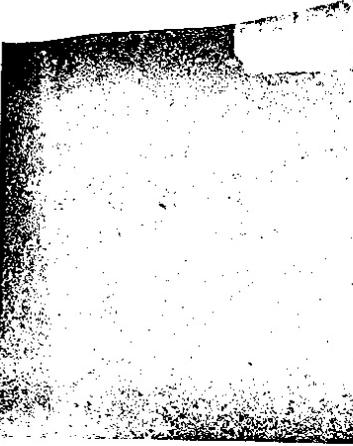


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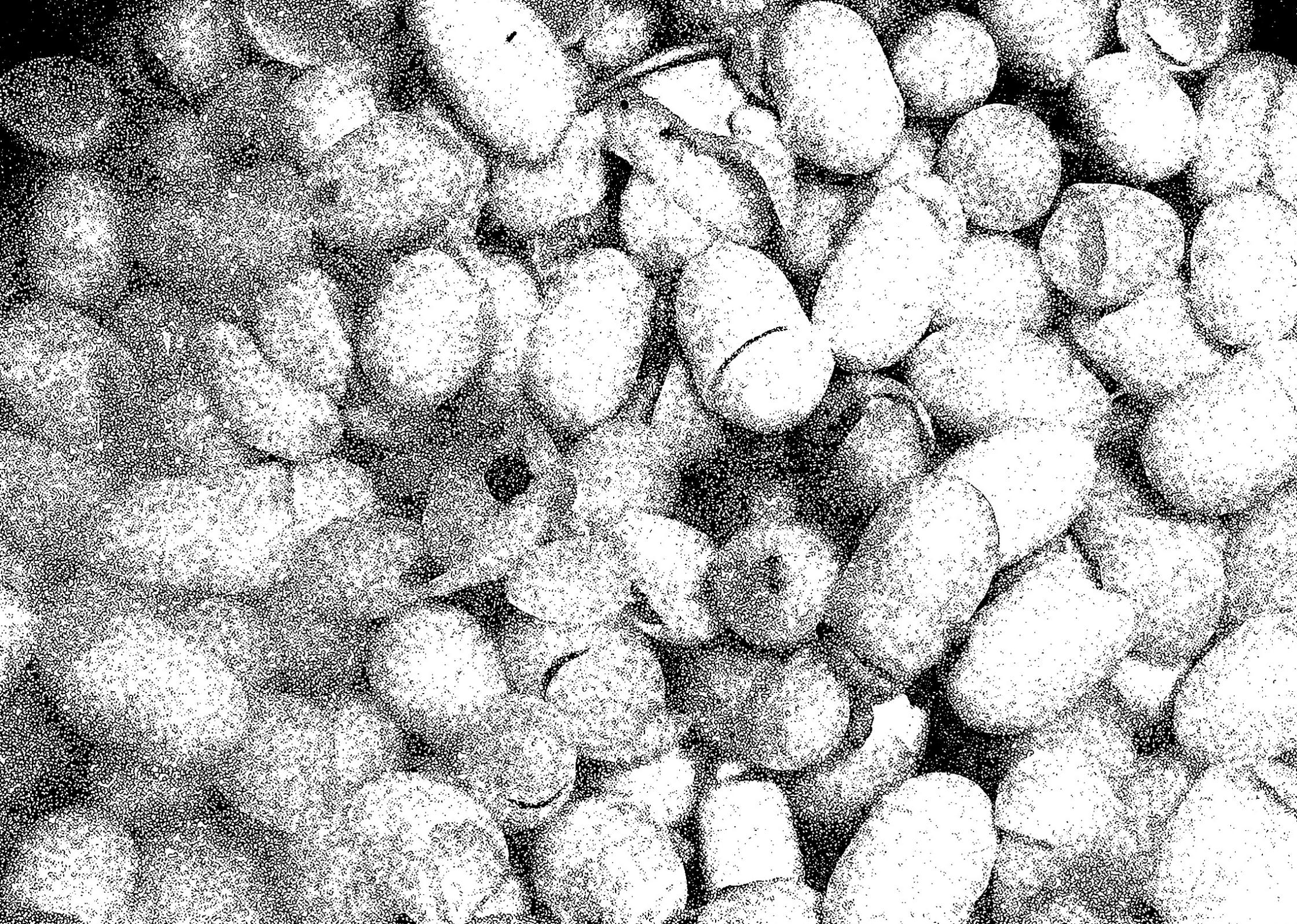
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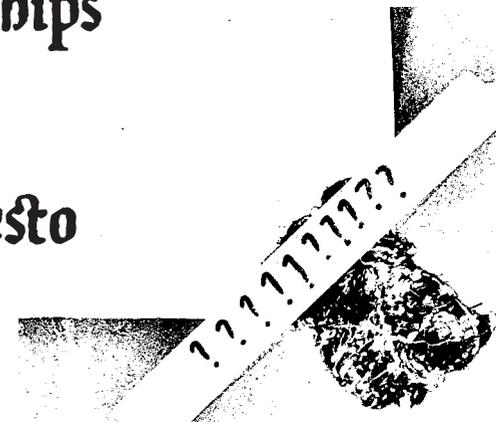
Silk varieties

