



Two Sisters Open  
a Bakery on Pico

# FLAX TEXTILES IN EUSKADI

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Linum  
ussitatisimum  
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# Linen, Flax, Liñua

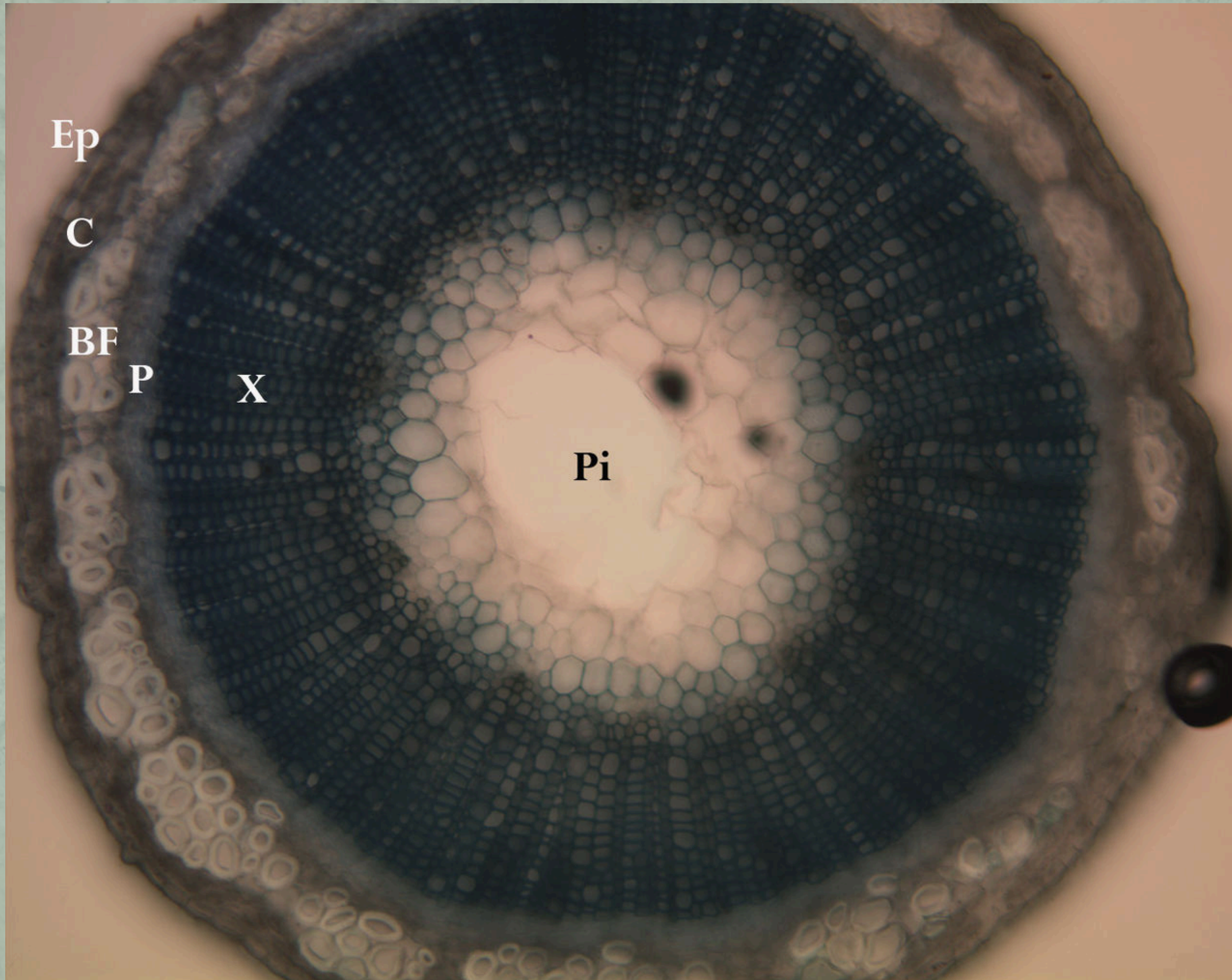
*Linum usitatissimum*, an annual herbaceous plant. Native to the Nile, Tigris, and Euphrates basins, it has become naturalized worldwide through cultivation.



The linen traditionally grown to produce thread and oil is the *Linum Usitatissimum*. Teofrasto, ancient greek botanist, was the one that named the plant such, *usitatissimum* means very useful in latin.

