

Physical and Living Alps

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Preface

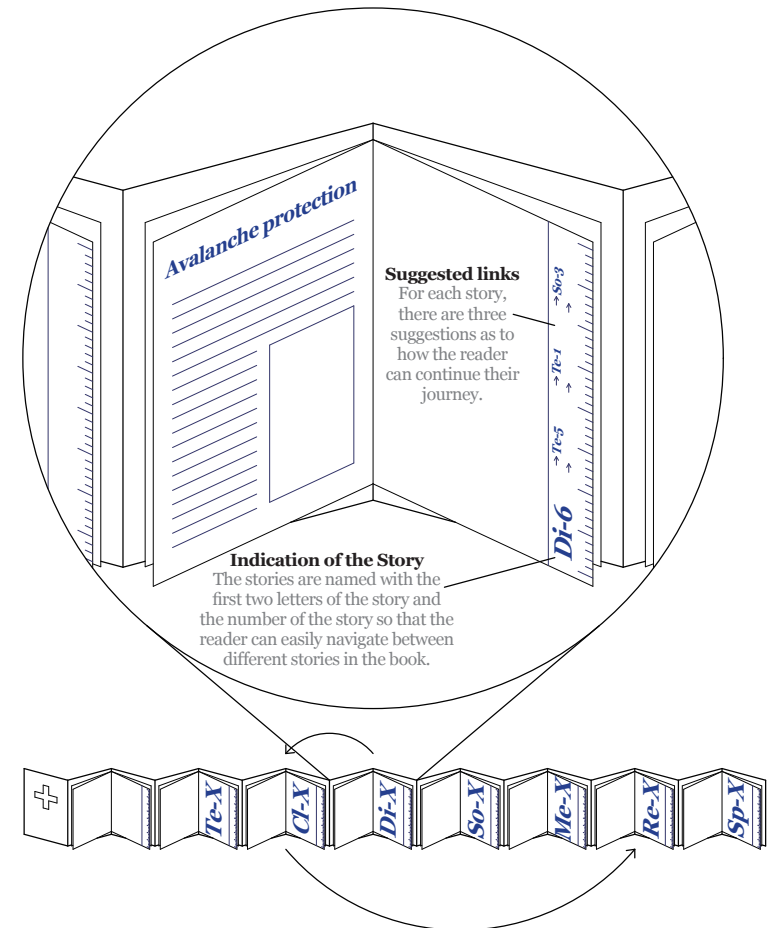
Welcome to The Physical and Living Alps, a logbook that ventures beyond the traditional boundaries of storytelling. This is not a linear exploration, but a multidimensional journey that mirrors the intricate web of life sustained by the physical and living landscapes of the Alps. Here, we invite you to dive into the dynamic relationships between the mountains, ecosystems, human settlements, and the forces that shape this remarkable region.

The Alps are not just a backdrop to human activity; they are a living, breathing entity. Their towering peaks, glacial valleys, and rugged terrains give rise to a unique environment where nature and human life are intricately linked. This logbook aims to unravel those connections, not as isolated events but as a network of interwoven forces.

In this book, we explore how the physical aspects of the Alps — its geology, climate, and landscapes — give rise to the rich tapestry of life that thrives here. But we also emphasize how living beings, from humans to wildlife, have shaped and been shaped by this environment over time. Whether it's the human ingenuity in building resilient alpine communities, the adaptability of flora and fauna, or the natural cycles that define the seasons, each element is connected, dependent on the others.

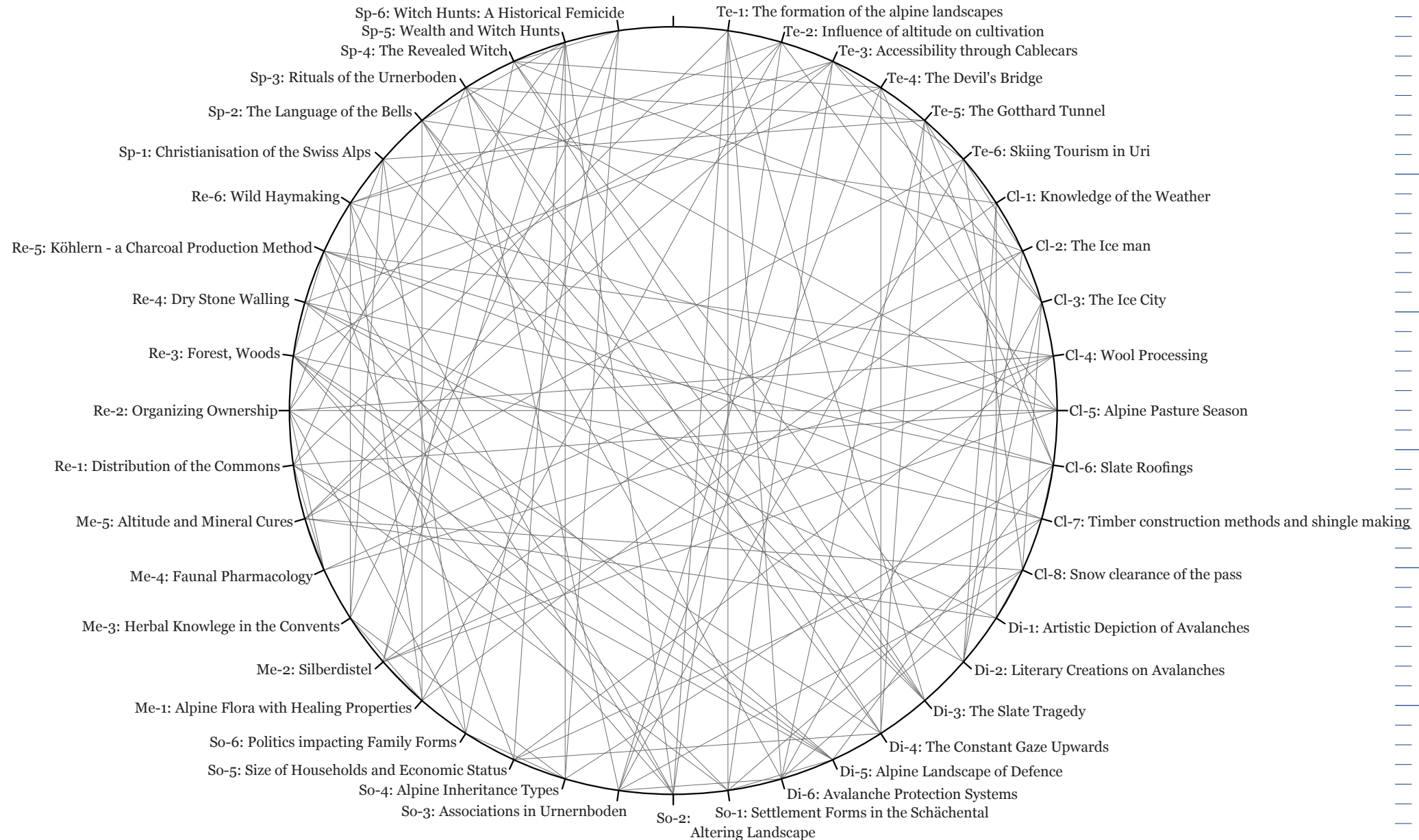
Instead of following a single path, this logbook allows you to explore the Alps through a web of interrelations, much like the way life unfolds in these mountains. As you turn each page, you'll find links between topics, bridging the past and present, the physical and the living, in an ever-evolving dance. There is no single entry point, no defined end; only a deepening understanding of how every aspect of the Alps sustains and influences the other.

In this non-linear narrative, we hope to capture the essence of what makes the Alps alive — not as static mountains, but as a complex and living system, forever in motion. Explore freely, connect ideas, and discover how the physical and living Alps are inextricably bound together in this ever-changing alpine world.



Wheel of Contents

All the stories are listed on the "Wheel of Contents" and divided into chapters. The lines represent the suggested connections. Of course, other connections are also conceivable, but we leave it to the reader to give free rein to their creativity.



Index

*Interviews with Beatrice Gisler; Restaurant Klausenpass
and Markus Walker; Gasthaus Urnerboden, on September 27, 2024*

*The questions are organized thematically according to the topics of the
chapters. You can decide which area you are most interested in. Just follow
the link of the question to get to the corresponding chapter.*

How does the steep and rugged **Terrain around the Klausenpass
affect daily life and work for the community?**

Beatrice Gisler: "The steep, high-altitude areas are ideal for summer grazing, but the terrain means that farmers must move their cattle multiple times throughout the season to ensure the land recovers. Mettenen is a great example for this. This alp is private property. They must relocate very often as they are not allowed to stay at one place for too long. They can't stay long at the Urner Boden in spring, and they also must move on after just 11 days when they come down in fall. They must move 8(!) times each season with their cattle. They start in Mettenen, then they move to the Urner Boden. After ten days they go back to Mettenen, then to "Butzli" and back to Mettenen again. Then they go to Urner Boden for a second time and return one final time to Mettenen before going home again. They do all of this in a span of five months."

What are some of the biggest challenges you face due to the **Climate
during the winter months?**

Markus Walker: "When you live up here, you have to deal with the weather and the dangers. Together with two other people, I am responsible for deciding whether the pass road needs to be closed. It has a lot to do with experience, you can't just blindly trust the measuring devices. There are always other conditions that determine the danger. In addition to the amount of snow, the winds are the main factor."

Have you or your community experienced natural **Disasters, such
as avalanches or landslides, in the Klausenpass region? How did you
cope?**

Beatrice Gisler: "Not recently but there were some incidents in the 1960s in which many people or whole families have died. If you drive on to Urnerboden there is a sign at the church where everything is described. In Unterschächen, a mother of 8 or 9 children lost her life to an avalanche in 1968. In the same year a whole family was buried by an avalanche in Silenen. Just the father survived because he left early in the morning to work in the barn. Their neighbor also lost his life in the barn next door because it was also buried by an avalanche. This was a very heavy winter with much snowfall and many avalanches."

In the Ribi there is a big bunker. In case of an emergency the fire department makes phone calls to the people to warn them. This is a safe space where people from Wannelen can go in case there are avalanches coming down. This happened now and then in the 1960s when the winters were heavier. Everything was organized per phone."

In what ways do you feel the isolation affects the **Social fabric of the community?**

Beatrice Gisler: "People used to just live on the alps as they didn't know anything else. There were up to three generations in the same household. But that was a long time ago and not too common anymore. I can tell you from my personal experience as I took over my parents' house and they moved out. It's a different story for people who own farms. There it's still usual that everyone lives together under one roof and the children take care of their parents when they get old.

People also didn't use to have the same possibilities as we do today. If children want to learn something new, the parents can afford it nowadays. This was not the case earlier, people relied on clubs and associations. You can join clubs for a small yearly fee or even for free. That's why they used to thrive in earlier days. Today, the possibilities are endless."

How does living in the alpine region affect access to **Medical care and treatment for illnesses? Especially for elderly people?**

Beatrice Gisler: "Traditionally, families took care of elderly members in a multi-generational household. However, this is less common now, with more elderly people moving to retirement homes in larger towns for better access to care, as smaller villages cannot provide the same level of support. In the past, families would have been more closely involved in caregiving, but today, support structures have shifted. The nearest retirement homes are located in Bürglen, Schattdorf, Flüelen and Altdorf."

Are there any cultural or **Spiritual practices that help you and your community deal with the unpredictability of alpine life?**

Beatrice Gisler: "Just legends which are known in the region but not really traditions. There are people which believe them to be true for sure but it's not a common thing up here.

I remember the "Bittgang" we used to have when the farmers used to bring their cattle up to the alps. People used to walk through the streets and pray that nothing bad happens while they were on the alps. But we don't do that anymore.

We also have a tradition that you shout a "BetruF" on every alp. This tradition for protection is still practiced to this day. A farmer shouts this "BetruF" every evening when the cows are on the meadow."

What methods are used to balance the use of shared **Resources like pastureland among different farming families?**

Beatrice Gisler: "The land is often owned by the corporation. The farmers are allowed to use it as common land, but the huts and other buildings are always private. We would have been able to buy the land we are using from the corporation once but that's not possible anymore.

The "Alprecht" decides how many cows each farmer can take to the alp. Not everyone is allowed to take the same amount. It depends on the size of the "Oberstael". The Urner Boden is the "Unterstafel" and when they come up here, that's the "Oberstafel". The "Alprecht" is distributed according to the size of the "Oberstafel".

In fall the farmers take as many cows back home as they can feed through the winter. They either sell the rest of the cows or give them to other farmers in the region or even in different cantons like Aargau or St.Gallen.

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Terrain

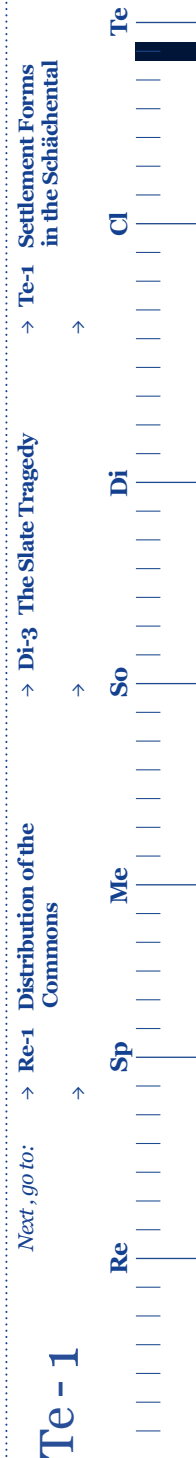




The Formation of Alpine Landscapes

Imagine standing atop the Klausen Pass, where the majestic peaks of the Swiss Alps stretch before you. Beneath your feet lies a hidden geological wonder: the Glarus Overthrust. Millions of years ago, immense tectonic forces pushed ancient rock layers, formed 250 to 300 million years ago, over much younger layers, creating a dramatic overthrust fault.

This event, known as a thrust fault, reveals the dynamic process of orogeny, or mountain-building, as the African and Eurasian plates collided. Today, the Klausen Pass offers a window into this ancient upheaval, with the "magic line" marking the clear boundary between the contrasting rock layers.





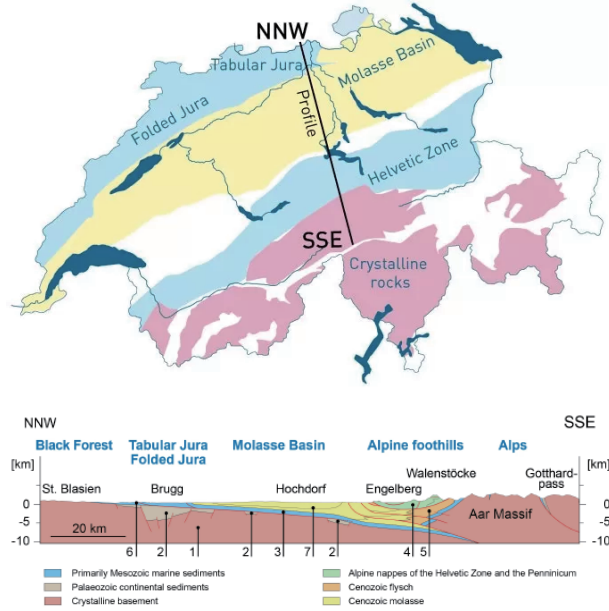
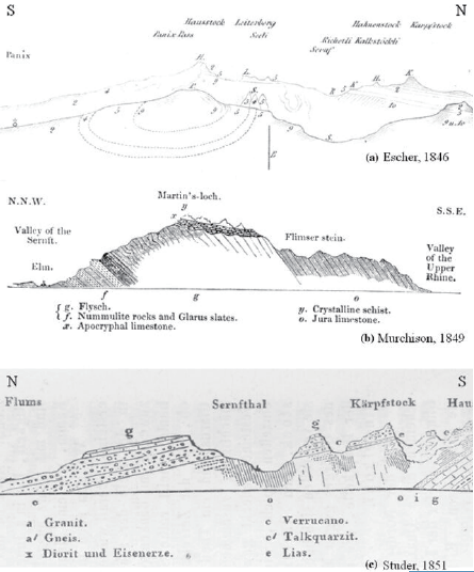
Andreas Gursky's "Klausen Pass" (1984) is a notable early work by the acclaimed German photographer. This photograph captures the rugged Swiss landscape of Klausen Pass, a high-altitude mountain pass in the Alps.

In contrast to Gursky's later digital compositions, Klausen Pass is part of his earlier period, where natural landscapes were captured in a more straightforward, traditional photographic style, without the heavy post-production techniques he became known for. By the late 1990s, Gursky began using digital manipulation to heighten his images' scale and impact, creating more abstract and hyperreal compositions.

Gursky's work often comments on the tension between humanity and the environment, using expansive landscapes to highlight both beauty and the insignificance of human presence. The clarity and detail in his early work like Klausen Pass set the stage for his more abstract, large-scale images of later years.

The Sardona Tectonic Arena, located in eastern Switzerland, is renowned for its breathtaking Alpine scenery and high-altitude lakes. Spanning more than 300 square kilometers around Piz Sardona, the region is geologically significant for displaying a rare phenomenon where older rock layers are found above younger ones. This anomaly serves as crucial evidence of plate tectonics and mountain formation processes. In recognition of its importance, the site was declared a UNESCO World Heritage Site in 2008, praised for its outstanding contribution to the understanding of mountain formation.

Covering an area of 32,850 hectares, the Sardona Tectonic Arena features several peaks exceeding 3,000 meters in height, many of which remain snow-covered year-round. Experts view the area as a prime example of mountains formed by the collision of continental plates, showcasing a geological cross-section that vividly illustrates the superposition of the Earth's crust. During this process, older, thicker rock layers from deep within the Earth were thrust over younger, thinner layers. This unique three-dimensional perspective makes the site a key scientific resource for geologists studying plate tectonics and mountain-building dynamics.



The Sardona region, and particularly the Glarus Overthrust, has been a focal point for geological research since the 18th century. Initially, scientists were puzzled as to why massive, ancient rock layers in the Glarus region were found atop younger formations. It wasn't until the mid-20th century, with advancements in fault dynamics and plate tectonic theory, that geologists attributed the phenomenon to the action of a large overthrust fault. The Glarus Overthrust, spanning over 300 square kilometers, is marked by the visible separation of older reddish rock layers from younger gray-brown ones, divided by a distinctive groove known as the "magic line." This clear visibility and the site's role in the development of plate tectonics theory were key factors in its designation as a UNESCO World Heritage Site.

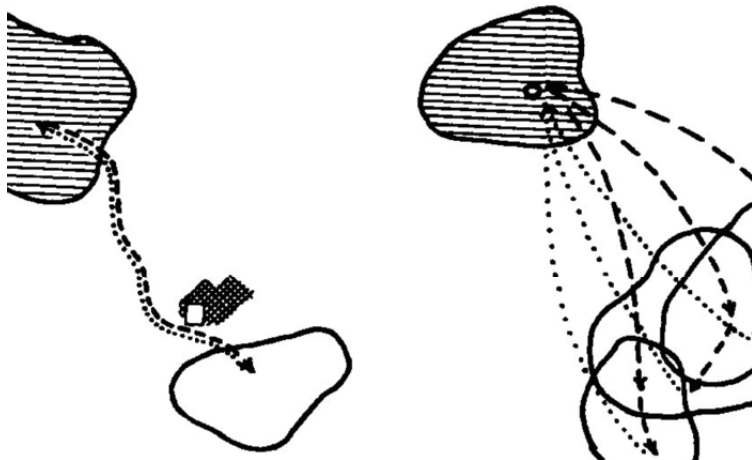
Influence of Altitude on cultivation

The higher the altitude of a field in the mountains, the smaller the harvest (40% less per 1000m difference in altitude) and the shorter the vegetation period.

In an early phase, when agriculture in the Alps and surrounding areas was relatively extensive, i.e. large areas were available, altitude and growing season were less important. The size could be flexibly adapted to the needs of the harvest and was therefore not dependent on achieving maximum yields per unit area.

Later, when agriculture reached a generally higher level of intensity, altitude and growing season became more important. In this phase, it was more important to have optimal conditions for cultivation, as efficiency and productivity per unit area were the main focus.

Even though the size of farms, crop types and livestock differed regionally (large prosperous farms in the east, smaller farms in the west), the multi-level system of alpine farming gave it a unity within the Alps. The summering of animals on high-altitude pastures that were difficult to access from settlements was forbidden almost everywhere, whether in the form of alpine farming (winter stabling, short distances) or transhumance (year-round grazing, long distances).



Accessibility through Cablecars

During the White War, Italy began developing cableways rather later than Austria-Hungary. Each day, an Alpine brigade required around 200 tons of supplies – food, equipment, clothing and ammunition. In 1915 all of this was brought up to the front line by mules, donkeys, civilians pressed into service, or prisoners of war. Under the harsh conditions in the mountains it could take well over an hour to cover one kilometre, and both porters and pack animals required supplies themselves, as well as rest. A single cableway could operate for 20 hours a day with a few hundred men and reliably deliver 6 thousand quintals of supplies. Without a cableway it would have required 400 trucks with a thousand drivers or 1,500 carts with 2 thousand soldiers and 3 thousand pack animals to achieve the same.



In 1916 the High Command decided that new, more efficient transport infrastructure was required. In the summer of 1916 the first cableway platoon was formed and by the end of the year another twelve had been formed and assigned to larger units on the front. By October 1917, the Italian Royal Army had built 564 cableways covering a total distance of 614,315 metres. Over the three years of the conflict, the Italian Army built 2,170 cableway installations with a total length of 2,300 kilometers, transporting 3,800 tons of material per hour.

Three companies supplied most of the machinery for the Italian cableways: Ceretti & Tanfani of Leini, Badoni, Bellani and Benazzoli of Lecco and Luigi Spadaccini of Milan. The cableways were of three types; three-rope, "single mobile rope" and "single fixed rope". They carried containers that could carry between 50 kilos and 20 quintals.[4] The systems were designed to be built and dismantled rapidly, using mostly standard parts. It normally took 72 hours to put up the cableway stations, mount the tubular trestles, unwind the cable and raise it onto the trestles by hand.

The Devil's Bridge

Progress Without Loss of Soul
A New Interpretation of the Legend of
the Devil's Bridge
by Theodor Abt



The legend does not primarily reflect
a historical event but represents the
processing of a significant progress

through the collective consciousness.

Therefore, it is a matter of state,
expressed through the magistrate and

the councilors. For the construction
of a bridge over the Schöllenen Gorge
in the 12th century must have been

an unheard-of event for that time,
a true triumph of technology over
nature. Yet every triumph over nature,

every liberation from the world of
nature and instinct, every expansion
of consciousness, contains the danger
of a loss of soul, a separation of
consciousness from instinctual nature,
the unconscious.

Such an overcoming of the defiant
mountain nature could not, in the view
of the time, be achieved by human
consciousness alone. It could only
arise with the help of superhuman
forces. But since God's creation is
perfect, only the devil can come into
question as a helper: Lucifer, who

seeks to improve God's world. Progress
was always seen as the devil's work, and
so it could not simply be accepted as a

gift. This would have equated to a loss
of soul at the time: As the price for
progress, the people of Uri would have
had to give a soul to the devil,
which, as *pars pro toto*, meant
the soul of Uri itself. Thus, the

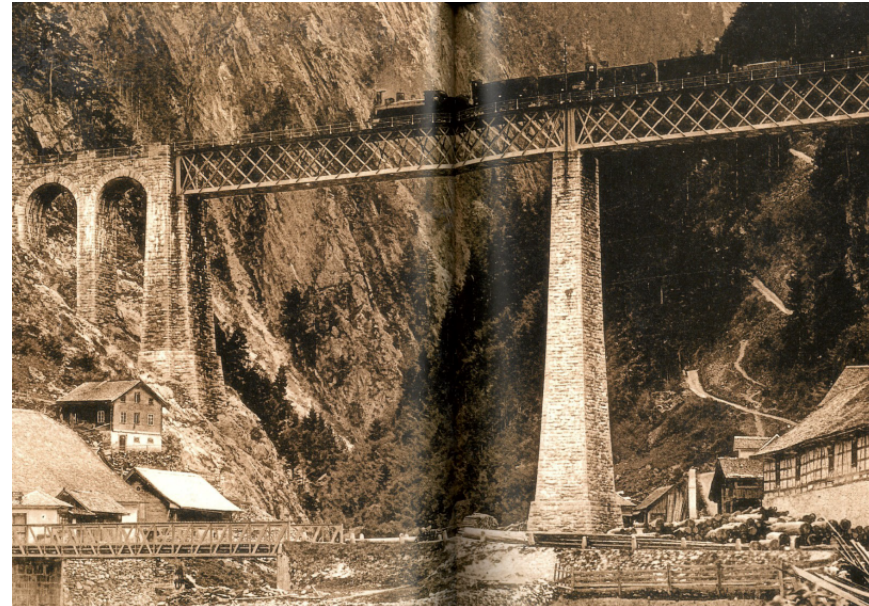
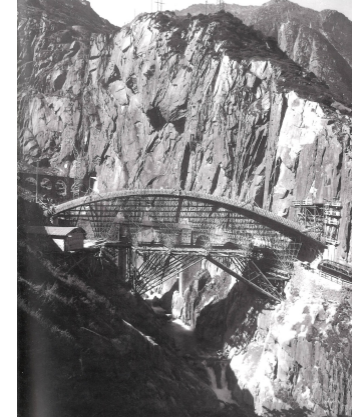
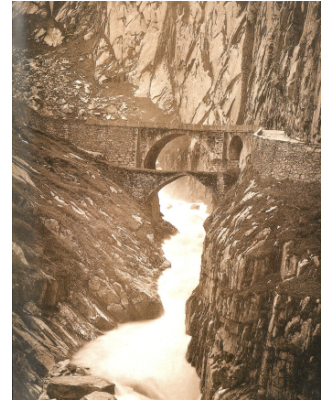
emergence of the legend can be
explained as the processing of
progress perceived as a threat.