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Silk varieties

Although silk is traditionally associated with *Bombyx mori*, it encompasses a much wider range of animal fibers, from ethical silks such as Ahimsa to wild silks such as Tussah and Muga, to rarer and more precious forms such as sea silk. Each type has specific characteristics that influence its workability, value, and uses in textiles, confirming silk as one of the most fascinating and diverse fibers in the world of fashion and craftsmanship.





Mulberry silk

This silk is a natural fiber of the highest quality and the most prized on the market: it accounts for about 90% of world production, 70% of which comes from China, followed by India. It is produced by *Bombyx mori*, the silkworm that feeds on mulberry leaves.

The silkworm secretes a protein substance from two internal glands; on contact with the air, it solidifies to form a single continuous thread between 800 and 1500 meters long, with which it builds its cocoon. To obtain silk, the cocoons are immersed in boiling water with the larva still inside: this allows the sericin to be partially dissolved and the continuous thread to be unraveled, which would otherwise be broken by the moth's escape, compromising its shine and softness. The white color of the cocoons is the result of human selection and a mulberry-based diet; in some cultures, the chrysalis is consumed.

Some cocoons are left to hatch for reproduction, but the adult moth does not fly or feed: it is now a species dependent on humans, the result of a long selection process that has produced many breeds with different characteristics. Among the most productive are the Japanese polyhybrids, selected in the last century.

Bourette silk

Also known as raw silk, is a natural silk of Asian origin obtained from the waste products of traditional processing, i.e., the short, uneven fibers discarded during the production of continuous filament silk.

Unlike mulberry silk, which is smooth and shiny, bourette silk has a matte, rough, and uneven surface, with small knots or visible bows that give it a rustic and artisanal look. The fabric obtained from it is sturdy yet lightweight, as well as breathable, qualities that make it suitable for comfortable garments with a natural aesthetic.

Abimsa silk

Also known as peace silk or ethical silk, it is produced without killing silkworms. Unlike traditional silk, where the cocoons are boiled with the larvae inside to obtain a continuous thread, here the cocoons are harvested only after the moth has emerged



naturally. Since the insect pierces the cocoon, breaking the long thread into short fibers, these must be spun together as with wool or cotton.

The result is a silk that is less shiny than traditional silk, but softer, warmer, and more structured, as it is not boiled.

It is produced on a small scale, mainly in India, where it supports rural communities of farmers, spinners, and weavers.

The term 'Ahimsa', from Sanskrit, means 'non-violence' and is a central principle of Jainism, Hinduism, and Buddhism. The commercial spread of this silk is attributed to Kusuma Rajaiah, an Andhra Pradesh official inspired by Gandhi, who began producing it in 1990 and marketing it in 2001.

From an economic point of view, it costs about twice as much as traditional silk: it requires about ten more days of processing and the cocoons produce only one-sixth of the fiber compared to conventional ones.

Eri silk

It comes from the moths *Samia cynthia ricini* and *Philosamia ricini*; the name derives from the Assamese word "era" ("castor oil plant"), the plant on which the larvae feed. Like mulberry silk, it is completely domesticated. The cocoons can be white or red, probably due to diet or polymorphism.

Since the cocoon is irregular, a continuous





thread cannot be obtained by boiling: it is harvested after the moth hatches, thus falling under the category of Ahimsa silk. It is therefore always a silk spun from short fibers.

Produced mainly in northeastern India (Assam, Nagaland, Meghalaya) and also widespread in other Indian states, as well as in Thailand, China, and Japan. It is distinguished by its soft texture, natural colors ranging from white to golden to rust red, and for being darker and heavier than Mulberry and Tussar. It has a coarser weave but is resistant, dense, and elastic, with excellent thermal properties: cool in summer and warm in winter.