It's an annual plant that can grow up to 1'20 ms tall with very slim stems. The green colored leaves are lanceolated and narrow, about 20 to 40mm long and 3 mm wide.

The flowers are easily identified, between 15 to 25 mm wide with 5 petals, with a light blue color. They flower for a couple of days and then the petals fall and round mature capsules grow instead, they contain the seeds, shiny brown and edible.



# Botany

- EP: **Epidermis.**
- C: **Cortex.**
- BF: **Bast Fiber.**
- P: **Floema.**
- X: **Xylema.**
- Pi: Pith o **Médula.**

EP: Epidermis. The vegetal epidermis is the living protection on the surface on the plant.

C: Cortex. In botany, a cortex is an outer layer of a stem or root in a vascular plant, lying below the epidermis but outside of the vascular bundles.

BF: Bast Fiber. Bast fibre (also called phloem fibre or skin fibre) is plant fibre collected from the phloem (the "inner bark", sometimes called "skin") or bast surrounding the stem of certain dicotyledonous plants. Some of the economically important bast fibres are obtained from herbs cultivated in agriculture, for instance flax, hemp, or ramie, but bast fibres from wild plants, such as stinging nettle, and trees such as lime or linden, willow, oak, wisteria, and mulberry have also been used.

P: Phloem. is the living tissue in vascular plants that transports the soluble organic compounds made during photosynthesis and known as photosynthates, in particular the sugar sucrose,[1] to the rest of the plant. This transport process is called translocation

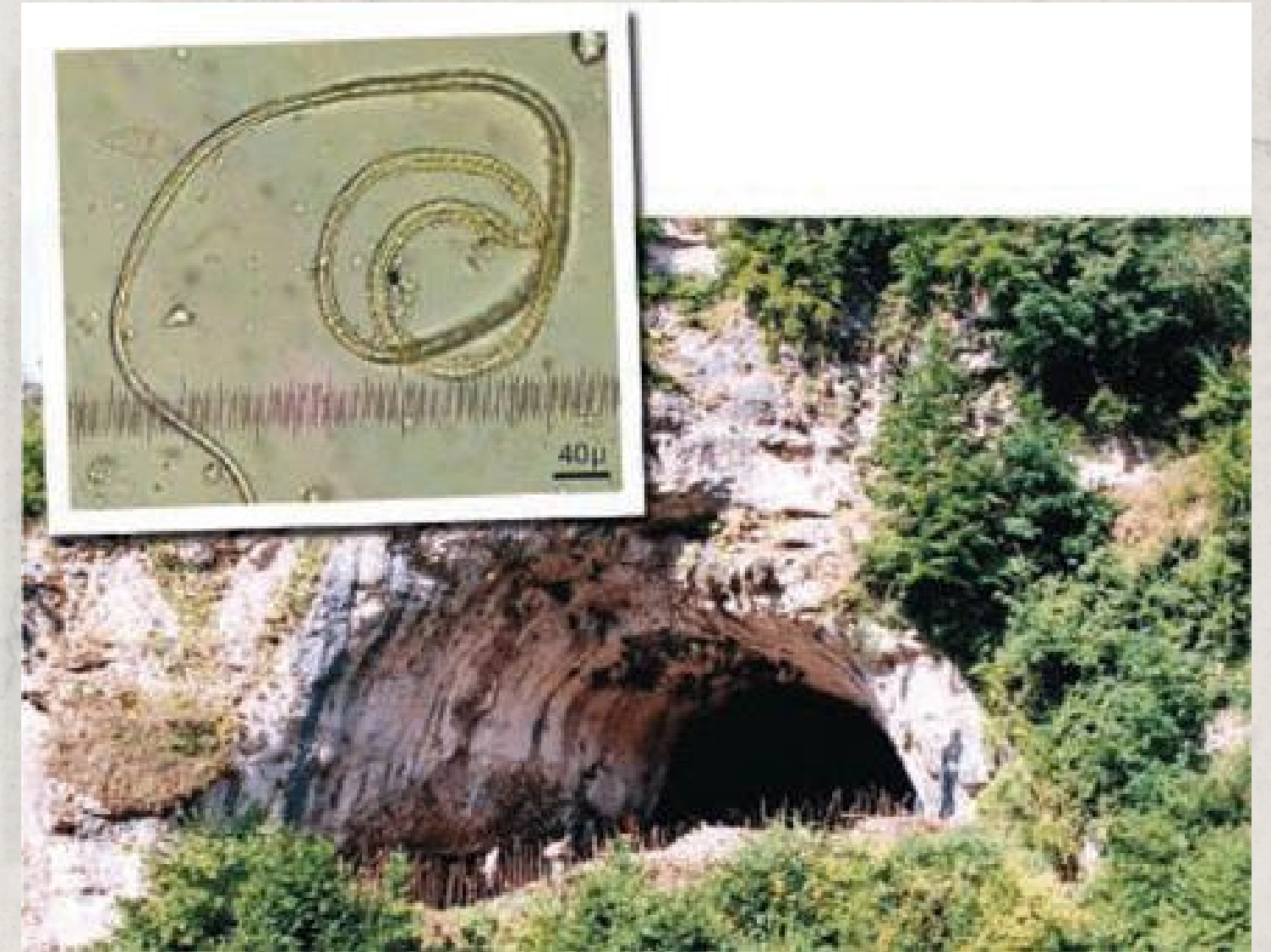
X: Xylema. Xylem is one of the two types of transport tissue in vascular plants, the other being phloem; both of these are part of the vascular bundle. The basic function of the xylem is to transport water upward from the roots to parts of the plants such as stems and leaves, but it also transports nutrients.