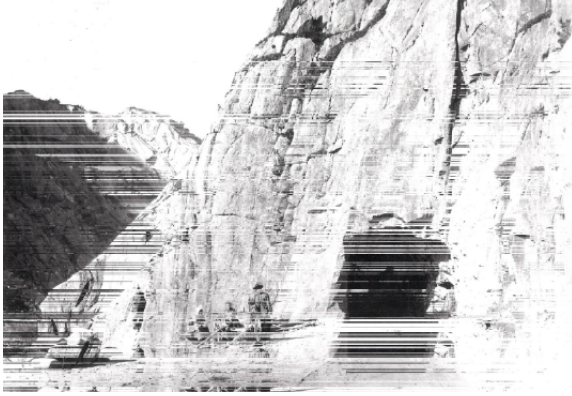
What is remarkable about
the legend is that the people
succeed in banishing the devil,
bringing them benefits. Yet one
thing is required: one must deal
with evil properly and banish
it at the right moment. Or,
expressed psychologically: It
requires a confrontation with the
Luciferian. In this context,

I would like to address two
aspects of the legend:
a) The banishment of evil
b) The consolidation of progress

The people of Uri first tried to banish the evil in the legend with the very old banishing formulas known in Uri, “Nit derglychä tua” (do not do such things). But it seems that this was not enough to deal with the mighty "great devil," that is, technological progress. According to the legend, a sacrifice is needed to banish the technocrat, who possesses the knowledge of bridge-building. The sacrifice is a goat. The billy goat has been a cult animal since ancient times, and it must have been a very important sacrificial animal among the Germanic peoples. The goat was sacred to Donar and Wotan. Since most of Donar’s and Wotan’s characteristics passed to the devil during Christianization, the goat became the devil’s animal. The billy goat, the “little devil,” is thus a symbol of evil very close by. For this, Jung coined the term shadow. He understood it to mean all the qualities that belong to human nature but are not lived due to moral, ethical, or other reasons.

“To be able to sacrifice something means to have it first.” So if the shadow is to be sacrificed, it must first be made conscious in some way. Understanding the shadow seems to be the key to dealing properly with the “devil of progress.” The warlike billy goat, a rather headstrong and horned animal, can be understood as the power-shadow, which had to be sacrificed by the community. For often the claim to power, after success, unconsciously leads to the belief that with the progress achieved, there is no higher power anymore.



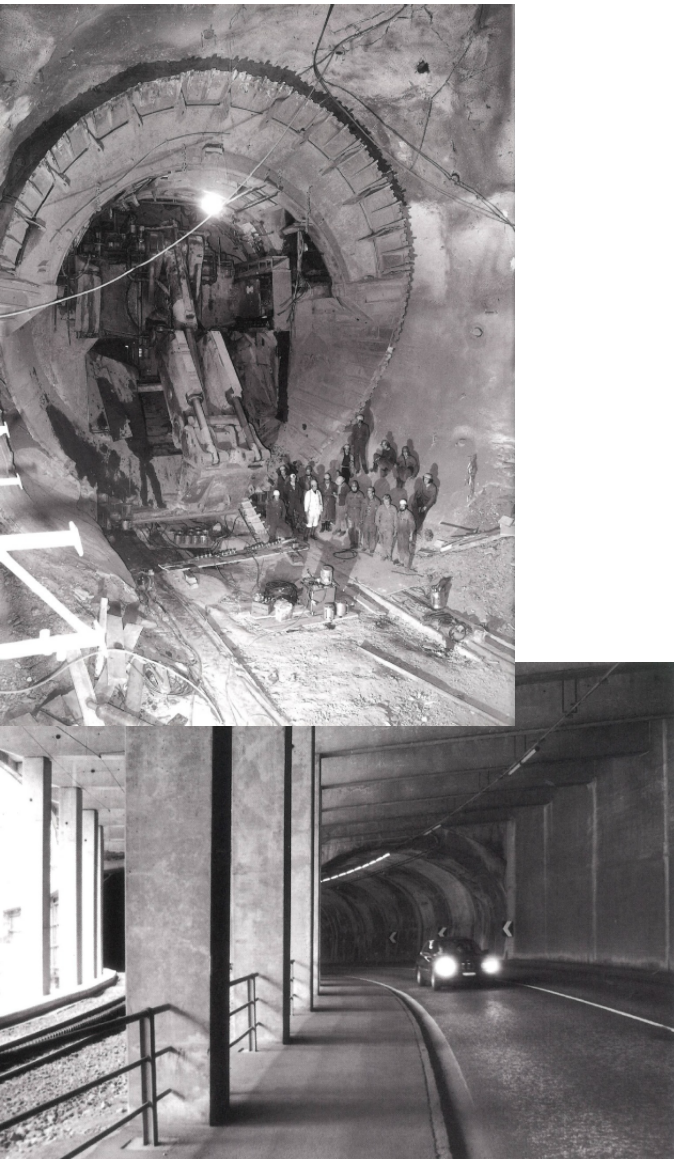


Gotthard: A Lifeline Through the Alps

The Gotthard Pass has long been a vital route connecting northern and southern Europe. The construction of the Gotthard road tunnel, which opened in 1980, marked a major milestone in transportation. Though overshadowed by the more spectacular Gotthard Road Tunnel, the Seelisberg Tunnel, with two parallel tunnels each 9,250 meters long, was also a significant project. Using an 80-ton American machine nicknamed "Big John," workers drilled through the mountain, bringing to life an idea that had been circulating in traffic plans since the 19th century.

Transformation of the Region

Before the road tunnel, Ticino was connected to northern Switzerland only by the Gotthard railway tunnel. Cars could only cross the Alps via SBB car trains between Göschenen and Airolo, costing 30 Swiss francs each trip. The construction of the road tunnel reshaped not just traffic, but entire communities. Altdorf, for example, was transformed with new infrastructure, losing much of its small-town charm in the process. The Schöllenen Gorge was bridged again in 1955, highlighting the region's continuous adaptations to growing traffic demands.



The Gotthard Road Tunnel: A Monumental Achievement

At 16.918 kilometers long, the Gotthard road tunnel required the excavation of 1,400,000 cubic meters of rock and 370,000 cubic meters of concrete.

With 7,700,000 liters of diesel and 2,800,000 kilograms of explosives used, construction took 9,200,000 work hours to complete.

During peak periods, around 720 workers were employed, many from Italy, Spain, Yugoslavia, and Austria. Sadly, 19 workers lost their lives during construction. Today, travelers pass through the tunnel in just 15 minutes, often unaware of the scale of the effort involved.

Impact and Overwhelming Traffic

The Gotthard tunnel not only shortened travel time between major cities like Milan and Hamburg, but it also restored a sense of unity to the Central Swiss region, which had been disrupted by the construction of the Axen Road. The vision of the mountain as a connection contrasted with the narrative and the buildings that conquer the mountain as a border. The base tunnel has allowed the small country of Switzerland to strengthen the cohesion of the entire continent.

The religion of the tunnel

If there is such a thing as a religion of the tunnel, it can be traced back to the tension between two female embodiments of different forces: Sissi, the name of the tunnel drilling machine, stands for the effect of technology, while Saint Barbara, patron saint of miners, symbolizes the effect of a transcendent greatness. Both have the task of conquering the mountain. Saint Barbara played a very important role for the miners at the Gotthard. A miner, accompanied by two comrades, places it in a prepared niche, where it is blessed during a small mass. An big part of the opening ceremony was the Roman Catholic blessing, strongly aimed at the local religious community.

The Gotthard Tunnel

Skiing Tourism in Uri

Arthur Conan Doyle: Uri's Ski Pioneer

Sir Arthur Conan Doyle, renowned for his Sherlock Holmes stories, was also one of Uri's early ski pioneers. In 1894, he crossed the Furka Pass on skis, describing them as “clogs made of elm wood.” While skis had been used by Nordic peoples since the Stone and Bronze Ages, skiing didn’t reach the Alps until the late 19th century. The first skiers in Uri appeared in 1894, and the new method of snow travel quickly impressed the locals, who previously struggled in deep snow using primitive devices called "Schneebrättli."



The Arrival of Norwegian Skiers in Uri

Between 1893 and 1895, Norwegian skiers arrived in the Urserental and demonstrated their superior skis, known locally as “Schneeschuhe.” Their elegant skiing convinced locals to adopt the method. One of the first Uri pioneers was Dr. med. Schönbächler, who recognized the practical benefits of skis. Two Norwegian skiers, Leif Berg and Thorleif Björnstad, trained the first Uri skiers, marking the start of skiing's rise in the region. Foreign guests, like members of the Schwarzvald Ski Club, continued to fuel this new sport, taking on challenging high-altitude tours.

Ski Manufacturing in Uri

By 1900, local carpenters in Uri, such as Emil Hegi, began producing skis. Using traditional wood-bending techniques, they created handcrafted skis from elm and ash, treated with linseed oil to protect them from snow. Artisanal ski production continued in Andermatt until the 1930s, when plastic and metal skis replaced wooden ones. Karl Beer and others in Hospental refined the manufacturing process, but the rise of mass production eventually ended this local craftsmanship.

Skiing Spreads Across Uri

Skiing in Uri spread quickly, with the first Swiss ski race held in Glarus in 1901. An Andermatt sergeant, Müller, won the race, showcasing the enthusiasm for skiing in the region. By 1903, skiing had gained popularity, even though some older mountain guides were skeptical. Younger mountaineers, however, eagerly embraced the new sport, seeing it as a valuable mode of transportation for winter and spring ascents.

Michael Wipfli: A Skiing Innovator

In 1902, mountain guide Michael Wipfli undertook his first ski tour and began promoting skis to his colleagues. He made skis himself and patented a type of snowboard in 1910, adapted for practical use in the mountains. Wipfli’s invention, featuring two curved runners connected by lightweight crossboards, proved superior to older equipment, earning praise from both mountain guides and sportsmen.

Climate



W. M. HERRING

Knowledge of the Weather



In the age of scientific weather forecasts and climate analysis, traditional farmers' proverbs have become part of folklore. Nevertheless, hardly a week goes by in which some television channel, radio station or newspaper does not quote an ancient proverb on the supposed laws governing the weather. These pearls of wisdom do of course stem from traditional knowledge and experience, but can equally be understood as literary forms of expression significantly influenced by the zeitgeist of the Romantic period. In addition to the conventional stylization of the farmers' meteorological knowledge, the practice of interpreting the weather was always popular. It arose out of the essential need to calculate and plan agricultural processes and was usually limited (literally) to the local horizons. It was written down mainly in almanacs, although this information was not

always unfiltered. To this day, many residents of the Central Swiss countryside still make their own weather observations and forecasts, despite the ubiquity of weather forecasts in the media and the effectiveness of professional weather services. These forecasts are based on the environment they are familiar with, its flora, fauna and natural phenomena – red sky in the morning and evening, clouds, animal behavior and their own sensitivity to changes in the weather are all important indicators. Many also keep a weather log book close at hand so that they can update it regularly with the latest meteorological data.

February 2nd – "Candlemas" and March 19th – "St. Joseph's Day" both promise a good harvest if the weather is fine. May 12th to 14th – the well-known Ice Saints (Pankratius, Servatius, Boniface) bring frosty nights. June 24th – "St. John's Day" (John the Baptist) marks the start of the hay harvest and is also "Midsummer Day." June 27th – "Seven Sleepers Day" determines the weather for the next seven weeks. The weather on August 15th – "Assumption Day" predicts the weather for the entire autumn. September 29th – "Michaelmas" marks the end of the outdoor working year. The weather on November 6th – St. Leonard's Day, the patron saint of livestock farming, will remain until Christmas.



1 a Circoncision	11	* * DIEU	humide	La Lune se re-
Le lever du Soleil 7. heur. 49. min.		Couche du Soleil 4. heur. 11. min.		nouve Hera le 4
2 s Abel Clair	23	* * Δ nous	froid	le temps est assez
3 s Isaac	5	benisse depuis	neige	froid, luivi des
4 d s Tite Eveq.	18	3. h. 4. min. dev. mid.	Δ	flocons de nei-
5 s Simeon	1	* * le commence-	froid	& du vent.
6 f Les 3 Rois	14	* * ment	du veni	La Lune entre-
7 g s Lucian	27	* * Jufques	couvert	ra dans son pre-
8 a s Erhard	11	* * * * 8	froid	mier Quartier le
Le lever du Soleil 7. heur. 45. min.		Couche du Soleil 4. heur. 15. min.		11. nous montre
9 B s Julien	25	* * * * Orient	violent	un tem- humide,
10 s Guillaume	8	* * * * 8	froid	le 16 promet des
11 d s Salme	22	9. h. 13. m. dev. mid.	Δ	beaux lueurs du
12 e s Satyr	6	(perig. Δ) la fin	du veni	soleil.
13 f s Hilaire 20. j	21	* * Δ Δ	neige	La pleine Lune
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15 a s Maure	19	* * * * 8	humide	tera un air tem-
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17 e s Anthoine	18	* * * * pluieux		d'Incendies &
18 d s Prifce	2	4. h. 5. min. dev. mid.	Δ	d'autres maux.
19 e s Omer	16	* * On parle	humide	La Lune sera
20 f s Sebaft. Fab.	9	* * d'un grand	lueur du	dans son dernier
21 g s Agnes	13	* * en	soleil	Quartier le 25 le
22 a s Vincenc	25	* * Δ Δ	playe	temps sera fort
Le lever du Soleil 7. heur. 32. min.		Couche du Soleil 4. heur. 31. min.		humide, avec de
23 B s Emerentia	7	* * changement	couvert	la neige ou des
24 e s Timothée	19	* * * * du vent		pluyes, le 30. il
25 d Conv. S Paul	1	9. h. 23. m. apres midy.	* *	arrivera un ton-
26 e s Polycarpe	13	* * Apog. sur les côtes.	⊕ froid	neau tout plein
27 f s Chrysoftom	25	* * Δ Δ	variable	de malheur & de
28 g s Charle M.	7	* * Δ Δ	neige	inconfiant malice.
29 a s Valere	19	* * * * 8	froid	
Le lever du Soleil 7. heur. 24. min.		Couche du Soleil 4. heur. 36. min.		
30 B s Adelgonde	1	* * Δ Δ	marines	
31 a s Vénit	14	* * Δ Δ	inconfiant	

me & de bon vin, | Poins de Medecine vous querira,
Auxieux la fin: | Au cas de beioin on l'essayera



Madame la Lune m'a dit...

Entre croyances et observations empiriques, la Lune alimente l'imaginaire humain depuis qu'elle s'amuse à jouer à cache-cache avec le Soleil. Est-ce bien raisonnable?

Elle naît, croît, atteint son apogée puis disparaît. Mais, sans cesse retrouvant ses formes initiales, l'astre de la nuit ne meurt jamais. Cette périodicité sans fin fait que la Lune a depuis toujours fasciné, voire intrigué les hommes. Symbole du temps qui passe, de l'espoir et de la renaissance, elle l'est de la mort aussi puisque, durant trois jours chaque mois, elle s'absente, comme happée par le néant.

Cinquième plus grand satellite du système solaire, avec son diamètre de 3474 km, la Lune, on le sait, est à ce jour le seul astre, mis à part la Terre, à avoir été exploré par l'homme en personne. Pourtant, que de secrets recèle-t-elle encore! Que de légendes suscite-t-elle toujours! A croire, qu'en dépit des avancées de la recherche scientifique, qu'une armée de lattes s'ingénie à préserver ses mystères.

Depuis la nuit des temps, elle forme avec le Soleil un couple d'amants tumultueux, se poursuivant sans relâche dans le ciel sans jamais parvenir à se rejoindre. Quelle opiniâtreté! Quelle persévérance! Quel bel exemple pour tous les amoureux!



La Lune de janvier prévient l'amour.

Sujette à controverses

On dit que l'influence de la Lune sur les plantes, les animaux ou les humains est considérable. S'il est vrai qu'elle conditionne les marées, le cycle de reproduction des bébés et leur migration, la question de son action sur les hommes semble sujette à controverses. Si certaines croyances ancestrales confèrent à l'astre de la nuit des pouvoirs magiques auxquels nous n'accrochons plus trop le crénelé, tel par exemple, celui de condamner les hommes punis à être transformés en loups-garous les soirs de pleine lune, d'autres superstitions demeurent encore bien ancrées dans le subconscient collectif. On connaît, bien sûr, l'importance que donnent à la Lune les agriculteurs voulant que graines et plantes à racines se plantent en lune décroissante alors que celles poussant à l'extérieur de la terre s'enracinent. Lorsque l'astre croît, Elle aurait aussi une forte influence sur les naissances, sur notre comportement, sur la pousse des cheveux, des ongles, sur la décoloration des vêtements et l'en en passe!

Rien n'a jamais été prouvé, aucune expérience sérieuse, objective et scientifique n'a été réalisée pour corroborer ces affirmations. Il s'agit plutôt de dictons, d'anecdotes, élevés au rang de faits avérés au fil des siècles.

Le mythe décoré

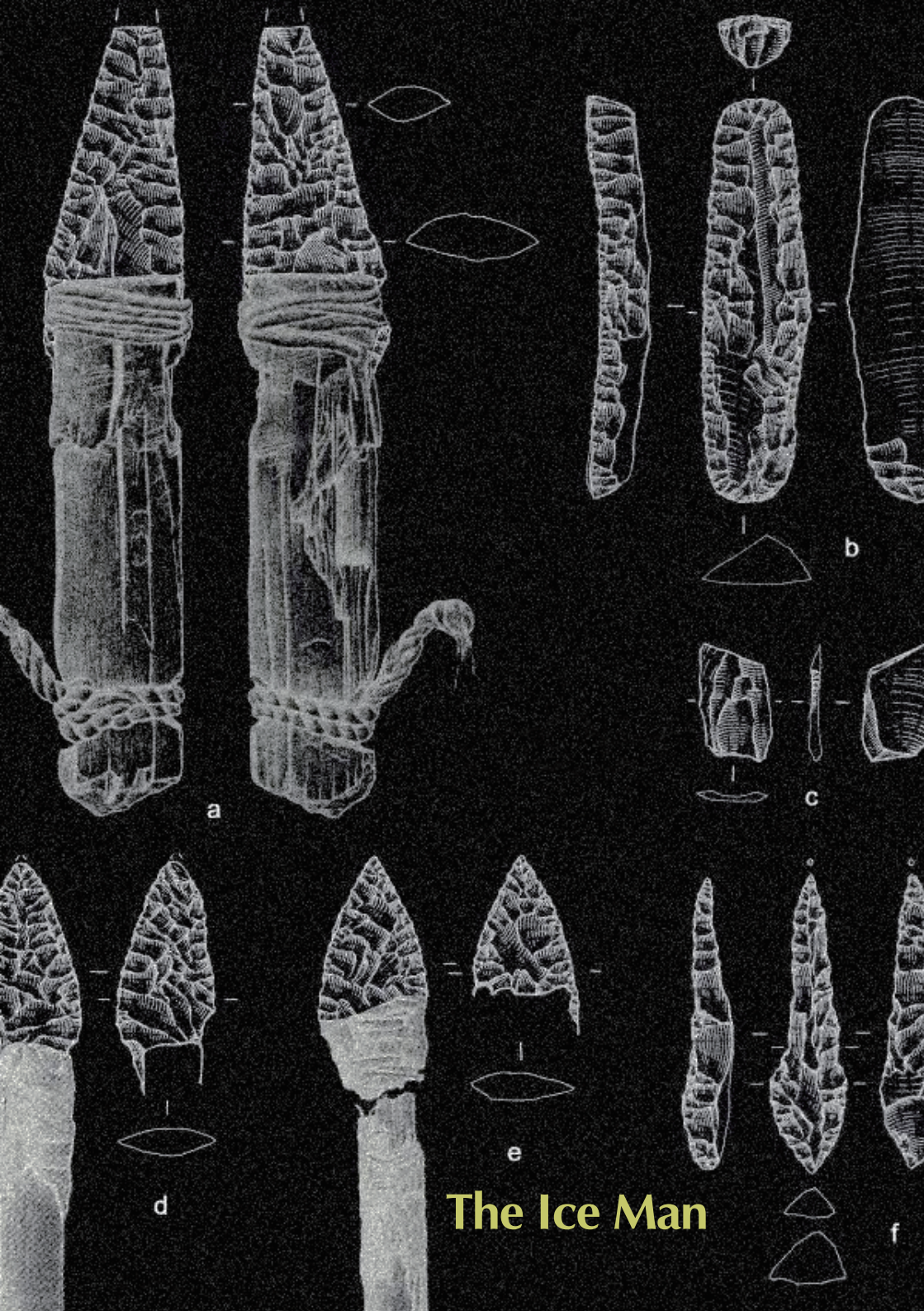
D'aucuns affirment que la Lune agitait sur le liquide amniotique de la mère, provoquant la perte des eaux et l'accouchement. Raison pour laquelle on assisterait à un plus grand nombre de naissances au moment des changements de phases lunaires. Diverses études, menées notamment au Canada, ont prouvé qu'il n'en était rien. Il suffisait de relever les jours de pleine lune et de les comparer aux registres des naissances de différentes maternités. Aucune augmentation notable n'a été constatée pendant les jours où la Lune était ronde, ni durant ceux d'avant ou après ceux-ci. D'autres enquêtes sont venues confirmer cela aux Etats-Unis et en France, le mythe étant sans

Almanach romand "Messenger boiteux"

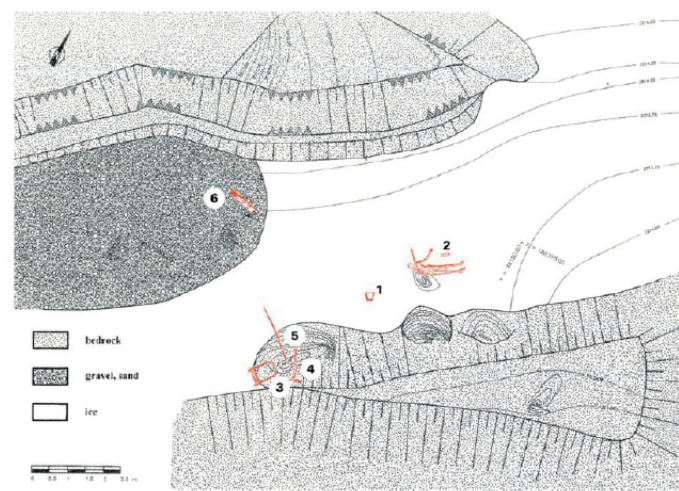
Dating back to the 18th century, the almanac of the "Messenger boiteux" (Limping Messenger) from the Vaud region is Switzerland's oldest almanac been a publication owned by a private printer.

"Le Véritable messenger boiteux de Berne et de Vevey" (the Real Limping Messenger of Bern and Vevey), to give it its full title, has been published every year since 1707 and continues to provide residents of French-speaking Switzerland with an unusual calendar combining horoscopes with key farming dates, regional fairs and markets. It contains a wealth of information including lists of elected officials, postage charges and countries and territories of the world, as well as a varied mix of anecdotes and reports ranging from the serious to the light-hearted. Its dialectal turn of phrase, its invariably wise musings on world events and its weather forecast based on the 17th-century observations of an abbot of Bamberg add up to a unique cocktail. Reflections on the past rub shoulders with thoughts of the future, perfectly illustrating the permanent cycle of nature and the insignificance of our own fleeting existence within it. "Le Messenger boiteux" is sold on the streets during the autumn fairs, and locals see it as much more than just a handy guide or a piece of folklore. To them, it is a friendly and comforting diary that helps them to maintain a strong bond with their region's farming past.

The 2011 edition is described as follows: "A historical publication for which Antoine Souci was the astrologer and historiographer. It contains both Protestant and Catholic calendars. One can find astronomical observations for each month; the course of the Sun and the Moon; the main fairs in Switzerland, the neighboring departments of France, and the Aosta Valley; a collection of stories and anecdotes accompanied by illustrations; a review of the main events that occurred in the world, in Switzerland, and in each of the French-speaking cantons since the beginning of 2009." (Le Messenger Boiteux, p. 1, 304th year, 2011).



The Ice Man



Discovery of Ötzi

In September 1991, German tourists Helmut and Erika Simon were hiking in the Ötztal Alps, near the Austrian-Italian border. At 3,210 meters near the Tisenjoch pass, they stumbled upon the frozen body of what they thought was a recently deceased mountaineer. This turned out to be one of the most important archaeological discoveries of the modern era: the Iceman, later named Ötzi.

The next day, authorities tried to free the body from the ice, but it was too thick. On September 22, the body was fully extracted and transported to Innsbruck. Archaeologist Konrad Spindler examined the remains and concluded that the body was over 4,000 years old, based on the ancient copper axe found with it.

Ötzi's Clothing and Footwear

Ötzi's clothing was as fascinating as his age. He wore a grass-woven cloak, a leather coat, leggings, a loincloth, and shoes crafted from various animal skins. His shoes were especially notable, with bearskin soles, deer hide panels, and tree bark netting. Inside, soft grass served as cushioning, much like modern socks. The craftsmanship was so advanced that when reproduced by a Czech academic, they were of such high quality that a Czech company considered commercializing them.

Next, go to:

CL - 2

Te-6 Skiing Tourism in Uri

Di-2 Literary Creations on Avalanches

Sp-2 The Language of Bells

Re | Sp | Me | So | Di | Cl | Te

Survival Tools and Equipment

Ötzi’s belt contained more than just clothing accessories—it held a pouch with tools essential for survival, including a scraper, drill, flint flake, and bone awl. Even more intriguing was a dried fungus, likely used for medicinal purposes, indicating that Ötzi was well-prepared for the harsh mountain environment. Among the most significant items was his copper axe, a rare and valuable tool at the time. The axe’s yew wood handle was carefully crafted, and the copper blade, though cast, wasn’t hardened. The copper originated from southern Tuscany, suggesting long-distance trade routes during Ötzi’s era. The axe was both a tool and a status symbol, indicating Ötzi’s importance in his community.