Baskal silk

It is obtained not from the cocoon, but from the stalk (stem) of the Tussah silk cocoon. After the butterflies have left the cocoon, the stems are collected, boiled in an alkaline solution, and then opened. This method is an example of “zero waste” textile production, as it makes use of a part that is normally unused.

Muga silk

It comes from the *Antheraea assamensis* moth, also known as the Assam silk moth, whose larvae feed on the aromatic leaves of the *Machilus* and *Litsea* families. An ancient species dating back to the age of the dinosaurs, it is extremely sensitive to pollution. This is why Muga silk is among the rarest in the world and is produced exclusively in the Indian state of Assam.

Anaphe silk

It is typical of central and southern Africa, where tribal populations collect the cocoons from the forest and spin the fluff in communities, producing a soft and rather shiny raw silk.

Fagara silk

This silk is produced by the large silkworm *Attacus atlas*, also known as the “snakehead moth,” and by related species found in the Indo-Australian region, as well as in China and Sudan.

These insects produce light brown cocoons up to about 6 cm long, characterized by peduncles (stems) that can vary from 2 to 10 cm in length.

Coan silk

It comes from the larvae of *Pachypasa atus*, widespread in the Mediterranean biogeographical area (southern Italy, Greece, Romania, Turkey). They feed mainly on pine, cypress, juniper, and oak trees and produce white cocoons measuring approximately 8.9 × 7.6 cm.

In ancient times, this silk was used to make crimson garments for Roman dignitaries. However, commercial production has long since disappeared due to limited yields and the spread of higher quality silks.

Other silks

Beyond silks produced by moths, there are silk-like fibers of different origins, such as spider silk (derived from species found in Madagascar), sea silk or mussel silk (obtained from the byssus of the mollusk *Pinna*), extremely rare silks produced by hymenopterans such as bees and wasps, and even non-animal silks of plant or artificial origin, such as bamboo silk/viscose, lyocell (Tencel), cupro, or fibers derived from pineapple and pine pulp.



Bombyx Mori history and silk tradition

The Origins of Silk and Its Introduction into Europe

Silk production is traditionally traced back to ancient China. According to legend, Empress Leizu (Si-Ling-Chi) discovered sericulture around 2600 BC, and silk was already in use by 2900 BC. In China, silkworm rearing was a prestigious and closely guarded imperial activity. Despite efforts to keep it secret, silkworm eggs were smuggled to Khotan in the 4th century AD, from where sericulture spread to India and Japan.

Greeks and Romans used silk without knowing its origin, purchasing it at high cost through the Silk Road—a vast trade network established during the Han dynasty (from 138 BC), linking China to Central Asia, the Middle East, and Europe. The route flourished under the Roman, Tang, and Mongol empires, before declining after the opening of European sea routes in 1498.

Sericulture reached Europe in 551 AD, when two monks brought silkworm eggs to Byzantium under Emperor Justinian. From there, it spread to Greece and Italy. Over time, European breeds developed through adaptation and selection. Today, hundreds of breeds exist, classified as European, Oriental, or Levantine, and distinguished mainly by productivity and voltinism (number of generations per year). European breeds are exclusively univoltine.

The Life of Bombyx Mori

Silkworm rearing was traditionally a family-based activity and played a major economic role. The silkworm overwinters as an egg. In univoltine breeds, embryonic development pauses in a diapause from June to April and resumes above 15°C, with hatching about three weeks later. In modern production, diapause and incubation are carefully controlled to synchronize hatching with favorable conditions. The larva feeds exclusively on mulberry leaves.

At birth, the larva is dark, hairy, 3 mm long, and weighs about 0.5 mg. In about one month it grows to 9 cm and over 4 g—multiplying its weight more than 9,000 times—through five larval stages separated by four molts (“dormite”). Each molt replaces the cuticle and allows further growth. At maturity, the larva empties its gut and spins a cocoon over 3–4 days, then pupates for about three weeks. The adult moth emerges by softening (not breaking) the fibers with an alkaline fluid. Adults do not feed; females are larger and lay 400–500 eggs, living about a week. To preserve the continuous filament for traditional silk, pupae are prevented from emerging.





