

The history of tabu powder as an ingredient in incense sticks and mosquito coils

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Introduction

Incense sticks and mosquito coils use a variety of ingredients.

Rather, binders (adhesives, binding agents) used to maintain the shape also play an important role as raw materials.

It accounts for a large portion. Among binders, tabu powder, made from the bark and branches of the tabu tree, is particularly important.

It can be said that it is a precious ingredient. The author is involved in the business of manufacturing and selling raw materials for mosquito coils.

In the process of compiling the company history of the company that has been around for so long, the importance of tabu powder in the incense and mosquito coil industry

I began to pay attention to sex (1) .

However, there are limited sources that mention tabu powder as a binder for incense sticks and mosquito coils.

It is not widely known, and there is very little research on it [Yokoyama 2013, Yamagata 2014].

Regarding this, literature has been compiled for each production area, but regarding the nationwide distribution and history...

However, it is difficult to say that the full picture is understood. On the other hand, regarding mosquito coils, the insecticide components

There are many documents concerning pyrethrum, which has played an important role in the history of the mosquito coil industry.

The discussion often revolves around pyrethrum.

Therefore, in this paper, based on the fragmentary literature I have collected so far, incense sticks...

This study aims to clarify the evolution of binders in mosquito coils and to consider the origin and purpose of incorporating tabu powder.

I'll try to understand.

Chapter 1: The History of Incense

Compared to kneaded incense and fragrant wood, the history of incense sticks is relatively recent. At the end of the 16th century, Li Shizhen of the Ming dynasty wrote "Bencao Gang" (Compendium of Materia Medica).

The book describes the manufacturing method of incense sticks. Incense sticks began to be manufactured in China around this time.

It is believed that [Yamada 1978]. There are also some unknown aspects regarding incense manufacturing in Japan.

There are many. It is believed that incense sticks began to be manufactured in Sakai and other areas in the first half of the 18th century.

[Yamada 1978, Aichi Prefecture Incense Wholesalers Association 2015]. Also, it was introduced from China in the mid-17th century.

The production of bamboo incense (incense sticks with a bamboo core) began in Nagasaki, from the late 17th to the early 18th century.

There is also a theory that, as a result, incense sticks without a bamboo core began to be made in Sakai and other places. [Bird

[Mao 2013] In any case, in the first half of the 18th century, stick-shaped incense without a bamboo core was being made in Sakai and other places.

It is believed that this has become the case.

Later, in the mid-19th century (late Edo period), Eiura on Awaji Island (present-day Hyogo Prefecture)

In Awaji City, incense production began with the invitation of craftsmen from Sakai [Hamaoka 1988, Hyogo Prefectural Tsu

Nagoya High School Social Studies Research Department 1961, Hoshino 1985]. In Imaichi, Shimotsuke (present-day Nikko City, Tochigi Prefecture)

However, the technology was introduced from Echigo (present-day Niigata Prefecture) in the late Edo period, and incense manufacturing began.

[Kuroiwa et al. 1980]. Thus, incense production began in various parts of Japan towards the end of the Edo period.

It began to be done. Incense production also began in the area around Tanabe in Kii Province (present-day Tanabe City, Wakayama Prefecture) in the late Edo period.

It appears that they were doing this [Ando 1993].

The "Prefectural Statistical Records" is a compilation of nationwide statistical data from the early Meiji period to the mid-Showa period.

When searching for "incense sticks" using the database, Miyagi Prefecture, Niigata Prefecture, Ishikawa Prefecture, Nagano Prefecture

Smell of Aichi, Mie, Osaka, Hyogo, Nara, Kagawa, Fukuoka, and Kumamoto prefectures

It appears that they were involved in the manufacture and sale of incense sticks. Currently, the manufacture and sale of incense sticks...

There are no comprehensive documents or studies on distribution, but as far as the author has confirmed,

In addition, incense is manufactured in various regions outside of those listed in the "Prefectural Statistical Database."

It is becoming clear that in the early Showa period, Sakai (Osaka Prefecture), Kyoto, Nara, and Awaji

Shima (Hyogo Prefecture), Kurume (Fukuoka Prefecture), and Yame (Fukuoka Prefecture) are considered to be production areas [Shigematsu et al.]

In 1936, other prominent production areas were also established, such as Nikko (Tochigi Prefecture) and the Nagoya area (Aichi Prefecture).

It was also seen in Ibaraki, Shizuoka, Wakayama, Okayama, Tokushima, and Shimane prefectures.

Family-run incense manufacturing businesses were in operation. However, after the war, small-scale incense manufacturing businesses were established.

The manufacturing process has been streamlined, and now about 70% of the incense sticks in Japan are manufactured on Awaji Island in Hyogo Prefecture.

It is as described [Aichi Prefecture Incense Wholesalers Association, 2015].

Chapter 2: Raw Materials and Manufacturing Process of Incense Sticks in the Mid-Showa Period

Various types of incense ingredients have been used depending on the era and region of origin. Here is one example:

To illustrate, records from the early Showa period show that "the raw material for ordinary incense sticks is mainly from the side business of forestry."

"The ingredients used are cedar leaf powder, tabu leaf powder (leaf powder), and tabu bark powder (true powder)," and "the fragrance is sandalwood and agarwood."

It is written that powders of incense, borneol, benzoin, licorice, and spikenard, as well as sawdust from camphor and cypress, are used. [Heavy

Matsu et al. (1936).

Currently, the ingredients consist of only the bark powder of the tabu tree, and there is a focus on the fragrance.

These are made by adding various fragrances, and are made using agarwood and kyara luxuriously.

Always high-end products, those with added color and function, wood-based raw materials hardened with synthetic glue and synthetic fragrances.

There are many types, including those made solely from [Torige 2013].

Some binders will be discussed later.

Regarding the incense manufacturing process, the names of the steps and other details differ only slightly depending on the region of origin.

They are almost the same. From the end of the Meiji era to the Taisho era, agitators and extruders

Although there were some changes in processing techniques after its introduction, the same manual methods continued until the mid-Showa period.

This has been done [Sakai City Economic Department, Commerce and Industry Division, 1963]. The current manufacturing process is basically the same.

[Torige 2013, Aichi Prefecture Incense Wholesalers Association 2015]. Here, as an example, Showa 38 (1963)

I will quote the section on raw materials from "The Incense Industry in Sakai City" (1963) [Sakai City]

[Economic Department, Commerce and Industry Division, 1963]. Note that the description of the process is a summary by the author.

• Storage of raw materials

- Blending of raw materials: Blend various raw materials.

- Sifting: Place the mixed ingredients through a simple sieve.

- Kneading: Rough kneading - Pour hot water over the ingredients and knead (Photo 1).

Refined raw materials

to several balls

Divide.

•Deep-fried egg

Tamakoi (a type of container) - The cooled balls are placed inside the container.

A container called a "kako"

Store in [location].

Cut the balls and put them into the extruder.

Cut into pieces that fit inside.

take.