Pi: Pith o Médula. Pith, or medulla, is a tissue in the stems of vascular plants. Pith is composed of soft, spongy parenchyma cells, which in some cases can store starch



**A short History  
of Flax**

# Dzudzuana



First examples of wild linen used in textiles can be found in the Georgian Republic, in the Dzudzuana cave where archaeologist found handspun linen fibers, dyed and knotted, dating from the Upper Paleolithic period, 30k years ago.

The first examples of domesticating linen happen in the Fertile crescent (levant, mesopotamia, middle east), linen seed oil has been found in Siria and linen cloth in Catalhoyuk, Turkey, 9k years old.

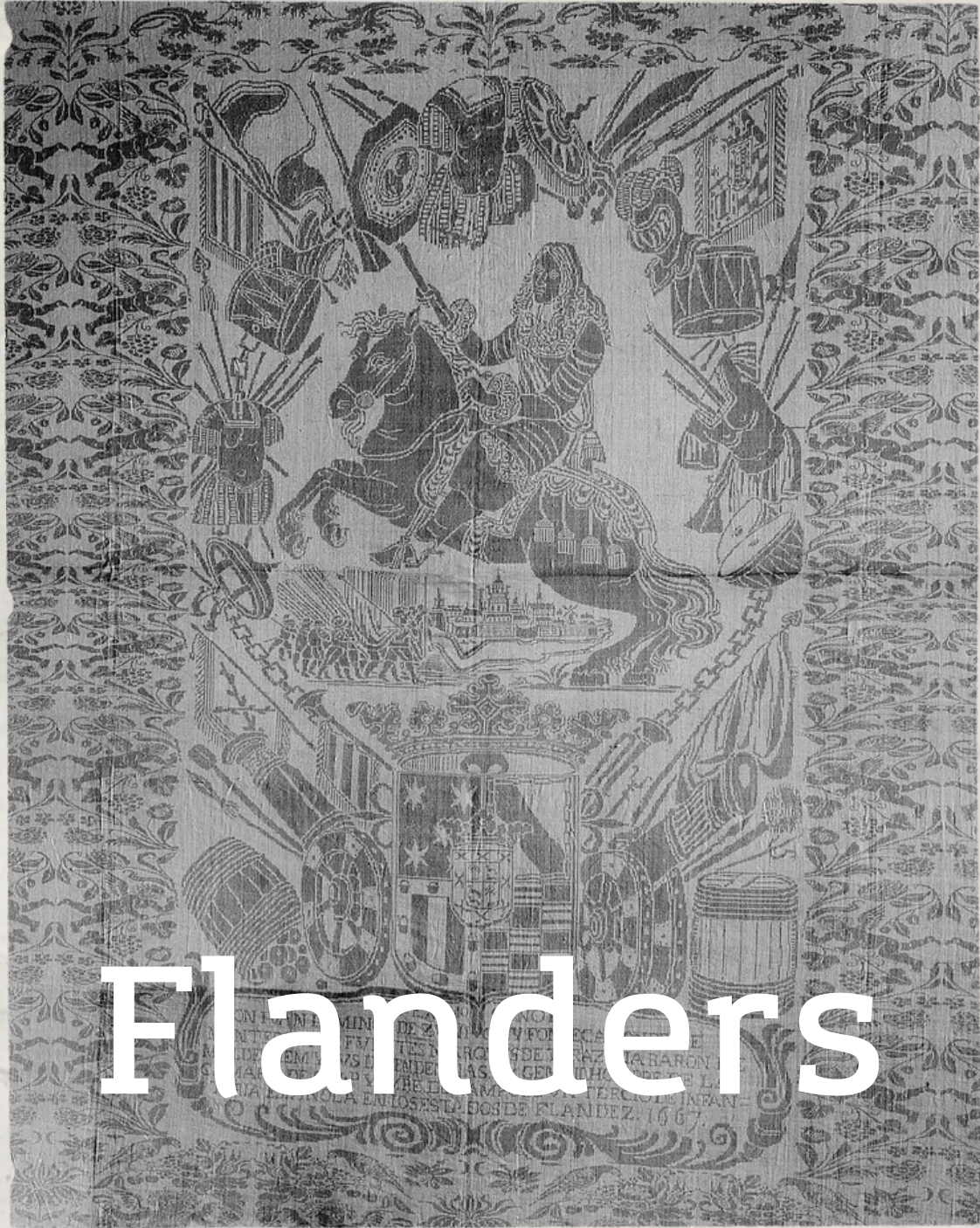
5k years ago flax was already worked and expanded around Europe, China and India.