Places, Farmers, and Rural Culture

For centuries, silkworms—known by many local names—were central to Italy’s rural economy, linking farm life to European trade. Sericulture required minimal investment (wooden trays, clean sheets, branches for spinning) but constant labor, largely provided by women, who held and transmitted this meticulous knowledge. Success depended on precise control of temperature, humidity, cleanliness, and leaf quality. The cycle followed a strict seasonal calendar: eggs were carefully warmed (sometimes even with body heat), larvae were fed every few hours, “climbing to the branches” marked cocooning, and harvesting demanded patience. It was a shared, experience-based craft built on observation and tradition.

The Attic

During silkworm season (April–June), the attic, usually a storage space—was transformed into a carefully cleaned, almost ritual “warm room.” Washed sheets, scrubbed boards, and regulated windows created the ideal microclimate. The steady rustle of mulberry leaves and the constant chewing of larvae filled the house, marking a brief but intense period that reshaped domestic life. Anthropologically, it functioned as a liminal space: temporarily sacred and devoted to transformation.

The People

Sericulture involved the whole family. Children gathered tender mulberry leaves; adults managed feeding, monitored molts, pruned trees, and detected problems through experience. For many women, it provided their first independent income—modest but meaningful.

The Countryside

In Northern Italy (Veneto, Lombardy, Emilia, Piedmont), rows of heavily pruned mulberry trees shaped the landscape. Known as “the bread tree,” the mulberry fed the silkworms that generated income. Fields were organized around it, blending agriculture with a form of home-based micro-industry.

The Markets and Filature

Between the 18th and early 20th centuries, sericulture supported a complex rural economy of leaf markets, cocoon fairs, merchants, brokers, and filature (silk mills). Leaves were sold in bundles, especially during critical growth stages. Cocoon market day was both economic and emotional—the visible reward for weeks of labor.

Filature were often the only local industrial sites, organizing trade networks, advances, and collection schedules. Small earnings from thousands of families sustained an entire silk supply chain and provided vital annual cash for debts and household needs.



Evolving from Bombyx Mandarina to Bombyx Mori

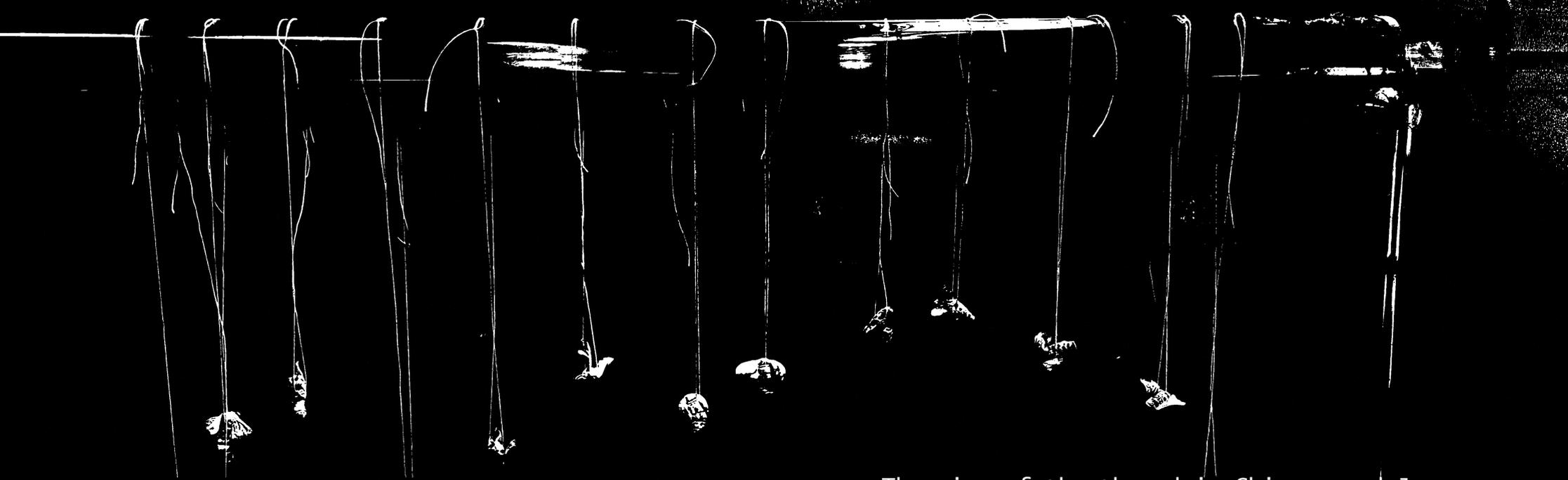
The silkworm has a history of very ancient domestication.