- Extrusion

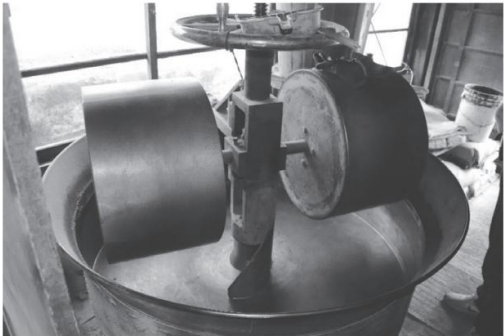


Photo 1: Mixing and stirring machine (Yame City, Fukuoka Prefecture, photographed in 2019)

The ball is placed into the extruder, compressed from above using hydraulic pressure, and then pressed against the bottom.

50 to 80 strands of dough are extruded through the holes in the copper pores, resembling somen noodles.

The dough is extruded and placed on a tray, then cut off with a spatula (Photo 2).

- Raw, arranged on a tray

Place the dough on a board.

Cut off both ends.

To be so.

Dry

- Bundling: Bundle incense sticks together and put paper on them.

Tie it together with a band.

·Package



Photo 2: Bon-kiri (Yame City, Fukuoka Prefecture, photographed in 2019)

Chapter 3: The History of Mosquito Coils

Mosquito coils first appeared during the Meiji era. Around 1885 (Meiji 18),

Pyrethrum was introduced from Europe and America, and pyrethrum was mainly cultivated in the Arida region of Wakayama Prefecture.

Cultivation began, and products using pyrethrum were developed (2) . Early Meiji 20s

Then, a powder made from dried pyrethrum flowers began to be produced, and incense manufacturers in Sakai

Incorporating this technology, a stick-shaped mosquito coil was prototyped. In the late Meiji period, the burning time was...

To make them longer, spiral-shaped mosquito coils were invented. However, during the Meiji era, pyrethrum was used.

The company primarily manufactured and sold powders and flea repellent powders, and the full-scale production of mosquito coils began during the Taisho era.

It was around that time. In the Arida region of Wakayama Prefecture, around 1920 (Taisho 9), several pyrethrum growers...

The company was incorporated and began full-scale production of mosquito coils. [Morikawa 1966, Arita City History]

[Collection Committee 1974, Imperial Court 2002, etc.] Subsequently, the manufacture and supply of mosquito coils expanded.

Even in the early 1960s, Wakayama Prefecture accounted for over 80% of the national production value of mosquito coils.

[Ogawa 1970]. From the 1960s to the 1970s, major companies put a lot of effort into advertising.

Pharmaceutical companies began selling incense sticks, and exports of not only incense sticks but also incense manufacturing machines and raw materials became active.

It was introduced. However, from the 1970s onward, various insecticides and mosquito coils appeared.

Due to overseas manufacturing and other factors, domestic production of mosquito coils is on the decline.

Chapter 4: Raw Materials and Manufacturing Process of Mosquito Coils in the Early Showa Period

The manufacturing process for mosquito coils is similar to that of incense. In particular,

From the early Showa period to the early Showa era, they were almost the same. (The text then describes the process of making spiral-shaped mosquito coils.)

In that case, the only difference was that the final step involved manually creating a spiral shape.

Ta.

During the Taisho era, the Wakayama Prefectural Internal Affairs Department investigated the pyrethrum industry and discovered the manufacture of mosquito coils.

The process is also mentioned, but the description is brief. [Sakiyama 1913, Wakayama Prefectural Internal Affairs Department]

[1925] As for a compilation of raw materials and manufacturing processes during the Taisho era, there is the Ministry of Home Affairs' Hygiene Testing Laboratory.

There is a document compiled by Tatsuo Karikome [Karikome 1925]. The relevant section is quoted below (copy).

True 3).

How are mosquito coils manufactured?

Therefore, the method and raw material composition will be determined by each manufacturing plant.

It's a secret and everyone is different, but the general idea is

The principle is extremely simple. That is, the principle is as follows:

Mix the ingredients, pour in hot water and knead thoroughly, then

It is then placed in a press and squeezed out in a linear fashion.

Cedar powder (dried and powdered cedar leaves)

Pyrethrum powder

Pyrethrum stem powder (made from the stems and leaves of the pyrethrum plant)

thing)

Tabu flour or fresh gluten

Cedar powder is made by drying and grinding cedar leaves, and because it contains volatile oils, it aids in combustion.

It is an ingredient that is always included in incense for Buddhist altars, but is not added to mosquito repellent incense.

There is also the powder called "tabu powder," which comes from the camphor tree (also known as yabunikukei).

It is made from the powdered bark of a plant and contains a large amount of mucilage, and is used as a binder to solidify incense sticks.

When using raw gluten paste as a substitute, the incense sticks become harder and less likely to break, which is very good, but fire

Because it doesn't light easily and the smoke has a slightly burnt smell, tabu powder is used for high-quality products.

To dye it, a dye called malachite green (green bamboo) is used.

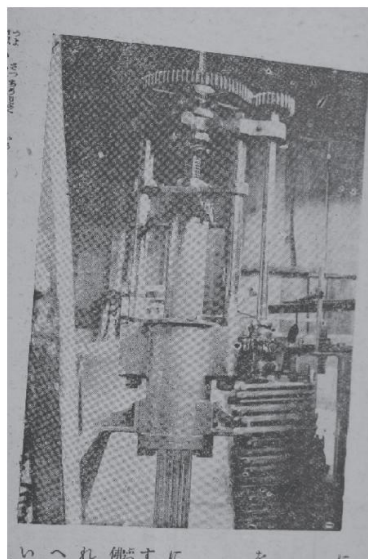


Photo 3: Rice harvesting report published in "Science Knowledge" (photograph of a mosquito coil press/extruder)

From the text on harvested rice, it appears that not only pyrethrum, which is an insecticidal ingredient, but also the entire raw material for mosquito coils.

The image is clearly visible. It can also be seen that tabu powder was used as a binder.

Furthermore, at the beginning of the issue of "Science Knowledge" in which this text is published, it says, "The raw material for mosquito coils is white

A frontispiece photograph titled "Cultivation of Pyrethrum in Arida District, Wakayama Prefecture."

The article shows a woman picking pyrethrum flowers, and a man carrying the picked pyrethrum flowers on a pole.

The scene of them transporting the goods has been photographed (Photo 4). The men are wearing the trademark shown above.

This is a happi coat from Yamahiko Pyrethrum Co., Ltd., which had the logo on it. At the time, Yamahiko Pyrethrum was a major manufacturer of mosquito coils.

It was an incense company [Sanwa Insecticide Company History Compilation Committee 2019]. Tatsuo Karikome was Yamahiko

It's possible that the article describes findings from a study using pyrethrum.

Also, in 1931 (Showa 6),

Kado Insecticide Industry Co., Ltd. (present-day Kishi, Osaka Prefecture)

Masakazu Fujiwara of Wada City, Hatacho, said "Mosquitoes and

The "General Manufacturing Method for Incense and Pyrethrum Products"

Published the raw materials and manufacturing method of mosquito coils.