Traveler and Hunter

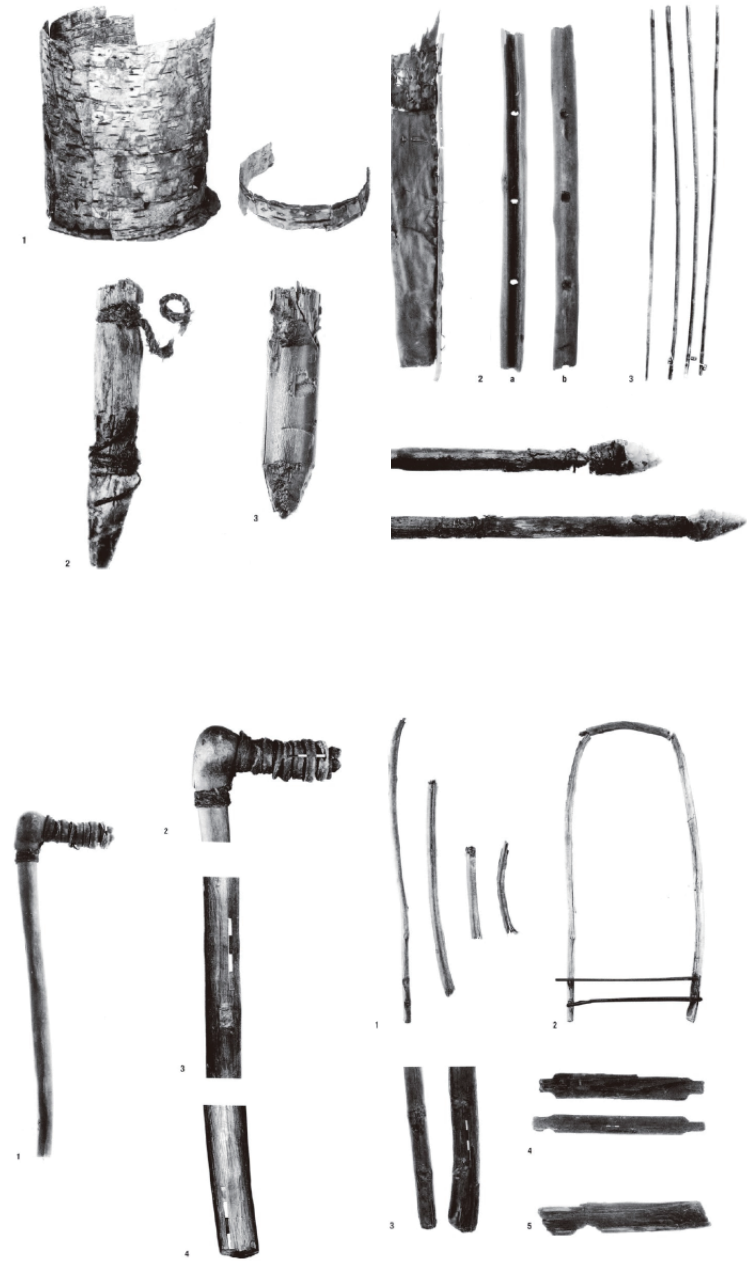
Ötzi was also a traveler, carrying two birch bark baskets and polypore mushrooms threaded with leather. One mushroom had medicinal properties, while another was part of a fire-lighting kit that included over a dozen plant materials for creating sparks. This shows that Ötzi was well-versed in survival techniques.

Scientists further pieced together his life story by studying his clothing. His loincloth and coat were made of sheepskin, stitched from the hides of at least four animals. Genetic analysis showed that the sheep species were more similar to modern domestic sheep than their wild ancestors. His goat leather leggings resembled ancient pairs found in Switzerland.

Weapons and Craftsmanship

Ötzi carried a chert-bladed knife with an ash handle and a quiver with 14 arrows. Only two arrows were finished, tipped with flint and fletched, while the other 12 were incomplete, indicating Ötzi was skilled in crafting his own tools and was likely a hunter.

Ötzi’s final journey remains a mystery. What led him to this remote, icy pass in the Alps, armed with his tools and weapons? Was he fleeing from danger, or simply traveling between regions? His untimely death, preserved in the ice for millennia, may have been the result of a violent encounter or a sudden accident. Whatever the cause, his legacy endures, providing modern scientists and historians with invaluable insights into the life and times of prehistoric people.





...Through many a dark and dreary vale they passed, and many a region dolorous, o'er many a frozen, many a fiery Alp, rocks, caves, lakes, fens, bogs, dens and shades of death, a universe of death, which God by curse, created evil.

- John Milton

The White War: Battling the Elements

During the White War, Italian and Austro-Hungarian troops fought at altitudes reaching 12,000 feet (3,600 meters) and in temperatures as low as -22°F (-30°C). Never before had battles been fought in such extreme conditions. The conflict, named for its wintry setting, lasted from May 23, 1915, when Italy joined the war to annex regions held by the Austro-Hungarian Empire. For three years, battles raged from Trentino to the Adriatic, but it was the White War that saw the most remarkable feats—impossible offensives, dangerous incursions, and extensive engineering projects. Soldiers on both sides built roads, tunnels, and cableways and transported essential supplies to troops living year-round at altitudes where only shepherds and climbers had ventured before.

The Ice City



Next, go to:

→ Te-3 Accessibility through Cablecars →

→ Te-5 The Gotthard Tunnel →

→ Di-6 Avalanche Protection Systems →

Cl - 3

Re

Sp

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So

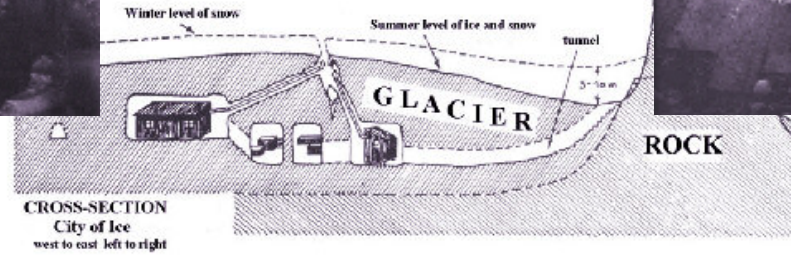
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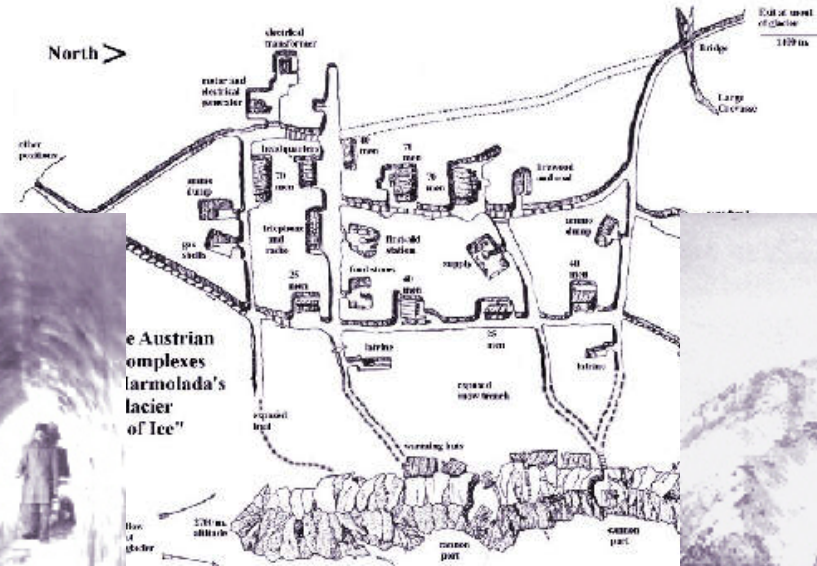
The City of Ice: Sub-Glacial Fortifications

Underneath a great glacier, the Austro-Hungarians built a hidden "city of ice" impervious to Italian artillery. Designed by Lieutenant Leo Handl, the fortress was a network of tunnels connecting clusters of buildings—barracks, supply depots, and kitchens—some buried beneath 60 meters of ice. Soldiers and supplies arrived via cable cars to safety, entering through tunnels bored into the glacier and rock. These positions, fortified with machine guns and cannons, gave the Austrians strategic control. However, despite their ingenuity, they were not immune to avalanches. The harsh winter of 1916/17, with record snowfall, created dangerous conditions that led to deadly avalanches throughout the front.



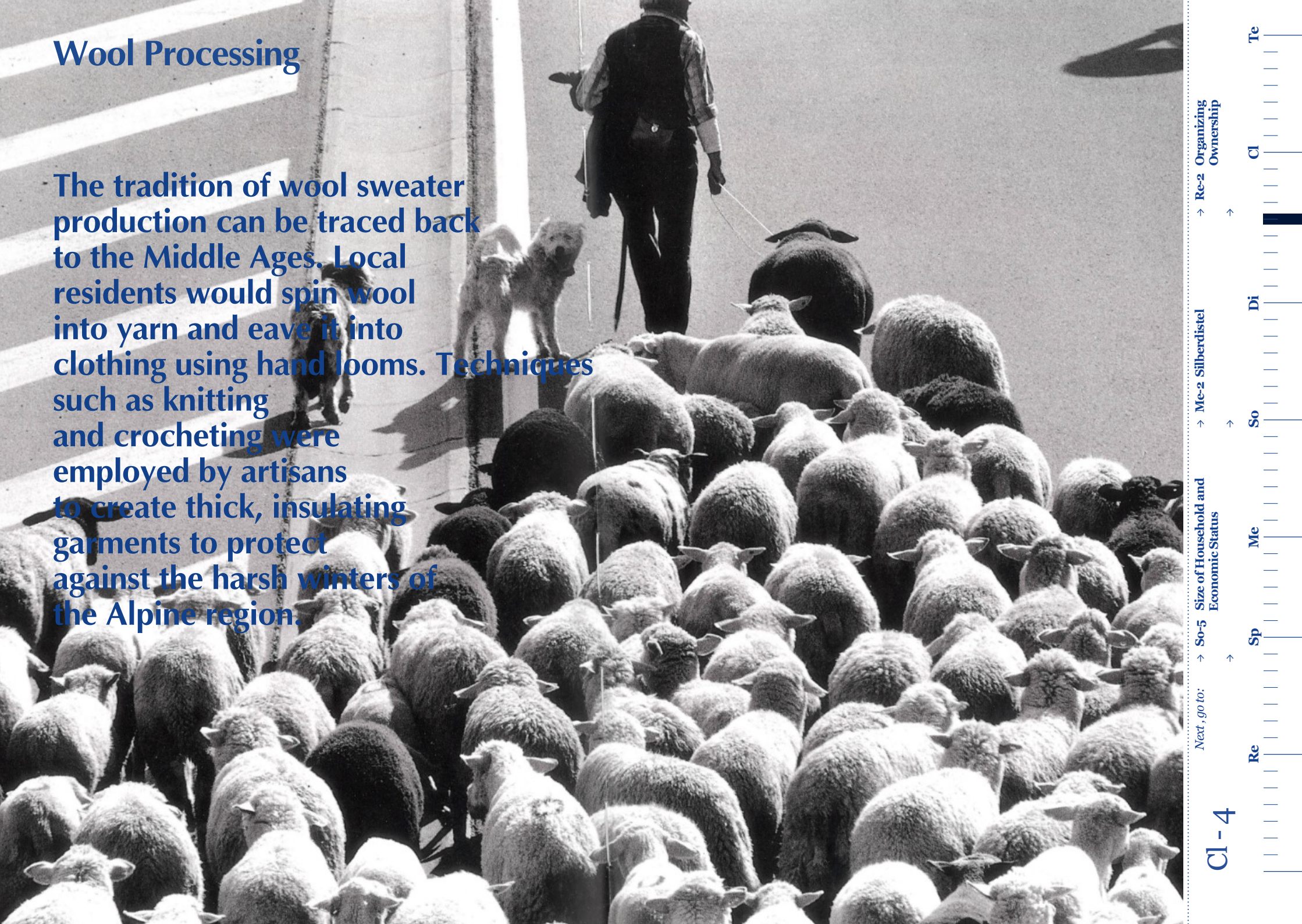
The White Death: Avalanches of 1916/17

The winter of 1916/17 saw over ten meters of snowfall in the Dolomites, including four meters in 48 hours. Avalanches, known as the "white death," claimed soldiers on both sides daily, particularly in the heavily fortified Austrian barracks at Gran Poz. In a "base avalanche," 250,000 tons of ice and snow buried about 500 men, killing 300. Ice boulders moving at over 200 kilometers per hour shattered bodies, with only 40 corpses recovered. Across the front, 9,000 to 10,000 soldiers died in avalanches during this terrible winter. Work parties, patrols, and observation posts were swept into crevasses or off cliffs, their remains still being discovered today.



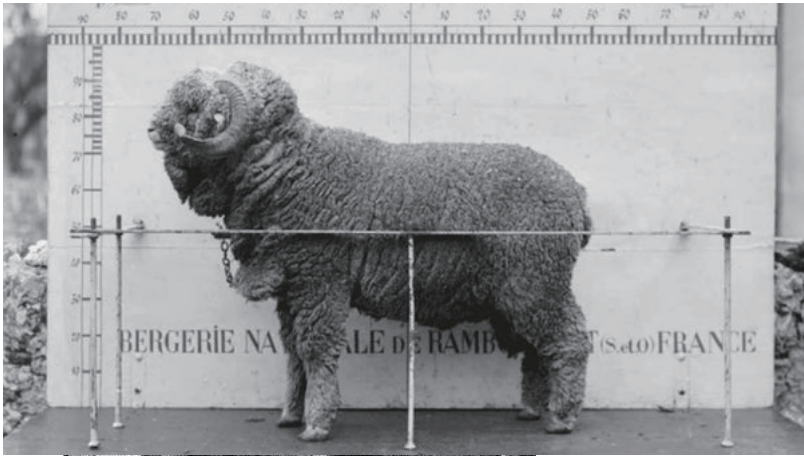
Wool Processing

The tradition of wool sweater production can be traced back to the Middle Ages. Local residents would spin wool into yarn and eave it into clothing using hand looms. Techniques such as knitting and crocheting were employed by artisans to create thick, insulating garments to protect against the harsh winters of the Alpine region.



Sheep thrived in the high-altitude pastures, and their wool was harvested annually. Traditional wool processing began with shearing, often done by hand, followed by washing the wool to remove lanolin and dirt. Afterward, the wool was carded—combed out to align the fibers—and spun into yarn using spindles or spinning wheels.

Weaving was another essential part of wool production, with handmade looms being a common tool in Alpine households. These households typically engaged in subsistence production, meaning families spun and wove their own wool to create garments, blankets, and other necessities.





Alpine Pasture Season

Alpine Pasture Season: A Centuries-Old Tradition

The Alpine pasture season, deeply rooted in practices documented since the late Middle Ages, runs from May to October. During this time, cattle, sheep, and goats are driven to high-altitude pastures (between 600 m and 2,900 m) to graze. Alpine herdsmen and women manage the herds, maintain pastures, fences, and buildings, process milk into cheese, and welcome visitors. This practice fosters strong economic and emotional ties between the local population, herdsmen, and the landscape, preserving cultural traditions and landscapes shaped over centuries.



Rituals and Festivals

The Alpine season has inspired various social practices and festivals. Rituals like the *inalpe* (cattle ascent) and *désalpe* (cattle descent) celebrate the seasonal movement of animals. Depending on the region, midsummer festivals and events where the most beautiful cow is chosen are also common. These customs, often passed down within families, are integral to the cultural life of Alpine communities.





A Living Heritage in Alpine Pastures

Alpine pastures have long contributed to renowned food production, with cheese being a hallmark product. Cheeses like Gruyère, Raclette du Valais AOP, and Schabziger date back to the 15th century or earlier. Alpine cheese production, though once threatened by the rise of lowland dairies and agricultural policies, saw a revival in the late 20th century and remains vital today. Cheesemakers continue to adapt to hygiene standards and PDO regulations, keeping the tradition alive through both formal training and family practices.

Managing the Herds and Cheese Production

During the summer season, herds are managed by a team led by a supervisor and a master cheesemaker, supported by employees or family members. While most of the journey to the pastures is now made by vehicle, some farmers still walk, with cows adorned with bells and decorated collars. Milk is processed in chalets into Alpine cheeses, fresh cheeses, and other specialties, often sold locally. Buildings like chalets and dairies, made from local materials, require skilled maintenance, and herdsman manage both the animals and the structures.

A Shift in Traditions and Diet

In addition to cheese, Alpine pastures are used for raising livestock such as lambs, calves, and pigs, often fattened on whey from cheese production. In the past, the diet of those in chalets was simple, consisting mostly of bread, potatoes, and dairy products. Today, improved infrastructure allows for more varied meals, including typical Alpine dishes like chalet soup and Älplermagronen (pasta with potatoes, milk, cheese, and bacon). Butter, once essential to Swiss diets, was largely replaced by plant-based fats in the mid-19th century, but traditional products like Alpine cream still remain.



Slate Roofings

The stone-covered roof (piode) is probably the most distinctive feature of traditional architecture in the Ticino region. It dominates the landscape throughout Sopraceneri and the northernmost part of Lugano (with traces extending to Valle di Muggio), making it one of the most prominent and defining characteristics of the area.

Next, go to:

CL-6

Re | | | | |

Sp | | | | |

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→ Re-4 Dry Stone Walling →

→ Re-5 Köhlern - a Charcoal Production Method →

Te | | | | |

Alpine Inheritance Types

Slate Roofings

The stone-covered roof (piode) is probably the most distinctive feature of traditional architecture in the Ticino region. It dominates the landscape throughout Sopraceneri and the northernmost part of Lugano (with traces extending to Valle di Muggio), making it one of the most prominent and defining characteristics of the area.

Next, go to:

→ So-4 Alpine Inheritance Types → Re-5 Köhlern - a Charcoal Production Method

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CL-6



Main Features of the Stone Roof

The piode are heavy slabs of gneiss, or beola, of various sizes and thicknesses. Gneiss is a hard Alpine rock formed over millions of years of geological metamorphosis, which arranged it into regular, parallel layers, making it relatively easy to split. This structure allows for the production of stone slabs with a uniform thickness. In some quarries in Sopraceneri and Val Calanca (GR), the extraction of this raw material continues, providing high-quality, durable building materials. A stone roof can last over 200 years, making it a long-term investment.

The history of stone roofs varies by region. In areas where stone construction is common, such as Locarno and lower Vallemaggia, historical documentation provides evidence dating back to medieval times. In other regions, like the upper valleys, stone roofs were introduced later, often replacing older wooden shingle roofs due to fire safety regulations. Local differences in stone roof construction are significant, depending on the quality of locally available stone. In geologically favorable regions, roofs were built early on and, with minimal maintenance, have remained functional for centuries.

The 'Teciatt': Specialized Craftsmen in Stone Roofing and Repair

Building a stone roof, which is a complex structure, requires specific skills that are increasingly hard to find. The profession of a stone roofer (known in dialect as *teciatt*) never existed formally, nor was this specialization part of typical construction training. The few artisans who still practice this craft learned directly on construction sites from the experience of older colleagues. Some work for private companies, while many others pursue this craft only in their free time. As roofer Reto Cittadini explains, "There isn't a proper apprenticeship that teaches you how to make stone roofs; it's knowledge passed down (...) You work alongside those who are already skilled, and that's how you learn." To fill this gap, the Construction Contractors' Association organizes practical courses at vocational training centers to teach the execution of natural stone roofing.

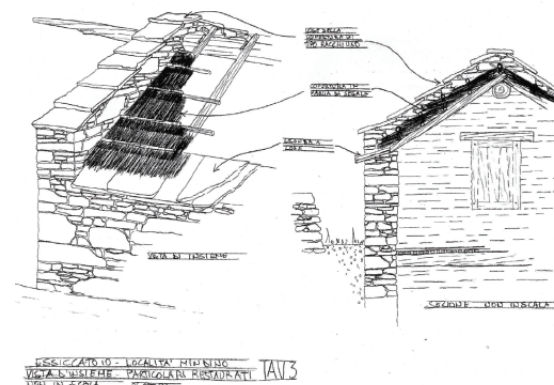
Constructing a Stone Roof

The traditional technique of constructing a stone roof is now practiced by only a few specialized artisans, who pass on their solid and ancient knowledge. The piode are manually shaped using only a hammer and laid on the sturdy roof structure with carefully adjusted thickness and slope, without any fasteners. Gravity and friction alone are enough to support and secure

the entire roof covering. When repairing old roofs or reusing part of the original materials, the roofer must demonstrate mastery of traditional techniques: each roof has its own particularities, and the type of stone and required interventions must be carefully evaluated. In these cases, the teciatt use a method called "vultá ul técc" in dialect, meaning "turning the roof": damaged piode are replaced with new ones, working in one-meter-wide sections from the bottom up.

Availability of Materials and Construction Methods

In terms of materials and construction techniques, the Ticino region can be broadly divided into two areas from north to south. The presence of gneiss in Sopraceneri has favored the use of stone roofs, which are widespread in the upper valleys (Blenio, Leventina, and Riviera), upper Malcantone, the upper Veduggio valley up to the Taverne ridge, Valcolla, and finally Valle di Muggio. On the other hand, the clay deposits in Sottoceneri led to the use of clay tiles in this region. As roofer Reto Cittadini explains, "The people of Mendrisiotto used clay tiles because they had clay; they didn't have piode. Most likely, if we in the Sopraceneri lowlands had had clay, we would have done the same. Roofs like this were a result of what was available, so it's a tradition."





Timber construction methods and shingle making

From the Earliest Times: Wood as Shelter Material

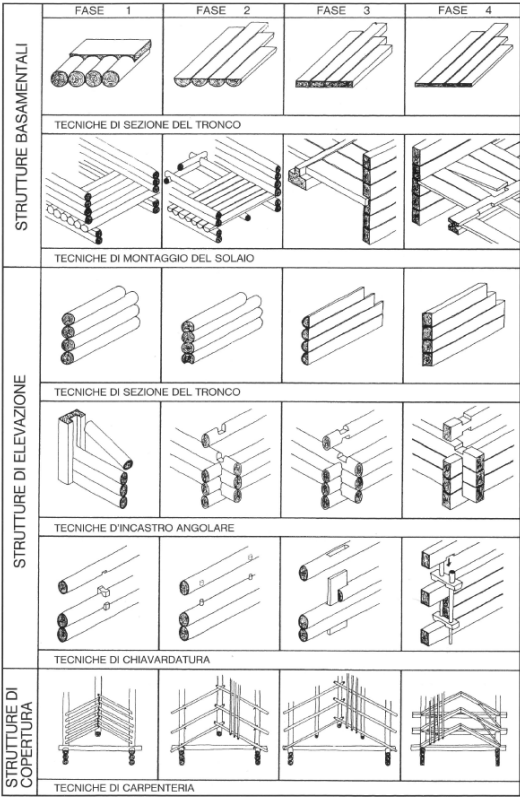
From early times, humans recognized the elastic and linear properties of wood, using it to build the first shelters. The flexibility of tree branches allowed them to be woven together, creating nighttime shelters. As metal tools and permanent settlements developed, logs became the material of choice for solid, durable homes. Larger, square-plan houses led to the need for new interior spaces, similar to those in winter huts where people gathered. This technique of stacking logs parallel to one another spread with large-scale forest clearances in Europe, especially in Norway, allowing humans to take advantage of renewable wood resources. Over time, Northern builders mastered wooden structures, significantly improving their durability and resistance.

Geo-material Area: The Influence of Local Materials

The concept of a "geo-material area" explains the long-term use of a particular material in specific regions, influencing typology and construction. These processes resulted in expressive "vernacular forms," which were gradually codified. In Alpine and Central European regions, wood was often combined with stone structures from the Mediterranean. Wood was used at the base of buildings, reinforcing support structures prone to static collapse or fire.

Alpine Houses: Combining Materials for Durability

Other materials, such as straw and moss, were incorporated into Alpine houses to improve durability and moisture resistance. Straw was placed inside hayloft walls for insulation during the winter, preventing heat loss. Moss was inserted between logs to seal gaps, and in some cases, lighter, cheaper materials like straw replaced heavier roofing options. Timber, typically used in construction, was often supported by stone at the corners to bear weight and prevent moisture from rising. The Blockner technique, involving the systematic use of tall tree trunks, became central to Alpine architecture.



Log Preparation and Construction Techniques

Logs had to be prepared—stripped of branches and bark—before being stacked and dried. Initially, logs in their circular form were used for walls, floors, and roofs, though this method was inefficient, leading to poor adhesion between elements. This technique worked better for barns, where gaps between the logs allowed ventilation. The introduction of metal tools, especially saws, led to the standardization of squared logs, which increased efficiency, reduced structure weight, and maximized interior space. For larger spans, special beams were required to prevent floor sagging.

Careful Manufacturing:
Selecting the Right Wood for
Shingles

The first step in producing a shingle roof is selecting the right wood, with each region using locally available species. In the pre-Alpine region, Norway spruces grown at elevations of 1,000 meters or higher are preferred due to their dense wood and tighter annual rings, improving splitability and durability. Trees from valleys are avoided, as wind weakens the rings. Trees are felled between mid-November and mid-February when moisture content is lowest. Board shingles measure about 60 cm long, 20 cm wide, and 10–15 mm thick, while regular shingles are about 42–45 cm long, 10–15 cm wide, and 5–7 mm thick. These shingles are ideal for steep roofs and façades. The process of making shingles is simple but repetitive, using a shingle iron, a steel blade with a wide edge and handle to split the wood and preserve the fibers.



The Art of Roofing: Crafting Shingle Roofs

In addition to nails, the primary tool for roofing is the shingle hammer, which drives nails and smooths shingles. Workers often use a small seat, the 'chaule,' to sit upright on roof slopes. Shingles are soaked in water to regain elasticity if too dry. In Switzerland, shingles are laid with a double overlap—10–11 cm vertically and 3–5 cm horizontally—forming twelve overlapping layers. Roofing starts at the lower edge, with shorter shingles in the first row, and overlapping prevents water damage.

Masterpieces and Signatures: Decorative Shingle Techniques

At roof ridges, shingles are laid in curved patterns using two methods: starting with a 5 cm overlap and gradually increasing, or hiding curves under horizontal rows. The pinnacle of shingle making is the board chimney of an Alpine hut, which requires the full skill of the shingler. Two techniques are common: the "card game" method, where shingles are laid in groups of four, or nailing them in pairs. Some shingles feature motifs cut into the beveled end as the shingler's signature, often seen on windbreaks or façades. Over time, shingle roofs turn silvery-gray, a natural protective layer. Shingle lifespan varies with wood type and roof pitch; low-pitch roofs last 40–50 years, while steeper roofs and façade shingles can last up to a century.

Passing on Manufacturing Secrets: The Oral Tradition of Shingle Making

There is no formal training for shingle making—it is passed down through "learning by doing." Techniques are taught orally and through example. Experience in carpentry or roofing is helpful, but not required. Apprenticeships typically last around three years under the supervision of a master, who oversees quality and explains techniques, although some, like board chimney roofing, are reserved for successors. Collaboration is common on larger projects, with each region having its own shingle size and wood type. When working outside their region, shingle makers adapt to local conditions.