The insect is no longer found in nature. It is believed that the progenitor of the silkworm was the wild silkworm, *Bombyx mandarina*, originally from the Far East, between China, Japan, and Korea, and still present in the East.

When humans observed the wild silkworm and its life cycle, they thought they could exploit it to their advantage by selecting traits more suitable for silk production. The insect, as a result, can no longer survive as an autonomous species outdoors, but must be reared in closed, temperature-controlled environments and preserved in genetic banks.

(Banks have the task of breeding each year the silkworm strains or the preserved lines, since silkworm eggs do not remain viable for more than one year unless subjected to an appropriate treatment.)





They are preserved in an immutable way or in a way that can be passed on to subsequent generations, continuing to select those traits that have made them interesting for humans. To maintain two silk-rich strains, selection must continue.

The domestic silkworm has undergone differentiation in relation to the environmental conditions to which it was subjected during this long domestication.

One particular feature of silkworm farming, unlike beekeeping, is that it is carried out using polyhybrid silkworms. A first cross and the first hybrids, in turn crossed with each other, give rise to the polyhybrid silkworm. This type of production exploits the genetic phenomenon of heterosis, which makes it more productive and more resistant compared to the parental strains.

The size of the thread in Chinese and Japanese silkworms reaches up to 1400 meters of continuous filament. With polyhybrid silkworms obtained by breeders—resulting from crossing the two strains—it can reach up to 2000 meters of continuous filament.

In commercial-type farms, the silkworm must be stopped at a certain stage of development corresponding to the formation of the chrysalis (the pupa). It must not complete its development because the butterfly, emerging from the cocoon with a secretion from its buccal apparatus, loosens the cocoon's fibers and dissolves the sericin. At that point, the thread becomes very weak when processed industrially, and it is no longer possible to reel the filament.

These cocoons are instead used in the carding process, but this is not suitable for the main processing purposes for which silk is intended.

Scattered notes, imagining new perspectives on human - non human relationships

Quotes from 'Chthulucene: Staying with the Trouble' by Donna Haraway and 'The Princess who Loved Insects'

the Communities of Compost understood their task to be to cultivate and invent the arts of living with and for damaged worlds in place, not as an abstraction or a type, but as and for those living and dying in ruined places.

the Great Dithering could end in terminal crises; or radical collective action could ferment a turbulent but generative time of reversals, revolt, revolution, and resurgence.

establishment of alliances and collaborations with people and other critters in those areas required the best abilities of the mentors and the in-migrants.

Remembering that humanity meant humus.

the sciences and arts were especially elaborated and cherished.

play was the most powerful and diverse activity for rearranging old things and proposing new things, new patterns of feeling and action, and for crafting safe enough ways to tangle with each other in conflict and collaboration

practice of friendship practice of play [...] were the core kin-forming apparatuses
Libraries [...] materialities [...] evoke curiosities and sustain knowledge projects for learning to live and die well in the work of healing damaged places, selves, and other beings

learning to inherit without denial and stay with the trouble of damaged worlds.

"The Princess Who Loved Insects."

All her passions were for the caterpillars and creeping crawling critters disdained by others heightened environmental justice.
a preference for the most vulnerable among other critters and their habitats

to stay with the ragged joy of ordinary living and dying.

the new things of earth [...] the emerging kinds of beings and ways of life of an always evolving home world.

the layered, curious practice of becoming-with others for a habitable, flourishing world

a child born for sympoiesis—for becoming-with
and making- with a motley clutch of earth others
ruined places and work with human and nonhuman
partners to heal these places,
for a newly habitable world.

Love of earth and its human and nonhuman
beings and by rage at the rate and scope
of extinctions, exterminations, genocides,
and immiserations in enforced patterns of
multispecies living and dying that threatened
ongoingness for everybody.

germs of partial healing even in the face of
onrushing destruction.

the sciences and arts are passionately practiced
and enlarged as means to attune rapidly evolving
ecological naturalcultural communities,
including people, to live and die well

collaborative and divergent story-making
practices, in narrative, audio, and visual
performances and texts in materialities from
digital to sculptural to everything practicable.
My stories are suggestive string figures
at best; they long for a fuller weave that
still keeps the patterns open, with ramifying
attachment sites for storytellers yet to come

The Great Dithering was a time of ineffective
and widespread anxiety about environmental
destruction. During this terrible period,
when it was nonetheless still possible for
concerted action to make a difference, numerous
communities emerged across the earth

concentrated on building culture, economy,
rituals, and politics in which oddkin would be
abundant,

a Phaecian princess from Homer's Odyssey named
Nausicaä, who loved nature and music, cultivated
a fervid imagination, and disdained possessions

"You have enslaved my ancestors and stolen their
lands. You have murdered them."