The laws and manufacturing machinery are introduced in detail.

[Fujiwara 1931]. Among these,

The following sentence is included.



Photo 4: Frontispiece photograph from "Science Knowledge" (Pyrethrum field in the Arida region of Wakayama Prefecture)

The main ingredient in mosquito coils is pyrethrum powder, which makes up about 70% of the total weight in high-quality coils.

This accounts for 30%, and the remaining 30% consists of viscosities, colorants, and other substances added to provide adhesiveness.

The amount of coloring agent is extremely small, not exceeding 5/1000 of the total amount, and in addition to this, antifungal agent

For the purpose of ignition, or to improve ignition, appropriate substances are mixed together (continued below).

Since the Meiji era, the raw materials for mosquito coils have undergone repeated trial and error, and there are differences between manufacturers.

There was a discrepancy. However, pyrethrum, which contains the insecticidal component pyrethrin, is essential.

It was the most important raw material, accounting for approximately 70%. The next most important ingredient after pyrethrum was the binder.

This is the case. The binder will be discussed later, as it is the central theme of this paper.

The manufacturing of mosquito coils underwent a major transformation in the 1940s. One of these was,

The spiral incense stick punching machine, invented in the 1930s, was introduced on a large scale.

Yes. Another is the development of synthetic pyrethroids, which are manufactured using chrysanthemums as the main raw material.

The point is that mosquito coils, which were once made using natural ingredients, are now manufactured using chemically synthesized materials.

However, even after synthetic pyrethroids came into use, as a raw material,

Drugs and expanders were necessary.

In the late 1970s, chemical glues such as alpha-starch became widespread, and cheap

The era arrived in which raw materials could be procured stably. The raw materials for mosquito coils today are mixed

In addition to pyrethroids, it contains alpha-starch, coconut flour, wood flour, pyrethrum meal flour, Siam flour,

They use ingredients like tabu powder. Pyrethrum meal powder is not added as an insecticide, but rather to the wood

It is added as a bulking agent along with flour, coconut flour, etc. Alpha starch and Siam flour are

It is used as a binder, similar to tabu powder. [Sanwa Insecticide Company History Compilation Committee]

[Meeting 2019].

Chapter 5: Tabu Powder Used in Incense Sticks and Mosquito Coils Section 1: Tabu Bark

Powder and Leaf Powder

Before tracing the evolution of the use of tabu powder as an ingredient in incense and mosquito coils, let's look at the differences between bark powder and leaf powder.

I would like to summarize the differences. Many documents refer to it as tabu powder, but

More precisely, it can be divided into bark powder and leaf powder (Photo 5). Bark powder is mainly used for incense sticks, and leaf powder is used for...

It has been mainly used in mosquito coils.

Regarding the classification of tabu powder, Showa

In 1936, the first Tabu flour was produced in southern Kyushu.

The report by Shigematsu et al., which summarized the production,

Detailed information [Shigematsu et al. 1936]. Tab powder

These are called "Machilus thunbergii leaf powder" and "Machilus thunbergii bark powder".

There are two types, "(original powder)" and "(original powder)", and they are distinguished as such.

As for the production area, "Machilus bark powder is mostly produced in nine regions

Produced in the province region, especially in Osumi, Kagoshima Prefecture.

The two regions of Miyazaki Prefecture, Oita, and Kumamoto are well-known for their tabu leaf powder. In addition to the two regions mentioned above, the Yame region of Fukuoka Prefecture and Kumamoto are also known for their tabu leaf powder.

From the Kumagawa River basin in Tokushima, Wakayama, and Shimane prefectures, "Cedar leaf powder is from the Yame region of Fukuoka Prefecture and Wakayama Prefecture."

It states, "From Yamagata, Hyogo, and Tochigi prefectures." In addition, it says, "Taiwanese flour or Chinese flour is different from Taiwanese flour."



Photo 5: Collected leaves of the Machilus thunbergii tree (Yame City, Fukuoka Prefecture, photographed in 2019)

It is a bark powder from the *Machilus thunbergii* trees in the Gulf or southern Qing dynasty regions, and is extremely viscous compared to those from inland areas.

"The tree species used for bark collection are *Machilus thunbergii*, *Quercus acuta*, *Quercus dentata*, *Quercus serrata*, and *Quercus dentata*."

Ki and others are used, and Taiwanese flour ingredients include Taiwanese ohoba tabu, ohoba tabu, and Taiwanese tabu.

And among them, Niohitabu is the most highly valued." In the case of bark powder, the same tab

Not only were they distinguished from each other, but it seems that the bark of similar trees was also used.

Shigematsu et al. also describe the differences in usage between the bark powder and leaf powder of the *Machilus thunbergii* tree.

"Incense made from *Machilus thunbergii* bark powder (called honko) is considered a high-quality product and is used for burning incense before Buddhist altars, and is also used as powdered incense."

That is, the powder is rich in aroma and emits a very strong fragrance when smoked, and when kneaded with water it becomes viscous.

It is rich in nutrients and has properties such as absorbing and retaining the aroma of added fragrances, and is therefore considered a high-grade raw material.

It states that it meets the following conditions, and that bark powder is a higher quality ingredient, and the main powder and

It also mentions that it is called by this name. The name "honko" is probably more accurate than "tabu leaf powder".

This seems to indicate that the bark powder is the original material.

Furthermore, based on their research into the bark powder and leaf powder of the *Machilus thunbergii* tree, Shigematsu et al. found that "a certain

This shows an example of a formulation that a manufacturer can adopt.

For incense used in graves, use 8 parts cedar leaf powder and 2 parts *Machilus thunbergii* leaf powder. For incense used in Buddhist altars or brothels, use 4 parts cedar leaf powder and *Machilus thunbergii* leaf powder.

Three parts bark powder, three parts *Machilus thunbergii* leaf powder. For Buddhist altar incense, use seven parts *Machilus thunbergii* bark powder and Taiwanese flour (or Chinese flour).

0.7 *Machilus thunbergii* leaf powder 1.4, fragrance 0.4. Mosquito coils contain *Machilus thunbergii* leaf powder 3, pyrethrum powder 4.5

A ratio of 2.5 parts mixed flour

Distinguishing between the types of incense from the early Showa period, each with a different proportion of raw materials, and the high price

Many incense sticks use *Machilus* bark powder, while inexpensive incense sticks and mosquito coils often use *Machilus* leaf powder.

This indicates that it is widely used.

Section 2: Binding agents in the Edo period

In Li Shizhen's "Compendium of Materia Medica" from the Ming Dynasty, it is stated that various kinds of spices are mixed with elm bark powder as a binder.

It is written that they mixed it to make incense sticks. In the mid-19th century (late Edo period in Japan),

There are also records indicating that the production of *Machilus* bark powder was thriving in Taiwan. [Kinpei]

[1918] However, there are not many old documents remaining in Japan concerning the binders used in incense sticks.

Yes. For now, in volume four of the "Kýhý Bussanshi," which is thought to have been compiled in the first half of the 18th century, there is a "Ta

I found a description that read, "This bark is often used in vulgar incense," under the name "Tabu."