An Ancient History: The Evolution of Roofing Materials

The oldest known shingles date back to Gallo-Roman times, with examples of white fir and Norway spruce shingles found in Holderbank and Oberwinterthur, dating from 7 to 70 A.D. In the 14th century, flat clay tiles began to replace wooden roofs in Switzerland, but wood and straw remained common materials, especially in the Alps and Jura. Wooden roofs persisted into the 19th century due to a scarcity of clay and the difficulty of transportation, along with the abundance of wood. By the late 19th century, materials like slate, sheet metal, and fiber cement were used in higher-altitude areas. Fires in villages led to bans on wooden roofing, limiting their use to remote Alpine huts and historic structures.



By Hand: The Persistence of Manual Shingle Production

Although shingle production has been partially mechanized, it remains largely a manual process. Handwork preserves wood fibers and ensures tightness. Attempts to use pneumatic nailers failed due to quality issues and logistical challenges in remote areas, so the traditional hammer remains essential. Shingles are common in the pre-Alps and Alps, symbolizing regional identity and even serving as the logo for the Gruyère-Pays-d'Enhaut Regional Nature Park. Small decorative buildings are often covered in shingles, reinforcing their connection to local tradition and emphasizing the symbolic nature of this roofing material.



Snow clearance of the pass

avalanches
and snowfall
on the
Klausen



Life in the mountains is threatened by the forces of nature and is therefore characterized by attempts to control them or to come to terms with the often deadly dangers in the best possible way. The historic settlement cores were always built after intensive study of the local conditions and are located with astonishing accuracy outside of regularly recurring avalanches. Protected forests and avalanche barriers provide additional protection nevertheless, not every avalanche is foreseeable.

The small avalanches that regularly cover the Klausenstrasse to this day and cut off the hamlets on the Urnerboden, which are already very isolated in winter, or even make the road to Linthal impassable, seem almost commonplace. The road has been cleared for traffic since 1960. In the winter of 1968, the road remained closed for a whole three months, cutting Urnerboden off from the rest of the world - as it had been for centuries. Today, this only happens for a few days.

Even the military road built in 1940 could only be kept open for a single winter with the greatest effort - the snow was shoveled away by hand. In recent years, the pass has always been opened in May and kept open until at least mid-October. Today, three milling machines and a clearing crew, usually consisting of seven men on the Schächental side and four men on the Urnerboden side, are used to clear the snow.

According to federal regulations dating back to 1898, the Klausenstrasse must be open to traffic at least from June 15 to September 15. The canton of Uri is responsible for breaking up the snow around the top of the pass.



Along the Lini, the snow is pushed down the slope with excavators and pneumatic loaders - a highly demanding precision work with heavy equipment.

Next, go to:

→ Te-6 Skiing Tourism
in Uri

→ Cl-3 The Ice City

→ Di-6 Avalanche
Protection Systems

Cl - 8

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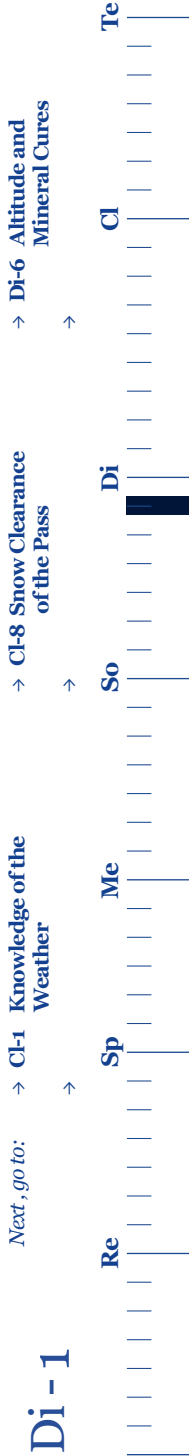
Artistic Depiction of Avalanches



An Avalanche in the Alps
1803, Philip James De Loutherbourg

Loutherbourg's painting (1740-1812) portrays the moment when an avalanche startles some people walking along a pass in the Alps. Snow falls violently, destroying the bridge these people were about to cross. One of them is praying, asking God for help, while another one is running to save his life. A third person stares -entranced in disbelief- the avalanche; he is paralyzed, impressed and does not seem scared at all. He even seems dazzled by that nature's spectacle that he is observing, which overwhelms and immobilizes him. This is a representation of the idea of the sublime, as it was understood in 18th century literary and artistic circles. The concept belonged to the baroque period, but it actually was identified as a concept with specific character during Neoclassicism and especially during Romanticism.

As artistic category, the sublime had been theorized by Edmund Burke in A Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful, book published in 1757. It originally comes from a finding, in the 16th century, of a book entitled Lo Sublime, dated in the 1st century. It was initially believed a work written by Longhino, which remains in the Vatican and was divulged in 1636. It was a text about Rhetoric, containing indications concerning the resources a speaker had to follow in order to persuade his audience. This text was extended to the philosophical world (actually, Immanuel Kant quoted it in his Critique of Judgment), influencing Aesthetics, critical and artistic reflection, even leading to a true and genuine revolution in taste.



The term sublime designates the exalted, the eminent or highly spirited. During the 18th century, it designated the rhetoric ability to induce the audience not just into persuasion, but also into ecstasy, capable of elevating our souls to the highest acme, like a ray agitating everything would, not only persuading the listener, but also subjugating him. After the 18th century, such rhetoric gave rise to the romantic idea of art free from any intellectual bondage, as a result from both passion and inspiration. Art in which the wonderful, which implies astonishment, is always higher than persuasion and what is pleasant.

The sublime was related In the XVIII century to qualities such as darkness, grandeur, magnificence and, subsequently, to feelings such as fear, astonishment, or respect. Therefore, it was not only related to grandeur, but to a certain feeling of pain and danger, as well: whatever is suitable to trigger

the ideas of pain and danger, that is, whatever is somehow terrible or linked to terrible objects or behaves in a similar fashion to terror is a source of the sublime; in other words it provokes the strongest emotion that the mind can feel. Obviously, when either pain or danger is too strong there is no pleasure, but from a distance they may be objects of satisfaction. Therefore, the sublime implies an ambiguous complacency; it is a certain delicious horror.

The sublime proves man how small he is compared to nature. While in paintings picturesque nature is a cozy and propitious atmosphere that makes the individual develop social feelings, in the sublime nature is a hostile environment that makes the individual aware of his own individuality, his solitude. Whereas the picturesque is the poetry of the relative, the sublime is the poetry of the absolute.



The Fall of an Avalanche in the Grisons
exhibited 1810, Joseph Mallord William Turner

Dramatic Alpine scenes were a stock feature of Sublime landscape. Though Turner had visited the Alps in 1802, there is no evidence that he visited the area represented in this picture, or that he actually witnessed an avalanche. Instead, the stimulus for creating this scene may have been reports of an avalanche that occurred at Selva in the Grisons in December 1808, killing twenty-five people. Yet far from attempting reportage, Turner creates an almost abstract scene of overwhelming elemental forces.

Exhibited with the following lines, which anticipate those attributed by Turner to his Fallacies of Hope, first quoted in connection with Hannibal crossing the Alps (No. 126 [N00490]):

*'The downward sun a parting sadness gleams,
Portentous lurid thro' the gathering storm;
Thick drifting snow on snow,
Till the vast weight bursts thro' the rocky barrier;
Down at once, its pine clad forests,
And towering glaciers fall, the work of ages
Crashing through all! extinction follows,
And the toil, the hope of man—o'erwhelms.'*

As Jack Lindsay has pointed out, these verses and the reference to the Grisons recall a passage from 'Winter' in Thomson's Seasons. John Gage suggests that the verses may also echo Job xiv, 18–19, and also the Paraphrase on the Book of Job edited by Sir Richard Blackmore (2nd ed. 1716).

It is not known if Turner visited the Grisons when he was in Switzerland in 1802. In any case it is probable, as Dr. Amstutz has pointed out, that Turner had heard about the avalanche that took place at Selva in the Grisons in December 1808, a disaster in which 25 people were killed in one cottage alone (see Russell and Wilton, loc. cit.).

Literary Creations on Avalanches

In Alpine legends, avalanches are sometimes personified and believed to be the "spirits of the mountains" either in anger or play. These legends express the local people's sense of helplessness in the face of nature's overwhelming power, while also highlighting their resilience and determination to survive in such harsh environments.

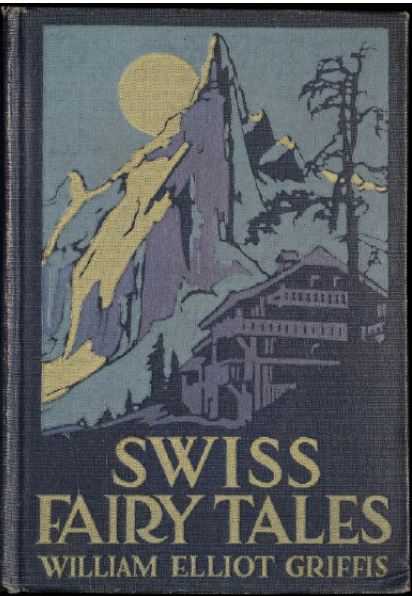
Some stories depict avalanches as a form of punishment from gods or giants, often occurring because people failed to show respect for nature or committed some wrongdoing. These types of tales carry moral lessons, serving as warnings to live in harmony with nature and avoid actions that might anger the forces of the natural world.

This portrayal of avalanches as both destructive and meaningful highlights the deep connection between the Alpine communities and their environment, blending fear, reverence, and respect for the natural world.

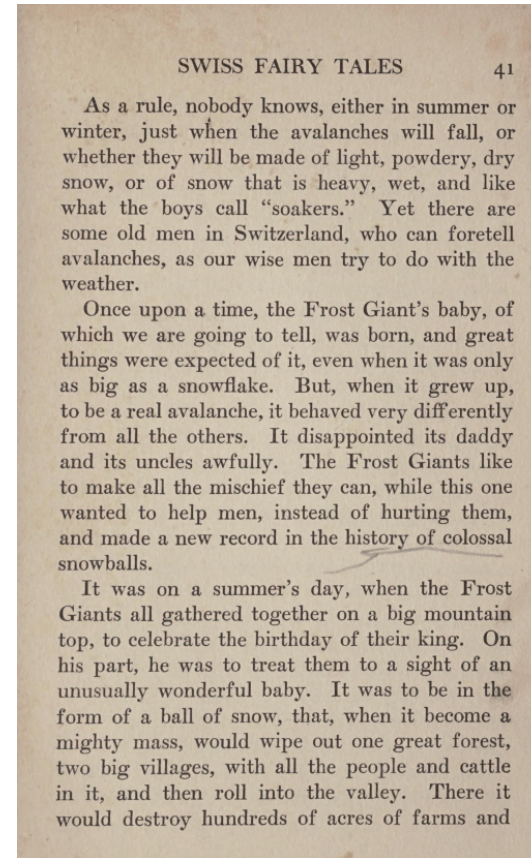
Traditional tales from the Alps

Whether it's the tale of the Blüemlisalp, William Tell or the Devil's Bridge, the Swiss Alps are steeped in legends.

Unlike fairy tales, this type of story can have a veneer of credibility because legends are always connected to real places. Historical legends in particular can appear to have a ring of "truth".



"The Whimsical Avalanche", a story by William Elliot Griffis from his 1920 book *Swiss Fairy Tales*, personifies an avalanche as the "child of the Frost Giants." While it starts as a small snowball and quickly grows into a massive destructive force, this particular avalanche defies expectations. Instead of causing destruction, it chooses to help humans, displaying a rare gentleness. The story uses a lighthearted tone to explore the dual nature of natural forces—capable of both devastation and unexpected kindness.



The Whimsical Avalanche

It may happen, in Switzerland, that mighty masses of snow and ice, sometimes as big as the capitol at Washington, and as high as Bunker Hill monument, will roll down the mountain sides without giving any notice. These crush whole forests, bury villages, tear rocks to pieces, knock off bits of the mountain sides and kill thousands of people, cows, goats and horses.

Though large enough to engulf an army, or a battleship, they are very small, when first born, up in the very high Alps.

Starting as a snow ball, they grow large, very quickly, every moment, and finally become immense. Then, they roll along over many miles, carrying destruction in their path, until they tumble over precipices, or reach low land that is level. That is the reason why they are so named, for avalanche means “to the valley.”

There are many causes of an avalanche and a little thing may start one of these terrors. The irregular melting, by the morning sun, of ice, [40]in light or shade, the fall of an icicle, the tumbling of a stone, or a sliver of rock, or even the firing of a gun, which shakes the overhanging, or piled up snow, will begin one of these revolving globes.

Now in old times, all Swiss folk used to think that an avalanche was alive, and was having a jolly time, enjoying itself, when sliding and rolling, leaping and dashing down the mountain slopes, in its mad race, from the sky to the plain. This was its way of enjoying itself, with a short life and a merry one. It grew faster than anything else known. For, while a glacier might take a thousand years to develop, from snowflakes into miles of solid ice, like a frozen river, it required only a few minutes for an avalanche to spring from babyhood into full size, with a power exceeding that of a thousand giants.

Being, at its birth, only an inch or two in diameter, this infant son of the King of the Frost Giants, the avalanche soon became the child, which, as it grew up, so terribly fast, took after its daddy. It liked to flatten out trees, and houses, and smash things. It generally so frightened men, dogs, cats and the big animals, that dared to come near the everlasting heights of ice and snow, where the Frost Giants lived, that, in old times, no one in winter went up to the high peaks.

As a rule, nobody knows, either in summer or winter, just when the avalanches will fall, or whether they will be made of light, powdery, dry snow, or of snow that is heavy, wet, and

like what the boys call "soakers." Yet there are some old men in Switzerland, who can foretell avalanches, as our wise men try to do with the weather.

Once upon a time, the Frost Giant's baby, of which we are going to tell, was born, and great things were expected of it, even when it was only as big as a snowflake. But, when it grew up, to be a real avalanche, it behaved very differently from all the others. It disappointed its daddy and its uncles awfully. The Frost Giants like to make all the mischief they can, while this one wanted to help men, instead of hurting them, and made a new record in the history of colossal snowballs.

It was on a summer's day, when the Frost Giants all gathered together on a big mountain top, to celebrate the birthday of their king. On his part, he was to treat them to a sight of an unusually wonderful baby. It was to be in the form of a ball of snow, that, when it become a mighty mass, would wipe out one great forest, two big villages, with all the people and cattle in it, and then roll into the valley. There it would destroy hundreds of acres of farms and vineyards, block up the roads, multiply funerals, and waste so many millions of men's dollars, that years would pass away before prosperity and good times would come again. The Frost King had a map of the route, which the young avalanche was to travel, and he showed it around freely. This was what the Frost Giants loved to do, for they hated flowers and butterflies, and cows and men.

When the white Frost Giants had come together, and all had arrived, in their coats of hard snow and with long beards of icicles, the Frost King invited them to gather at the edge of a precipice, under a jagged peak, that had many times been riven and splintered by lightning. Then he bade them look down over the landscape, while he pointed out the track which he expected his hopeful offspring, the newborn avalanche, was to take, from the time it started, until it had done its work in levelling forests, villages and vineyards. Then, using the big palm of his hand as a diagram, and his five fingers as pointers—just as a fortune teller finds out and assures a girl what kind of a husband she will have—he told them just what he was sure would happen. On reaching the valley, the big ball would spread itself over a square mile or two, while covering up and ruining the grain fields.

After that, it would take the sunshine and warm south wind at least two or three years to melt the mass, while thousands of people would be in mourning for their dead children and kinsfolk. Or, reduced to beggary, they would bewail the loss of all they had in this world. To hear the old Frost King, as his tongue wagged, and the icicles of his beard flopped up and down, as the chief chin-chopper of the party, you would have thought that this baby avalanche, that was to start today was the greatest and most famous ever known.

“Now watch,” said the Frost King.

It was midday in midsummer, and the heat was great, as he took up a mass of wet snow, hardly more than a dipper full, but already made soft by the sun's rays. He squeezed the mass hard, between the palms of his hands. To the Frost Giants, it seemed scarcely bigger than a pill.

Then, striking an attitude, like a baseball pitcher, or a man playing tenpins, and about to roll the ball along down the alley, the Frost King held up before them the dark

gray, sticky ball. As he fondled and patted it, as his own child, the Frost King called out, “I name thee, my son, ‘Soaker Smash-All,’ and I expect thee to break all records. Make the widest swathe of ruin, my son, ever known among men. The sun is [44]mine enemy, and, through thee, I shall spoil his work and give him plenty of labor to restore it. Go!”

Saying this, the toss was made and the ball set rolling.

At first, for several seconds, with Soaker Smash-All, it was more like ploughing, than rolling its way through the drifts, for the slope was slight. Then, as the incline grew more steep, the tumbling became more rapid, until about a half mile from the starting point, the baby avalanche had, by its leaps and bounds grown so fast, as to be already as big as a barn. It was bouncing swiftly along, when, instead of going straight ahead, as its daddy, the Frost King, had planned and expected, it rolled against a rounded rock, that curved up and backwards, like the dashboard of a sleigh, or the roof of a pagoda.

At once, it swerved to the right and bounded high up in the air, as though some Frost Giant was playing foot ball, and was trying to hit the goal.

Then all sorts of funny things began to happen.

The Frost Giants were terribly disappointed at seeing their pet mount up in the air like a pigskin ball from the foot of a first class kicker, even before it was half grown. To behave so differently, from what its daddy had felt sure of, and told the Frost Giants it would do, seemed like disobedience. For, was not this avalanche the Frost King’s son? Instead of rolling straight down the valley, gathering force for its final plunge, at every yard, it was apparently trying to climb up to the moon.

“That youngster is altogether too smart,” whispered one old giant to another.

Just a second or two, before this baby avalanche seemed to have lost both its head and its path, to go aside and play in the deep valley below, there was a hunter, on one side of the ravine, who had climbed up the high rocks, to get a shot at a herd of chamois that were feeding quietly on the other side.

Besides the buck or daddy chamois there were four mothers, each with a pretty little kid, hardly two months old, beside her. Now it was not the season for hunting, and it was against the law, which allowed the mother chamois a quiet interval, and the kids, time to grow up; for a chamois kid needs to be educated just as a child does.

But this fellow, named Erni, was both cruel and lawless. He had brought his spy glass with him and, pulling it out, swept the distant faces of the great cliffs to find his game. Just as this promising family—a buck, with a harem of four does, and as many kids—hove in sight, his fancy was tickled. Law or no law, he would shoot. He laid down his glass, pointed the rifle and took cool aim, hoping to bring down two of the chamois at a shot. Then he pulled the trigger. With that gun, it was a case of “a fire at one end and a fool at the other.”

Alas, for human hopes! There is many a slip between muzzle and game. In his case a miss was as good as a mile, or even a league. In the cruel hunter’s brain there had been already a flitting vision of venison pot-pie and chamois steak. He even saw, in his day dream, two fine pairs of mounted horns adorning his parlor walls.

But the daddy of the chamois family had, a second before, thrown up his nose and caught a whiff of some human being near. Looking up in alarm, he saw the huge snow ball in the air above him. Giving the usual sort of whistle, as chamois sentinels do, the whole family started to run, as if racing with the wind, to get under the shelter of an overhanging rock.

Already the bullet had sped, and, despite their speed, one or two chamois might have fallen, but the movement of an avalanche had so thickened and condensed the air, that it was like firing a pellet of lead into molasses, making the ball go slowly. This was what is called “the wind of the avalanche,” which sometimes kills men and beasts.

Instead of the heart of a chamois, the rifle bullet struck the monster snowball in the centre, but it hurt the avalanche no more than a flea bite on the end of an elephant’s tail.

We cannot here tell what Erni, the enraged hunter, said.

Having lost the whole day in climbing and now, tired, hungry and vexed with disappointment, he trudged back. When he reached home, his wife kept quiet, his children had to keep away from him, and he did not say his prayers that night.

On the contrary, in the forest home of the chamois, there was much rejoicing, for they had heard the ring of the rifle and seen its flash. In fact, avalanches were very popular in chamois society, for even when one was seen coming, soon enough, the bucks and does could easily dodge them.



“DRINK, YOUNG FRIEND,” SAID THE GIANT - - -

The Slate Tragedy

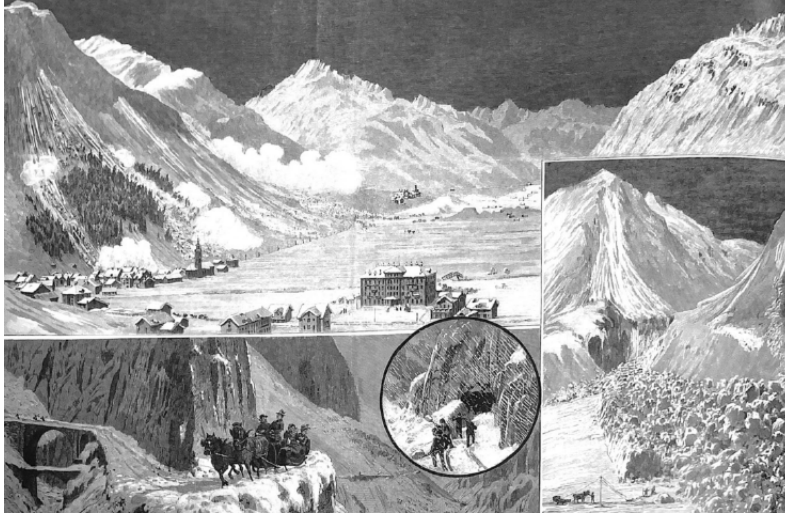


The Elmer slate, prized for its softness, had long been used to make writing tablets, especially after compulsory schooling swept through Germany in the mid-19th century. The demand for these tools surged. Desperate for prosperity, the farmers of Elm, many of them impoverished and unskilled in mining, took matters into their own hands. They undermined the mountainside, carving out wide swaths of the valuable slate pillars that had held the mountain steady for centuries. At first, it seemed like fortune had finally smiled on Elm. But as the farmers chipped away at the earth, the land above began to shift. Unseen, the mountain began to stir.

On the morning of September 11, 1881, while the villagers attended the church service, they began to hear ominous sounds—rockfalls, deep creaking from within the earth, and cracks forming in the ground. These noises echoed through the valley, yet very few were alarmed. Some even ventured closer to the affected area, eager to witness the spectacle unfolding on the mountain.

Then suddenly, the earth let out a final, thunderous roar. After two minor pre-avalanches, the inevitable happened.

Nearly 10 million cubic meters of slate rock broke free from the mountainside. The rock tumbled in a terrifying freefall of 400 to 500 meters before crashing into the valley below. The force was so great that the debris shot up 100 meters on the opposite side, onto the very slope where the spectators had gathered. In an instant, the crowd that had come to watch was gone, buried beneath the force of the mountain’s wrath.



Snow! Snow! Snow!

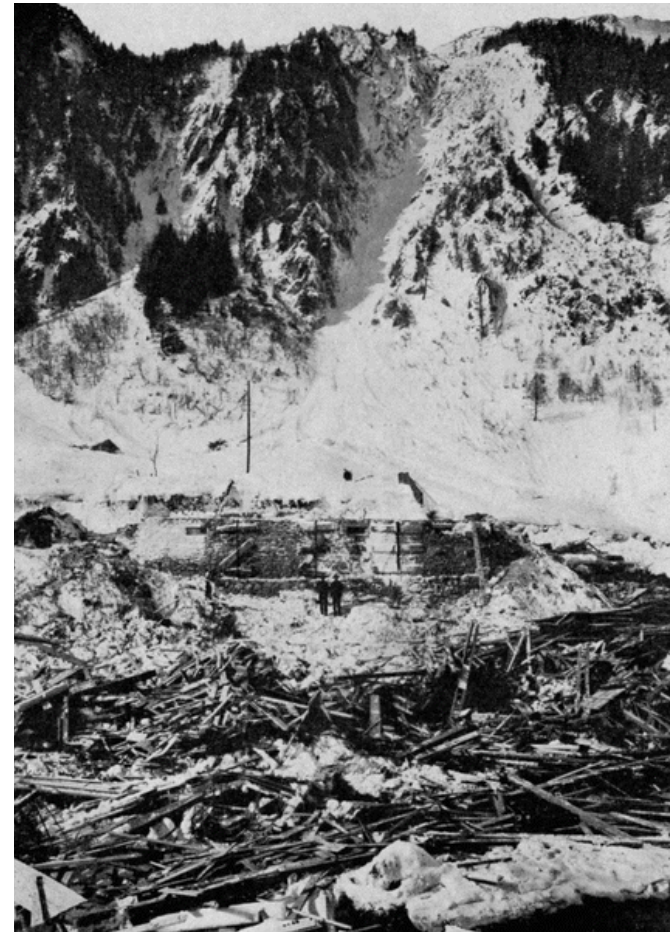
"People know—on steep terrain, heavy objects cannot stay in place and will eventually cause destruction, suddenly tumbling down from the slopes: stones, rocks, forests, glaciers, snow—these disasters, we do not name them now, for a single sound is enough to awaken them."

- the radio play *The Seventh Day of the Sixth Day* by Uri painter and poet Heinrich Danioth.

The Constant Gaze Upwards

The book "Adieu-Altes Uri: Aspekte des Wandels eins Kantons vom 19. Ins 20. Jahrhundert" by Karl Iten focuses on the historical changes and transformations experienced by the Swiss canton of Uri from the 19th to the 20th century, during a period of industrialization, social change, and environmental challenges. The book explores multiple aspects, describing how Uri transitioned from a traditional agricultural society and gradually adapted to modern transformations.

The chapter "Die Bedrohung des Lebensraumes Durch die Naturgewalten" (The Threat to Living Spaces by Natural Forces) discusses how the local population has long faced the constant threat of natural disasters, such as avalanches, floods, and rockfalls. People frequently needed to look up to the sky, watching for possible impending disasters, and this ongoing pressure shaped the way of life in the region. The chapter explores the impact of these disasters on the local social structure and describes how the population responded to these challenges by using engineering solutions (such as building protective forests and walls) to mitigate the effects of natural disasters and protect their homes.