Anna Tsing urges us to cobble together the
"arts of living on a damaged planet"; and among
those arts are cultivating the capacity to
reimagine wealth, learn practical healing rather
than wholeness, and stitch together improbable
collaborations without worrying overmuch about
conventional ontological kinds

to propose near futures, possible futures, and
implausible but real nows.

a pathway into what was not yet but might be.

The Communities of Compost worked and played
hard to understand how to inherit the layers
upon layers of living and dying that infuse
every place and every corridor
they could not deceive themselves that they
could start from scratch.

making kin in innovative ways.

biologies and storytelling to be the richest
veins for weaving the needed fabrics to bind
syms and non-syms together.



rethinking relationality, perspective, process, and reality without the dubious comforts of the oppositional categories of modern/ traditional or religious/secular. Human-animal knots do something different in this world.

choose an animal symbiont for the new child.

Bodily modifications are normal among Camille's people.

further bodily modifications for pleasure and aesthetics or for work, as long as the modifications tend to both symbionts' well-being in the humus of sympoiesis.

In sympoiesis, the monarch critters, human and other-than-human, drank from the healing tears of the living and the dead.

become a Speaker for the Dead, to bring into ongoing presence, through active memory, the lost lifeways, so that other symbiotic and sympoietic commitments would not lose heart

the second Camille decided to ask for chin implants of butterfly antennae, a kind of tentacular beard

"What intrigues me the most is the caterpillars, which have a certain appeal," she would say, and she would lay them out on the palm of her hand and watch them from morning till evening with her hair drawn back behind her ears.

Oh, how regrettable! Why does she have such a weird mind, and when she looks so nice too!"

"When one thinks things through, one realizes that nothing is shameful. Who among men can stay long enough in this dreamlike and illusory world to look at bad things or look at the good and wonder about them?"

Her parents criticized her passion as "strange," "unseemly," and "a cause of embarrassment." But she retorted with firm indifference. She reasoned that the silk coveted by many was the product of silkworms that hadn't yet had the chance to fly. When they transformed into butterflies, they became hollow

"Imagine serving the princess who prefers caterpillars over butterflies."

"That must be tough. Our princess's eyebrows are as bushy as caterpillars."

"Her gums resemble a molting caterpillar."

"Well, with all these caterpillars, she doesn't need clothes."

The image of a young girl's body, swarming with caterpillars. The stark contrast of a caterpillar and a stunning girl, coupled with the portrayal of a cross-dressing nobleman and a princess in masculine attire towards the tale's conclusion, prompts us to reconsider the ever-shifting boundaries between beauty and repulsion, male and female, convention and anomaly.



Laboratoria Serica, Casa Punto Croce, 07-02-26

Notes on representing post-human animality

In Alexander McQueen's A/W 1997 collection *It's a Jungle Out There* centered on the Thomson's gazelle (*Eudorcas thomsonii*), which he interpreted as a poignant symbol of the cycle of life and death: "As soon as it's born it's dead" (Bolton 159). Leather, pelts, and even impala horns appeared in this collection, as did subversions of traditional materials—for instance, horsehair, typically used as padding, was transformed into a fluid, tasselled skirt.

Collections such as *The Birds* (S/S 1995) and *La Dame Bleue* (S/S 2008) foregrounded avian references through set design, makeup, and garment construction.

Such imagery underscores the centrality of animals—especially birds—to McQueen's aesthetic, while also revealing broader concerns with metamorphosis, identity, and the porous boundaries between the human and the non-human.

This tendency reached one of its clearest expressions in *The Horn of Plenty*, McQueen's A/W 2009 collection. The show was a sharp critique—what McQueen himself called "a sackable offence" (Frankel 2013, 2)—against the industry's destructive cycles of excess, consumerism, and waste. . *The Horn of Plenty* engages artistically with posthumanist ideas by destabilizing the very notion of what counts as "human," challenging binaries such as the human/non-human divide, and encouraging reflection on how anthropocentric thinking has shaped our

relationship with the planet.

