basho* thread. As such, *basho-gumbou*, which combines *basho* thread and raw silk, is emphasized at *Kuuru Koubou*.

Kuuru Koubou has experimented on creating various types of *gumbou* by combining *ito-basho*, ramie, and several kinds of raw silks.

▽ *Sudina*

‘*Sudina + kakan*’ was the basic form of traditional formal attire for Yaeyama women. These were classified for wearing during certain festivals and events depending on the material (cotton, ramie, silk, etc.) and color. *Kakan* corresponds to *hakama* in mainland Japan and has a skirt with pleats. *Sudina*, the upper garment, has slits on both sides of the hem and is fastened with strings in two sections. Unlike the *kimono*, it does not use an *obi* (belt) and does not constrict the body, so it is loose, has a comfortable fit, and is suitable for the climate of Okinawa.

However, since the Taisho period (1912-1926), more and more people have predominantly worn *kimono* in formal occasions. Before long, ordinary people in Yaeyama stopped wearing *sudina* and *kakan*. *Sudina* was worn only as a traditional dance costume.

In the 1990s, Chiaki Maki [born in 1960, thread, dye and weaving artist and researcher] and Michiyo Masago [born in 1947, a clothing designer] stayed at *Kuuru Koubou* from time to time while deepening collaborative relationships with Akiko. During this period, the revival of *sudina* became one of the common interests of the three.



Maapai sudina, pure silk. *Shima-ai* dyed.



Maapai upper garment, silk and ramie. *Kuuru* dyed.



Maapai Sudina, pure silk. *Akamegashiwa* (*Mallotus japonicus*) dyed.

The four photos on these two pages were provided by Maki Textile Studio.

Akiko used to make her own *sudina* and wore it for occasions such as community events. When Chiaki and Michiyo saw it they felt that *sudina* was quite fashionable and could be incorporated into modern clothing.

Before long, the three collaborated to launch a project with the brand name *Maapai*, which incorporates Yaeyama's traditional costumes in modern fashion. 'Sudina+kakan' became one the centerpieces of *Maapai*.

A year before *Maapai* was launched, Chiaki tried to introduce *sudina* to people in Tokyo by holding the 'Yaeyama Dance and *Sudina* Meeting' at the Maki Textile Studio's Minami-Aoyama shop.

Through the collaborative work of the three, *sudina*, which originated in Yaeyama, has been revived in Yamato. This caused a boomerang effect onto Yaeyama, helping promote the reinstatement of *sudina*. The number of people engaged in dyeing, weaving, sewing, and wearing *sudina* gradually increased in Yaeyama as more realized that *sudina* is clothing that can be worn daily.

Nowadays, more and more young people wear *sudina* during festivals and events, or even as daily attire. Akiko feels the powerful effects of clothing, which is neither Japanese nor Western, but rather Asian, with a Ryukyu identity embedded in it.



Maapai cloth. Kuuru dyed.



Akiha fabric screen (ramie and basho).

Iriomote Island *Kuuru Koubou* Symphony :

A leading Case for Coexisting with Nature and the Resurgence of Culture

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The Original Book

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