Since the first humans settled in this steep mountain region, they have been threatened by a variety of natural disasters: floods, landslides, falling stones and rocks, crevices, and of course, the terrifying avalanches. In the lower Uri region, from Schöllenen to Urnersee, there are a total of 355 avalanche zones where massive snow accumulations regularly slide down into the valleys. In the Urseren Valley, there are 256 avalanche zones. Without effective avalanche protection measures, such as relying on hillside forests and man-made avalanche barriers, long-term habitation in the Uri Valley would be almost unimaginable. The forests and protective structures throughout the Uri region are all under national supervision.

Despite these extensive protective measures, unpredictable avalanches continue to occur, causing significant material losses and even taking lives. Especially during winter, abnormal snowfall makes the threat of avalanches difficult to predict, as avalanches may suddenly happen in places that had been safe for hundreds of years.

In 1809, the Uri police department published a booklet titled A Simple Description of Avalanche Accidents in the Canton of Uri (December 1808). It states: "Avalanches, with their terrifying power, are unimaginable, especially when people are not living in the mountains during the winter; the power remains unnoticed. Most of these avalanches are powder avalanches. Mountain residents call them powder avalanches. When layers of wet, heavy snow form, avalanches slide down the slopes, with only the top layer moving, while the lower layers still cling to the ground. In terms of power, there is little difference; the wind speeds make the impact of powder avalanches stronger. As a result, powder avalanches often topple before reaching the forests, affected only by the force of the wind."

Although the people of Uri have learned to coexist with avalanches, they cannot entirely prevent the threat that avalanches bring. This disaster reveals a terrifying future: dead forests, valleys becoming uninhabitable, and barren land. Without the forests of Uri, the region would be uninhabitable. The barren land, houses, streets, and transportation routes would have long been destroyed if not for the protective role of the forests. These forests not only prevent large-scale avalanches but also regulate stream flows and enhance the stability of the terrain.

93% of Uri's forests are publicly owned, with the remaining 7% privately owned. For centuries, these forests have provided the people of Uri with building materials, fuel, animal fodder, and leaves. However, goat grazing in the forests caused serious damage to young trees, leading to a significant decline in forest resources in many areas. As early as 1610, widespread deforestation affected the Uri Valley. Despite bans and regulations, people ignored them and continued to cut down trees, further degrading the forests. This systematic destruction of seedlings impaired the forests' natural regeneration capacity. Although this issue was known, it wasn't fully realized until it became irreversible: the reckless and irresponsible use of avalanches, rockfalls, and crevices gradually left the paths open, posing increasing threats to settlements, animals, humans, and transportation routes. This created a vicious cycle. Once a gap in forest protection emerged, avalanches and rockfalls inevitably struck, destroying the remaining trees.

In Heinrich Danioth's Uri Christmas Play, snow is portrayed as a symbol of the devil. The demonic snowfall descends from the heavens:

"Snow! Snow! Snow! More! More! Don't stop! Let more snow fall! Snow! Snow! Snow! / Ugh! More snow! Snow! Snow! Snow! It presses down like scales, relentlessly weighing, heavier and heavier! / Everything disappears, everything is buried! / Trees and graves, roofs and stones! The white chorus brings me sustenance! Quickly, give it to me! / Snow! Snow! Snow! It destroys humans and livestock! It laughs mercilessly, indifferent to flames, and destroys every field!"



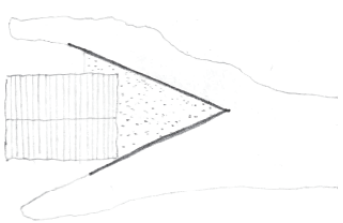
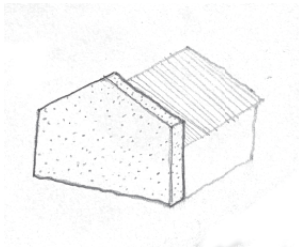
Alpine Landscape of Defence

Avalanches produce tremendous amounts of energy that require solutions that absorb and diffuse energy. The design of these solutions require engineering expertise backed with full-scale testing, field experience and know-how.

Terre-Armée has worked with local authorities in several locations across Europe, Latin America and Asia to develop tailored solutions. See our references for the works performed at sites in Seyðisfjörður and Ísafjörður, Iceland.

The construction of embankments faced with steel mesh are an excellent option to build avalanche barriers, splitters and catching dams with facing angles that can vary from 34° to 75°. Terre Armée offers the TerraTrel® and GeoTrel® engineered solutions. These structures are built of steel mesh facing with soil reinforcements comprised of either steel or geosynthetics.

These solutions have the advantage of being made of lightweight elements that are easily transportable and that do not require specific lifting machinery for installation. This is especially beneficial when the structures are to be built in remote mountainous areas that are not easily accessible for heavy equipment.





Shielded Houses

The small houses embedded in the Swiss mountainous terrain are typically referred to in architecture as "Alpine chalets" or "mountain chalets." the form and design of these mountain houses likely incorporate elements related to snow avalanche defense. In alpine regions like Switzerland, where avalanches are a significant risk, architectural strategies are often used to minimize potential damage. Here's how the design elements in your photos may relate to avalanche protection:

Partially Buried Structures:

Many of these houses appear to be embedded into the hillside. This reduces the exposed surface area, minimizing the impact of snow if an avalanche occurs. By burying parts of the structure, the houses can absorb some of the force of an avalanche and avoid being pushed or carried away.



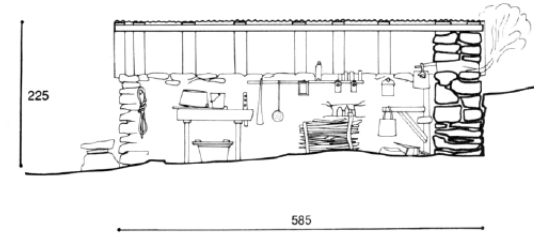
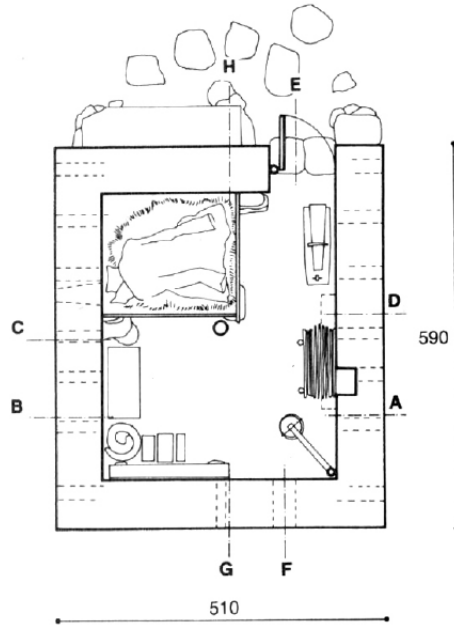
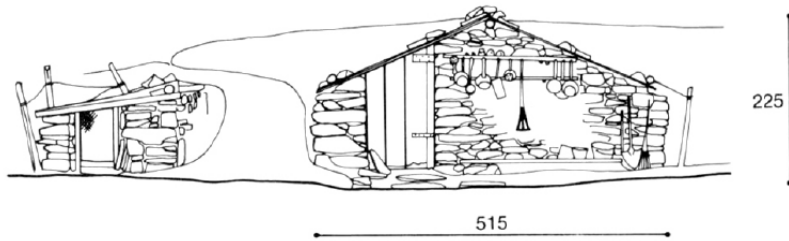
Sloped Roofs:

The steep, sloped roofs visible in the photos are another key feature in avalanche zones. These roofs help snow slide off easily, preventing the accumulation of heavy snow loads that could cause structural collapse. Additionally, the roofs seem to blend with the landscape, reducing the chance that an avalanche would directly hit the structure by flowing over it.

Orientation and Placement:

The houses are strategically placed in areas where natural landscape features, such as large boulders or slopes, act as barriers. These barriers help divert avalanches away from the buildings, protecting them from direct impact. The orientation also takes into account prevailing winds and the flow of snow, ensuring that the most exposed parts of the house are shielded by natural formations.



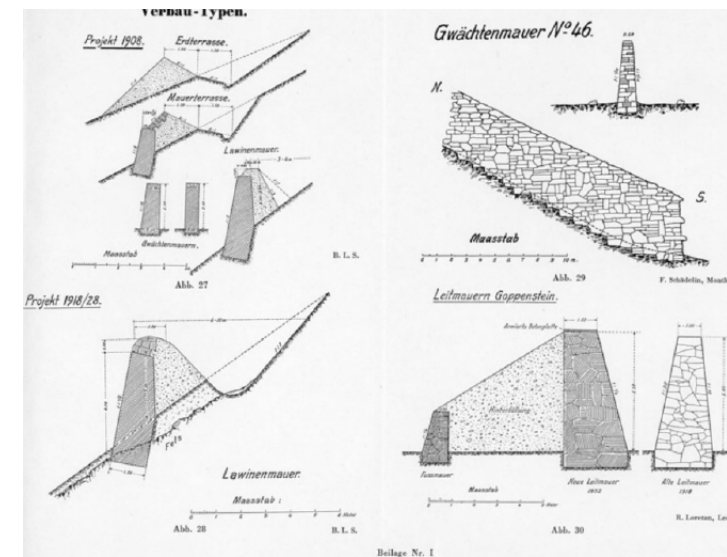
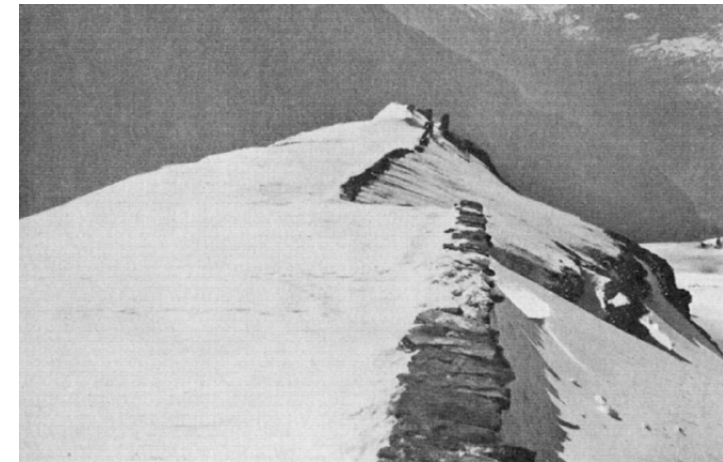
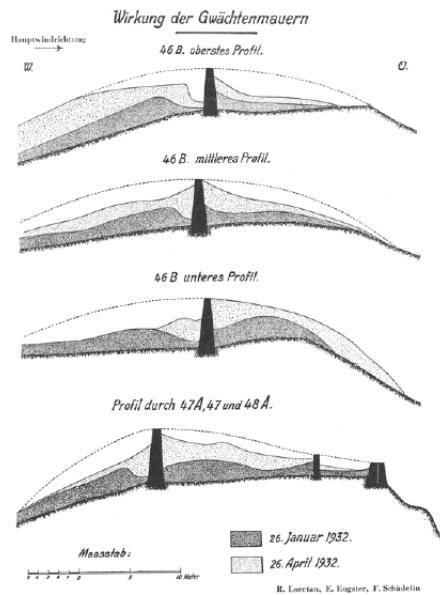


Reinforced Walls:

The thick stone walls are not just for thermal insulation but also for providing structural integrity against the pressure exerted by avalanches. Stone is a durable material that can withstand the force of snow pushing against it. In summary, the integration of these houses into the landscape, combined with their steep roofs and strategic placement, are likely defensive measures against avalanches. These architectural choices are common in mountain environments where snow movement can be unpredictable and dangerous.

Avalanche Protection Systems

On a micro level, the value of historical anti-avalanche walls in dry rubble construction is—in relation to new steel bridges—also analysed from the perspective of biodiversity. Again, it was Coaz in his 1910 publication who defended “his” dry rubble walls against snow movement because the longer and more stable snow cover served to protect high-alpine vegetation against cold temperatures, drying winds, and devastating landslides. However, contemporary examinations of biodiversity also find something positive about the natural dynamics of avalanches. When it comes to comparing the old and new versions as micro-habitats for flora and fauna, they prefer the old, local stone material structures to the new steel constructions.

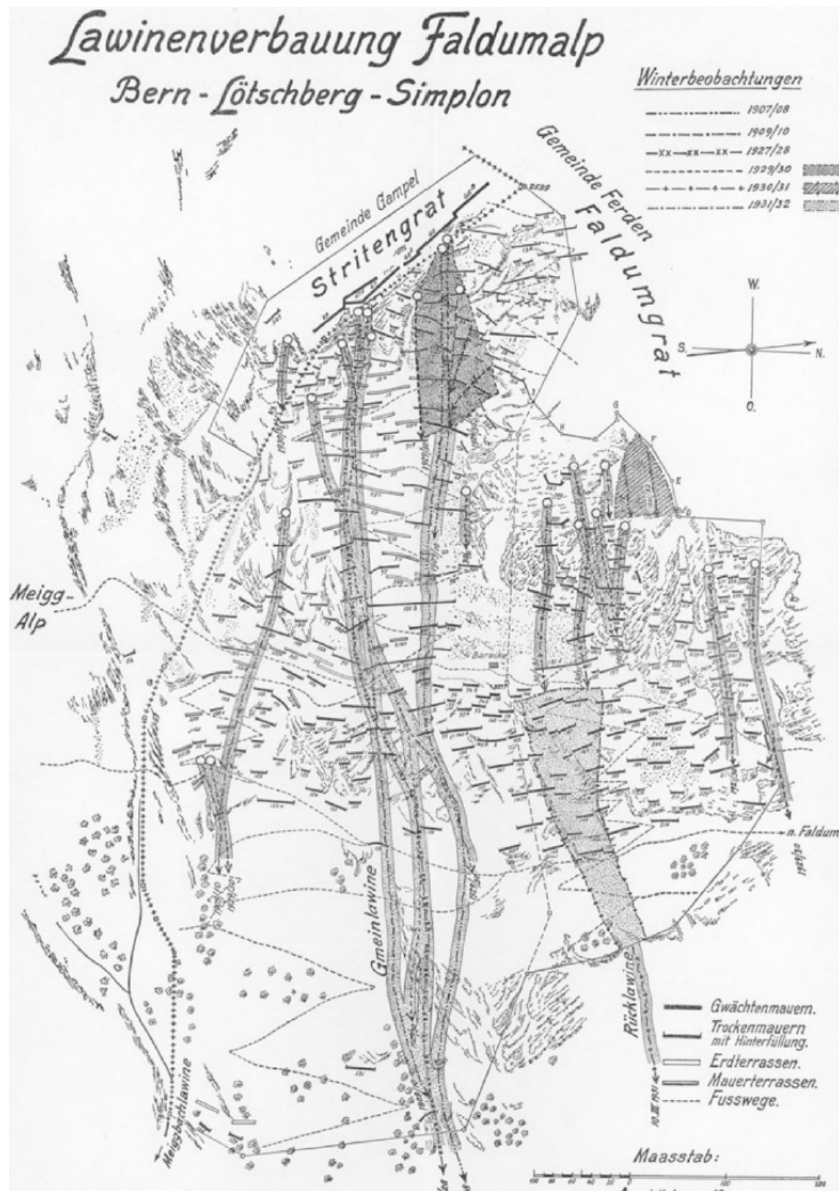


Next, go to:

→ Te-1 The formation of alpine landscapes

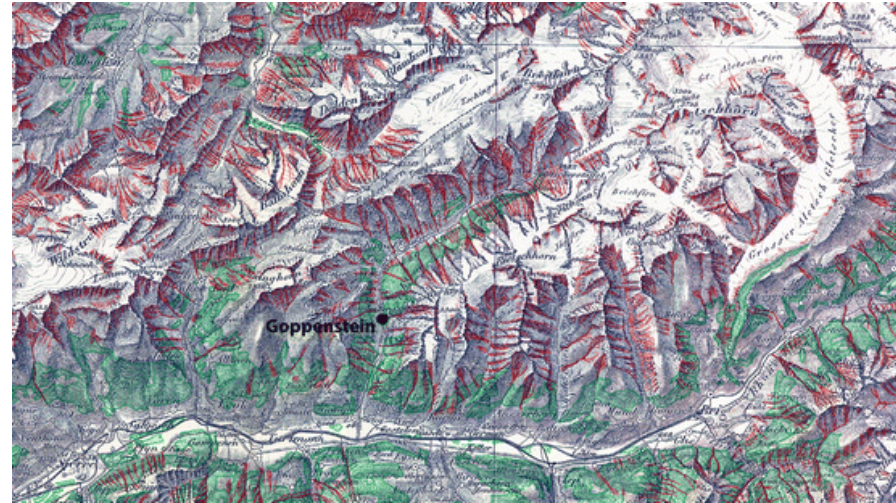
→ Te-5 The Gotthard Tunnel

→ So-3 Associations in Urnenboden



Life in the Swiss Alps would be inconceivable without avalanche protection measures. The earliest evidence of structural defences for individual buildings dates back to the 17th century when, in around 1600, a 4-metre-high and 80-metre-long avalanche deflection wall was built in Leukerbad, and a spaltkeil was constructed to protect a church in Davos. Likewise in the distant past, buildings were also provided with underground avalanche bunkers, where the residents could seek refuge in case of avalanche danger.

The first snow sheds were built in 1805, including on the Simplon Pass. At the time, most avalanche defences consisted of bricks and mortar. In the early 19th century, the first defensive structures were erected in avalanche starting zones – walls and earthen terraces were constructed for the purpose of actually preventing avalanches. In the period to 1938 a network of such defences spanning around 1,000 km was constructed throughout the Swiss Alps. Johann Coaz, who was one of the pioneers of avalanche protection in Switzerland, already realised around 1910 that the terraces and walls that had been built were too low to afford effective protection. As long ago as around 1939, the SLF published the first ground-breaking insights into calculating snow pressure, and erected experimental defences on the Dorfberg to investigate the effectiveness of different types of works.



How can we evaluate historical anti-avalanche wall systems today? Are they worth preserving? In order to find satisfactory answers, we have to place these systems within their correct spatial scale of “landscapes.” As a methodological approach, we combine historical preservation/historic monument research (Denkmalpflege und Denkmalkunde) with historical geography (Historische Geographie). The European (and, in our focus, German) discussion on cultural landscapes (Kulturlandschaften) began in the 1970s. “Cultural landscapes” in general are defined as anthropogenic landscapes—even though the term “landscape” is an anthropogenic (aesthetic) construction itself. If “historical cultural landscapes” (historische Kulturlandschaften) are landscapes with dominant historically human-introduced elements, rediscovering the original “context” calls for an understanding of the punctual, linear, and two- or three-dimensional interconnections of this whole object of inquiry. This understanding is provided by the discipline of historical geography as a historical spatial science (historische Raumwissenschaft). In order to evaluate the intensity, continuance, and ultimate relevance of this historical imprinting process, we have to conceptualise its specific typological character. Besides historical agrarian, industrial, and economic landscapes, it also created historical landscapes of traffic/transport technology, in our case mountain railway systems (historische Verkehrs- und Bahnlandschaften).

However, calling up their prevalent elements such as historical locomotives, rail-track systems, accompanying building infrastructures such as tunnels, railway stations, bridges etc., is not enough; we have to include the much more extensive, but at first glance invisible structures which secured them: avalanche protection systems. Placing these structures in the very centre of analysis, we can call them “historic alpine landscapes of defence” (Historische Lawinenschutzlandschaften)—against, but also within nature: on the one hand, historical anti-avalanche walls were built to manage a natural hazard and to block natural disasters against technical masterpieces such as railways. On the other hand, the fact that they were constructed with local and purely natural stone materials, perfectly placed within each topographical mountain context using local knowledge, and coexisting aesthetically and ecologically with living flora and fauna, made them a symbiotic partner with nature. These defence landscapes have been continually reshaped by changing cultures of risk in which the balance between nature and culture is dynamically negotiated.



Social Structures





Swiss National Map detail above Springen



Farmer with cow on the Klausen Pass road

Settlement Forms in the Schächental

The residential buildings of the three municipalities are scattered across the entire cultivated land. Only in a few places small centers have formed. Urnerboden (Ufem Port), Unterschächen village, Springen village, and Bürglen village serve as hubs for central services. In the Schächental, similar to other mountain valleys, there is a gradual transition from isolated farm settlements to smaller centers with limited central services, culminating in a larger center with most services.

In addition to these settlement centers, there are individual farms spread throughout the fields. The highest residential buildings, which are also occupied during part of the winter, are situated on the sunny slopes in the municipalities of Springen and Bürglen at elevations above 1700 meters:

Ruegig at 1705 m, Lücken at 1740 m, Pfaffen at 1725 m, Vorderer Wissenboden at 1740 m, and Obflüe at 1715 m above sea level. The

highest buildings occupied year-round are located in the municipality of Bürglen, Biel at 1620, and in the municipality of Springen, Gross Obermatt at 1600.

In addition to the Klausen Pass road, there are now several additional roads connecting the farms with each other and with the valley. However, some homesteads are still only accessible on foot, with goods needing to be laboriously carried up from the valley. All three municipalities have established cable transport systems for goods.

The individual farm area displays a characteristic grouping of buildings in pairs, as shown on the Swiss National Map 1:25,000, sheets 1172 and 1192. The stable stands directly next to the farmhouse. In addition to these two buildings, many farmers have one or two additional external stables. Not all residential buildings are inhabited year-round.

In the 11th and 12th centuries, a fundamental change took place in the Alpine region due to the strong population growth.

In the earlier periods - from the Bronze Age through antiquity to the early Middle Ages - the landscape appears to have had a mosaic-like character. The centers of settlement and use were located in the middle of wooded areas with little traffic. From the high medieval population surge onwards, this semi-open landscape was transformed into a cultivated landscape. The settlement and land-use centers multiplied and expanded, and the forest was pushed back over large areas.

Most people worked in **agriculture**. A central means of increasing production was to increase the frequency of harvesting on the same area. With the previously widespread **slash-and-burn** agriculture, several decades had to pass before a field could be cultivated again. Field systems with a fallow period made better use of the soil, as it could be cultivated again after a year of lying fallow. However, this space-saving form of land use was very labor-intensive and its yields did not increase to the same extent as the effort required. For this reason, slash-and-burn was used for as long as land resources permitted.

Altering Landscape



Explanation of Slash-and-Burn

Steps to Slash and Burn Farming
Generally, the following steps are taken in slash and burn agriculture:

Prepare the field by cutting down vegetation; plants that provide food or timber may be left standing.

The downed vegetation is allowed to dry until just before the rainiest part of the year to ensure an effective burn.

The plot of land is burned to remove vegetation, drive away pests, and provide a burst of nutrients for planting. Planting is done directly in the ashes left after the burn.

Planting is done directly in the ashes left after the burn.

Side Effects of the Practice

Short-term Nutrient Supply:
Burning vegetation releases nutrients bound in plants, such as nitrogen, phosphorus, and potassium, temporarily increasing soil fertility. However, this effect is short-lived.

Rapid Nutrient Depletion:
Within one to three years of intensive use, the released nutrients are depleted. Without additional fertilization or soil improvement measures, soil fertility declines rapidly.

Soil Exhaustion and Degradation:
Continuous use without adequate regeneration exhausts the soil. The humus layer is reduced, and soil structure deteriorates.

Erosion and Environmental Issues:
Removing the vegetation cover makes the soil more susceptible to erosion from wind and water.

Long Regeneration Period: To restore natural vegetation and soil fertility, the land must lie fallow for decades.

Unsustainable Land Use:
With increasing population density, it becomes harder to allocate enough land for long fallow periods.

Crop Variety:

Planting different crops reduced the risk of total crop failure due to pests or diseases affecting a single crop type.

More Land Cultivated:

allowed for two-thirds of the land to be cultivated each year, increasing overall production

Labor Distribution:

Staggered planting and harvesting times spread labor needs more evenly throughout the year, optimizing the use of available labor. More worke intensive than it is productive

Pros of the Three-field system



Associations in Urnerboden

Schwingen (Swiss wrestling)

Skiing

Tourism

Fire Brigade

Samaritan Association

Music bands

In the isolated Alpine region of the Urnerboden, the people have long relied on associations and community efforts to protect and sustain their way of life. This tight-knit community, though small and somewhat diverse, has always prioritized spending their time together meaningfully and productively. While it can be challenging to cater to everyone’s interests in such a small village, particularly during the long, harsh winters when the area is cut off from the rest of the canton, various associations have sprung up to provide support, entertainment, and protection for the residents.

During the summer, the Urnerboden sees an influx of visitors, holiday guests, and local farmers, with around 500 people bringing life and activity to the village. However, in winter, when the region is buried under heavy snow, the community becomes more reliant on organized social and protective associations to ensure safety and cohesion.

One of the oldest forms of organized activity is Schwingen, a traditional Swiss wrestling sport that embodies the natural desire for physical competition. The Urnerbodenschwinget has become a beloved tradition, bringing people together to test their strength in friendly matches.

In the winter months, skiing naturally plays a vital role in the community’s life. Given the proximity to Glarus, where Switzerland’s first ski club was founded, it’s no surprise that skiing remains popular. Over 25 years ago, the Ski Club Urnerboden was established and has produced some strong local skiers. Skiing is not just a pastime but also a way to navigate the heavy snow and maintain a sense of connection with neighboring communities.

Beyond sports, associations for practical protection and support are essential. The Fire Brigade, established 20 years ago, ensures immediate assistance in the event of a fire. Their equipment is regularly updated, and they provide essential protection for the remote and often vulnerable village. Similarly, the Samaritan Association offers medical aid and support, proving invaluable in an area where emergency services are not easily accessible.

Tourism, vital to the region’s economy, is supported by the Tourism Association, founded on September 28, 1967. This association not only promotes tourism but also plays a critical role in local governance, acting almost as a substitute municipal authority. It has been actively involved in addressing practical issues such as road expansion, street lighting, postal services, and waste management, working closely with municipal authorities to find solutions.

Though the community does not have a native folk music band, musical traditions are kept alive through performances by groups from neighboring regions like Uri and Glarus, often playing for village dances and celebrations.

Much of the success of these associations and the vibrant community life depends on the leadership of the local chaplains. These individuals, often the only educated residents living permanently in the village, guide not only religious and educational matters but also serve as leaders in organizing and sustaining various aspects of village life, including the associations.

By coming together through shared traditions, sports, and practical associations, they maintain a strong social fabric that supports their unique way of life.

“By coming together through shared traditions, sports, and practical associations, they maintain a strong social fabric that supports their unique way of life.”