[The bird-woman] hybrid is interpreted as a posthumanist exploration of human-animal proximity, revealing how both humans and non-humans are transformed in the Anthropocene [The posthuman] perspective is particularly relevant to fashion, an industry that has long relied on the exploitation of non-human entities, including natural resources and animals.

contemporary fashion designers such as Alexander McQueen have used their work to visualize this instability, drawing on the disruptive power of art and on fashion's "affinity for transformation," which often "stakes out the terrain of 'becoming'" (Evans 2023, 6).

For Braidotti, the body is not simply a biological given: it is "an ontological site of becoming," shaped by social and technological infrastructures

clothing transforms "nature into culture, layering cultural meanings on the body" (Entwistle 2023, 144)

inscribe alternative modes of becoming onto the body, including becoming-animal or becoming-other (Braidotti 2017).

posthuman figure in fashion as "a hybrid figure who decenters human subjectivity, celebrating in-between-ness by making alliances with all kinds of non-humans" (Smelik 2022a, 58).

A posthuman approach to fashion therefore provides a powerful lens through which to understand how significant parts of the industry contribute to the exploitation of non-human life—whether natural resources or animals (Ehrenfeld 2015; Niessen 2020; Smelik 2022a; Vänskä 2018).

In their discussion of “becomings-animal,” Deleuze and Guattari emphasize that their force does not stem from copying an animal but from a transformative proximity that produces an indiscernible, shared state (307). It is precisely this blurred, hybrid identity that McQueen continually sought to explore in his work.

evoking both a furry caterpillar, butterfly wings and the human face, creating a being literally in transition, in a state of becoming: in between human and animal, in between silk worm caterpillar and butterfly, in between raw silk cocoon and elaborate jacquard woven silk (Faiers 127).

McQueen created hybrids, outfits that were both human and animal, part human, part animal and part machine. His play with the morphic variability of bodies explored the possibilities of the in-betweenness of becoming—becoming animal, becoming machine.

McQueen sutured parts that did not belong together to create unprecedented creatures whose monstrosity, both enthralling and discomfoting, reflect concerns about our post-industrial world

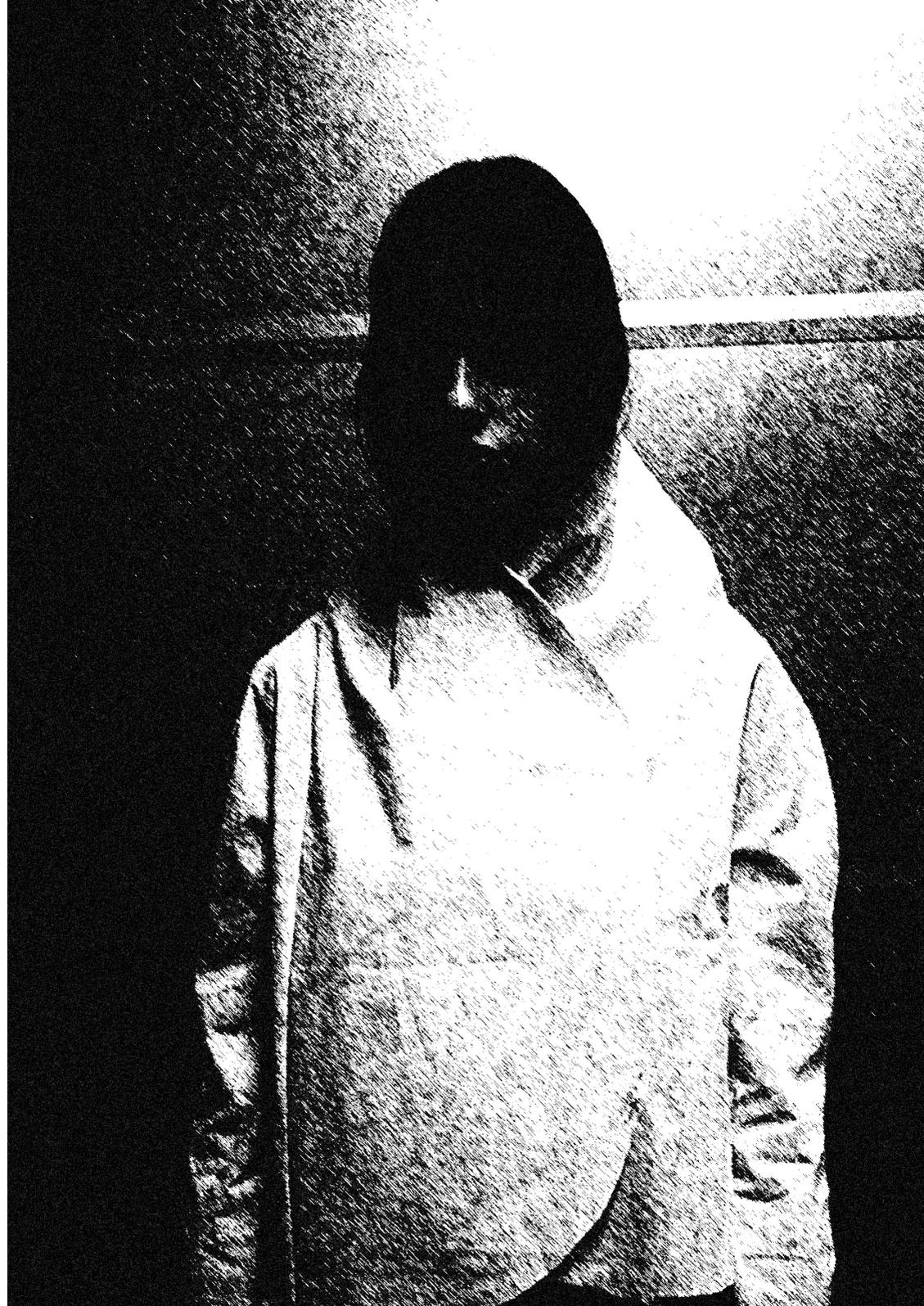
and the impending doom of climate change brought about by man’s crazy tampering with the fabric of nature.