It was only to that extent (3) . In addition, the forestry records of the Hitoyoshi Domain in Higo Province from Bunka 14 (1817)

There is a description of "tafu powder" on crabs [Kumamoto Oobayashi District Office, 1922], An'ei 7 (1778)

It is also known that "powdered incense" was traded in Tanabe, Kii Province, during the late Edo period (according to "Tanabe Town University")

The "Records" dated August 11, 1778, etc., have been confirmed. The bark powder of the Tabu tree was used as an ingredient for incense sticks.

It can be inferred that it was used, but the details are unknown. Furthermore, during the Edo period...

No records have been found regarding the production of leaf powder from the Tabu plant.

Section 3: Production of *Machilus thunbergii* leaf powder in the Meiji era

In the late Meiji period, tab was used as an incense ingredient in Fukuoka, Wakayama, and Mie prefectures.

It can be confirmed that leaf powder production was taking place. However, in all regions,

During the Chiji era, the main focus was on the production of cedar powder as an ingredient for incense sticks, and the production of tabu powder was small.

Yes, there was [Fujii 2021b]. Furthermore, the production of tabu powder and cedar powder as incense raw materials was powered by waterwheels.

Using force (turbine waterwheels became widespread from the early Showa period onward), the pestle (pounding mill machine) was moved to produce flour.

The basic process involved making the following (Photo 6).

The aforementioned report by Shigematsu et al. included tabs.

The following description is given regarding leaf powder:

[Shigematsu et al., 1936].

The leaves of the *Machilus thunbergii* tree are used as an ingredient in incense.

It became like "raruru" in the early Meiji era.

This began in Yame District, Fukuoka Prefecture.

It was claimed that it was made from cedar powder.

The amount used is extremely small compared to that.

It existed, but it was merely a paste that added viscosity to the cedar powder raw material, but in the Meiji era...

Around 1923, mosquito coils were invented, and since then their use has increased dramatically, and currently they are found in Kyushu and other regions.

This area serves as a supply center for the nationwide demand for Tabu leaf powder. In his cedar powder incense production...

Traditionally, cloth starch or certain medicinal herbs have been used as a thickening agent, but these are expensive.

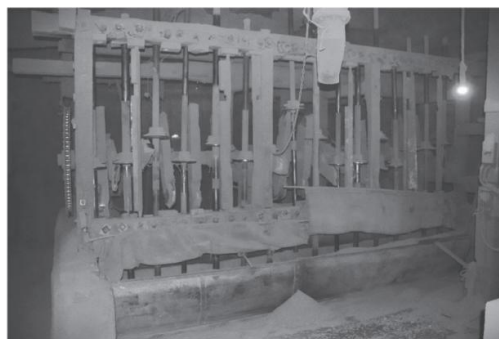


Photo 6: Tabu flour being milled using a mortar and pestle (Yame City, Fukuoka Prefecture, photographed in 2019)

Also, since incense sticks are too hard and easily break, they can be substituted with machilus leaf powder.

Since then, not only have these two points been completely addressed, but as an additional benefit, incense sticks have also been added.

This includes increasing the capacity of the fuel and extending the burning time.

According to Shigematsu et al., while bark powder has been used, leaf powder has been used since the early Meiji period.

It was developed in this way, and initially, the amount used was only enough to give the cedar powder a thickening agent.

However, once it began to be used as an ingredient in mosquito coils, the production of *Machilus thunbergii* leaf powder increased dramatically.

It is said that the invention of mosquito coils is said to have occurred around 1890 (Meiji 23), but

As mentioned earlier, full-scale production began from the late Meiji period to the Taisho period.

Shigematsu and others suggested that leaf powder was not simply used as a substitute for bark powder.

Furthermore, it also mentions that it has many advantages compared to other adhesives.

However, tabu powder wasn't originally used as a binder for mosquito coils.

Since the 1880s, various prototypes of mosquito coils have been made in different regions.

Among them, some mixed in powdered bark or leaves of the *Machilus thunbergii* tree. For example, Meiji

Yataro Mizushima, who filed a patent application in 1924 and obtained the patent in 1902, was the originator of "insecticides".

The ingredients are: pyrethrum (3 kanme), rhubarb root (500 monme), corn sprouts (500 monme), pine needles (1 kanme), and machilus bark (4 kanme).

It is written that "700 monme and 300 monme of Tabuno leaves are each made into powder and mixed" [Fujiwara 1931].

Numerous prototypes were made, but Mizushima's mosquito coil never became widespread.

It seems so.

Section 4: Use of *Machilus thunbergii* leaf powder in the Taisho era

The production of both the bark powder and leaf powder of the *Machilus* tree began to expand during the Taisho era.

During the Taisho era, the production of tabu flour began to expand rapidly in Kagoshima, Miyazaki, and Kumamoto prefectures.

Flour mills (using steam infuser) were installed [Fujii 2021b]. This was mainly in Kyushu during the Taisho era.

One factor contributing to the expansion of tabu powder production is the increased demand for tabu bark powder, which is used as an ingredient in incense sticks.

For example, on Awaji Island in Hyogo Prefecture, the use of *Machilus thunbergii* bark powder began in the early Taisho period.

This has come to be the case [Hamaoka 1988]. However, this is only in terms of the amount used as a binder for incense sticks.

Therefore, it is unlikely that this led to a nationwide increase in production. As reported by Shigematsu et al.

[Shigematsu et al. 1936] A major factor in the expansion of tabu powder production was the rapid development of the mosquito coil industry.

This is thought to be because the amount used increased dramatically due to the exhibition (4) .

However, in the early Taisho era, tabu powder was not yet widely used as a binder for mosquito coils.

It seems so. In 1913, the Wakayama Prefectural Internal Affairs Department published "Insecticide of Kishu".

In the book "Chrysanthemum," under the section "Method of Crushing Stems and Leaves and Its Uses," there is a section titled "Reference" which includes "Method of Manufacturing Mosquito Repellents and Incense Sticks."

This is discussed in [Sakiyama 1913].

The method for making mosquito repellent and incense involves adding smoked materials such as stem and leaf powder, wheat flour, and sawdust to second-flush mosquito repellent and then shaping it into long, thin strips of paper.

It is placed in a bag and lit at one end. Its shape is like the ash in a hand warmer. It is also kneaded with seaweed.

Combine the ingredients to make incense sticks. Adding a small amount of high-quality pyrethrum powder at this stage will make it even more effective.

And thus attain refinement. (Eiichiro Ueyama, Hota Village, Arita District)

Eiichiro Ueyama was involved in the cultivation of pyrethrum in the Arita region from its initial introduction and promoted its cultivation.

Furthermore, they were among the first to develop mosquito coils, and in 1919 (Taisho 8), they established Dainippon Jochugiku Co., Ltd.

He is the person who founded the company (commonly known as Kincho). According to this document, Eiichiro Ueyama's place

In summary, it appears that tabu powder was not yet used as a binder in the early Taisho period.