Ski club Unterschächen

Alpine Inheritance Types

The notions of inheritance recorded among farmers in the 1960s show considerable differences. While in one village great value was placed on the indivisibility of inheritance in favor of a single son, neighbors in the next village preferred an equal distribution of family property among all children. This difference had a considerable influence on the social structure and the distribution of power within the family.

Explanation of the three ideal types of family history by Dionigi Albera. Each type describes how inheritance, family structure and social relations were organized in different Alpine regions:

1. **Agnatic type:** In the southern and western Alps. The family is embedded in kinship and neighborhood networks of small settlements; strong position of the male side (agnatic) The inheritance is distributed evenly/ equally among the sons, while the daughters receive a dowry. The family lives patrilocally (near the father or in the father's house), and married brothers often live together. The agnatic order reached its peak in the early modern period. In the transition to modernity, from the 18th century onwards, male dominance weakened.

Agnatic type

Dowry

Indivisibility

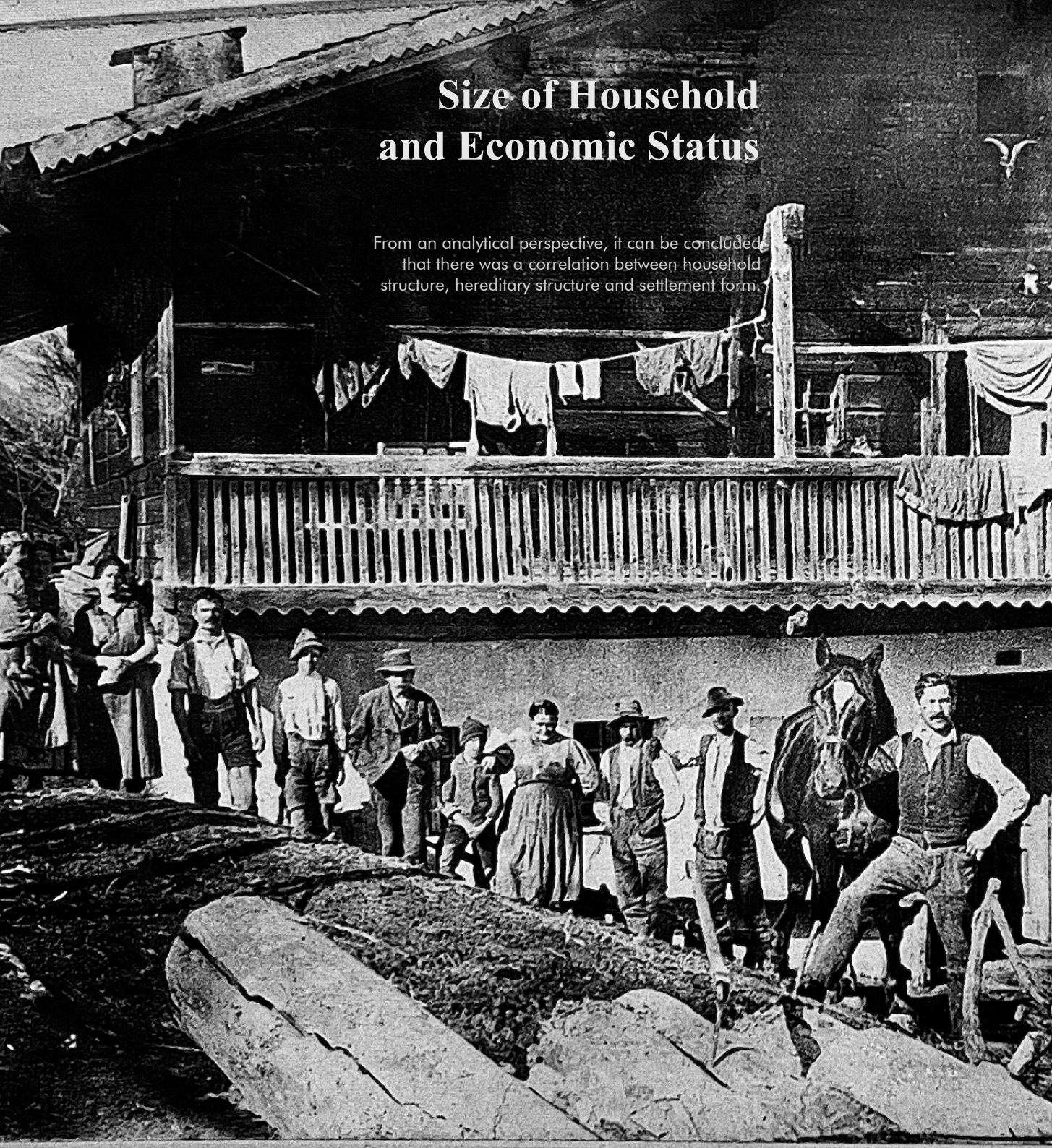
Patrilocal

2. **Bourgeois type:** parts of the central Alps. The inheritance is shared equally between sons and daughters. Kinship is based on bilateral concepts (both parents count equally). The family is embedded in the community association, which often includes larger settlements. The status of men does not depend on their role as head of the household, but on their citizenship. Examples come from the Valais.

Bourgeois type

3. Farmer type: Eastern Alps. Social relations are concentrated on the farm and its owner (farmer). The estate is passed on undivided to an heir, while the other family members play a subordinate role. -> Declassification of the other siblings. The authority of the farmer is based on connections to landlords and the state. Examples can be found in South Tyrol, Austria and Slovenia. The farm is usually demarcated and consists of farm units scattered throughout the landscape.

Farmer type



Size of Household and Economic Status

From an analytical perspective, it can be concluded that there was a correlation between household structure, hereditary structure and settlement form.

In contrast to the western and central Alps, which were characterized by small farms, the 'large farming country' in Austria had a large number of farmhands and numerous illegitimate births - the latter were closely related to the former. Household composition varied considerably over time, but available statistics show that phases of multi-family households were common. In 1561 and 1778, 12 and 20 percent of all households in the neighboring parish of Chevaline, respectively, consisted of several families. The distribution in other villages was of a similar order of magnitude. Many Savoyard settlements at an altitude of 1,000 meters consisted of hamlets. There were numerous family relationships between the households, and the property of the former "chef de famille" often remained undivided within the households. Records from the 18th century mention only a few divisions.

In the Grisons, on the other hand, it is assumed (there are only a few written documents) that a very egalitarian division of land ownership between male and female siblings was common. The practically gender-neutral inheritance rules, which clarified the claims of individual children, meant that multi-family households were less common in Graubünden. The wife and husband, usually both from the same village, combined their two estates. It was therefore not necessary to live together with siblings, as everyone's survival was assured. Small farms dominated in Graubünden.

In Carinthia, division almost never occurred. An important reason for the general aversion to this solution could have been the fact that many farms consisted of individual farms that formed a more or less closed territorial entity. In any case, the approval of new smallholdings on little-used and often communal land seems to have been more common than the division of old farms. Many households in Carinthia typically comprised a considerable number of people outside the family, organized according to their economic status in the second half of the 18th century. They show that the majority of households - up to 87 percent in one parish - included servants. In this and other parts of the country, servants made up between a quarter and a third of the population. In contrast, the proportion of servants in Graubünden between 1750 and 1768 was barely one percent of the population.

Politics impacting Family Forms

In Savoy, notaries and written contracts, such as wills, strengthened the chefs de famille, which increased their power within the family and consolidated the family economy. These institutions made private decisions public and institutionalized, which strengthened the influence of the state on family property structures.

In the Grisons, on the other hand, the family structure was less determined by formal laws and state authority. As there were hardly any professional legal systems and notary's offices in this region, decisions remained largely within the family environment and oral. This led to less state influence on the family structure and more flexible power relations within households.

In Carinthia, the lords of the manor dominated the succession, often acting as negotiators in the transfer of property and asserting financial claims. Here, public order was shaped by relations with the landlords, which meant that the head of the household had a great deal of power. The family was more closely tied to the state and feudal system, which reinforced inequalities within the family and relegated non-hereditary members to a status similar to that of servants.



Medicine



Alpine Flora with Healing Properties

Silberdistel
Carlina acaulis



The effect of silver thistle is antibiotic, antispasmodic, laxative and diaphoretic. It is used as a remedy for colds and skin diseases, but its effect on other complaints is also remarkable. It also helps with nervous excitement. The root of the silver thistle, which is collected in the fall, is generally used.



Alpen-Edelweiss
Leontopodium nivale

The alpine flower is a real fountain of youth against premature skin ageing. Edelweiss also has an antiseptic, antibacterial and anti-inflammatory effect. In addition, the extract can effectively bind free radicals, reduces the formation of wrinkles and acts against skin ageing. Edelweiss extract is particularly suitable for stressed and sensitive skin.

Berg-Nelkenwurz
Geum montanum



In the past, the strong taproots of the mountain clove root were used in folk medicine as they contain aromatic clove oil as well as tannins. The pinnate basal leaves are characterized by a large terminal leaflet. Their bright yellow flowers attract flies for pollination.



Alpen-Enzian
Gentiana alpina

Gentian root is used: as the strongest indigenous bitter substance, it helps against loss of appetite and functional digestive complaints such as bloating and flatulence. The dried rhizome and roots of gentian contain two to three percent bitter substances, including gentiopicroside and the extremely bitter amarogentin. These ingredients stimulate the taste buds on the one hand and the flow of saliva, gastric juice and bile on the other.



Alpenrose
Rhododendron ferrugineum

The stem cells of alpine rose leaves are particularly beneficial for dry and stressed skin. It has been proven that the skin's own stem cells are protected, revitalized and their lifespan is promoted. The skin barrier is strengthened and the skin is better protected against climatic stress. The use of plant stem cells can delay skin ageing. As a result, the skin stays young for longer and looks better and more vital.

Gletscher-Hahnenfuss
Ranunculus glacialis



The pungent-tasting leaves are eaten by chamois, which is why they are popularly known as chamois cress (like the round-leaved pursenwort, *Thlaspi rotundifolium*). Hunters hope that eating the leaves will give them a similar giddiness to that of chamois (Jägerblättle).



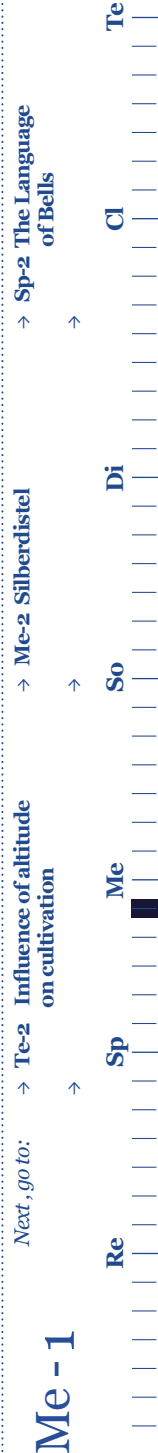
Alpen-Wundklee
Anthyllis vulneraria

In folk medicine, kidney vetch is used externally to promote the healing of wounds and injuries. A tea is said to help against intestinal complaints and coughs and is used for gargling in the case of throat, mouth and pharynx diseases. The fresh flowers in salads are said to stimulate the metabolism and strengthen the stomach and intestines. It is often used together with ribwort plantain.



Schneeglöckchen
Galanthus

The snowdrop is slightly poisonous. The bulb in particular contains alkaloids. Too much can cause nausea, vomiting and paralysis. Well-dosed, however, the snowdrop has a strengthening effect on the heart and nerves. As the flower essence only transfers the energy field of the flower to the water, it can be taken without hesitation.



Alpen-Enzian

Gentiana alpina

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Alpen-Aster

Aster alpinus



decoration

Silberdistel

Carlina acaulis



medicine, symbolism
& culinary

Alpen-Edelweiss

Leontopodium nivale



medicine, symbolism
& cosmetics

Alpen-Mannsschild

Androsace alpina



decoration

Berg-Nelkenwurz

Geum montanum



medicine
& culinary

Alpen-Enzian

Gentiana alpina



medicine
& culinary

Alpenrose

Rhododendron ferrugineum



medicine
& decoration

Gletscher-Hahnenfuss

Ranunculus glacialis



medicine

Alpen-Wundklee

Anthyllis vulneraria



medicine
& culinary

Schneeglöckchen

Galanthus



medicine
& decoration

Next, go to:

→ Te-2 Influence of altitude
on cultivation

→ Me-2 Silberdistel

→ Sp-2 The Language
of Bells

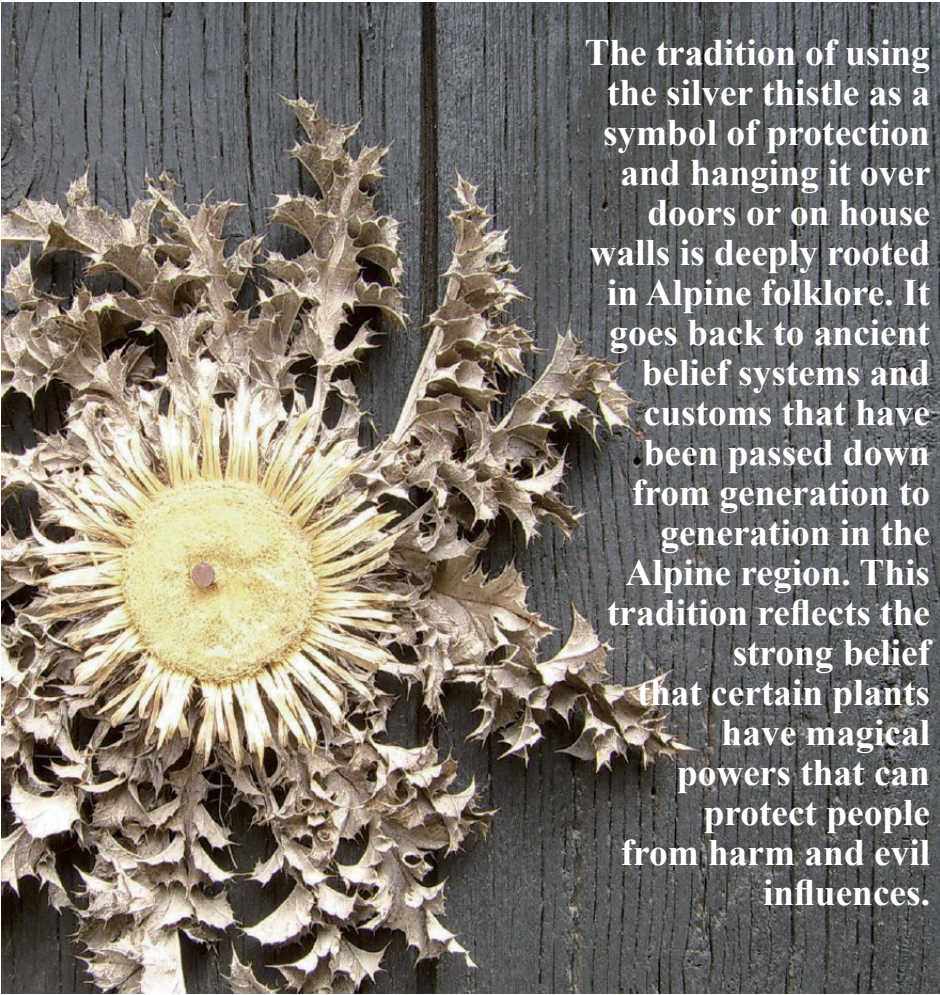
Me - 1

Re Sp Me Di So Se Sa Su Mo Tu We Th Fr

Cl Te

Silberdistel

Carlina acaulis



The tradition of using the silver thistle as a symbol of protection and hanging it over doors or on house walls is deeply rooted in Alpine folklore. It goes back to ancient belief systems and customs that have been passed down from generation to generation in the Alpine region. This tradition reflects the strong belief that certain plants have magical powers that can protect people from harm and evil influences.

Protection from evil spirits and witches:
In the Alpine region, it was believed that evil spirits, demons and witches lurked in the darkness and could enter houses to harm people and livestock. To protect themselves, people used certain plants that were believed to have protective or defensive powers. The silver thistle was considered particularly effective because of its prickly, star-shaped appearance. It was believed that the thorns and the ray shape of the plant could deter or keep away evil spirits. It was customary to hang the dried flower over front doors, stables or windows to protect the house and its inhabitants.

Magical and protective powers of the silver thistle:
The belief in the magical power of plants is widespread in many ancient cultures, and in the Alps the silver thistle played a special role. Its shape was reminiscent of the sun, a symbol of light and life that drives away darkness and evil. In many cultures, plants with a star-shaped or ray-shaped flower were regarded as symbols of protection against evil. This practice is similar to other protective spells, such as hanging horseshoes or placing crosses. People believed that the silver thistle offered both supernatural protection and could influence the weather.

Is the silver thistle really a weather prophet?



Yes, because it is only on sunny, dry days that the silver thistle - as the greater thistle (*Carlina acaulis* ssp. *acaulis*) is simply called - displays its pretty, silvery inflorescences.

In damp weather, however, its long, silvery bracts curl inwards, protecting the actual flowers from the rain.

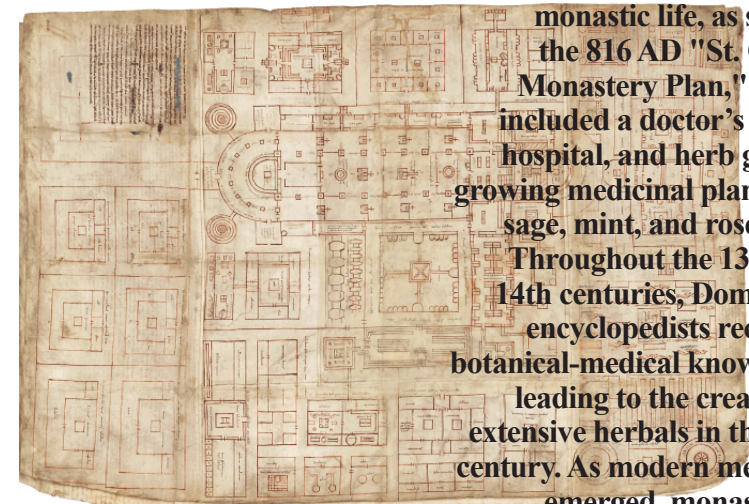


Whether the flowers open or close is directly related to the humidity of the surrounding air. This humidity, in turn, can be used to predict the future weather quite reliably, which is why the plant has been given the common name weather thistle: Open flower heads indicate low humidity and forecast high-pressure conditions, which is usually associated with fine, sunny weather. The closed flower heads of the silver thistle, on the other hand, herald an area of low pressure, which means bad prospects if it is not already raining.

Herbal Knowledge in the Convents

Most of women's convents in Central Switzerland have their own herb gardens, which are maintained by the sisters. Despite variations in size and in the range of herbs cultivated, and although the sisters who maintain them belong to different orders, the significance of these gardens can only be understood as part of a broader cultural and historical framework. When Benedict of Nursia founded a monastery on Monte Cassino in southern Italy, he imposed an obligation on the monks to care for the sick and also provided staff and the infrastructure re-quired for this purpose. After the Benedictines grew into one of the leading religious orders in the Catholic Church, a process which began in the 8th century, their medicinal knowledge – which was derived from the teachings of the ancient world – spread throughout the entire European continent and influenced all areas of Western pharmacology throughout the Middle Ages. Herb gardens in monasteries and convents played a key role in this system from the very beginning as suppliers of essential ingredients.

In Central Switzerland, it's mainly women's convents that are doing their best - despite a lack of new recruits - to maintain and pass on the knowledge and practices (planting, gathering and preparation) associated with medicinal herbs. In addition to cultivating a varied herb garden, this can also include extensive herb collecting on alpine meadows and delegating garden maintenance to interested volunteers. Most convents have a store, sometimes combined with an online store, where they sell home-made products made from herbs and plants.



Herbs were integral to monastic life, as seen in the 816 AD "St. Gallen Monastery Plan," which included a doctor's house, hospital, and herb garden growing medicinal plants like sage, mint, and rosemary. Throughout the 13th and 14th centuries, Dominican encyclopedists recorded botanical-medical knowledge, leading to the creation of extensive herbals in the 15th century. As modern medicine emerged, monasteries' role as medical authorities diminished, but their remedies remained relevant as complementary treatments.

Gathering and Blessing

In addition to garden harvesting, nuns gather herbs from Alpine meadows. For example, the sisters of Frauenthal Monastery collect herbs in the Schwyz mountains for their famous herbal tea, while the Maria-Rickenbach sisters harvest in nearby Alpine areas. The harvested plants are processed in monastery workshops and used in the production of herbal remedies. Herbs are traditionally blessed during the Feast of the Assumption on August 15.



In most women's monasteries in Central Switzerland, sisters maintain herb gardens, continuing a tradition that dates back to the 6th century when Benedict of Nursia founded a monastery on Monte Cassino. The Benedictines' medical knowledge spread across Europe during the Middle Ages, with herb gardens playing a vital role in supplying medicinal ingredients.

Despite a lack of new recruits, convents still maintain this knowledge, passing it down through gardening, Alpine herb collection, or involving laypeople.



Planting, Harvesting, and Processing

In Central Switzerland's larger monastery gardens, up to 100 herbs and shrubs are cultivated organically, avoiding artificial fertilizers and pesticides. During the summer months, intensive harvesting takes place, with sisters and helpers working for days to cut herbs and pluck flowers. The herbs are dried and processed into a variety of products such as ointments, balms, tinctures, teas, syrups, liqueurs, and oils. These products are sold in monastery stores and online, with some regional specialties becoming well-known over decades. Some monasteries have passed the care of their herb gardens to external helpers due to staff shortages.



Knowledge Transmission and Challenges

The transmission of herbal knowledge within monasteries has historically been written down and shared across regions. In modern times, some monasteries, like Maria-Rickenbach, have sought external training to revive herbal traditions. However, with fewer nuns and resources, some have discontinued educational programs related to herbalism. Nevertheless, interest in herbal traditions is growing among the general population, leading to opportunities for new forms of knowledge sharing, such as herb courses and public tours.

Monastery Landscape in Transition

Of the 14 monastic communities in Central Switzerland, seven date back to medieval times. Due to aging populations and a lack of new recruits, some monasteries have closed or merged. This shift has impacted the transmission of herbal knowledge, as there are fewer resources to maintain traditions.



Faunal Pharmacology

Marmot Fat and Bezoars:

The ruthless hunting of Alpine animals by hunters and poachers was not merely for their meat and trophies; various body parts and organs were used as medicines. For instance, marmot fat was used to treat rheumatic diseases, bearded vulture innards for epilepsy (known as “falling sickness”), and bear bile for gallstones.

Even the Alpine ibex fell victim to superstitious folk medicine. The animal’s immense strength, its elegant climbing skills despite a seemingly clumsy body, and its extreme resilience to the brutal hardships of mountain winters made the ibex a symbol of robust health in people’s eyes.

Practically every part of this “climbing pharmacy” was believed to be useful for something, either as a cure or for magical purposes. From the horns to the heart, marrow, and blood—even heart ossifications (bony formations in the area where the heart’s arteries exit) and bezoar stones (balls of hair swallowed and clumped together in the stomach) were considered valuable. Thus, hunting an ibex was a rewarding endeavor. The bishops of Salzburg even operated proper “ibex pharmacies.”



Goat Whey and Cow Dung:

From the mid-18th century, health retreats in the mountains became fashionable, starting in the Alpine foothills. Goat whey gained widespread attention in the Appenzell region—originating from the village of Gais—in the fight against the common plague of “consumption” (pulmonary tuberculosis). In some places, such as Heinrichsbad near Herisau, whey was combined with cow dung: in the patient’s room above the cowshed, the therapeutic effects of the ammonia fumes were utilized...

Over time, Switzerland, a land of grass and livestock, developed a true milk culture, where milk from mountain pastures was considered particularly beneficial to health. This led, in the 19th century, to the triumphant global success of Swiss Alpine milk, in the form of condensed milk, milk powder, and milk chocolate.

The Great Spa Boom:

Switzerland, with its abundance of natural springs, was ideal for spa and drinking cures, which typically lasted at least four weeks. Bathing, with patients wearing long shirts, often lasted up to ten hours a day until the appearance of “Urschlechte” (a skin rash caused by overbathing), which was considered a sign of effective treatment. Drinking cures involved consuming up to ten liters of spring water per day.

This early form of tourism saw significant growth with the expansion of transportation infrastructure in the 19th century. The oldest and highest mineral springs in Switzerland are the iron-rich springs of St. Moritz, while the hottest are the calcium sulfite springs of Leukerbad. The most hidden is the spring of Pfäfers in the Tamina Gorge, which has supplied Bad Ragaz since 1840. The “most radioactive” spring was the St. Placi spring near Disentis, which fell out of favor only after radium and radon lost their place in modern medicine.

Altitude and Mineral Cures

Air and Altitude Cures:

Though Hippocrates praised the benefits of climate change, and Galen extolled the pure, cool air, it was only after the discovery of oxygen (1789) that Alpine air became a focus of interest. Johann Jacob Scheuchzer and Jean-Jacques Rousseau had already explicitly recommended Alpine air, but it wasn't until later that it truly gained popularity. Scholars debated whether sea air or mountain air was superior, and the height of popularity for air and altitude cures, as well as heliotherapy (sunlight therapy, inspired by dried meat production and used for bone tuberculosis), came after whey and bathing cures.

Dozens of high-altitude locations suddenly promoted themselves as air and altitude health resorts, with ozone-rich air—remarkably—considered a competitive advantage for many years. Sanatoriums sprang up like mushrooms across the Alps. Lung health resorts like Davos (a pioneer), Arosa, Leysin, and Montana flourished as treatments for tuberculosis until medical advancements made drug treatments for the disease possible. As antibiotics became widely used, the sanatoriums emptied and were eventually converted into sports hotels.

Mineral Cures: Dragonstone and Moonmilk:

Minerals were also used as medicine. For example, mountain crystal was believed to quench thirst when sucked on (since crystal was thought to be “condensed” water) and, when powdered, was taken to treat dysentery. One of the most sought-after minerals was the “Dragonstone” from mountain dragons, like the famous Lucerne Dragonstone—a stone orb with strange markings, allegedly dropped in 1420 by a dragon flying from Mount Rigi to Mount Pilatus near Rothenburg, encased in a blood-colored crust.