M anifesto

We're living in a time of ineffective and widespread anxiety about environmental destruction, where humans are continuously recreating old ways of making things for personal gain, labeling them "sustainable" or, even worse, "ethical". When faced with the reality behind the "ethical silk" project our immediate reactions were disbelief and anger. What's ethical about raising critters in captivity, selective breeding them in order to gain more thread, obtained by boiling them while in the pupa stage? Is it ethical just because, after thousands and thousands of years of selective breeding, the bombyx mori moth doesn't have a digestive system and is thus condemned to reproduce and die of hunger if they're allowed to complete their beautiful metamorphosis?

As a creative collective, we want to imagine new ways of utilizing silk/making fashion, taking a radical stance against the exploitation of non-human beings. We hope to find a way to liberate the Bombyx Mori and other species from their enslavement. We strive for a renewed multispecies world, built on interspecies collaboration. We want to explore and implement



bodily modifications as means of pleasure, aesthetics and performance. Our goal is the well-being of all creatures (human, non-human and symbionts).

Through collective action we wish to settle the germs of partial healing from the damages humanity has done to the Earth and the non-human beings that inhabit it. The only process through which this is possible is through an imaginative exercise of rebuilding, using active memory to inherit the echelons of living and dying, paved by all the creatures that came before. Still, before that it is pivotal that we deconstruct ourselves in the idea of being separated and different from the non-human form of life. We need to rethink ourselves into a liminal space of proximity between human and non-human, that situates our bodies into a zone of indiscernibility and undecidability, stabilize ourselves into a zone of becoming, in a forever-never-ending state of movement. The process of becoming represents the moment of dressing and its identity variation, an act that requires learning to inherit without denial and to remain with the problem of damaged worlds. It enters itself in a vulnerable form within a context where reality takes a layered yet fluid shape in the human and animal body and again other-bodies.

Becoming-animal is not a matter of imitation or of engagement in the reproduction of pre-existing forms; rather, it is a movement toward non-human intensities that sweep the subject up into an assemblage of novelties. Through this

assemblage unprecedented creatures will rise, tied together by sticky threads, ever changing in shapes, volumes and details. Creatures that have wings and tails as well as antennae, a furry and velvety body, made of scales, feathers and fishbones. They'll show blurred and hybrid identities, related to each other by a deep desire of learning how to live and die well on a damaged planet. In a renewed multispecies world and environment of infinite identities, their becoming is necessary for the symbiosis of the bodies that inhabit it. This movement toward non-human intensities inevitably opens onto a shared state, a zone of relational entanglement of collaborative practices between species. Ever-shifting boundaries will rise, leading to an actual transformative proximity based on the layering of cultural meanings on the body.









Collection created by Rebecca Costa, Alessia Gjini, Giulia Malatesta, Michele Morando, Aria Princigalli and Tia Quaglia as part of the FASHION MATERIALS DESIGN STUDIO course, curated by Professors Lucia Rosin and Davide Crippa.

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