Also, in 1925, the Wakayama Prefectural Internal Affairs Department published "Reference Materials for Side Jobs."

The "Survey on Pyrethrum" includes, for reference, information on the status of mosquito coil manufacturing in Okayama Prefecture.

[Wakayama Prefectural Internal Affairs Department, 1925]

The composition of the raw materials used in this product is a closely guarded secret, and if you were to reveal it

Not disclosing the formula among fellow professionals would be tantamount to giving weapons to the enemy, so the proportions of the formula should never be revealed.

Although not announced, the unselected pyrethrum and some stem and leaf powders are used in the preparation of the cassia seed powder (mountain cinnamon and oak).

This is a mixture of powdered leaves of the Japanese cinnamon tree (which is rich in viscosity) and other ingredients.

The glue is usually made from pyrethrum raw materials in a ratio of 15% to 20%.

Here too, although tabu powder is not explicitly mentioned, Shigematsu and others listed it as bark powder.

Cinnamon is used as a starch. (Note: This refers to a flour mill in the Kozagawa River basin in Wakayama Prefecture.)

Then, around the Taisho era, they experimentally cultivated Japanese cinnamon at the request of a mosquito coil company.

It seems that the mosquito coil company was experimenting with using glue powder as an adhesive.

Frog [Fujii 2021c].

It is unclear when each mosquito coil company started using tabu powder.

(5) In the first place, there are hardly any historical records remaining for companies other than the major companies that still exist today.

Furthermore, during the founding period of the mosquito coil industry as a whole, companies each had their own blending ingredients and distribution methods.

The fact that they were experimenting with different ratios and therefore did not want to disclose their own data also played a role.

It seems so. However, as mentioned earlier, the document on harvested rice from 1925 (Taisho 14) contains the phrase "Ta

The use of rhynchohylla leaf powder is mentioned, and in the "General Manufacturing Method for Mosquito Coils and Pyrethrum Products" of 1931 (Showa 6)

Considering that they highly valued *Machilus thunbergii* leaf powder as the most suitable adhesive, it seems that this was during the latter half of the Taisho era.

It began to be used by some mosquito coil companies in Wakayama Prefecture, and in the early Showa era, other companies in the same industry...

The value of Tabu leaf powder was also recognized, and it became an indispensable binder in the manufacture of mosquito coils.

It is believed that they were there.

Section 5: The spread of production and use of tabu flour in the early Showa period

In the early Showa era, the use of *Machilus thunbergii* leaf powder as a binder rapidly increased in the mosquito coil industry.

It seems to have become widespread. The "General Manufacturing Method for Mosquito Coils and Pyrethrum Products" from 1931 (Showa 6) states that mosquito coils are used.

There is a section that describes in detail the adhesive used in incense sticks [Fujiwara 1931]. According to this,

This suggests that *Machilus thunbergii* leaf powder was considered important in the mosquito coil industry at the time.

As mentioned earlier, Masakazu Fujiwara, who compiled the "General Manufacturing Method for Mosquito Coils and Pyrethrum Products,"

Currently, in Kishiwada City, Osaka Prefecture, they operate a mosquito coil manufacturing company called Kohkado Insecticide Industry Co., Ltd.

He was that kind of person.

To quote a portion of "Part Two: Raw Materials" and "Chapter Two: Viscosities," it states: "Other than pyrethrum powder."

The most important component is the viscosity. If the viscosity is of poor quality, the viscosity will be weak, making the work difficult.

Therefore, if a large amount is used to increase viscosity, the amount of pyrethrum powder, which is the main component,

Because it naturally deteriorates and reduces the insecticidal effect of the product, we use the highest quality viscosity possible.

It should be used," he said, adding, "Currently, the most important viscous material used in incense manufacturing is..."

The main ingredient is Tabuno flour, but other ingredients include Taiwanese flour, Asarum root, and Asarum.

Furthermore, under the heading "Tabu flour," the following is written:

Tabunoki (Tabu tree): The Tabunoki tree (Var. *Jaucescens*) is found in parts of Shikoku and Kyushu in Japan.

It is an evergreen tree belonging to the camphor family that grows naturally in warm regions such as Ryukyu and Taiwan, and its trunk height is

It reaches 40 to 50 feet, and its leaves are long obovate or oblong, thick, and narrow at one end.

It continues onto the petiole. The leaves are glossy. "Inugusu" "Inugusu" Machilus,

It is a variety of Thunbergii. Tabu powder is made from dried and powdered leaves of the Tabu tree.

When mixed with hot water, it becomes viscous, making it ideal as a viscous for mosquito coils.

The thin bark of twigs and other small branches, when crushed, produces a sticky substance and is used under the name "Taiwanese flour," and the thickness of the tree trunk

The bark is similarly ground and used as an ingredient (not a thickening agent) in incense sticks under the name "genko" (true powder).

To be caught.

Furthermore, under the entry for "Huangshu root," it states, "According to the author's experience, compared to the first Machilus thunbergii powder..."

It is expensive, contrary to the patent terms, prone to mold growth, and shrinks during the drying process of the incense sticks.

Because it causes significant problems, it is difficult to ignite and can cause the flame to go out prematurely, among other disadvantages, making it impractical.

It states that "In terms of value, it is far inferior to Tabuno flour." Regarding Taiwanese flour, it states that "Taiwanese flour is

As mentioned in the section on Tabuno powder, it is made from the thin bark of the Tabuno tree, and is used as a high-quality incense thickener.

It is used, but not so much in inexpensive incense or mosquito coils.

Products using Taiwanese flour as a thickening agent shrink significantly during drying, and also during manufacturing, they can cause problems with the production of incense sticks.

It states, "The ground becomes soft and difficult to handle." Furthermore, regarding other binders,

"Besides the above, there are other thickeners such as rice flour, wheat flour, gum arabic, and seaweed."

However, these all have a strong tendency to stick to other things, which makes them inconvenient to use. (Referring to the adhesive used in incense sticks.)

Therefore, it must be a substance that contains the raw materials within itself and does not adhere to other substances.

It also says, "Yes."

In the early Showa period, Tatsuo Karikome of the Ministry of Home Affairs' Sanitary Testing Laboratory also spoke about tabu powder at the Dai Nippon Forestry Association.

He left valuable testimonies in publications such as the journal "Sanrin". As mentioned earlier, the harvested rice was harvested in 1925 (Taisho 14).

He was the person who wrote the report on mosquito coils [Karigome 1925].

"Medicinal Plants Growing Wild in Mountains and Fields," published in the September 1931 issue (No. 586) of the journal "Sanrin" (Mountain Forest).

The following sentence is found within it [Karimai 1931a].

Machilus thunbergii is a tall tree of the camphor family that generally grows in warm regions, and its bark is made into a powder.

It is called tabu powder and is an indispensable ingredient in the manufacture of incense sticks.

It is used as a binder. In mosquito coils and similar products, powdered leaves of the *Machilus thunbergii* tree are actually used.