For centuries, Alpine dwellers had also collected “Moonmilk” (actually “Montmilk” or mountain milk) from a cave on Mount Pilatus—fine calcium carbonate deposits from a cave stream. In Lucerne, this milk, mixed with water, was still used as a remedy for heartburn and insufficient breast milk production until 1900. Another widespread remedy was “Glacier Salt” or Sal Alpinum (magnesium sulfate or Epsomite), which, like sodium sulfate (Glauber's salt), had laxative properties and was used to treat various ailments.



Spirituality



To this day, the Alps remain a space that people cannot fully control. They deal with this uncontrollability in very different ways depending on the time and place. Attempts to protect themselves technically from the climate, crises and disasters with dams or protective structures were met with many spiritual defensive measures, such as supplication and processions, cross-settings or invocations.

Religions can give shape to the uncontrollable, explain it and offer a ritual or intellectual way of dealing with it, but without being able to solve it.

Christianisation of the Swiss Alps

The Christianization of the Alpine regions, including Glarus and Uri in Switzerland, from the 4th century onwards initially took place through Roman administrative structures and urban centers such as Chur, Geneva, and Basel, which developed into important Christian diocesan seats. Christianity spread more quickly in the west and south of Switzerland due to greater urbanization, while the east, being less urbanized, experienced a slower spread. The spread of Christianity served not only as religious education but was also used as a tool to secure political power. Monasteries and missionaries such as St. Gallus and Columban played central roles in the Glarus and Uri regions. From the 7th century onwards, they founded monasteries and hermitages, which became religious and economic centers, gradually converting the local population from paganism to Christianity. The influence of the Church grew as monasteries and pilgrimage sites were established, firmly integrating these areas into the Christian network.

The Christianization of the Alpine regions was largely driven by missionary work and the establishment of sacred structures, which in the long term shaped the religious and cultural identity of Glarus and Uri. The foundation of these monasteries not only served spiritual purposes but also strengthened

the rulers' territorial control over the population in the remote Alpine regions. Christianization in the Alps was thus not only a religious process but also a means of social and political integration into the power structures of the time. The principle of "Cuius regio, eius religio" (whose the prince, his the religion) applied, emphasizing the role of rulers in determining the region's religious affiliation.

The Alpine region found itself on the border between the Roman Catholic Church and various reformist movements. In the mountains, most regions remained Catholic or were re-Catholicized after a multi-confessional phase by around 1750. Only in the Bernese Oberland and parts of eastern Switzerland (such as Graubünden, Glarus, St. Gallen, and Appenzell) did the Reformation prevail long-term, affecting about five percent of the area. Some argue that the Alps should be viewed as having a fundamentally Catholic character, despite these exceptions.

In Graubünden and Glarus, the Reformation was characterized by the localism of the political structures in these central Alpine regions. With little centralization of power, decisions regarding religious affiliation in Glarus fell to individual communities, resulting in a denominational patchwork. Most parishes were religiously homogeneous, with only a few villages having both Reformed and Catholic inhabitants. Euan Cameron, a leading expert on the history of the European Reformation, proposes a rough regional categorization for the early 17th century. Applied to the Alpine region, this shows that Lombardy and Veneto, making up 15% of the area, remained Catholic, while France and Savoy (25%) remained Catholic with some Protestant rights. Habsburg Austria and Salzburg (45%) were either re-Catholicized or in the process of re-Catholicization. In the Swiss Confederation and the Associated Countries (15%), regulated confessional coexistence was achieved. The Alpine regions saw intense religious struggles, with only Lombardy and Veneto relatively unaffected. By the mid-18th century, when state structures solidified, Protestantism had become officially established in only about five percent of the total Alpine area.



The



Language of Bells

Bells ringing against **storm dangers**.

The church bell had many functions and developed an entire language understood by all villagers. For example when used as a funeral bell, through different rhythms, the bell would indicate whether the deceased was a man or a woman, or warn residents of emergencies, such as floods or fires. There were signals for people to bring animals into the barn to protect them from storms.

From the 12th century until well into the 20th century, bell ringing was not only used for communication and warning but also to control storms.

"During a terrible flood several hundred years ago, a landslide from the steep, torn-up valley threatened to destroy the old hamlet of Wytterschwanden in the Schächental. It carried house-sized boulders, some of which can still be seen today in the stream bed. Riding the debris were two witches, bringing a massive stone with them; one pulled, the other pushed. A young girl saw this from the orchard and ran as fast as she could to the St. Anthony Chapel in the hamlet, ringing the bell with all her might. And lo and behold! The storm subsided, the landslide halted, and the stone remained in place, despite the witches' efforts to move it.

'Push, Lunni, push!' cried one. 'I can't push anymore, St. Anthony's bell has cast a spell!' cried the other. But it was too late. Their power was gone. The witches disappeared."

This legend from the Uner Alps was based on the oral account of a seventeen-year-old girl, documented in 1920. She witnessed a landslide stopping just before the St. Anthony Chapel in Spiringen. The girl and the entire community attributed the miracle to her ringing the church bells, which was believed to have banished the storm. Weather-bell ringing was a religious practice that reflected the belief in supernatural beings held responsible for dangerous weather. The church bell, a consecrated object long documented in Alpine regions, was believed to destroy their power. The sound of the weather bell spread a protective charm, reminiscent of the "Betruif" (a chant asking for protection for all living beings on the alp) known in Uri, meant to safeguard both livestock and humans.

This story from the Schächental in Uri is not unique. Weather-bell ringing has been documented since the 12th century and was a common practice in Catholic Alpine regions until 1960. Even private households often had a small weather bell serving the same purpose.

Today, sirens and other alarm systems have largely taken over the role of this warning call.



Next, go to:

→ Di-4 The Constant Gaze Upwards

→ Di-6 Avalanche Protection Systems

→ Sp-5 Wealth and Witch Hunts

Sp - 2

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Rituals of the Urnerboden Inhabitants

The area east of the Klausen Pass, Ännet Märcht or Urnerboden, was already used by the people of Uri in the High Middle Ages. However, the Urnerboden only became a year-round settlement in 1877.

A chapel dedicated to St. Verena dates to around 1437. After further chapels were built around 1600 in the lower Spittelrütli and in 1756 on the Kapellenport, the present church dedicated to St. Erhard was built between 1912 and 1915 according to the plans of architect Hardegger, St. Gallen.

Let's take a look at two religious rituals that have been practiced by the people of the Urnerboden for over 500 years, giving them a sense of security and stability in this often dangerous region.

Bittgang

"I remember the "Bittgang" we used to have when the farmers used to bring their cattle up to the alps. People used to walk through the streets and pray that nothing bad happens while they were on the alps. But we don't do that anymore."

- Extract from interview at Restaurant Klausenpass

According to tradition, the first working day after the ascent to the Alps on Urnerboden is the day of supplication. This means that the parishioners from Unterschächen and Spiringen, together with the Urnerboden alpine farmers, march in prayer from the Urnerboden church to the cross at the Sonne restaurant.

There, the priest from Spiringen blesses the alp and its inhabitants and prays for a good alpine summer. After returning to the church, mass is celebrated there.

The supplication goes back further than 1495.



Next, go to:

→ Cl-5 Alpine Pasture Season

→ Di-3 The Slate Tragedy

→ So-3 Associations in Urnerboden

Sp - 3

Re

Sp

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B e

Alp

Langsam. Dreimal.

A - ve M

Singend gesprochen. Rhythmisch gesungen.

Bhüets Gott und u Herr Je-sus Christ.
Li-ber, Hab un was hier-um ist.
Bhüets Gott und de Sanct Jö - ri,
Der wol hier uf- und hō - ri!
Bhüets Gott und un-se Sanct Mar - ti,
Der wol hier uf-wa und war - ti!
Bhüets Gott und der lie Sanct Gall,
Mit seinen -- — Gottes-heiligen all!
Bhüets Gott und der lieb Sanct Pe - ter;
Sanct Peter, nimm die Schla dein rechte Hand,
Bschiess wol dem Bären — mein Gang,

Rhythmisch gesungen.

Dem Wolf den Zahn.
Dem Luchs den Kräu
Dem Rappen den Schnau
Dem Wurm den Schw
Dem Stein den Spru

Bhüetis Gott vor
Dass solche Thier mögen wed
Wol so wenig, als die falschen Ju

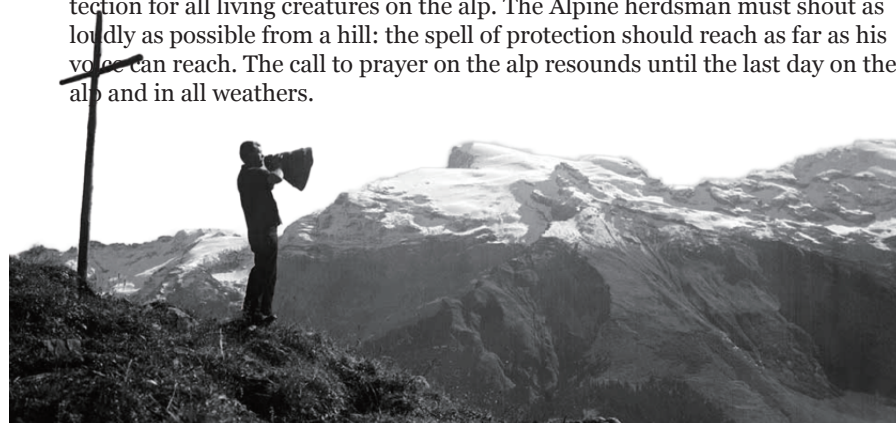
Bhüets Gott al - le
Und die lieb M
Bhüets Gott al
Mit erhobener Stim

All - he ber - all,
Bhüets G und es wal-ti Gott,
Und das thue der lieb Gott!

"We also have a tradition where you shout a "Betrufr" on every alp. This tradition for protection is still practiced to this day. A farmer shouts this "Betrufr" every evening when the cows are on the meadow. There are always many farmers on the same alp and one of them shouts the "Betrufr". It's usually always the same guy who does it."

The prayer call is a traditional prayer of the herdsmen and shepherds, which is called out and sung daily during the cattle summering period on many alps in Central Switzerland. At the end of a long day's work, a herdsman - usually the head herdsman - seeks out a suitable, if possible elevated spot where a wooden cross is often installed. By placing his hands around his mouth in the shape of a funnel or using a "Folle" (wooden milk funnel), he produces a sound that can be heard for miles around and, in good weather conditions, often even down into the valley. The caller's chanting has the function of a protective ritual. In dialectal High German, he asks God, Mary, Jesus, the Holy Spirit and various saints to protect all living creatures on the alp from harm and especially the dangers of the night. Storms, wolves, robbers and ghosts are often mentioned by name as threats. The prayer call can be interpreted as a popularized Gregorian chant, which has developed over centuries in the Catholic Alpine regions and is still passed down orally among the herdsmen and shepherds today.

The prayer call has usually been passed down orally over many generations, which explains why it is different on every alp. It is usually sung by the head of the respective alp. Every evening after the work is done, the caller asks God, Mary the Mother of God, Jesus, the Holy Spirit and selected saints for protection for all living creatures on the alp. The Alpine herdsman must shout as loudly as possible from a hill: the spell of protection should reach as far as his voice can reach. The call to prayer on the alp resounds until the last day on the alp and in all weathers.



Forms of expression in the rural cultural landscape

Wherever the Schächen valley farmer spends a short or long period of time, one encounters signs of his presence. Not only the dwellings, farm buildings, walls, fences and interventions of all kinds in nature bear witness to his lively activity. The many small and large crosses and wayside shrines by the road, in dangerous places and on prominent hilltops also reveal the presence of people who do not rely solely on their own strength for their daily work. The peculiarity of the farmer and herdsman to make his presence known and probably also the desire to somehow 'immortalize' himself is reflected in so-called sign stones. On suitable stones that happen to lie in an alpine pasture (and only there), herdsman or shepherds carve all sorts of numbers, signs and symbols. Among the few Zeichensteine on the Schächental Alps, the approximately 34 square meters of carved surface on a piece of grown rock on Ober Lammerbach are probably the most impressive.



FADING TRADITIONS

Nowadays, the procession takes place on a much smaller scale. Last year, 30 worshippers celebrated the traditional cloister on Urnerboden, where only 24 people now live all year round. Ageing, emigration and a lack of jobs have taken their toll on the village, which once had 250 inhabitants, in recent decades. The future of the settlement is therefore rather uncertain. It is quite possible that in a few years' time, alpine herdsman and women will only live there in summer and that the Urnerboden will become a normal alp again.

“30 believers celebrated”
the traditional cloister on
Urnerboden last year



The Revealed Witch

1. A farmer who had lost all his **livestock** to a witch said to his wife one morning: "If that's the case, I want to become a sorcerer too". She sternly warned him against this sinful step. But because he did not give up his plan and sought out a sorcerer in all earnestness, she finally said: "Yes, if you are serious, I will teach you the art of witchcraft." The man agreed. At midnight, armed with a pitchfork, he had to accompany his wife to the dung heap. There he should have stuck the fork in the manure heap and renounced God and all saints. Standing behind him, she recited the formula. He mumbled something, and suddenly he turned around like lightning, and with the words: "Now, I see you, you witch" he stabbed the three-pronged pitchfork into the heart of the false woman. In the morning she lay dead on the spot and was black as fire. The man had suspected it for a long time and only pretended to want to learn witchcraft in order to catch her in this way.

Ms. Zäzilia Gisler-Walker, 70 years old

2. Once three proud, splendid girls came over Hüfi and through the Maderanertal into the country, stayed there, and all three subsequently married **councillors**, one in the Blüemli matt behind the Reuss, one in the Ried above Amsteg and the third, I don't know where. The alderman in Ried soon realized that his was more capable than others and decided to put her to the test. One day he said to her that he would like to learn her skills too. "Well," she replied, "come down to Amsteg with me tomorrow evening, we'll stand on a horse dung stick and then you have to repeat everything I say to you word for word." The man promised. As they stood on the dung heap, the witch said: "Now we're on the horse dung." The man repeated it. "Now I'll conceal Jesus Christ," the witch continued. "And I'll kill whoever is next," said the man and hit the woman with his fist.

Josef M. Baumann, Gurtzellen, 68 years old, farmer, carter, day laborer



These two legends originate from the canton of Uri and are variations of the same story.

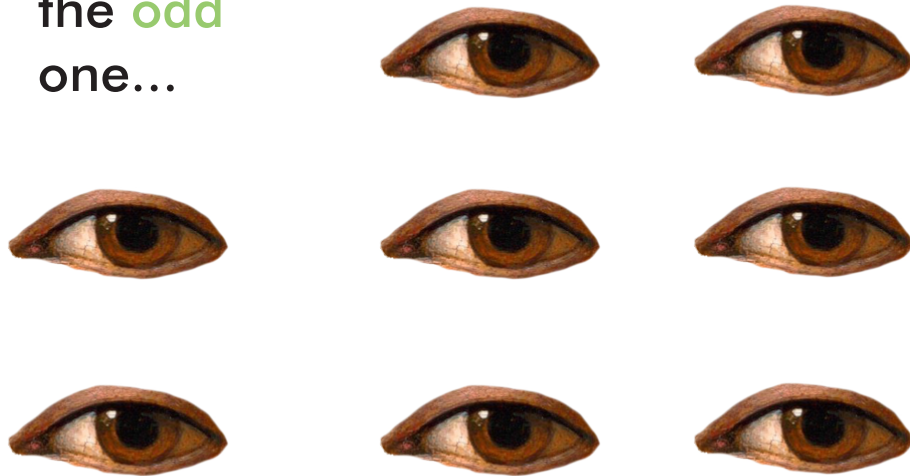
They are about women who were exposed as witches by their husbands and were subsequently murdered.

IN CONTEXT

In the context of the early modern period, in which over 90 percent of witchcraft accusations were directed against women, these stories reveal a social structure in which the male position was seen as righteous, God-fearing and wise, while women were slandered as threatening, unbelieving and vicious - a view that justified violent oppression or even their murder.



the odd
one...



...out

Wealth and Witch Hunts

" When land becomes lucrative for plantations or mining, communal structures stand in the way. "

The last witch execution in Europe, that of the 47-year-old Anna Göldi, took place in Glarus and Uri. It is a clear proof of how deeply religion and control over the alpine population were intertwined, but also of how this belief in witchcraft was deliberately used as a tool of control. The execution on June 24, 1782, sparked outrage and harsh criticism across Europe, while conservative circles in Glarus continued to defend the verdict.

Viewing the witch hunts, witch trials, and court practices provides insight into the sociocultural and religious mechanisms of these mountain regions. Witch hunts are a tragic example of how fears about natural forces and social upheavals were channeled toward certain groups in society who were mistrusted or resented by the elite. In the 16th and 17th centuries, this led to a veritable war against migrant workers, non-conformists, rebellious peasants, and farmers, who were perceived as a threat to the existing order and had to be disciplined.

The execution of Anna Göldi in 1782, just a few years before the French Revolution, appears at first glance as an archaic regression in a canton shaped by enlightenment ideas, rapid industrial progress,

and economic growth. Silvia Federici, political philosopher, professor, and activist, sees in the witch hunts a reaction to profound economic upheavals that fundamentally changed early modern society. Her research emphasizes that witch hunts were not random outbreaks of archaic violence. Instead, they accumulated against the backdrop of economic transformations. When land, previously managed collectively in subsistence societies, acquired a different value, it triggered greed.

In Glarus, as elsewhere, economic restructuring in the 18th century was driven by the emerging textile industry, which increasingly privatized and enclosed previously shared land. The privatization of community resources, particularly land, heavily impacted women, who often depended on these collective resources for their livelihoods. Federici argues that, in this context, women replaced the lost commons, as their labor, once defined as "non-work," began to be seen as a natural resource available to everyone, like air and water.

Federici sees witch hunts as a means of reconditioning and reprogramming society to establish a new social order in which witch trails became unnecessary.

Anna Göldi, born in 1734, worked as a maid and, by 1780, was employed by the wealthy Glarus family Tschudi. She came into conflict with the family's eight-year-old daughter Annemiggeli, who accused Göldi of having bewitched her by causing needles and nails to appear in her stomach. Göldi was dismissed, then arrested, and despite having healed Annemiggeli's foot ailments, she was interrogated, tortured, and finally executed as a "poisoner" by sword in 1782. Many of the trial documents survive.

→ Re-2 Organizing
Ownership

→ Me-2 Silberdistel

→ So-5 Size of Household and
Economic Status

Next, go to:

Sp - 5

Re | Sp | Me | Di | Cl | Te



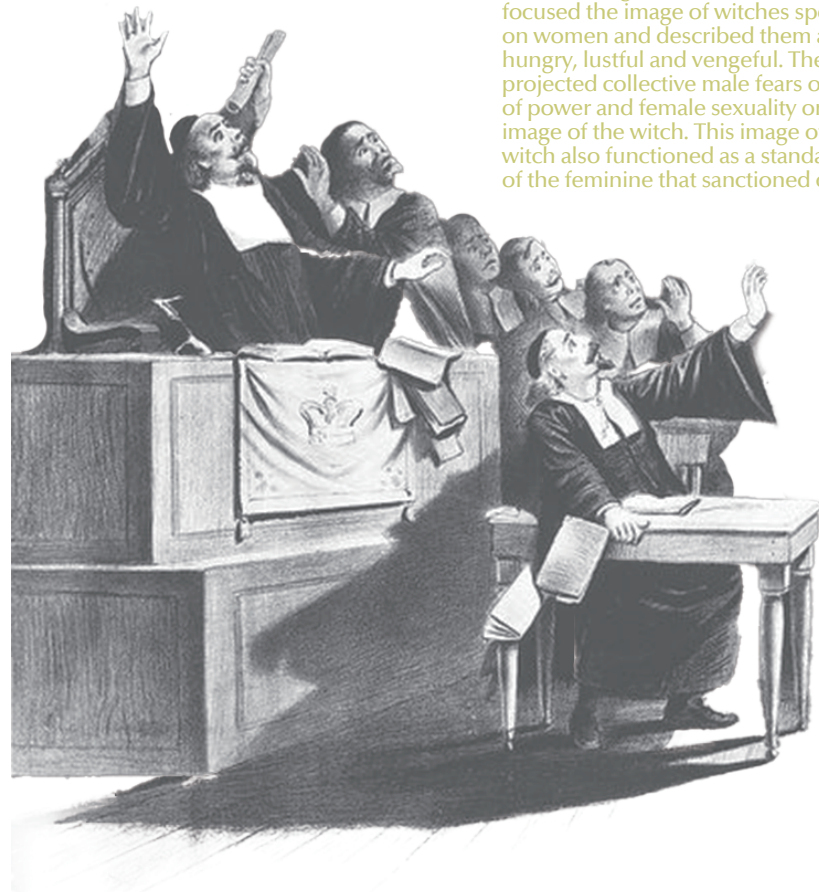
The Guardian, Liz Ophoven

Witch Hunts: A Historical Femicide?

Traditional witchcraft narratives are rightly criticized in research as an expression of a patriarchal society in which women who behave “differently” to the cultural norm are discriminated, excluded from community life or, as the witch hunts up until modern times have shown, brutally tortured or killed.

Even though we know today that a large number of men also fell victim to the witch hunts in Europe, it is undeniable that the proportion of women among the victims - with very few regional exceptions - was sometimes even over 90 percent of the accusations were directed against women. But why did the persecution of witches become primarily a persecution of women?

The misogyny of church authors alone did not cause witch-hunts, as it was deeply rooted in church practice long before the witch-hunts. At best, it can explain why the proportion of women among the victims was so enormously high. Roughly three levels can be distinguished which together help to explain the particularly large number of female victims of witch hunts: firstly, the discrimination of women in the early modern court system and especially in witch trials, secondly, the gender-specific implications of everyday magic and everyday conflicts, which played a major role in witchcraft accusations and charges, and thirdly, misogyny in scholarly discourses, especially in demonology.



Weakness of women in court

Women were severely disadvantaged in court in the early modern period, as the principle of equality before the law did not yet exist. They could not act as judges, jurors or juries and usually only appeared as defendants or as secondary witnesses. In civil proceedings, they had to be represented by their husbands, and their low legal status also meant that they were rarely called as witnesses in witch trials. In addition, women were often punished more severely than men, especially for breaches of morality, and the sexualized portrayal of the witch reinforced the prejudices against them, making it easier for women to fall into the machinery of witch-hunting.

Projections of male fears

In the late Middle Ages and early modern period, a theological genre of writing emerged, demonology, which was strongly misogynistic and portrayed women as particularly susceptible to alliances with the devil. Writings such as the "Hexenhammer" focused the image of witches specifically on women and described them as power-hungry, lustful and vengeful. These texts projected collective male fears of loss of power and female sexuality onto the image of the witch. This image of the witch also functioned as a standardization of the feminine that sanctioned certain



Imponderabilia, 1977
Marina Abramović

actions and behaviours if they did not conform to the parochial image of society, thus reinforcing the latter all the more.

At the beginning of the 18th century, men such as the doctor Johann Weyer and the lawyer Christian Thomasius attempted to end the witch hunts by exposing the alleged witches as (mentally) ill old women who believed they could fly to the Blocksberg and harm their fellow human beings. Although such tales were gladly heard and taken seriously by "lords of the court", they weakened the credibility of the accused in court as they simultaneously portrayed the accused as untrustworthy and inferior.

Gender-Specific Magic Practices

In the early modern period, older, marginalized women in particular were considered prime suspects for witchcraft, as their often miserable situation made them appear susceptible to the devil in the eyes of society. Particularly in rural areas, women were increasingly suspected of black magic and attributed with abilities such as transforming into animals or brewing magic potions. While women enjoyed a good reputation as healers in times of crisis, any undesirable effect or damage quickly led to suspicion and accusations. A neighborhood dispute was often enough to denounce women as witches. As women had no direct physical defense in conflicts, such as fist fights or armed violence, they usually had no choice but to defend themselves verbally through threats, insults or curses. This in turn brought them dangerously close to being suspected of harmful witchcraft.

Instrument of submission

To a certain extent, the persecution of witches can be seen as a form of femicide, as it deliberately suppressed women as supposedly subversive forces and institutionalized their destruction. Most trials took place in regions with weak state structures, while more stable states such as France carried out fewer witch hunts. Witch hunts were a violent means of pointing out women's socially defined boundaries and sending them a clear message of subordination for almost three centuries.

Writings such as the Hexenhammer projected collective male fears of loss of power and female sexuality onto the image of the witch. "

Next, go to:

→ So-4 Alpine Inheritance Types →

→ Me-3 Herbal Knowledge in the Convents →

→ Sp-4 The Revealed Witch →

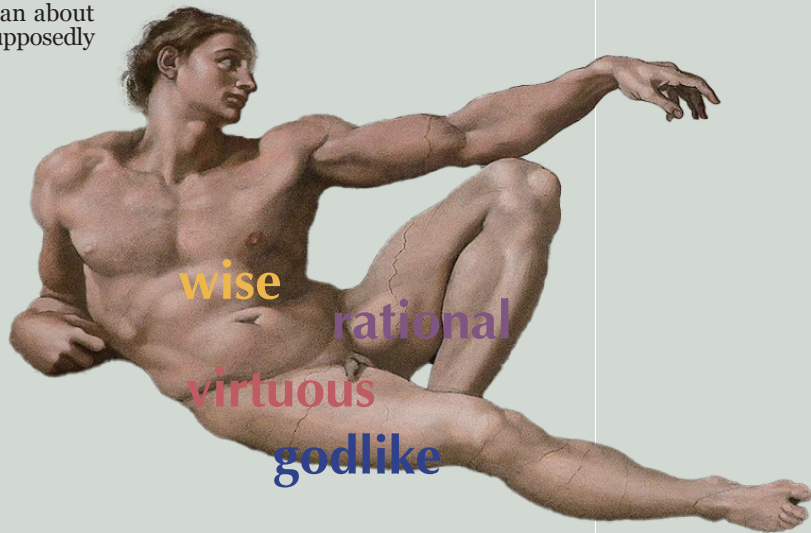
Sp - 6

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MEN AND WITCHCRAFT

THE DIVISION BETWEEN FEMALE AND MALE AND WITCHES

Men are not completely spared of the accusation of witchcraft either and, as research has only become clearer in recent years, demonological texts were not uninvolved in defining male witchcraft. Demonological writings do not condemn the male sex as such or emphasize its vices, as is the case with the female. Instead, the male sex is usually portrayed in a positive light, and male sorcerers are described as “feminized” due to their vices and thus as exceptions to the inherently virtuous male sex. In general, therefore, it can be argued that early modern demonologists did indeed consider some of their fellow men to be capable of witchcraft. However, in their view, the male sex as such was far better protected from diabolical temptations than the female sex due to its greater rationality and godlike nature. And if it was already dangerous for men to oppose the persecution of witches and thereby run the risk of being accused of witchcraft, there was no room for maneuver for women. The very misogynistic demonological debate disempowered members of the female sex in particular. It was and remained a debate between men - and it was not least for this reason that they expressed themselves far more frequently and clearly about women and their relationship with the devil than about their male counterparts and their supposedly witchy activities.