Egypt



Rome



Flanders

It was extensively worked in Egypt, and some temple wall paintings show the way it was harvested, prepared and worked because linen cloth was a must for mummification.

Egyptian priest could only wear linen as it was considered a purity symbol and thanks to Phoenician merchant it expanded around the Mediterranean. Ubiquitous on the Roman civilization its production declined with the decline of the Empire.

When Charlemagne proclaimed his laws to enforce hygiene it was recommended using linen cloth and flaxseed oil was also recommended for its own health benefits and the production revived in Europe on the VIII century. On the middle ages Flanders was the main industrial hub for flax and linen production in Europe and it was also when it began its tradition in Euskadi.

It was the favored vegetable fiber in Europe until the beginning of the 20th century when the Industrial Revolution and the introduction of cheap cotton made the linen industry fall and almost disappear. It disappeared completely in Euskadi. It's still quite a minority fiber nowadays.



# Ehunak ehuna lan

Basque folk saying about the laborious  
process of flax.

Oi! Pello Pello logale nauk eta  
Jinen nizan ohera?

**Irun** ezan eta gero gero gero  
Irun ezan eta gero gero bai.

Oi! Pello Pello irun diat eta  
Jinen nizan ohera?

**Astalka** zan eta gero gero gero  
Astalka zan eta gero gero bai.

Oi! Pello Pello astalkatu diat eta  
Jinen nizan ohera?

**Harilka** zan eta gero gero gero  
Harilka zan eta gero gero bai.

Oi! Pello Pello harilkatu diat eta  
Jinen nizan ohera?

**Jos** ezan eta gero gero gero  
Jos ezan eta gero gero bai.

Oi! Pello Pello josi diat eta  
Jinen nizan phera?

Argia dun eta, bihar bihar bihar  
Argia dun eta, jinen izan bihar.



# Flax Works



1

Haziak ereitea.  
Sowing of the seeds



2

Uzta Biltzea.  
Harvest



3

Aletzea, karramatzea.  
Collecting the seeds



4

Putzuan beratzea.  
Retting

A close-up photograph of a wooden scoop filled with brown flax seeds. The seeds are piled high in the scoop and spill out onto a burlap fabric background. The lighting is warm, highlighting the texture of the seeds and the fabric.

**Haziak ereitea**  
**Sowing of the seeds**

It is sown in March and September, twice a year. It is harvested on St. John's Day. September 23rd is St. Flax's Day.

Agor-linoa: sown in September, it is stronger and taller, the fibers are longer and it was used to make long cloths. The stem of this flax divides into many different branches, and it flowers three times before producing seed.

Liñuberdea or martxo-linoa, sown in the high plains, has a shorter stem and is harvested in November.

Flax and wheat were sown alternately, and the planted area was rotated every year.