Currently, it is mainly supplied from Fukuoka Prefecture, Miyazaki Prefecture, Wakayama Prefecture, etc. Inexpensive incense sticks

For the lower grades, this is not used; instead, raw gluten paste is used, but for the medium grade and above, this is always used.

There is a considerable demand for it. When water is added to the tabu powder and stirred, it produces a viscous mucus.

The *Kadsura japonica* used to straighten women's hair is a related plant native to China.

Another ingredient consumed in large quantities as a raw material for incense is powdered cedar leaves.

It is called "gi powder" and is used as an ingredient in incense for Buddhist ceremonies.

It was also mentioned in issue 76 of the "Kinokuni Sanrin Jiho," the official journal of the Wakayama Prefectural Forestry Association, published in September 1931.

The exact same text is published in [Karigome 1931b]. Also, in the November 1933 issue of Shizuka

The same article is also published in issue 168 of "Forestry," the journal of the Okayama Prefectural Forestry Association [Karimai 1933].

In the early Showa period, forestry associations in each prefecture encouraged the cultivation of special tree species and special forest products,

It is likely that potentially useful articles were reprinted in the journals of each prefectural forestry association.

The July 1932 issue (No. 596) of "Sanrin" contains information about an event held in Akasaka, Tokyo in February of the same year.

The second roundtable discussion on promoting the cultivation of special tree species is included, and in this discussion, the topic of harvested rice is discussed.

He also made comments about Tab [Karigome et al. 1932a].

Almost the same article is published in issue 83 of the "Forestry Times" [Karigome et al. 1932b]. The following is from "Mountain

The following is quoted from Hayashii, issue 596.

Then there's the *Machilus thunbergii* tree, which isn't directly used as medicine, but is related to medicinal purposes.

Yes, it's used as a binder and adhesive for incense sticks. It's a cheap ingredient, costing about one sen per stick.

The incense is made by hardening powdered cedar leaves with gluten paste, but when you burn it, it smells burnt.

It smells bad, and it hardens too much, causing the incense stick to go out.

It breaks easily. However, incense sticks that use the bark of this *Machilus thunbergii* tree as a binder do not emit any odor when burned.

Because it has the advantage of not going out prematurely, high-quality incense sticks are made from the bark of the *Machilus thunbergii* tree.

We use a powder. This is called tabu powder. This is mainly found in Kyushu, especially in Miyazaki Prefecture.

So, they make charcoal from the *Machilus thunbergii* tree, and as a by-product, they peel the bark and sell it on the market.

Yes. For example, Kyukyodo in Kyoto uses it quite a lot, but all of it is from Kyushu.

In the production area, it is classified into three grades, with the bark above the soil, that is, from two ken (approximately 3.5 meters) or more from the base, being called "true bark."

And this is the most expensive, costing about 10 yen for 10 kanme. That's because it contains the most mucus.

Yes. The middle section is specially made and costs about 10 kanme 8 yen. The part with less mucus at the base is the main section.

It costs about 10 kanme and 6 yen. That's how the bark is used as an ingredient for incense sticks.

However, powder made from the leaves of the *Machilus thunbergii* tree is also used, and this is called starch powder, which is an even cheaper alternative.

For example, when binding mosquito coils, the powdered leaves are used exclusively. This is the powdered bark.

It's about half the price.

This statement by Kari-gome was made in response to the question "Forest medicinal plants" by the moderator of the Japan Forestry Association, who said "skin

This was in response to the request for "cutting." Karikome was a doctor of pharmacy, and during the Taisho era...

We have been researching medicinal plants since the 1st generation. Therefore, as mentioned above, "medicinal plants that grow wild in the mountains and fields"

Similar to "plants for use," this statement was made within the framework of medicinal plants. However, in the early Showa era...

During that period, the Great Japan Forestry Association and local forestry associations took the lead in promoting palm tree cultivation as a side business for agricultural and mountain villages.

This was a period when the cultivation of special tree species such as wax tree, lacquer tree, and chestnut was recommended. *Machilus* bark powder...

The fact that leaf powder was being considered an important source of supplementary income in rural areas and that its production was beginning to be encouraged

It can be inferred.

To summarize the above two points regarding harvested rice, the bark powder and leaf powder of the *Tabu* tree are used for different purposes.

The fact that bark powder is more expensive, that there are different grades of bark powder, and mosquito coils

It's clear that the fragrance comes from using leaf powder, among other things.

Subsequently, in "Special Use Forest Products and Forest Product Processing," published in 1937 (Showa 12), it states: "Part 1"

In "Physical Uses and Special Products of Wood and Bamboo Materials," under "Chapter 4: Tree Bark," there is a section titled "Incense Sticks and *Machilus* Trees."

The item "skin" is listed [Sonobe et al. 1937]. This item was introduced in "Forestry".

It was compiled based on the writings of Tatsuo Karikome.

As described above, in the early Showa period, not only mosquito coil manufacturers, but also the Dai Nippon Sanrinkai (Great Japan Forestry Association) and various

The local forestry association was conducting awareness campaigns regarding the use of *tabu* powder. The Great Japan Forestry Association released

In the Forestry News, there was a segment titled "Utilization of the bark and leaves of the *Machilus thunbergii* tree" (broadcast on April 12, 1936) [Dainichi].

Motoyama Forestry Association, 1936] "Manufacturing of Incense Raw Materials as a Side Business in Agricultural and Mountain Villages" (Broadcast April 16, 1940) [Large

The Japan Forestry Association (1940), among others, was mentioned. The former is mentioned in the report by Shigematsu et al., which will be discussed later.

While briefly introducing the region (production area and production value), it mentions Ryumon Village, Kikuchi District, Kumamoto Prefecture (present-day Kikuchi City)

The establishment of a mill for the leaves of the *Bu* tree was also mentioned, and it was stated that "it has had a positive impact on the economic recovery of the village."

The latter refers to the production volume of tabu flour and cedar flour in the Yame region of Fukuoka Prefecture.

This section provides a brief introduction to the frame. The main destinations for tabu flour and cedar flour are Okayama, Hyogo, and Wa.

In Wakayama and Osaka, around 1939, tabu flour was about 3.6 times the price of cedar flour, and "export"

Due to the booming market for pyrethrum incense and other products being offered for sale, there is a very high demand for Tabuno powder, resulting in a shortage of raw materials.

In the early 1930s, the demand for tabu powder as an adhesive for mosquito coils increased dramatically.

Against this backdrop, the production of tabu flour in the Yame region increased, causing prices to soar.

This suggests that, in the cases the author is aware of, the raw materials for incense sticks have been milled since the Meiji era.

In the flour mill (sprung water mill) in the Kozagawa River basin of Wakayama Prefecture, cedar flour was used until around the mid-Taisho period.

Production was the main focus, but from the end of the Taisho era onwards, the production of tabu flour began to increase, and in the early Showa era...

Tabu flour was the main ingredient [Fujii 2021c].

In 1936, when tabu flour was attracting attention, a major production area for tabu flour was established.

A report from Miyazaki Prefecture was published in issue 640 of "Sanrin," the journal of the Dai Nippon Forestry Association.