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Next, go to:

Alpine Inheritance Types

→ Me-3 Herbal Knowledge in the Convents

→ **Sp-4 The Revealed Witch**

sp-9

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Resources



Distribution of the Commons

In the 19th century, the community of Urnerboden faced strict regulations concerning winter residency in the Alps, outlined in the old land book of Uri from 1823. Traditionally, living in the alpine regions of Ennetmärcht and Niedersurenen during winter was forbidden for several important reasons. Article 391 of the land book stated that no one was allowed to remain in the region beyond Christmas. Those who violated this rule faced legal consequences. This rule was rooted in religious, educational, health, and environmental concerns, recognizing that prolonged winter residence could damage the delicate alpine woodlands and meadows. Moreover, those who stayed risked isolation from necessary spiritual and medical care.

Over time, however, this restriction became increasingly contested as the region developed. By the mid-19th



century, there was a growing desire for permanent, year-round settlement on the Urnerboden. This shift was supported by changes in both social needs and legal frameworks. In 1874, a revised Swiss Federal Constitution came into force, granting every Swiss citizen the right to settle freely anywhere in Switzerland, an essential step toward lifting the winter residency ban.

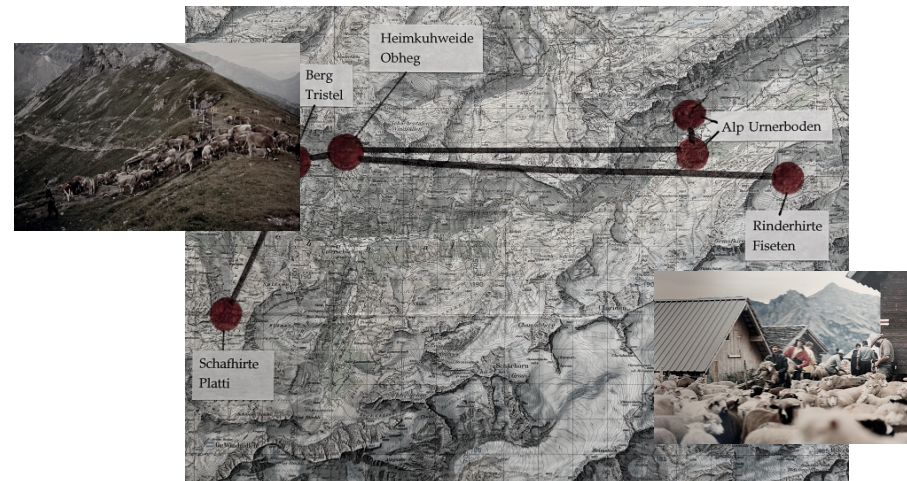
One notable event that accelerated this change was a petition submitted on June 8, 1877, by Karl Brücker and 21 other citizens from Urnerboden. They argued that Article 391, which restricted winter residence, conflicted with Article 45 of the new Federal Constitution, which guaranteed free settlement. They pointed out that

many citizens already lived in Urnerboden in their own homes or rented properties, and thus it was unreasonable to prevent them from residing there year-round.

This petition was successful, and on October 12/23, 1877, the Swiss Federal Council, led by Federal President Dr. Joachim Heer, ruled in favor of the petitioners. The council declared that the question of winter residency was a civil matter and that, without any legal grounds for eviction, the rights of Swiss citizens to settle freely could not be infringed. As a result, the community of Urnerboden was allowed to remain on the land throughout the year.

This ruling was a turning point for Urnerboden and led to further development of the region. With the possibility of permanent residency, the community began to establish infrastructure that would support year-round living. This included the construction of a school, the creation of a chapel, the improvement of roads, and the promotion of tourism. These changes also contributed to improving the overall quality of life in the region.

The movement for year-round settlement in Urnerboden owes much to the efforts of Dr. Joachim Heer, a Glarus politician and statesman who was instrumental in advocating for the right to free settlement. A firm believer in the principles of personal liberty, Heer had long championed the idea of allowing citizens to settle freely within the country. His influence played a crucial role in the success of the 1877 ruling, which ultimately ensured that Urnerboden could be inhabited all year long.



Next, go to:

Di-5 Alpine Landscape of Defence

Me-4 Faunal Pharmacology

Sp-3 Rituals of the Urnerboden

Re - 1

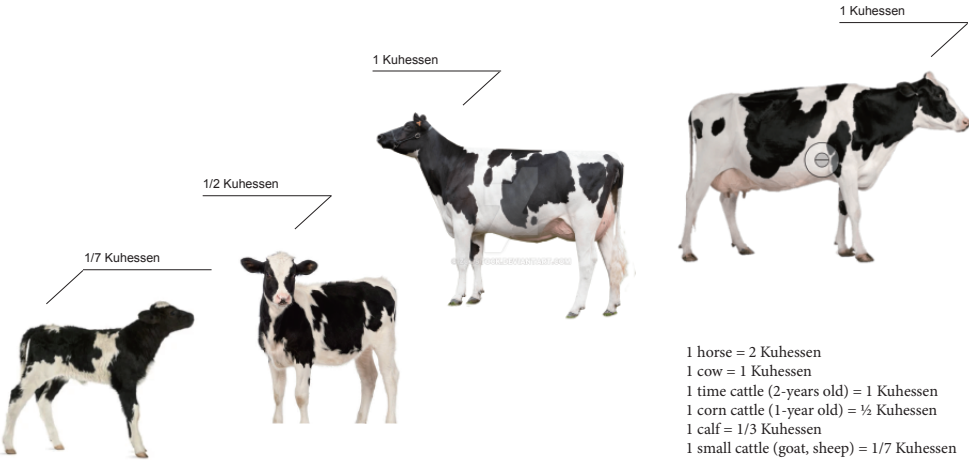
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Organizing Ownership

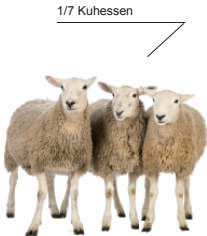
In the region of Uri, particularly in the Schächental valley, the process of gaining independence from external landowners, especially religious institutions, led to significant changes in land ownership and governance. After Uri became politically independent in 1231 through the “Freedom Charter,” the local population reclaimed control over the land from monasteries and noble families. This shift allowed farmers to establish their own communities, where they created rules governing the ownership and management of land. These regulations helped ensure that property remained in the hands of locals and was managed sustainably.

As the control of land shifted into the hands of local farmers, they organized themselves into collective groups, establishing guidelines on land inheritance, usage, and rights. Local assemblies, such as the Landsgemeinde, played a central role in overseeing the transfer and sale of land and ensuring that ownership stayed within the community. This transition marked the rise of an independent agricultural society in Uri, where farmers managed their own affairs and property.

This cooperative spirit extended to the management of the Urnerboden and the Ober und Unter Balm pastures, key areas for agriculture in Uri. The Alps were seen as common property, owned collectively by the Uri Corporation, though individual alpine huts were owned by the farmers themselves. These alpine pastures, critical for cattle grazing, have remained part of the public domain, underscoring the community’s commitment to shared ownership and collective management.



2 Kuhessen



1/7 Kuhessen

Strict regulations were implemented early on for the use of alpine pastures, ensuring that they were not overused and remained productive. Every year, herdsmen gather for the Alpmehren, where they determine the date for the cattle drive and make decisions about pasture use. By tradition, cattle must return from the Alps by St. Michael’s Day on September 29. Only citizens of the Corporation of Uri are allowed to graze their livestock on these communal lands, and the number of cattle per farmer is regulated to prevent overgrazing. For example, an alpine farmer may not raise more than 25 cows, with specific rules equating different types of livestock (e.g., a horse equals two cows).

In exceptional cases, farmers may be allowed to graze additional livestock, but this is subject to corporation approval. Livestock owners also pay a cattle levy to the corporation, not based on duration of use, but on the type of animal and other factors, ensuring a fair contribution to the maintenance of the communal pastures.

To enforce these rules, alpine bailiffs are elected for each pasture, typically serving two-year terms. Before the cattle are driven up the mountain pastures in spring, these bailiffs swear an oath, promising to uphold the regulations and report any violations. This longstanding tradition of self-regulation, reinforced by community-elected officials, has helped maintain the balance between individual farming rights and communal responsibilities for centuries.

Thus, the independence gained by Uri’s farmers allowed them not only to own and manage their land but also to create structured communities where shared resources like the alpine pastures are carefully managed. The rules and traditions surrounding land use, developed over generations, reflect the region’s enduring commitment to self-governance, cooperation, and sustainability.

Waldungen der Allmend-Bürgergemeinde Spiringen.

Wegprojekt "Holzboden - Ruolisberg"

Generelles Wegprojekt

Uebersichtskarte 1 : 10000.

Forests, Woods

The shady side of the Schächental and Urnerboden valleys is quite densely wooded. On the sunny side, on the other hand, the forest has been pushed back considerably.

Early on, the people of Spiringen had the forests on the shady side between Witschwenden and Holzboden banished and transferred to them for their exclusive use and management. This is how the Spiringer Bannwälder, which cover 76 hectares, came into being:

- Witschwenden Bantwatal,
- Söld-Reckholderwald;
- Dachsenstein-Brunniwald;
- Oberschwandwald;
- Holzboden-Schiltwald.

The remaining forests of the Schächental and the Urnerboden, with the exception of the Unterschächner Bannwälder, were used by the Spiringer together with the inhabitants of Unterschächen. They measured 1,078 ha. Forest utilisation was very free until the 19th century, when every inhabitant was allowed to collect firewood and timber from the forest for their own use. The forests were also used as forest pasture for goats and sheep, as suppliers of grit and leaves as well as litter.

It was not until the Federal Forest Police Act of 1876 that forestry was subject to stricter rules. The entire forest was declared a protected forest, harmful secondary uses were prohibited and logging was subject to stricter regulations.

Waldwirtschaftskarte der Spiringer und Unterschächner Waldungen, von Dr. h. c. Max Oechslin, um 1923.

Since 1903, utilisation controls have been carried out in the forests of Spiringen. In 1923, Dr Max Oechslin from the cantonal forestry office drew up the first comprehensive forest management plan. The formation of the corporate municipality in 1945 led to the division of the forests between Spiringen and Unterschächen. Since then, Spiringen has utilised the forests within the municipal boundaries (847 ha) and an additional parcel in the Brunni valley (150 ha).

The annual felling rate is around 900 m3. The ready-to-cut timber is labelled, its cubic content estimated and then auctioned off at a timber auction. By increasing and reselling the timber, the farmers have a welcome extra income in winter.

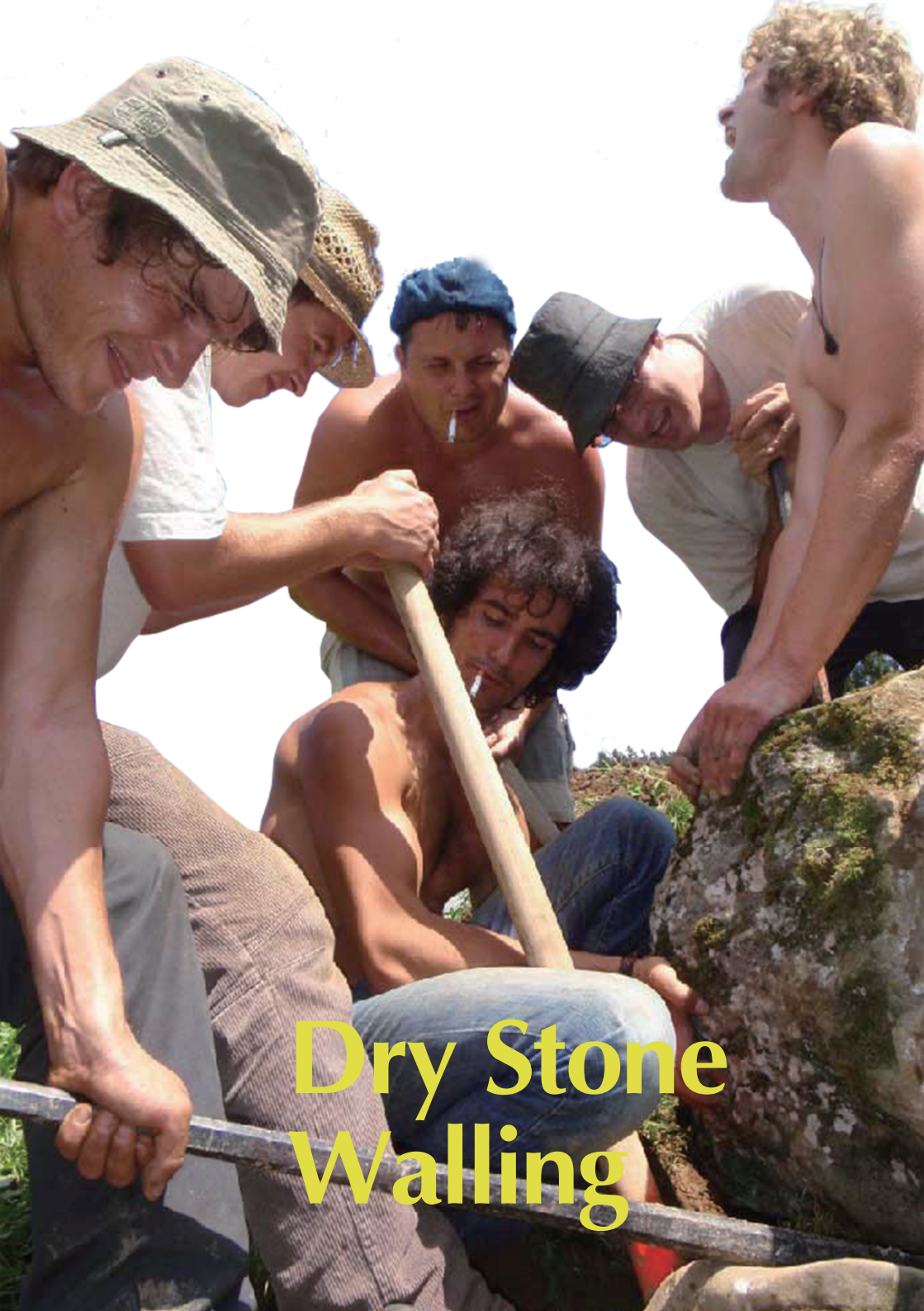
As carpenters and joiners, the Spiringer family have great skill in woodworking. In addition to the farmer's broad axe, there were early sawmills powered by water, e.g. in Witschwenden on the Gangbach and in Argseeli on the Fätsch, where timber was prepared for the locals. The Klausenstrasse, which was completed in 1900, encouraged the development of larger wood-processing businesses.



Waldwegbauprojekt für die Waldungen der Gemeinde Spiringen, von Kantonsforstmeister Dr. h.c. Max Oechslin, 1947.

Eine Holzerguppe unter Fridolin Gisler fällt gemeinsam im Chipfen einen mächtigen Ahorn, 1921

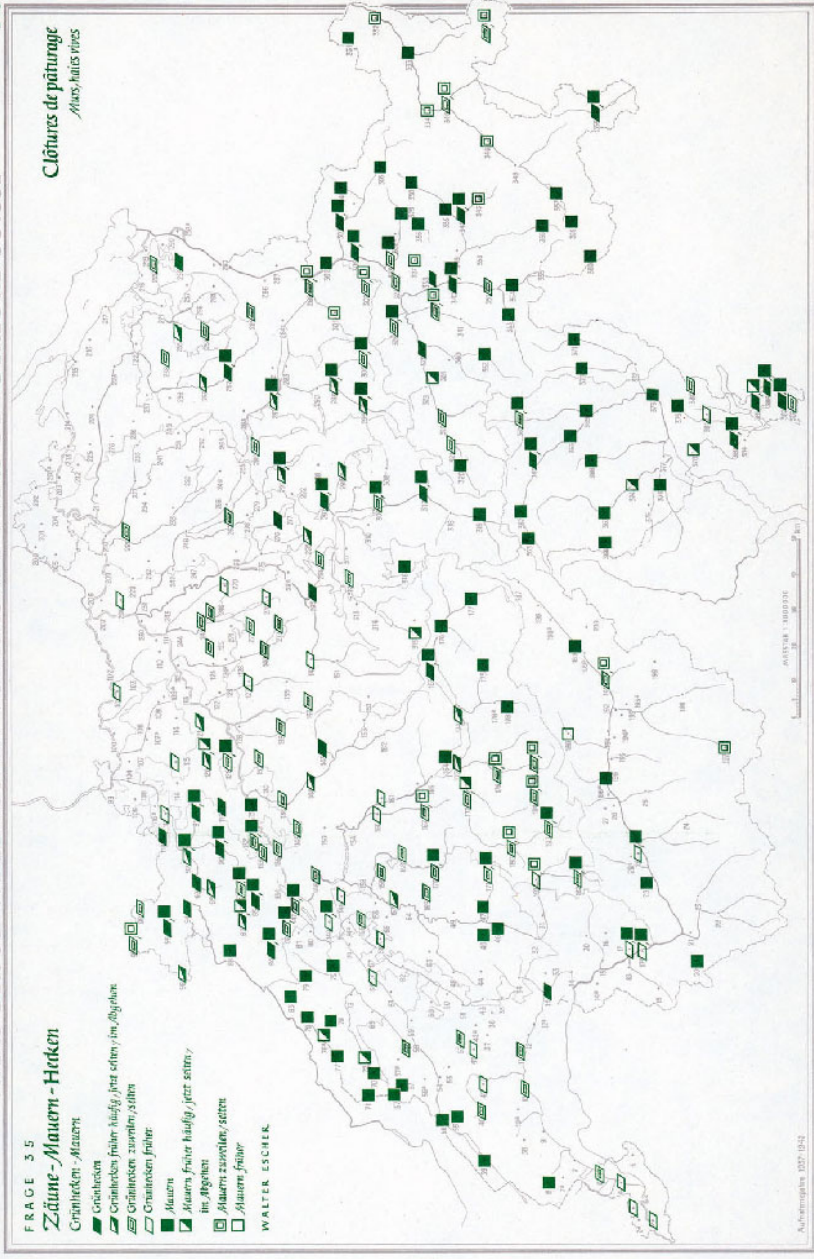




Dry Stone Walling



The practice of stacking natural stones into stable and durable dry stone walls without the use of mortar, cement, or adhesives is a centuries-old tradition. Dry stone walls are part of Switzerland's cultural landscape, representing rural building traditions and craftsmanship. They provide valuable habitats for plants and animals, promoting biodiversity. Various organizations and craftspeople work to preserve this ancient building technique, sharing expertise to prevent old walls from deteriorating. New walls are built in construction courses and through civil service projects, and they are increasingly integrated into modern garden designs. In recent years, dry stone walls have gained increased attention, with their craftsmanship, aesthetic, and ecological significance now widely recognized.



Dry stone wall construction has been practiced for millennia and can be found worldwide. As land is cleared for cultivation, large amounts of stones are collected. With the skill of dry stone walling, people in various regions developed slightly different but fundamentally similar techniques based on available stones. These techniques were applied in various areas, such as building houses, wells, roads, and bridges. This tradition, especially important in agriculture and livestock farming, has remained largely unchanged over the centuries.

Dry stone walls are particularly valuable in agriculture. Stones removed from fields and pastures become useful building materials. In regions with little wood or stony terrain, where driving stakes is difficult, stones are an invaluable resource. Dry stone walls keep livestock like sheep, cattle, and horses contained, separate pastures from fields reserved for hay, and protect crops from wild animals. These walls also serve as boundaries between farms and mark municipal or cantonal borders. They transform steep slopes into terraces for cultivation and protect the soil from erosion. As protective structures, dry stone walls guard villages and roads against landslides and avalanches.

Next, go to:

→ Te-4 The Devil's Bridge

→ Di-1 Artistic Depiction of Avalanches

→ Di-2 Literary Creations on Avalanches

Re - 4

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Ecological Importance

The many gaps and crevices in dry stone walls provide essential habitats for various plants and animals, including algae, lichens, mosses, houseleeks, wall ferns, insects, amphibians, reptiles, birds, hedgehogs, and martens. The walls offer microclimates that change with the seasons, providing shelter in cold winters and hot summers. They also act as corridors for the movement of flora and fauna, connecting different ecosystems. Preservation and Revival.

Until the late 1950s, farmers and local communities regularly maintained dry stone walls. However, with the mechanization of agriculture, there was less time and labor available for this manual work, leading to the decline of these structures. Fast-built fences, cheap concrete walls, and expanding construction zones displaced traditional dry stone walls, leaving many to deteriorate. The centuries-old tradition was at risk of disappearing, but some specialists and organizations worked to preserve the craft.





Köhlern - a Charcoal Production Method

The glowing of wood in a charcoal kiln for the production of charcoal is called "charcoaling." In the agricultural community of Romoos in the Entlebuch region of Lucerne, the last charcoal makers in Switzerland practice this ancient craft on a part-time professional basis. Charcoaling has a centuries-old tradition in the Napf mountain region. Since the forests remained largely inaccessible for a long time, it was not possible to harvest timber, and people turned to charcoal production instead. In the municipality of Romoos alone, more than two hundred historical charcoal production sites have been documented.

The most labor-intensive part of the work involves constructing and preparing a charcoal kiln in the open air. This is done by stacking waste wood into a pile about four meters high and ten meters wide. After being lit, the kiln smolders for about two weeks under the constant supervision of the charcoal maker. Finally, the exhausting and sweat-inducing task of extracting the charcoal takes place. The charcoal makers in Romoos produce approximately one hundred tons of charcoal per year using this method. Until the 1980s, the steel industry was their main customer. After this sector withdrew as a buyer, the charcoal makers specialized in the market for grilling charcoal.

Building and Burning a Charcoal Kiln:

A suitable charcoal production site must be level, provide protection from the wind, and offer enough space for constructing a round kiln about ten meters in diameter. Once the wood, cut during winter, has been transported to the chosen location, the charcoal maker spends several days sawing and splitting it into logs about one meter in length. In total, between 25 and 40 cubic meters of air-dried hardwood and softwood are needed.

In the middle of the site, the wood pieces are stacked to form a shaft about twenty centimeters wide, which will later be used to ignite the kiln. Until then, a four-meter-long "Füllibaum" (a central post) is placed in the shaft opening. The kiln grows around it—resting on a prepared base of round logs—ring by ring. When stacking the logs, the charcoal maker must ensure that as few air gaps as possible are left to prevent overly rapid carbonization. Once the wood pile is complete, it is covered: first with fir branches and then with the dampened "Löschli" (a mixture of charcoal dust and earth). This minimizes air intake. To secure the structure, the charcoal maker binds the "Löschli" cover with wire cables.

Igniting the kiln begins with removing the "Füllibaum," which opens up the shaft, also called the "Füllihus." The charcoal maker then pours glowing charcoal into the opening from above, creating a column of embers that starts the smoldering process. The charcoal maker closes the shaft with an iron lid and covers it with "Löschli." He then regularly pokes air holes at the top of the kiln to allow smoke to escape, serving as a signal of the carbonization process. When blue smoke rises, the wood has been carbonized up to the outer covering. The process proceeds from top to bottom and from inside to outside. Once blue smoke is emitted from the air holes, the charcoal maker plugs them and makes new ones lower down.

A kiln burns for between 14 and 18 days. During this time, the charcoal maker must monitor, maintain, and "feed" it around the clock. Initially, coal pieces are added to the shaft every two hours. Toward the end, the intervals between refills stretch to five hours. The process requires a high degree of presence on-site. Typically, charcoal makers sleep in a simple nearby wooden hut, with an alarm clock serving as an essential tool to avoid missing their shifts. When the carbonization process is complete, all the holes are sealed, and the kiln is covered with a plastic sheet to suffocate the embers completely. After 10 to 14 days, the matured charcoal can be pulled out. This covering method has been in use since 2003. Before that, the still-glowing charcoal pieces were cooled with water, which required a laborious drying process (filling them into jute sacks and storing them in huts).



The process of building, carbonizing, and dismantling a kiln takes a charcoal maker about 300 work hours. This does not include the time required to cut the wood in winter, transport it to the production site, and prepare the logs. A general rule of thumb is that one cubic meter of wood yields an average of 270 kilograms of charcoal. A kiln produces between four and eight tons of charcoal. Most charcoal makers build two or three kilns per year, between spring and fall, as the winter months are not suitable for charcoal production due to the high heat loss.



‘Shifting Markets:

Artisanal Shops, Factories, and Grillers Even in pre-industrial times, there was lively charcoal production in the forests of Entlebuch, as indicated by numerous place names related to the craft, such as "Chohlwald" (charcoal forest), "Chohlgrabe" (charcoal ditch), and "Chohlhode" (charcoal ground). The charcoal makers from Romoos transported most of their charcoal to Lucerne, where they sold it at local markets. Their customers primarily used it as fuel for production facilities such as goldsmiths, silversmiths, blacksmiths, iron foundries, brickworks, glassworks, gunpowder workshops, and bakeries. Private households also needed charcoal, for example, to heat irons.



Wild Haymaking

Every summer, men, women and children climb up steep, difficult to access slopes to collect hay. These mountain meadows, often referred to as “Planggen”, are too steep for grazing cattle. The hay collected there is called wild hay: a type of lean hay that grows sparsely and is harvested at most once per year. The hay collected from these wild meadows provides essential winter fodder for livestock in mountainous regions. In areas where cultivated fields are limited, wild hay is an important resource for farmers, ensuring their animals have adequate nutrition through the winter months.



Wild haymaking is widespread mainly in Central Switzerland and in the Canton of Glarus and traces its roots back to the hard cheese business that developed in this region in the 17th century. The practice was abandoned in many places in the 20th century but experienced a conservation-inspired revival at the beginning of the 21st century. Dry meadows are home to a lot of biodiversity, so farmers receive direct payments to use and maintain them. Without these subsidies, very little wild hay would be harvested.