The seeds must be sown very close together so that the plants grow close together and are tall and slender.

Care must be taken with birds because they are very fond of flax seeds.

The plants typically have seven flowering periods; the flowers open at dawn and close at dusk, repeating this process for seven days. Then the blue petals fall off, and the seed capsules appear.

A photograph showing two men in a field of green Uzta biltzea plants. The man on the left is wearing a white shirt and dark pants, and the man on the right is wearing a light blue shirt and dark pants. They are both bent over, working with the plants. The field is lush green, and the plants are arranged in rows. The men are using their hands to harvest the plants.

**Uzta biltzea  
Harvest**

Around St. John's Day. The plant is pulled up by the roots. Bunches (sortak) made up of 10 handfuls (eskukadak) were tied by hand with a flax stem; 10 bunches made a load.

A group of people are gathered around a large pile of green, leafy plants in an outdoor setting. One person in a brown jacket is using a wooden tool to separate the plants. Another person in a light blue shirt is holding a bundle of the plants. The scene is outdoors with trees and foliage in the background.

**Aletzea  
Collecting the  
seeds**

After harvesting the flax, the seeds were extracted using a comb-like board with prongs made of iron nails at one end, called a "karrama." As the bundles of flax were combed, the seed pods fell out and were left to dry, stored for the following year in a small cloth bag.



**Putzuan beratzea**  
**Retting**



Autumn was the best time to begin working with flax, once the wheat had been harvested and the turnips sown.

In the past, the banks of the small tributaries, which are very common in the Basque Country, were used, but since the process pollutes the water and can lead to serious public health problems, pits were built nearby, which we know as liño-putzuak.

The seedless bundles had to soak for five days and six nights in the pit, or nine, depending on the source. The green flax needed between 15 and 20 days of soaking (always one night more than the number of days), spread out evenly in the pit.

At the bottom of the pit, debris was placed, and on top of that, stones or branches, until the pektose that binds the fibers together decomposed.

The climate influenced the process, as did the hardness of the water, and therefore it depended almost entirely on each individual pit.

This task, known as lihoa sasoindu (ripening the flax), was exclusively women's work. To determine if the flax was ready to be removed from the pit, two stalks could be rubbed together to examine the fibers. Others said that if the outer layer was removed and the stalks were placed in water, sinking to the bottom meant they were ready.

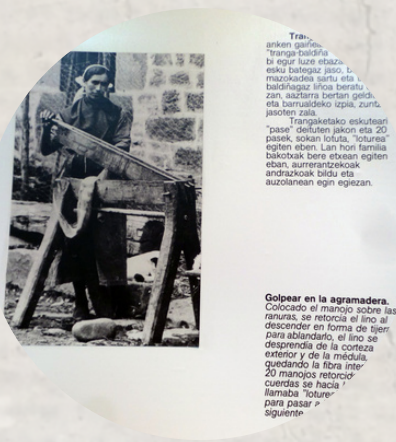
Over time, the pits fell into disuse in favor of zinc containers, although today there are initiatives to restore them, and a few have been located.

# Flax works



5

Lehortzea.  
Drying



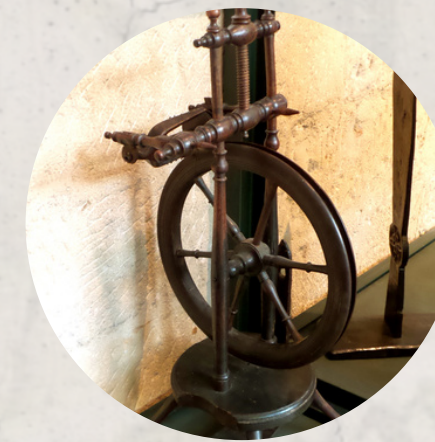
6

Trangaketa,  
ezpataketa.  
Breaking



7

Txarrantxatzea.  
Card and comb



8

Harigintza, irutea,  
ardazketa, gorueta.  
Spinning.

## Lehortzea Drying

izenak diñoanez Burullu-areiten zan  
Santioz biltzeko.

**Kirnutza.** Oso fiña...  
arilletan saltzen zana.

Landareak, luzez, 60 zentimetro  
hor nunbait ditu, eta lorea kolore  
bizikoa da; hazia lorearen barruan  
dago, eta urte batetik hurrengora  
gordetzen da.