This is a report titled "Manufacturing of Machilus thunbergii Leaf and Bark Powder for Incense Sticks," compiled by Yoshinori Shigematsu and others at Miyazaki Higher School of Agriculture and Forestry.

[Shigematsu et al. 1936]. As far as the author has investigated, this is the most detailed information regarding tabu flour.

As it is something that has been written, this report has already been frequently cited in this paper.

This report was compiled based on a survey primarily conducted in Miyazaki Prefecture, with the aim of serving as a reference for encouraging side jobs in mountain villages.

It was like that.

Around the same time as Shigematsu and others, in 1937 (Showa 12), the Kagoshima Prefecture Oonejime Forestry Office was located in Kimotsuki, Kagoshima Prefecture.

We investigated the flour mill of Ikuma Miura in Kawakita, Nejima Village, Gun-Osumi Town (present-day Nejima Kawakita, Minami-Osumi Town), and

This report [Kumamoto Forestry Office, 1938] details the production status of the powder. This report also states that "the bark is for use by Shinto priests and Buddhist deities."

This is the so-called "original powder" used as an ingredient for incense sticks, and it is classified into three types according to its quality. ̳

Type A has thin bark, is a young log, and is common in the Oita Prefecture region. ̳ Type B has thick bark, and production volume

The most common is [unclear]. The production areas are Kimotsuki District and Kumage District in Kagoshima Prefecture, and Nishimorokata District and Minaminaka District in Miyazaki Prefecture.

̳ Type C is harvested from old trees and is of lower quality compared to ̳ and ̳. "The leaves are used as raw material for mosquito coils."

It is a substitute ingredient for what is commonly known as "nori powder."

Thus, in the early Showa period, the production of tabu powder became active, mainly in Kyushu, and Dai Nippon Sanrin

The association and various local forestry associations were conducting awareness campaigns regarding the use of tabu powder.

In the mosquito coil industry, which developed rapidly from the late Taisho period to the early Showa period,

The value of tabu powder as a pharmaceutical agent has increased, and demand for tabu powder has become active throughout the country.

It was a problem. A mosquito coil company in Wakayama Prefecture had to travel all the way to Kyushu to buy tabu powder.

However, some people have even moved there and started milling flour [Fujii 2021b].

On the other hand, although there are not many historical records, tabu powder was also important as a binder for incense sticks.

According to records from Awaji Island in Hyogo Prefecture, the item containing glue was listed in 1937 (Showa 12).

Chinese powder, special paste powder, paste powder, premium Taiwanese powder, Taiwanese powder, Chinese powder from Showa 13 (1949), special paste powder

Special grade Taiwanese flour, Taiwanese flour, Chinese flour in 1939, special paste flour, special grade Taiwanese flour, Luo paste flour, toi

The name can be confirmed [Hamaoka 1988]. Based on current incense manufacturing and incense from Sakai in the mid-Showa period.

Based on this, it can be inferred that the special starch is made from *Machilus thunbergii* bark powder, and the regular starch is made from *Machilus thunbergii* leaf powder.

The use of bark powder from the *Machilus thunbergii* tree grown in Kyushu began in the early Taisho period, and

Until then, cedar was mainly used [Hamaoka 1988].

In the case of cedar incense sticks, it seems that the use of tabu powder was originally limited.

In particular, there were not many wild *Machilus thunbergii* in eastern Japan, and until around the early Showa period...

It seems that tabu powder was not used much as a binder. For example, in Tochigi Prefecture

In Imaichi, by carefully timing the harvesting of cedar leaves, they are able to obtain a sticky substance from the leaves and make starch.

They did not use it [Kuroiwa et al. 1980].

Section 6: Demand for Tabu Flour in the Mid-to-Late Showa Period

As mentioned earlier, in the 1940s, mosquito coils were changed from using pyrethrum to using synthetic pyrethrum.

Lloyd's came into use. However, the demand for tab powder as a binder remained.

And it was expensive. During the period from the 1950s to the 1970s, mosquito coil companies, and

Companies trading in raw materials were competing to acquire tabu powder. For mosquito coil companies and raw material companies...

Therefore, securing tabu powder was an important task. [Sanwa Insecticide Company History]

[Compilation Committee 2019].

Meanwhile, tabu powder remained important as a binder for incense companies.

In Awaji Island incense sticks, even in the 1950s, they used *Machilus* bark powder, *Machilus* leaf powder, and Chinese spicebush as binders.

I'm using [Hamaoka 1988].

The following records remain regarding binders used in Sakai during the mid-Showa period [Sakai City Economics]

[Economic Affairs Division, Commerce and Industry Section, 1963]

The binding powders include the leaves and bark of the *Machilus thunbergii* tree, the white bark powder of the elm tree, and tobi flour (or chrysanthemum powder).

Powdered konjac (called "ri-ko") is used, but odorless powder is preferred.

Products from Okinawa and Taiwan are popular, and white sugar, brown sugar, and seaweed are used to increase the stickiness.

It may be added.

In addition, it also describes how to use different types of tabu powder depending on the purpose of the incense stick.

The premium version uses powdered bark from the *Machilus thunbergii* tree as the main body, but the binder is a kind of olfactory powder.

It has a scent that cancels out fragrances, so it is not used; it is commonly called Chinese flour and is thought to be odorless camphor bark.

"Use the same material." "The mid-grade product uses odorless powdered bark of the Taban tree as the main ingredient, and the binding agent is..."

Using nori powder and powdered leaves of the Tabu tree (commonly known as Tabu tree) as the ingredients, the aforementioned flavoring is added.

It usually refers to products that contain and add chemical fragrance oils such as lolette and Shipley.

It exists. [Sakai City Economic Department, Commerce and Industry Division, 1963].

It is said to have similar properties to tabs, but with stronger adhesive properties.

[Sakai Chamber of Commerce and Industry / Sakai Industrial and Economic Research Institute, 1970]. Regarding Chinese flour and Taiwanese flour, see Tab seeds.

They are considered to be of the same species [Yokoyama 2013].

In Sakai and Awaji Island, incense sticks containing fragrances are the mainstream, and a wide variety of incense sticks are manufactured.

Therefore, various types of binders have been used depending on viscosity and other factors.

This suggests that...

On the other hand, in the Tenryu River basin of Shizuoka Prefecture, where cedar incense is produced, the cedar powder itself is sticky.

Previously, no binders were used. However, around the mid-Showa era, a binder was introduced.

They have started using bu flour and are purchasing it from Sakai City, Osaka Prefecture [Shizuoka Prefectural Board of Education]

[Meeting 1989] Also, in Imaichi, Tochigi Prefecture, in the mid-Showa period, not only was there the stickiness of cedar leaves, but also starch powder.

It is said that they also began to use it [Kuroiwa et al. 1980]. This starch powder is presumed to be tabu powder.

This has not been confirmed. In Ibaraki Prefecture, cedar incense sticks use the leaf powder of the *Machilus thunbergii* tree as an adhesive.

[Kashiwa 1980]. In particular, in the cedar incense producing regions of eastern Japan, tabu powder was used around the mid-Showa period.

It seems that its use has also increased.

Section 7 (Current)

In the mosquito coil industry, as mentioned earlier, since the late Showa period, tabu powder has been imported from Southeast Asia.

Imports began to be made, and chemical adhesives such as alpha-starch became widespread.

Therefore, as before, tabu powder is no longer necessary, and as a result, Kyushu and the rest of the country

Only a very few flour mills in the area continue to produce tabu flour.

The reason our company uses domestically produced tabu flour is due to our long-standing business relationship with the flour mill.

Only in cases where the company places great importance on and is particular about the raw materials used in the production of mosquito coils.

It is being done.

On the other hand, in the current incense industry, the use of tabu bark powder as a binder is the standard practice.

[Bird Feather 2013, Aichi Prefecture Incense Wholesalers Association 2015]. The bark of the Machilus tree is peeled and dried.

When water is added to the crushed powder, it becomes viscous and elastic. Wood powder raw materials, charcoal, etc. are used as the binder.

In addition, they mold the incense sticks. However, the higher the quality, the lower the proportion of inexpensive wood-based raw materials.

The amount of viscous adhesive is reduced, and the amount of viscous adhesive is kept to a minimum, with a fragrant alternative instead.

Increase the amount of raw materials. Also, cedar incense, which is often used for visiting graves, is made from cedar twigs and leaves.

It is mainly made from [ingredient name], and because it has little glue, a small amount of Machilus leaves and seaweed are added, along with other flavorings.

It is not used [Torige 2013]. In the current incense industry, the basic ingredient is the bark powder of the Tab tree, and Tab

The leaf powder appears to be used only as an adhesive in cedar incense sticks. Incidentally, incense is manufactured in Ibaraki Prefecture.

Among the companies that carry out this work, some are particular about the stickiness of cedar and still use materials other than cedar.

Some places do not use the raw materials for their cedar incense sticks (100 years of cedar incense making, Komamura-do)

wide").

Chapter 6 Summary

The key points revealed in this paper can be summarized as follows: As a binder for incense sticks.

It is possible that the use of Machilus bark powder began in the Edo period.

Furthermore, the powder from the leaves of the Machilus thunbergii tree is produced in Kyushu and the Kii Peninsula and is mainly used as a binder for incense sticks.

In the late Taisho and early Showa periods, there were several mills (using linear incense rollers) for making tabu flour in Kyushu.

Numerous facilities were installed, and the production of Machilus bark powder and leaf powder expanded. Machilus powder production expanded during this period.

A major factor is the development of the mosquito coil industry and the increased demand for tabu leaf powder as a binder.

It was a folding method. The mosquito coil industry not only intensified its efforts to obtain tabu powder, but

The national and prefectural forestry associations were focusing on cultivating special plants as a side business in rural areas.

They also promoted the production of tabu flour in books, journals, and radio news.

Even during the early to late stages of the season, the demand for Tabu leaf powder as a binder for mosquito coils remains strong.

It was indeed expensive. Mosquito coil companies and raw material companies competed to buy tabu powder.

Incense companies continued to require both bark powder and leaf powder from the *Machilus thunbergii* tree. In the Heisei era and beyond,

The binders used in mosquito coils include tabu powder and alpha-starch imported from Southeast Asia.

It has become common to use these. Also, the number of domestic producers of tabu flour has decreased, and domestic production

It has become difficult to secure tabu powder. Much of the bark powder used as a binder for incense sticks is also imported.

It appears that this is the case.

Tab powder, as a binder, has not received much attention until now,

It has become clear that it is an important raw material for the incense and mosquito coil industry.

Furthermore, demand increased particularly from the Taisho era to the mid-Showa era, leading to an increase in both producers and production volume.

We have come to understand this as well. In the future, Kyushu, which was the base for the production of tabu powder, and the base for the mosquito coil industry...

We plan to examine the production of tabu flour in Wakayama Prefecture, which was previously a isolated area.

^{y1y} The author is a writer of the company history of Sanwa Insecticide (Arida City, Wakayama Prefecture), which developed from Tanaka Genichi Shoten.

I had the honor of compiling the [Sanwa Insecticide Company History Compilation Committee 2019]. During the compilation process...

We then interviewed company officials, including Genichiro Tanaka, Chairman of Sanwa Insecticide.

This was done. In this compilation project, the raw materials of mosquito coils, which had hardly ever been introduced before, were discovered.

We were able to shed light on one aspect of the food business. Furthermore, in October 2019, Sanwa Insects

Iside was integrated into Lion Chemical. Lion Chemical has its origins dating back to the Meiji era.

Although it is an old company formed by the merger of pyrethrum-related companies, it became part of the Sanwa Group in 1999.

That's how it was.

^{y2y} The pyrethrum is said to have originated in the Dalmatia region of the then Austro-Hungarian Empire.

Yes, they exist. In the Arida region of Wakayama Prefecture, they were introduced from Dalmatia between 1885 and 1886.

Those who cultivated pyrethrum seeds and those who started cultivating pyrethrum seeds that came from America

There were people like that. The former included Shichiroemon Gozen, one of the founders of the current Lion Chemical.

The latter was Eiichiro Ueyama, the founder of Dainippon Jochugiku (Kincho). He was the pioneer of pyrethrum cultivation.

There are various theories about this, but in the local Arida region, the originator is not identified as a single person, but rather as Gozen or Kamiyama.

There is a view that several predecessors constitute the group of founders [Morikawa 1966].

(3) The "Imperial Products Compilation" was compiled by the herbalist Ino Wakasui (1655-1715) and his disciple Uchiyama Kakuchu (Kakujun).

It is believed to have been completed by (1673-1742) [Tokyo Botanical Society 1909, Ota 2016].

⁹⁴⁹ Genichiro Tanaka of Sanwa Insecticide says that because the incense sticks for Buddhist altars are small, the raw materials are sold in kilogram quantities.

However, he says that mosquito coils require tons of raw materials.

Therefore, it seems unlikely that the demand for tabu powder would have increased dramatically.

⁹⁵⁹ The following is a description from a later period, looking back on that time: Meiji 20s

Regarding the early stages of mosquito coil development, the company history of Dainippon Jochugiku states that "the manufacturing method at the time involved using pyrethrum powder..."

"Add starch and dried mandarin orange peel powder and knead thoroughly," it says [Dainippon Jochugiku Co., Ltd.].

[History Compilation Office, 1988] Also, Senta Morikawa, who had been running King Pyrethrum in Arita City,

He recounts his experience entering the industry around 1920 (Taisho 9), saying, "The original method for making mosquito coils involved using pyrethrum powder."

Finally, as an adhesive, powdered camphor leaves and a small amount of filler to aid combustion are added, along with malachite.

Add water colored with To-Green (bamboo green) and mix well, then put it in a tampon and use hydraulic pressure

He states, "Then it is extruded into a rod shape." [Morikawa 1966]

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(Note)

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This work primarily reflects the results of personal research conducted after the completion of the compilation project, focusing mainly on tabu powder.

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