Orain, bata bestearen ondoan  
esku-lanak horreik egiteko lanak  
erakutsiko ditugu.

**Azgarbaketa.** Landareak  
herrotik atara eta langiñak, aurkitu  
jarrita, eskutei zuztarretik oratu eta  
orraztu egiten ditu, haziak kendu  
landareak zikinkeriaz garbituz.

**Beratzea.** Landareekaz  
eskutak egiten ziran, 10 eskutek liño  
landare batzuekz lotu eta...

mas ordinario y basto pero más  
abundante (lino de Septiembre o de  
Navarra) que se sembraba en dicho  
mes y se recogía por Santiago.

**Kirritzea.** Muy fino, que se  
adquiría en Ferias comarcales, en ovillos.

La planta tiene una longitud  
aproximada 0,60 cms. y floración de  
color azul intenso, la simiente se  
encuentra en la flor, que se guarda de  
un año para otro.

A continuación vamos a exponer  
las operaciones necesarias y los  
instrumentos necesarios para llevarlas  
a cabo. Algunas piezas son muestra  
de bella artesanía popular, y formaban  
parte de los arreos de boda:

**Desgranar.** La planta es  
arrancada de la tierra, y el artesano  
sentado sobre el Banco-ripador,  
agarrando los manojos por la raíces, va  
pasándolos por el peine desgranando  
la simiente y limpiando las plantas de  
adherencias.

**Remojo.** Las plantas eran  
recogidas en manojos. Con 10  
manojos se formaba el "haz" que solía  
atarse, con unas pocas plantas de lino.  
Estas "haces" se echaban a unos  
pozos llamados "liñosiñek" (pozos de  
lino) donde permanecían de 15 a 20  
días. Al cabo de este tiempo, era  
extendido en el prado donde  
permanecía de 10 a 20 días, para  
secarlo y reblandecerlo.

Parece que hubo, otra forma de  
reblandecido...

To complete the ripening process, when the bark easily separated from the fibers when two stems were rubbed together, they were removed from the water and left to dry in the sun, spread out as much as possible.

For this, it was necessary for it to be warm, and if the weather wasn't suitable, they were placed near the oven used for baking bread.



**Trangaketa  
Breaking**

Depending on the region, this step could be divided into three parts.

In this phase, the bark is separated from the inner fibers using a tool called a tranga. Before the invention of this machine, it was done with a hammer, but its invention in 16th-century Holland was a significant advancement.

Afterward, the stalks could be passed through two other pieces (or not). One of these was called a sugatsa, which resembled a very large pair of wooden scissors, with a grooved, stationary lower part and an upper part that fit into it and caught the previously tranged bundles.

In the Bizkaia region, they also used the ezpata, or sword, to apply a different striking technique.

These tasks were physically demanding and were usually performed by women, dressed in large shirts (zamarra) and with scarves covering their hair and mouths because of the enormous amount of dust produced.



**Txarrantxatzea  
Card and Comb**

A tool similar to the carding board was the Txarrantxa, a rectangular wooden board with nails, which had a hole at the other end for the foot to hold it in place.

The fibers were carded to comb them and remove any remaining bark, and this process took about 3 minutes with each sorta (handful).

When this process was finished, the flax was ready to be spun.

Superstition: If txarrantxa (a type of straw) was placed at the foot of the stairs in a house, witches would be frightened away and would not try to enter.

And they were usually classified as follows: the longest and finest fibers on one side (kirrua edo amukoa), the medium-sized fibers of intermediate quality on another (amelua edo muiloa), and the shortest and coarsest fibers on yet another (mukarra edo karraskia).

Kirrua (the fine fiber left on the hand after the process): for sheets, men's shirts, women's shirt cuffs, bandages for wounds, the cloth the priest used to dry his hands during Mass, and for holy oils; also for tying albokas (a type of Basque double-reed instrument).

Muiloa (what remained between the teeth): used for dresses and breeches, and for shotgun pellets.

Mukarra (what remained between the teeth and fell to the ground): for sheets, men's work clothes, sheepskins, trousers, alkondara (a type of Basque jacket), sacks, and kitchen rags, and for lighting fires in the mornings with the embers from the night before.



**Harigintza  
Spinning**



The name of the tool changes in each valley. A spindle (ardatza) and a distaff (gorua, or ezpata-gorua) were used. Describe the distaff. (cloth hood, goru-burua)

Materials: Holly (*Ilex aquifolium*), Boxwood (*Buxus sempervirens*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*). (Mine is made of hazel with willow rods.)

The distaff is held between the left arm and the body, supported at the waist, and the fiber is drawn out with the left hand. The spindle is held in the right hand and turned with the right.

The fiber had to be moistened with saliva while spinning so that the thread would form better. If water was used alone, the thread could rot, so it was customary to carry dried figs, chestnuts, or apples to nibble on while working to stimulate saliva production.

The yarn was then transferred from the spindle to a winder and stored there until weaving.

The spindle and distaff were the most prominent feminine symbols in the traditional setting of the farmhouses and were considered a fundamental part of a bride's trousseau. If the bride was a very skilled spinner, the distaff was tied to the yoke of oxen pulling the cart with the trousseau, because a good spinner meant that the family had an additional source of income.

One item used to demonstrate status was the goru-txapela, or cloth cap, often embroidered, which was placed over the top of the spinning wheel.

Spindles were made of wood, but metal spindles could also be found.

Although spinning could be done alone, it was much more common to meet at a pre-arranged farmhouse. Between November and February, women from various farmhouses would gather for important meetings where oral traditions, stories, tales, and superstitions were celebrated, known as "Sorgin Afariak."

One of the superstitions surrounding these gatherings held that if the kitchen (sukaldea) hosting the spinning session wasn't left clean and tidy, all the flax scraps left on the floor and in the corners would attract witches, who would spend the night dancing and spinning. So, as soon as it was over, the grandmother of the house would sweep the entire kitchen.

In the 16th century, the spinning wheel, was invented, with the head as we know it today, with bobbins, and powered by the movement of the foot, eventually partially replacing spinning with a spindle.



# Timeline



9

Matasatzea.  
Skeining.



10

Haria egostea.  
Boiling the thread.



11

Harilkatu.  
Cakeing or balling



12

Ehundu.  
Weaving.

A close-up photograph of a traditional wooden skeining frame. The frame is constructed from dark, weathered wood and features several vertical posts and horizontal beams. Multiple bobbins are mounted on the frame, and numerous threads are being wound onto them. The threads are arranged in a regular, parallel pattern. The background is a light-colored, textured surface, possibly a wall or a floor. The lighting is bright, highlighting the texture of the wood and the threads.

**Matasatzea  
Skeining**

There were two main tools: one called the Inuzkia, which was held by hand and resembled a Niddy-Noddy, and the matasuszkia, a large winder, which was also an important part of the bridal regalia.

A dark fabric is being boiled in a wooden tub. In the background, white fabric is hanging, likely being washed or bleached. The scene is set in a well-lit area, possibly a laundry room or a textile processing facility.

**Haria Egostea  
Boiling the thread**

The skeins were traditionally boiled using a vat made from the hollowed-out trunk of a *Fagus sylvatica* (beech tree). To heat the vat, which had a small drain at the bottom that was usually plugged when water was poured in, progressively hotter water was used, as adding boiling water from the start would ruin the process.

Beech ash (due to its high potassium content) was used as lye, placed inside a cloth bag, and to give the yarn a pleasant scent, leaves of *Laurus nobilis* (bay tree, of which every farmhouse has a bay tree nearby) were used.

The skeins were left to cool in the tub until the next day, and then they were cleaned in the water of the nearest river, because the cold water softened them. They were spread out at night in the meadow to take advantage of the dew, and to finish the process they were laid out to dry in front of the house, in plain sight. Because the house with the most skeins was the richest house, and it also served as an advertisement for finding a husband.

Now, if desired, the yarn could be dyed.



**Harilkatu  
Caking or Balling**

Once the skeins were dry, they were made into balls for use on the loom using a machine called a Harilkaria (another type of winder, more similar to an umbrella winder). These balls were stored in a special box, and when each compartment was full, they were taken to the loom.

A close-up photograph of a handloom weaving process. The image shows a partially completed fabric with a pattern of blue and beige stripes and a diamond-shaped motif. The threads are visible, and the texture of the fabric is clearly shown. The background is dark, highlighting the intricate details of the weaving.

**Ehundu  
Weaving**

Although the yarn could be woven with needles, it was more common to use looms, creating sheets, canvases, and fabrics of varying quality depending on the type of linen used.

The women who did this work were called ehuleak and could achieve unprecedented economic independence.

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